Anxiety, Uncertainty, and Resilience During the Pandemic Period

Anthropological and Psychological Perspectives

Edited by Fabio Gabrielli and Floriana Irtelli

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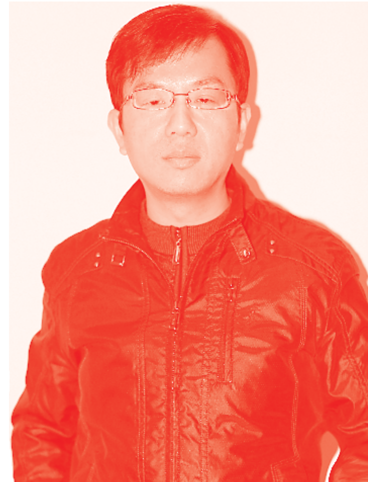

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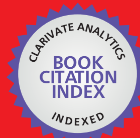

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Preface

Today, much research is being conducted in the psychological, psychiatric, medical, anthropological, and sociological fields on the effects of the COVID-19 pandemic on people's mental and physical health, a period characterized by uncertainty and anxiety. This book provides a comprehensive overview of this topic by exploring research, theories, biopsychosocial perspectives, and intercultural studies about the pandemic period. First, the book analyzes updates from research and clinics on how psychological distress and resilience develop in different contemporary cultural and anthropological contexts. Second, it examines the human potential and its associations with mental health. Third, it investigates the interaction of demographic variables along different psychological and social trajectories to obtain detailed information on risk factors for the development of mental illness and existential distress. Finally, the book provides an overview of risk factors and epidemiology for prevention to promote a better quality of life, resilience, and psychological wellbeing of the general population during this period.

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Section 1

Introduction

Chapter 1

Introductory Chapter: The Transition from Distress to Acceptance of Human Frailty - Anthropology and Psychology of the Pandemic Era

Fabio Gabrielli and Floriana Irtelli

1. Introduction

The irruption of covid-19 on the world scene has brought about a profound change of our way of being in the world, disrupting economic, political and social structures, and exposing our lives to a precariousness that the risk of falling ill renews every day. This has created an era of uncertainty and anxiety. Anxiety, unlike fear, is generated by a state of indeterminacy and general uncertainty. Being exposed to a virus that spreads beyond all geographical and social boundaries emphasizes that it is able to escape the control of science and medicine, thus causing a general climate of sadness characterized by pervasive forms of anxiety, prolonged states of insomnia, gloomy resignation or, conversely, social dynamics characterized by aggression ready to pour into homes and squares. This state of affairs risks further fuelling blind rage, authoritarian populism, resentment, envy and revenge, sad passions that should instead be reconverted into projects of hope [1]; we can also note that expressions such as pandemic fatigue [2–6] and limbo anxiety have now entered the new psychiatric vocabulary to indicate the sense of widespread fatigue that characterizes our lives. We have therefore entered this new era from a less than optimal state: frenetic, self-centered, subjected to continuous pushes for productivity, we were probably already experiencing a certain sickness of living. The Korean philosopher B. In this regard, the Korean philosopher B. Chul Han argues that we come from an era characterized by a sort of logic of uniformity: in summary, this author suggests that anxiety, mood disorders, attention deficit hyperactivity disorder, borderline disorder and burnout arise in a society that has no other alternatives to efficiency and productivity; it is therefore characterized by a standardized thinking, inflexible and uncreative in which narcissism reigns and covers extreme fragility, ready to explode at the first crisis [7]. If we do not want to react to the current situation with gloomy resignation, we must accept fragility as an existential condition of the human being, whose life is always exposed to risk, and develop responsibility and the ability to take care of one's own life project.

2. Fear and distress as fundamental emotional situations

M. Heidegger in the "Existential Analytic" of Being and Time written in 1927, as it is known, has focused his theory in the description of being (Dasein) not

in a transcendental sense (as for Husserl) but from the point of view of the vital and concrete flows of human existence, that is man in his real existential dimension, which according to this author is characterized by fear and anxiety. In fact, Heidegger believes that fear and anguish are fundamental emotional states for the understanding of human existence. Already during the summer semester of 1924 dedicated to the Fundamental Concepts of Aristotelian Philosophy, Heidegger confronts in particular the Rhetoric of Aristotle and underlines the intimate connection between thought and passion. Heidegger speaks of emotional situation (Befindlichkeit) as the "feeling situated in a certain state of mind" and this concept will find its theoretical maturity in the work Being and Time in which it is emphasized that there can be no understanding of man and his multiple ways of being, his relationship with others and with the world, without understanding the affective dimension. Fear, not by chance, in Being and Time, was defined as a "mode of emotional situation", and anguish, in two texts of 1929-1930, What is Metaphysics and The Fundamental Concepts of Metaphysics, is configured as a key element: a privileged existential state from which to question man and the world. If fear and anguish are configured as pivotal emotional moments for man, they nevertheless present a different phenomenology. Just in "Being and Time", Heidegger presents us with a description of "fear" (Furcht) and "anguish" (Angst) [8]. Fear according to this author has a determined nature and a specific cause, as it contemplates the "before what of fear" [das Wovor], and also the "why (das Worum) of fear". Fear is therefore always concerned with a specific entity encountered in the world that nonetheless possesses a characteristic of menace (Bedrohlichkeit). Anguish, on the other hand, is not determined by this or that specific entity, rather its cause is completely indeterminate. This indefiniteness not only leaves it effectively completely undecided from which entity the threat comes, but also means that in general the entity is "irrelevant". Anguish, according to this author, originates from the fundamental relationship between being in the world (dasein) and the world itself, from the fact that we exist in a world that sometimes seems meaningless and in which we are destined to death. And yet, it is precisely from anguish that the human being experiences the possibility of the free development of its potential, therefore, anguish makes us discover both our fragility, our destiny of death, but at the same time, it gives us the possibility to deploy our potential, stimulating our creativity and our projects, while being aware of our human fragility. We could define this anguish as vertical anguish. The first wave of the pandemic therefore caused dismay and provoked vertical anguish while in the so-called second wave, the population was apparently more prepared, but found itself in an even more painful overall state of mind [9] we therefore became more aware of the fact that Nature is indomitable and, according to Kierkegard's theory, a horizontal anguish was added to our vertical anguish, which is based on the realization that the power of nature in which we are immersed is greater than our own [10].

3. Life paths

The Greeks distinguished a biological life, common to every species, which is represented by the alternation of life and death, called zoè, and a life understood as a specific existence, i.e. a segment called bìos, which coincides with our unrepeatable life and biography, with its precise beginning and end. Each biography tries to carve out within the common biological life a duration, hoping that it is not only prolonged as much as possible in time, but, above all, that it is also full, bright, satisfying. In other words, man seeks to carry out in the world his own power, or as Spinoza says man is characterized by effort, tension, internal drive to exist, but man

is also part of Nature and therefore can not be conceived of as separate from the rest of nature, in fact, the term bìos emphasizes precisely our fragility, our mortal destiny for which we passively suffer our natural fate: we can not escape death. In the time of the pandemic, our passivity, that is, our dependence on other powers, and in particular on the power of untameable Nature, made itself felt in all its extent. From the sense of our passivity, from the vertical and horizontal anguish we are experiencing, a new way of living human frailty can emerge, however, and we can develop new ways of taking care of our lives. The word "care" is a word of Latin origin, whose etymological root is ku = kau-kav and refers to the concept of observing, watching, it therefore indicates an attentive, thoughtful, vigilant observation, a kind of restless concern. Care is an essential way of approaching life, the form we give to the time of existence, guarding it, according to our vocation and our character. At the same time, each of us also wants to be the object of care and wants to be welcomed in our fragility [11], in the anguish that accompanies every attempt to have control over our existence, which is never fully achievable [12], as the current pandemic is also demonstrating.

4. The wound of uncertainty

The Western world, at least the European one, is heir to three great historical-cultural traces: the Greek civilization, the Christian one, the scientific revolution. We are indebted to the Greeks, in the terms we use, in our logical categories, in our worldviews. For the Greeks, explaining reality means leading the multiple back to unity, in the sign of kósmos, of order; according to this perspective, order governs the world, and makes it fraternal to humans, who in turn become familiar with the world thanks to their ability to measure it; according to Plato, we can explain the world because it always refers back to unity, to measure; this theoretical and philosophical point of view has been challenged today by the perspectives of the science of complexity, but this does not undermine the profoundly human aspiration to measure and control with which the subject takes distance from the anonymous and undifferentiated character of the world through concentration on himself and on the satisfaction of his own needs [13]. We must consider at this point that in the era of the pandemic there is a profound uncertainty, which is no longer limited only to economic or social precariousness, it is in fact biological precariousness: a virus is roaming the world, which at least for the first time shakes our existence from its foundations; in fact, the virus' aggressiveness constitutes a brutal and tangible attack on our very possibility of giving a beginning to things and on our tendency to control reality and satisfy our needs: anguish germinates precisely from this loss of control, from a state of both existential and biological uncertainty.

5. Perspectives on uncertainty

In a world marked by pandemics, which we find increasingly difficult to control, uncertainty makes the present time threatening and unproductive, lacking in planning tension. Uncertainty produces fear, then anguish, then sadness, and Spinoza reveals something very simple: sadness never makes one intelligent, which is why the powerful need the sadness of the subjugated [14]. It is evident that the introduction of a perpetual state of sadness, sometimes artfully amplifying the margins of uncertainty, risks creating a distressed, resigned, and therefore controllable human community. However, there are two types of sadness: one refers to impotence, to inaction, to resignation; the other is born from the awareness that the things of the

world are destined to perish, that nothing is forever, that our structural finiteness can never authorize us to realize all our possibilities, our projects, our dreams, yet this does not mean that we should stop, that we should resign ourselves. We can call this second type of sadness the one that can lead to fragile creativity: the capacity to create even in the awareness of one's own fragility, of one's own human limits; in order for there to be fragile creativity, it is necessary to turn uncertainty into an opportunity for creative vitality, an opportunity to enhance our qualities also for the benefit of the community [15] the capacity to field a plastic, open and dynamic human planning; plasticity in particular is configured as the radical possibility of the human being to modify himself and the world: a vital and creative possibility that should induce hope, not gloomy resignation [16].

6. Conclusion

The body communicates to us with immediacy our state of health and illness, and through the body we experience emotions and feelings [17]. When care comes into the picture as a remedy for illness and suffering, it is always oriented towards our fragility [18]. When care of the body comes into the picture it calls for the concept of gentleness [19] and respect for others, which is also expressed in respecting the rules of physical distancing in a suitable way [20]. In the pandemic time we have therefore experienced physical distance as a painful brake on relational contact, yet it is a necessary distance [21]. The recovery of distance is therefore an absolute urgency [22–24]. Many have been the consequences of this era marked by illness, for example, today we have also become accustomed to stopping, and this has distanced us from efficiencyism and from the logic of productivity [25], the pandemic has shown, forcing us into our homes, how it is necessary to find patience, perseverance and temperance to take care of one's life project [26]. The pandemic has also raised several criticisms on bio-politics and bio-power by fomenting the debate between deniers and non-deniers [27–30]; as a population we are called by the virus to act politically in the cities [31] and we must recognize that not all bio-politics is characterized by the logic of domination, of the exercise of sovereignty, there is also a bio-politics that calls us to a collective and responsible action in the face of particular ecological events, such as covid-19. This collective, bio-political action, precisely because the virus has shown all our precariousness with respect to the immense power of nature, has as its ultimate goal the recovery of distance as an act of respect for our neighbors and society more generally, so it is possible that this era constitutes an opportunity to develop a great responsibility towards others [32, 33].

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Section 2

Psychological Perspective

Chapter 2

Various Facets of Anxiety during the Pandemic in India - Critical Issues

Riddhi Laijawala, Sushma Sonavane and Avinash De Sousa

Abstract

The COVID-19 pandemic has brought on a lot of challenges. Among these challenges, the most pressing causes for concern are mental health issues. Anxiety is one such mental health concern that statistics has shown as increasing since the beginning of the pandemic. Numerous causes have contributed to these rising levels of anxiety. Health related concerns, loss of income, are just some of the many reasons that individuals have attributed their anxiety to. The Indian population has especially seen a massive number of jobs that have been lost, and the first lockdown in April 2020 saw a major domestic migrant crisis. In addition, a number of groups, such as the elderly, women, and the youth have faced anxiety provoking situations of their own. While India is currently facing a second wave exactly a year later, the facets of anxiety to take into consideration are numerous. The chapter looks at various facets of anxiety that have been encountered during the pandemic from an Indian context.

Keywords: anxiety, pandemic, lockdown, COVID-19, health

1. Introduction

The COVID-19 pandemic with its widespread global impact on health, healthcare infrastructure and the psycho-social and economic disruption has never been seen in modern times. The virus causing it is a new one and hence not only do we not know the optimum management of it [1]. After a year of the pandemic, we are yet struggling to overcome it. It is rare in a pandemic where a vaccine has been synthesized and manufactured within a year and now with different more infectious variants spreading and the second, third, fourth and fifth waves in some countries (USA, Canada) we seem to be in the learning curve with this pandemic. Considering the proportion of the pandemic affecting almost all the countries in the world and some of them having high morbidity rates, the fear & anxiety is high [2]. There is a tremendous amount of information/misinformation that is so easily available in the social media. The psychological complications are increasing rapidly. A year into the pandemic and we are facing the second wave in India which seems to be worse than the first. Unlike the first wave we now seem to be facing fatigue not only in the general population but more so in the healthcare and frontline workers. There are various forms of anxiety that have been encountered during the pandemic and this chapter looks at these various forms of anxiety from an Indian perspective.

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2. Factors that can impact and cause anxiety during the pandemic

A number of factors in the Indian context, with reference to COVID-19 can affect and lead to anxiety. Among economic factors, one of the biggest is the sudden loss of income due to unemployment during lockdowns. Single income households face a massive financial crunch, and not being able to afford daily food can be a very stressful experience. From daily wage laborers to business owners, the loss of money and income has posed a serious dilemma of risking their safety to go to work, versus having some form of income to run their households [3]. The following sections shall now look at the various forms of anxiety seen during the pandemic.

3. COVID related anxiety or Corona-anxiety

COVID related anxiety is a major form of anxiety. Especially during the early days of the pandemic, when India was under lockdown, individuals faced major anxiety at the thought of themselves or their families being infected. Popularly known as *'coronaphobia'* this fear of the virus itself causes a lot of anxiety over the possibility of being hospitalized, or even dying [4]. A study done on this fear among the Indian population using a scale revealed that 54.8% of the population reported low fear, however female married healthcare workers with low educational status reported high levels of fear in this context [5]. Media information via news channels and social media have witnessed a lot of sensationalism and even fake news. This constant access to news updates about rising numbers, buildings being sealed and first-hand accounts of hospitals are a source of anxiety and stress. The advent of social media journalism has led to fake news that does not come from credible sources. A classic case of the boy who cried wolf, this can be a factor that can seriously cause anxiety [6].

4. Health anxiety related to procuring COVID-19

Health anxiety Denotes a continuum of behaviors and cognitions of an individual that can range from persistent worries about illness which may vary from mild to severe forms bordering on hypochondriasis. Risk factors which influence health anxiety include personality and mood characteristics. Consequently, the potential for adaptation is through resilience that is the ability to adapt and withstand emotional and physical distress. Anxiety symptoms and anxiety disorders are distinct entities and anxiety symptoms frequently correspond to an adaptive and physiological response to a stressor requiring little, if any specific treatment and management. Compulsory contact tracing and long periods of quarantine which are measures taken to control the epidemic increase people's anxiety and the remorse regarding passing on the infection and its consequences along with the stigma attached. Health anxiety has led to everyone attributing routine cold and cough to COVID and getting themselves tested when there is no need [7, 8].

5. Work from home induced anxiety

Work from home is not a new concept but has been enforced on a large population with the exception of healthcare professionals and frontline workers. The enforced stay at home and work from home along with the presence of other family members which may include other working members, the elderly and school going

children or infants and preschoolers. This may lead to overcrowding, interpersonal strained relationships, a severe crunch of resources especially if multiple members are working from home for laptops and smartphones used for office and school work. The reduction in pay, difficulty in working from home while looking after other family members, elderly and children may add to the stressors especially for women. The skills needed to work from home may not be good and entails new learning and training which can prove to be anxiety provoking [9].

6. Quarantine anxiety

One of the preventive measures for COVID-19 infection is quarantine for a period ranging from 14 days and more depending on the presence of symptoms and Covid test results. This becomes an extremely stressful period with different coping mechanisms employed individually. Being isolated and alone during an extremely vulnerable period of illness increases the chances of anxiety and depressive disorders, substance use disorders and PTSD. The loneliness and uncertainty regarding prognosis, financial burden and worries about the health of the near and dear ones leaves one emotionally and physically vulnerable. There have been instances where a member of the family is admitted in the hospital and the rest of the family is quarantined leaving no support system for the family. The problems are increased if there are young children in the family. Social media platforms can prove to be a solace as well as a nuisance depending on how much importance and belief is attached to it. Vicarious somatization may be seen in the general population due to the explosion of information available [10].

7. COVID recovery anxiety

Hospitalized patients who are stable show a high prevalence of symptoms like insomnia, generalized anxiety, depression and psychosis [11]. Patients who were in the ICU reported post COVID complications like reduced lung functioning and reduced exercise capacity. In the ICU, panic disorder and specific anxiety disorders like claustrophobia are seen. The loss of human touch in the ICU with healthcare professionals being in PPE kits leads to extreme loneliness and feelings of helplessness in an excruciatingly vulnerable state. Acute respiratory distress syndrome (ARDS) in ICU survivors of COVID-19 may occur with an expected survival rate of approximately 25% [12]. The survivors may have psychological and neurological sequelae due to the prolonged ICU stay. Stressors include immobility, separation from family and friends, pronounced sedation, anxiety about health and survival and financial concerns. About 30% of them may suffer from PTSD and panic disorders and other mental health problems. Aggravation of panic attacks is high in survivors of COVID-19 due to prominent respiratory symptoms and panic attacks which may be triggered by fear conditioning to difficulty in breathing. The prolonged time taken to recover from post-covid complications adds to the anxiety along with the fear of reinfection [13].

8. Obsessive compulsive disorder and COVID

Sanitizing and disinfecting protocols brought on by COVID-19 particularly can cause individuals suffering from OCD a lot of anxiety and overwhelming thoughts, leading them to indulge in compulsive behaviors. The fear of contaminated surfaces

and repeated handwashing is one of the main challenges these individuals have to face. A study done revealed that 72% of their participants reported an increase in their symptoms, and were negatively impacted by the pandemic. In the Indian context, OCD can manifest itself in the form of hoarding groceries and resources by panic buying in fear of lockdowns [14]. Items like masks, sanitizers, and disinfectants could be bought in bulk as a way to keep themselves safe. Hand hygiene is one of the main protocols given by the World Health Organization [15]. Compulsive, repeated hand washing and sanitizing can manifest itself as one of the most serious symptoms of OCD with regards to coronavirus. A report in the Times of India has mentioned that OCD patients are visiting hospitals due to dermatological issues during the COVID-19 pandemic in India [16]. Studies have mentioned aspects of OCD such as increased hand washing, involving family in disinfecting procedures, and the fear of having outsiders in the house as ritualistic behaviors that OCD patients indulge in [17].

9. Generalized anxiety disorder, panic and pre-existing anxiety

From quarantine, to the impact of media and statistics, there are a number of factors that can impact those who have been diagnosed with generalized anxiety disorder, panic attacks and phobias such as germophobia. For example, an individual with general anxiety who tests COVID-10 positive and has to be quarantined in a room away from others can have very severe complications in addition to the physical diagnosis of COVID [18]. With jobs lost during the pandemic, financial insecurity can also be a massive anxiety provoking factor, especially among those who rely on daily wages for mere survival. The diagnosis of COVID, along with job insecurities has led to an increase in the reporting of panic attacks in India [19]. A report revealed that anxiety, depression and stress were some of the mental health concerns in the context of the pandemic. Older adults, children, frontline workers and individuals with mental health conditions were among the most vulnerable. Watching the news for updates, and increased screen time can also provoke anxious feelings. In this day and age of Whatsapp forwards and fake news, such messages can cause unnecessary panic and anxiety [20]. COVID-19 related fear can also induce panic attacks. The thoughts of a loved one getting the virus, loss of life, and the fear of contracting the virus are all anxious thoughts that can have disastrous impacts. Another study done revealed that among their sample of 2004 participants, the prevalence of anxiety was 2.29%, obsession 13.47% and fear 46.9%. This fear involves complications arising due to social distancing measures, and general COVID related fear [21]. The uncertainty and lack of information about this new virus contributes to this fear. Mysopobia, or the fear of contamination is a very relevant phobia in this context. The fear of contaminated surfaces, groceries or delivery parcels can lead to the development of this phobia [22].

10. Anxiety in patients with pre-existing psychiatric disorders

Patients with mental health disorders are more vulnerable to stress related events and find it difficult to cope with their original disorder along with the negative life events. Mental health disorders are a risk factor for developing symptoms like insomnia and anxiety during the pandemic. They also have a higher mortality rate. It is also a fact that mental health disorders are often neglected during a disaster and this makes them more vulnerable compounded by the inability to access healthcare during lock downs. This causes nonadherence to medication causing a relapse or

deterioration of the already existing illness [23]. Patients with mental health disorders are more likely to utilize maladaptive coping strategies when faced with stress. Patients with affective and anxiety disorders are more concerned about external environment than patients with schizophrenia. Hence the increase in anxiety and insomnia in anxious or depressed patients is more likely due to COVID-19 related issues and availability of drugs while in patients with schizophrenia it is more likely due to irregular intake or stopping of medication [24]. Nil to mild levels of anxiety, depression and insomnia in a patient with mental health disorder is associated with an increased risk for worsening anxiety, depression and insomnia. This is due to the ceiling effect i.e. the higher the initial degree of psychopathology the less the deterioration is seen. Poor sleep hygiene due to disruption in the daily routine may exacerbate insomnia [25].

11. Anxiety in frontline health workers and their families

A number of studies around the world have addressed mental health concerns of doctors, nurses, and other frontline workers in the context of the pandemic. Unbelievably long hours, making life or death decisions, and the trauma of working through a pandemic comes with immense challenges of its own. The lack of PPE kits, masks, the fear of contracting the virus are all extremely anxiety provoking and cause a lot of psychological trauma. One of the main causes of anxiety could possibly be contracting the virus, and infecting others like colleagues and family members. In addition, the lack of beds, oxygen, and ventilators can lead them to make decisions as to which patient has access to what resource [26]. These decisions are quite literally, “life or death” decisions, and can cause intense anxiety. A survey done on the prevalence of anxiety and depressive symptoms among healthcare workers in India [27] revealed that 37% of their participants reported symptoms of anxiety. Among healthcare workers, the risk factor included female nurses in the age bracket of 20 to 35. However, those participants who had been in the profession for twenty years or more seemed to report less symptoms of anxiety. A study done by the Center of Healing in Delhi revealed that mental health professionals are seeing an increase in their work hours. Burnout and compassion fatigue in this context are just some of the facets of anxiety that healthcare workers can face. Government employees in India have had to report to duty and put themselves as well as their families at risk. Traveling in public transport and being at physical office space all increase the chances of contracting the virus. This has been a major cause of anxiety for government employees [28].

12. Psychosocial factors leading to anxiety

Humans are social animals, and need some form of interaction for basic survival. With homestay restrictions for safety purposes, we must consider its impact on mental health. Social isolation also leads to increased screen time, and an overload of media information. This media overload can cause a lot of anxiety. Seeing daily numbers rise, and staying at home in the midst of a full blown second wave can be very anxiety provoking. For Indians, the first lockdown saw large numbers of migrants struggling financially due to a sudden job loss. Trains across the country saw uncontrollable crowds of migrants going back to their hometowns, without any social distancing measures. Further, they had lost their jobs overnight, so their anxiety was twofold- financial insecurity and the chances of contracting the virus while traveling back to their hometowns [29]. A number of students, especially

Indian students living abroad, have dealt with the anxiety of the sudden closure of universities, having to pack up all their belongings, and take international flights overnight back to India. The anxiety of testing positive after returning to India, along with the fear of being sent to a quarantine center can be a stressful experience [30].

Screen fatigue, being awake at odd hours of the night due to time zones have a disastrous impact on their mental health, and cause anxiety due to not being able to give exams in the correct frame of mind. An interesting study revealed that all around the world, the negative sentiments individuals expressed on social media platform Twitter were anxiety related, due to the loss of jobs, and social isolation [31]. Another study done revealed that out of their sample size of 403 participants, students and healthcare professionals were most adversely impacted by anxiety in this context. Families who did not have sufficient resources during the lockdown, and family affluence were negatively correlated with anxiety. It is interesting to note however, that mental health professionals reported anxiety within the normal range [32].

The fear and anxiety of losing a loved one due to COVID is a facet to take into consideration, because of the sudden trauma faced. Social distancing, quarantine and lockdowns have kept individuals away from their families, and children living away from their aged parents often face the anxiety of them possibly never seeing them again. For the elderly living away from home, there is the fear of dying alone, without any support. The current procedures in India do not allow the family to see the individual in hospital, and the cremation procedures are done by local government bodies. The thought of not cremating the loved one who died due to COVID-19 is traumatic, and this trauma can cause a lot of anxious thoughts and reactions. The fear of a family member not having access to life saving resources is an uncontrollable situation and this uncertainty for the family causes a lot of anxiety [33].

While India sees the concept of multi-generational families and joint families living together under one roof, this could be both, a bane and a boon. Living together reduces the social isolation faced, however if by chance even one family member gets infected, the anxiety lies in the fact that a ten members household, with members of all age groups could potentially catch the virus. There have been multiple reported cases of false positive COVID cases. Having a positive result in the first place is a stressful experience, and quarantine procedures have to be strictly followed. The added uncertainty of then knowing that the result was false can cause anxiety due to the doubt of credibility. Quarantine procedures in India for a covid case have known to last for 21 days, and in these 21 days, the patient has no contact with others. Being alone in one room, along with physical symptoms can be a lonely experience that raises mental health concerns [34].

13. COVID-19 and anxiety in the elderly

There are a number of elderly individuals who live in cities away from their children. COVID-19 poses a number of risk factors for anxiety for this age group as well. COVID-19 has caused the highest number of deaths among senior citizens due to a number of age-related factors and associated comorbidities. The anxiety of contracting the virus is twofold, because of the fear of dying due to COVID-19, without having anyone to be there for them. The media has revealed grim statistics of ventilators not being available to elderly patients suffering from COVID-19. Further, hearing about relatives and friends succumbing to the virus can cause a lot of anxiety. Grieving for a spouse, sibling, or a friend who died due to covid once again, can cause long term mental health effects [35]. Another facet of anxiety

faced by the elderly population is access to daily necessities and resources. Many of the senior citizens living alone have to visit banks and grocery stores for their day-to-day living. During the lockdown and for safety reasons, the elderly could not venture out of their homes for such basic necessities. This poses a serious risk factor for anxiety, as they are unsure about who will purchase the staple ingredients for them. The advent of technology and the smartphone age has always been a fear that the elderly have faced. However, with COVID, this fear can manifest itself as a form of anxiety. During lockdowns, the best way to stay in touch with family is via phone calls and video calls. Without a Wi-fi connection or the ability to understand how technology works, the elderly is thus virtually as well as physically isolated. This isolation brings with it challenges of its own, one of the biggest being anxiety. Without a wireless connection, virtual consultations with doctors and psychiatrists are impossible, making them unable to have access to their daily medications [36]. In some cases, mental health concerns in India among the elderly have led to suicides. A report done on elderly suicides in India has revealed reasons such as the fear of being in isolation wards, and COVID associated fears for ending lives [37].

There are various concerns like isolation, dependency on others for their basic needs, living alone and in nursing homes, social isolation and quarantine increases the risk of anxiety and depression in the elderly. The elderly also has a relatively weak immune system. From its initial stages the pandemic has been portrayed as a problem of older ages thus resulting in increased ageism around the world. This leads to increased stigmatization in this marginalized population increasing their feelings of loneliness and anxiety. They suffer from issues like fear of contracting the infection for self and family members, fear of quarantine or hospitalization, death of oneself and family members, fear of being abandoned, loneliness, anxiety related with daily provisions, illness and their medications & lack of physical exercise [38]. Death anxiety is a feeling of panic, fear or great worry caused by thinking of death, being detached from the world or what would happen after life. Elderly with pre-existing mental illness is at a risk of relapse or exacerbation of symptoms due to the stressors and also due to nonavailability of routine clinical follow-ups and hence nonadherence to treatment [39].

14. COVID-19 and anxiety in women

Two factors might be taken into consideration while discussing anxiety among women in India. These two factors are pregnancy, and domestic violence. Within just a few weeks of lockdown being announced in India in April 2020, the National Commission of Women saw a 100% rise in reported cases of domestic violence [40]. Being at home has led to women being locked inside with their abusers, without any escape. The anxiety caused due to the trauma and pain inflicted can have disastrous impacts on their mental health. There is no way they can have a support system, or register a formal complaint with the police during this time. COVID-19 can also be a particularly anxious time for pregnant women in India. The possibility of being infected at the time of labor, without any support due to hospital measures can be an anxious time, especially in small towns and villages that have limited medical facilities [41].

15. COVID-19 and pregnancy related anxiety

Pregnancy is one of the most important events in women's life. It is associated with many physiological, psychological and social changes. They are prone

to psychological problems like fatigue, emotional disorders, mood disorders and anxiety disorders. They also have the extra burden and challenges of caring for the other children and family members. Pregnancy related anxiety (PRA) is a common problem during pregnancy. PRA is related to fears and concerns regarding the pregnancy, delivery, neonatal health and childrearing. This can negatively affect women's physical and mental health and their children's overall physical, emotional, behavioral and cognitive development. A major source of PRA is infectious diseases especially during epidemic and pandemics. Epidemics are known to cause negative clinical outcomes in pregnant woman such as death, spontaneous abortion, premature birth and fetal death [42]. The COVID-19 pandemic has reduced pregnant women's access to routine prenatal care services due to rapid spread of disease, lack of effective treatment, necessity of quarantining and its subsequent loneliness during affliction, stigmatization and despair. The anxiety is more in women with comorbid disorders like diabetes mellitus hypertension and renal disorders. The prevalence of anxiety in them varies from 15 to 23%. During the pandemic, 50–71% were worried about their health status. They are concerned about their own health & that of their unborn child, access to healthcare facilities, lack of family & social support & quarantine in case they get infected. Due to lockdown there's poor access for prenatal examinations & many women faced difficulty going to hospitals. The women in 2nd & especially the 3rd trimester showed more signs of anxiety [43].

16. COVID-19 and children, adolescents, and youth

When speaking of young children, their childhoods are supposed to be spent outdoors, at school, with friends. However, the advent of the pandemic has made children of all age groups stay at home, with increased hours of screen time. While the government and education ministries have released guidelines to control screen time, online classes bring with them mental health concerns. Among older children and college going students, having access to an electronic device can cause a lot of anxiety. There is a major digital divide between various regions of India, and a recent article has revealed that in the state of Maharashtra, only half the students have access to forms of online learning [44]. The inability to attend online classes due to a lack of electricity, or internet connection poses a serious problem to students, as their classes and even exams get hindered. The youth have also developed a more 'relaxed' attitude towards covid 19 as they do not believe that it is dangerous within their age group. As a result, they have violated social distancing norms. The youth can actually have a reverse effect- by feeling anxious due to not meeting friends and peers for long periods of time. This, popularly known by the youth is called FOMO, or the fear of missing out [45].

Children and adolescents when infected with COVID-19 have milder symptoms, fewer hospital admissions and a low fatality rate. However, there is a small percentage of children manifesting a hyper inflammatory state similar to Kawasaki disease due to the pandemic. Children and youth have suddenly lost many of the routine activities like school, extracurricular activities, physical activity and social interactions. This has led to a drastic modification of children's routines. Learning and all other activities have moved into the home. Physical activity is reduced, parents and children are spending more time together at home which maybe good or maybe a cause for concern depending on the parenting skills, family environment and psychopathology present in parents [46].

Not all homes are safe and children may become more vulnerable to abuse. The screen time has increased and there is a lack of supervision over internet access which can increase vulnerability to accessing sexually inappropriate content and online

offenders. There may be increased frustration, agitation, aggression and worsening of school performance. There may be more mental health issues in children from lower socio-economic conditions due to unavailability of appropriate access to internet and smart phones, iPads or computers. Children who had a family member or a friend infected with COVID-19 had higher levels of anxiety and depression. Anxiety symptoms were more in females and in children studying in higher grades. However, for some children especially those suffering from social anxiety disorder remaining at home and online schooling may temporarily relieve their anxiety, however may result in overwhelming anxiety when they have to return back to school [47].

17. COVID vaccine related anxiety

Anxiety about COVID 19 vaccine-most vaccines are developed over a few years. However, with COVID-19 first being reported just a year ago many people are concerned about if a vaccine developed in such a short time frame can truly be safe. Without years of trials, it is difficult to predict long-term side-effects. Most people including healthcare workers have been living and working with a high degree of uncertainty for a long time now. The state of the pandemic changes daily and recommendations from government officials fluctuate as well and hence the anxiety regarding vaccines is understandable. The choice & availability between 2 vaccines coupled with inadequate data leads to a lot of ambiguity & confusion regarding the safety and efficacy of the vaccines. There may be a feeling that they are being used as a Guinea pigs rather than being protected. The side effects of the vaccine like fever, body ache is misinterpreted as signs of COVID-19 infection increasing anxiety and panic. The staggered manner in which vaccines are administered depending on the priority and availability of the vaccine makes the pro vaccine lobby anxious. There's also the downside of people becoming relaxed regarding the precautions to be taken, after getting the vaccine may lead to an increase in the number of cases rising [48].

The COVID-19 vaccines have caused a lot of stir, and the initial lack of information has led to speculation, causing anxiety and fear. Information in the news about vaccine related complications has also led people to rethink their choices about which vaccine to take. Recent news about life threatening side effects can cause a lot of anxiety, especially if the individual has taken the particular vaccine in question. A number of individuals have reported hesitancy and concerns over long term effects of the vaccine. In India, the recent shortage of vaccines can be a potential facet of anxiety, given the full blown second wave that the country is facing [49].

Trypanophobia, or needle phobia, is another possible facet of anxiety to consider with respect to taking the vaccine, or any medical form of treatment for COVID. There is a chance that the patient is so afraid of needles, that they avoid taking the shot in the first instance. Further, the side effects that individuals face after taking the shot can cause a lot of anxiety to their family members too. Another factor to take into consideration is testing positive for COVID after taking the vaccine for the same. This is important to note, since many in India have begun to resume life in the social sense after taking their first dose of the vaccine. While the diagnosis is a milder form of covid, the fact that the patient has to go through the quarantine procedure can be a stressful experience that is anxiety provoking [50].

18. Financial and economic factor related anxiety

Months of lockdown for a developing country's economy has had disastrous impacts on the stock market, businesses, factories and daily wage laborers.

The pandemic has put many migrant and blue-collar workers under tremendous pressure. We have already seen that over the last year, most of India's factories had to close temporarily and the only people who were affected were those who were usually doing manual labor. This is since most white-collar jobs can and are done from home without much hassle. These blue-collar workers are the primary people experiencing stress which might cause them to suffer from long term anxiety in the future. There are many reasons for this increase in stress. The first reason is the volatility of the current economic situation. India has struggled to curb the spread of coronavirus and with a lockdown being the only measure when cases get too high, this means that workers are at the mercy of the lockdown policies. Workers who earn a daily wage are at the most risk of job loss and are also the most vulnerable to new restrictions in movement and trade by the government. This uncertainty of not knowing how they will pay for their next meal can cause massive anxiety that can manifest itself as multiple physical symptoms as well. The second reason why these workers have increased stress is that they are worried about infecting their loved ones at home. In India, it is very common when compared to the Western world to live with your extended family. This means that the bread earners, not only have to take care of themselves, but also have to be extra cautious and lessen family interaction since they could spread the virus to their elderly parents and also their children [51, 52].

19. Second wave COVID anxiety

India is currently facing a full blown second wave, that is far worse than the first wave. Despite vaccination drives going smoothly, a number of factors have contributed to the second wave. In the state of Maharashtra particularly, there has been the highest spike of cases, accompanied by a shortage of vaccines, oxygen, and hospital beds. With new lockdown like restrictions, the situation arising out of the second wave is one that is likely to cause a lot of anxiety for all groups. Businesses and day to day economic activities are once again going through uncertainty, students are facing anxiety over announcement of exams and admission procedures, and a large number of individuals are going back to their hometowns and villages. Traders in Maharashtra conducted protests against a potential lockdown, fearing that their daily activities would be totally stopped in the event that a lockdown would be reimposed. It's highly possible that the same situation that India faced exactly a year ago is back, with even worse implications. It is at this time that mental health needs need to be taken care of. The situation poses a grim threat that is far worse than the second wave. The absence of crowd control measures, incorrect wearing of masks, and COVID-19 numbers rising every day are some of the facets of anxiety that have sprung up once again in the second wave. Learning from the lockdown experience a year ago, it is important that the mental health of citizens be taken care of [53].

20. Conclusions

There have thus been many factors that leads to anxiety during the COVID scenario that has been seen in the Indian scenario. The pandemic has caused new anxieties, revoked healed anxieties and exacerbated existent anxieties. The chapter has looked at all these anxieties and there may be new anxieties that may stem as the pandemic progresses and even probably after the end of the pandemic. Mental health policy makers need to work on pandemic preparedness and prepare people for handling anxiety at all fronts.

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Chapter 3

The Impact of COVID-19 Pandemic on Suicidal Behavior

Cicek Hocaoglu

Abstract

The new type of coronavirus disease (COVID-19), which has affected the whole world and resulted in many people's death, has also had negative effects on mental health. The measures, restrictions, and quarantine practices taken to control the pandemic have caused psychological, social, and economic problems. In studies conducted to date, it has been stated that anxiety symptoms, depression, severe adaptation, and sleep disorders are observed in people who have lost their relatives due to COVID-19, who were treated with the diagnosis of COVID-19, or who were exposed to intense information pollution related to the pandemic. It is also known that a large number of people lost their jobs due to the pandemic, and unemployment rates increased in countries. Economies and health systems of many countries are under this significant burden. In addition to the increase in the incidence of mental symptoms and disorders associated with COVID-19, growing socioeconomic problems pose a risk for suicide. In studies on the subject, attention is drawn to the rate of suicide that will increase during and after the pandemic, and warnings are given about taking precautions. In this section, the effects of COVID-19 on suicidal behavior will be discussed in light of findings in the literature.

Keywords: COVID-19, pandemic, suicidal behavior, risk factors

1. Introduction

The infectious disease caused by the SARS-CoV-2 virus, which first appeared in the city Wuhan in China's Hubei Province, China, in mid-December 2019, affected the whole world in a short time. The infectious disease, which was defined as the novel Coronavirus Disease (COVID-19) by the World Health Organization (WHO) on January 13, 2020, has spread rapidly to 6 continents and hundreds of countries after China [1]. At the time this study was prepared (March 1, 2021), approximately 115 million people were infected all over the world, and more than 2.5 million people died due to COVID-19 [2]. Described as the first pandemic caused by coronaviruses, COVID-19 still continues its devastating effects. Today, it is not known exactly how and for how long the COVID-19 pandemic will continue and how long it will disrupt people's lives. Unforeseen consequences of COVID-19 causing global concern, uncertainty, information pollution (infodemic) about the epidemic in the media, quarantine and isolation procedures can affect people's mental health. Pandemic conditions can cause anxiety, fear, panic, anger, loneliness, guilt, helplessness, and disappointment in people [3]. In addition, the economic problems experienced by many countries during the epidemic period increase the severity of the symptoms. Therefore, COVID-19, which causes massive

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trauma, can be considered a risky situation for suicidal behavior. Although the effects of COVID-19 on suicidal behavior have not been fully examined yet, a limited number of studies on the subject draw attention to the approaching "*suicide storm*" [4–6]. Within the scope of suicide prevention programs and interventions during and after the pandemic, it should be aimed to recognize the risk groups beforehand and determine the risk factors. In this section, the effects of COVID-19 on suicidal behavior will be reviewed in light of the literature.

2. Definition and history of suicidal behavior

Suicide is defined as the act of killing oneself. In other words, it is the most tragic event in human life. Suicide, a universal phenomenon as old as human history, is a complex human behavior with biological, psychological, economic, religious, and social aspects. In many anthropological studies, situations related to suicide in primitive tribes have been mentioned. In previous periods, suicide was accepted as a heroic behavior in some societies, and it was sanctified. For example, natural death is found embarrassing, so it was considered an honorable act for the elderly to commit suicide by throwing themselves off a cliff. Today, acceptance of suicide as an honorable behavior, especially in Far Eastern countries, can be regarded as a continuation of this idea [7].

The concept of death has eerie and mysterious features that arouse people's curiosity, to which no human being could remain indifferent throughout the history of mankind. Many religious and philosophical systems have concentrated on the concept of death. Understanding and meaning of death, understanding and meaning of life are in close relationship with each other. The way of perceiving death or its quality directly affects and even determines the perception of life, the feelings, thoughts and behaviors of people, which are the basic elements in the flow of life, and their relationships with other people [8].

Until today, many psychosocial theories have been proposed to explain suicidal behavior [9]. When these theories are examined in general, it is seen that the people who are interested in the subject actually reflect their own perspectives and some of them are very narrow and some of them are very far away from the definition of suicide with very broad explanations. However, while defining suicide in almost all of them, '*human*' has been handled as the most basic element. One of the most important theories about suicide is the socially oriented theory of the French sociologist Emile Durkheim. According to Durkheim, suicide is defined as "every death event that is the direct or indirect result of a positive or negative act done by the deceased person, knowing that it will result in death" [10]. Durkheim cited irregularities in a person's relationship with society as the reason for suicide. As the level of social integration increases in a society, suicide also decreases. Durkheim groups suicides in four main groups. These are: egotistic (selfish), anomic (unregulated), altruistic, and fatal types. Egoistic suicide stems from being withdrawn and insufficient social integration, and not being able to integrate with society to which the individual belongs. In the anomic type, the person cannot keep up with social changes due to changes in life (eg job loss, divorce) or the person is not adequately controlled by social rules. The altruistic type of suicide, on the other hand, is seen in situations where social integration is high, and moral values are strong. The suicide of this type of individual is wanted and accepted by society. For example, a soldier throws himself on a grenade to save his friend or the 'harakiri' seen in Japanese society [10]. Durkheim's theory is successful in explaining suicide rates between different societies and countries. In psychodynamic theories, suicide is defined as "the desire to kill oneself as a result of the individual directing his/her anger towards

others to himself/herself. In these theories focusing on the relationship between suicide and internal factors, suicide was stated as a communication tool, providing help, regret, confession, threat, or revenge method [9].

When it comes to suicide, actions that often result in death come to mind. In fact, it is a correct approach to evaluate suicide as a behavior. With the term "suicidal behavior", a behavioral process that starts with a thought and ends with death is expressed. The National Institute of World Mental Health has identified three basic terms related to suicidal behavior. The first of these is completed suicide. Refers to a person's fatal behavior towards oneself. Suicide attempt defined behaviors that do not result in death but aim to end one's own life. This term encompasses behaviors classified as non-fatal acts such as incomplete suicide, unsuccessful suicide, suicidal statement, and contradictory attempt. It is known that individuals who attempt suicide have tried suicide many times later in their lives. Suicidal ideation, on the other hand, is defined as the person constantly thinking about suicide, making plans in this direction, explicit threats to kill oneself and having a clearly expressed desire to die, but no observable behavior [11].

Until today, the psychosocial aspect of suicidal behavior has been focused on and researched. The neurobiology of suicide is not well known. Studies on the neurobiology of suicide, which has been the focus of researchers' attention especially in recent years, are increasing rapidly. Especially strong evidence has been obtained regarding the role of genetic factors in the emergence of suicidal behavior [12]. It is noteworthy that most of the completed suicides had one or more mental disorders in the pre-death period. The most common psychiatric diagnoses are mood disorders, schizophrenia, and substance use disorders. Mental disorders with the highest risk of suicide are unipolar major depression and bipolar disorder type I and type II [11, 12]. Although it is known that many mental illnesses, especially mood disorders, increase the risk for suicidal behavior, the fact that not every patient with a diagnosis of psychiatric disorder exhibits suicidal behavior indicates that there is a different structural predisposition and genetic tendency for suicidal behavior, which is independent of mental illnesses. In recent years, there is a tendency to evaluate suicidal behavior as a condition independent of mental and physical illnesses. For this reason, "suicide brain" is mentioned in studies on the subject. Attention was drawn to the existence of a relationship between suicidal behavior and aggression and impulsivity. It has been suggested that serotonergic, dopaminergic, glutamatergic, GABAergic system dysfunction, noradrenergic, hypothalamic–pituitary–adrenal axis hyperactivity and microgliosis, anomaly in glial cells and inaccuracy of signaling play a role in the neurobiology of suicide.

Although some findings have been obtained in the limited number of neuroimaging studies examining suicidal behavior, it is not sufficient [13]. As a result, no biomarker related to suicidal behavior has been obtained for today. New studies are needed to better understand the neurobiology of suicide.

3. Epidemiology of suicide

Suicide is an important public health problem that ranks first among the causes of death. Approximately 800,000 people die each year due to suicide in the world. The World Health Organization (WHO) has reported that deaths due to suicide have increased by 60% in the last 50 years. 78% of completed suicides occur in low- and middle-income countries. Suicides account for 1.4% of premature deaths worldwide [14]. Suicide rates differ between regions and countries in terms of age, gender, socio-economic status, method of suicide, and access to health services. Deaths due to suicide rank first among the causes of death in the second and third

decades of life. Completed suicides are 3 times more common in men than in women. On the other hand, suicide attempts are higher in female gender. Likewise, suicide attempts are 30 times more common than suicide. The lifetime prevalence of suicidal ideation in society is between 13.5–35%. Repeated suicide attempts are important predictors of completed suicides. The most common suicide methods are hanging, poisoning with chemicals, and using firearms. Most suicides are associated with psychiatric disorders [15]. Especially depression, alcohol substance use, psychotic disorders carry a high risk for suicidal behavior. In addition, cases with personality disorders, eating disorders, post-traumatic stress disorder are also higher than the general population. Psychosocial risk factors for suicide have been addressed in many studies, and strong evidence has been obtained [14]. However, it may not be possible to evaluate and predict the risk for every suicide case.

4. Suicidal behavior in previous pandemics

An infectious disease affecting the whole world is defined as a pandemic. In order for a disease to be considered a pandemic, it must not have been seen before in society, it must be easily and rapidly transmitted from person to person in different parts of the world and cause devastating consequences. Fatal infectious diseases that threaten social life have been observed throughout human history [16]. Unlike natural disasters or wars affecting a certain geographic region, infectious diseases have affected all humanity without any boundaries, as we have seen in the COVID-19 epidemic, and it has shown its effect wherever people are. There have been 21 pandemics affecting humanity to date [16]. The best known of these is the plague pandemic that emerged in the 14th century. It has been reported that in this pandemic, which has been reported for years, the entire world population has decreased by 1/4 and the population of many important cities has been completely destroyed [17]. Later, Spanish Flu (1918–1920), HIV epidemic, Smallpox in the Former Yugoslavia (1972), severe acute respiratory syndrome (SARS) (2003), “Swine Flu” or H1N1/09 (2009), Middle East Respiratory Syndrome (MERS), Ebola (2014–2016) and ZIKA (2015–2016) pandemics were experienced. These pandemics have resulted in many casualties [18]. There are differences between the first known pandemics and more recent pandemics because during the first pandemics, the population was independent of each other, that is, isolated. However, in today’s world where human mobility is increasing, the serious increase in communication and interaction between regions and even intercontinental has changed the course of today’s pandemics. In other words, the development of global transportation and communication, and increased contact with different human, animal and ecosystem populations has facilitated the spread of the pandemic. In the studies on previous pandemics, attention has been drawn to the prevalence of psychiatric disorders. Especially during and after the pandemic, mood disorders, anxiety disorders, and sleep disorders are the most frequently reported psychiatric disorders [19]. Increases in suicidal behavior have also been reported due to the increase in psychiatric diseases associated with the pandemic, as well as socio-economic problems [20]. For example, a study reported that suicidal deaths increased in the 1918–1920 flu pandemic in the United States [21]. Similarly, another study reported that during the SARS pandemic in 2003, suicide rates increased in Hong Kong, especially in elderly people [22].

The effects of the COVID-19 pandemic, which we live in and still have an effect all over the world, on suicidal behavior have been discussed in a limited number of studies. However, it is remarkable that in almost all these studies, it is seen that the COVID-19 pandemic can increase suicide rates [23–25]. Although it is accepted

that the pandemic may increase the risk related to suicidal behavior, it is not fully explained how this situation develops. It is important to identify risk factors associated with suicidal behavior that may occur during and after the pandemic, and to develop methods to prevent suicide globally. Only in this way can deaths related to suicide associated with the pandemic be prevented. Researching and learning about past pandemics is necessary to be prepared for a possible future pandemic.

5. Risk factors for suicide associated with COVID-19

In the fight against the pandemic, countries have closed their borders, traveling between and within the country has been restricted, and life has stopped in many areas all over the world. Many factors related to long-term quarantine and isolation procedures, economic, psychosocial, and physical health may be risky situations for suicide. Having social relationships and social support is important in preventing suicide. When suicide attempts or completed suicides are examined, it is determined that individuals' social relations have recently decreased [26]. This situation is also included in suicide theories. The most important health strategy in combating COVID-19 is maintaining a physical distance. Isolation from individuals with a positive test result or suspected COVID-19 from their immediate environment is among the mandatory measures. Also, isolation from people who are hospitalized at home or hospitalized for a long time from their family and relatives because of COVID-19 causes loneliness and inability to share their feelings about the current situation. In other words, restriction of social relationships and quarantine procedures can increase the risk of suicide [27]. For this reason, individuals who stay in quarantine and isolation for a long time should be carefully monitored for suicidal behavior. Access to crowded communities has also been restricted in many countries within the scope of combating COVID-19. Due to these restrictions, people are prevented from coexistence and social sharing. For example, it is prohibited to hold concerts, shows, congresses, and religious ceremonies with large groups of people in many countries. This may be a risk factor for suicidal behavior by increasing the loneliness and social isolation because by being in a group, socialization and a sense of belonging show a protective effect against suicide [28].

With the onset of the COVID-19 pandemic, economic problems began to occur globally. Unemployment rates and financial losses increased in many countries. Millions of people lost income due to the closure of businesses and factories. The early retirement rate increased. Stagnation due to quarantine procedures, loss of workforce caused disruptions in production. The governments of many countries implement a number of financial support programs for impoverished individuals with reduced purchasing power [4]. Loss of job and economic crisis have been proven to be the most important risk factors for suicide in studies conducted to date [29]. It has been reported that economic crises are associated with higher suicide rates compared to the welfare period [30]. Therefore, considering the existing research, it can be said that the unemployment and economic crisis due to COVID-19 pose a significant risk for suicide [4–6].

Suicidal behavior can be seen in physical diseases as well as in psychiatric disorders. Although the relationship between physical diseases and suicidal behavior is not known clearly, the results of the studies conducted so far support the suicidal tendency in physical diseases [31]. Especially in the advanced age group, there may be more than one physical disease, and this may increase the risk of suicide. On the other hand, it is noteworthy that COVID-19 is more fatal in advanced age groups and causes more severe symptoms in individuals with physical diseases [32]. For this reason, measures such as long-term home isolation

and curfew are applied to individuals in the advanced age group in many countries. These restrictions and the fear of getting sick during hospital admissions caused individuals with physical diseases to postpone their applications for health problems. Therefore, especially the treatment and course of chronic diseases have been adversely affected by the pandemic. The high rate of suicide-related deaths in elderly individuals during and after previous pandemics necessitates caution for COVID-19 [33–35].

6. The effects of COVID-19 on mental health

Although general medical complications during the COVID-19 outbreak have been addressed in numerous studies, limited studies have focused on their neuropsychiatric effects. In these studies, it is mentioned that SARS-CoV-2 can directly affect the central nervous system. In addition, knowledge of the indirect effects on mental health in previous pandemics (especially the SARS-CoV-1 epidemic 2002–2003) raises concerns about this issue. Therefore, in studies that evaluate the direct neuropsychiatric results and indirect effects of COVID-19 on mental health, it is recommended to plan psychiatric evaluations during and after the pandemic [36]. In some studies, it has been reported that the initial symptoms of COVID-19 may be neuropsychiatric in nature. Patients may present delirium, cerebrovascular complications, encephalopathy, anosmia, and neuromuscular disorders [37, 38]. On the other hand, patients with a previous psychiatric diagnosis may be more vulnerable to COVID-19 and may be at higher risk for negative consequences. Patients with impaired cognitive abilities related to learning, understanding, and cognitive abilities in the fight against pandemic may have difficulties in protecting themselves or in compliance with procedures of individuals with infected psychiatric diseases [39]. During the COVID-19 epidemic, it has been reported that as a result of the stress that individuals faced, anger, anxiety, insomnia, impulsivity, behavioral changes, and suicidal thoughts increased [27, 36]. It should be kept in mind that patients with subclinical psychiatric symptoms before a pandemic with a massive effect may increase their symptoms and create a risky situation for suicide. Pre-COVID-19, especially in cases with a diagnosis of mood disorder, the symptoms of the disease may be exacerbated the pandemic period. It is important to closely monitor the patients in this group in terms of suicidal behavior during the COVID-19 period.

During the treatment of COVID-19, psychiatric symptoms may aggravate as a result of the discontinuation of psychotropic drugs that patients use due to drug–drug interaction. This situation is risky for suicidal behavior. On the other hand, during the COVID-19 pandemic, due to the increased workload, healthcare institutions primarily planned the regulation of treating infected people and delayed the follow-up and treatment of other patients. This has led to difficulties in accessing mental health services. Failure to carry out regular outpatient clinic examinations, especially in patients with a diagnosis of mental disorder, or not being able to allocate sufficient time for psychiatric emergencies in overcrowded emergency services may negatively affect cases with suicidal ideation or suicide attempt. During the pandemic, clinicians may not be able to adequately evaluate the risk factors related to suicidal behavior of the cases due to different reasons (workload, arrangement of psychiatric inpatient institutions for epidemic treatment). It should not be forgotten that patients with generalized anxiety disorder, post-traumatic stress disorder, sleep disorders, alcohol and substance abuse history, and previous suicide attempts are among the risk groups for suicide during and after the pandemic [40].

7. Social stigma associated with COVID-19

Stigma defined as social rejection affects human life negatively. Stigma is frequently observed in pandemic diseases affecting the whole world and large masses of people. In previous typhus, cholera, and plague pandemics, individuals with the disease are known to be discriminated and stigmatized [41]. The COVID-19 pandemic, which has seriously devastating consequences, causes serious social stigma. Especially for those affected by the disease, their family members, healthcare professionals, Asians are exposed to distinct discrimination and stigmatizing attitudes [41, 42]. After the stigma, people may experience hopelessness, anxiety, fear, loneliness, anger towards themselves and their environment, and harmful behaviors. Individuals exposed to social stigma are in the risk group for psychiatric disorders and suicidal behavior [42] because stigmatized people may give up seeking treatment or leave their current treatment unfinished. Because of the fear of being stigmatized as someone with an infectious disease, individuals at risk may not seek help at all. Other individuals in the community may fear and stay away from those who are stigmatized and may be biased towards those who are stigmatized. This situation can turn into verbal or physical violence against the stigmatized person or group.

Therefore, social stigma associated with COVID-19 can have serious consequences for suicidal behavior. In studies conducted to date, attention has been drawn to suicidal behaviors during the pandemic in studies that stated that they were worried about discrimination and stigmatization by society in patients treated for COVID-19 [43–45]. In these studies, it was stated that the ethnic origins of cases who died as a result of suicide were also effective in stigmatizing COVID-19. Increasing fears and misunderstandings of COVID-19 in communities with low socioeconomic and educational levels may have led to higher xenophobia, discrimination, and stigma. It should be kept in mind that this situation may be an important factor for suicide, especially in minority, immigrant, or asylum seeker communities. With COVID-19, changes have occurred in many areas of life. There are some difficulties regarding postnatal visits, funerals, weddings, and graduation ceremonies. In addition to the sudden, unexpected, and rapid course of the pandemic, unusual death conditions affected the mourning process. Family members who cannot see their relatives for a long time due to the risk of contamination cannot see the body after death, and funeral ceremonies cannot be organized. In addition, due to restrictions, the deceased cannot be buried wherever the family wants, migrating to mass graves, and not being able to visit the graves, reducing the social support that the family will receive after the loss. The concern that the relatives of the deceased may infect the disease may cause family members to be stigmatized by society. Traumatic grief may occur as a result of losses due to COVID-19. Planning interventions to prevent and reduce social stigma is of great importance to avoid from these problems. Having easily accessible help facilities for psychiatric symptoms and disorders in the grief process will prevent suicidal behavior.

8. Risk groups in suicidal behavior associated with COVID-19

Risk groups for suicide have also been reported in previous studies on the subject. It is known that especially the advanced age group is among the risk groups for completed suicide. It has been reported that there is an increase in suicide rates among elderly people after previous pandemics [35]. For this reason, individuals in the advanced age group most affected by the COVID-19 pandemic should

be carefully monitored in terms of suicidal behavior [33, 34]. Other age groups most affected by COVID-19 include children and adolescents. With the onset of the pandemic, the mental health of children and adolescents who had been separated from their school and friends for a long time was affected [46]. Although there are studies reporting that there is no change in suicide rates in children and adolescents during the COVID-19 period, it should be kept in mind that it may be a risk group in terms of suicidal behavior [47]. COVID-19 has affected family relationships. During the long-term quarantine and home isolation procedures, an increase in violent behaviors, especially against women, was observed. Women who have been subjected to domestic violence can be considered in the risk group for suicidal behavior [48–50]. Healthcare workers who are at the forefront of combating COVID-19 all over the world are also in the risk group for suicide. Before the pandemic, healthcare workers with high suicide rates should be carefully monitored in terms of suicidal behavior when compared to other occupational groups [51]. Increasing work intensity, fatigue, insomnia, anxiety of infecting family and relatives, incompatibilities within the team, problems due to long-term use of protective equipment, and witnessing the illness and death of their colleagues can cause stress in healthcare professionals [52, 53]. Many healthcare professionals had to stay in a separate place from their family during the pandemic period. In previous pandemics, it has been reported that mental symptoms were observed at a high rate in healthcare workers, and there was an increase in suicidal thoughts and suicide attempts [54–56]. Therefore, it should be kept in mind that healthcare professionals working in medical services related to COVID-19 carry a risk in terms of suicidal behavior. Suicide prevention programs customized for healthcare professionals should be developed. Another group at risk in terms of suicidal behavior associated with COVID-19 consists of police, soldiers, and prisoners. It is because in recent years, higher suicide rates have been reported in special groups such as police, soldiers, and prisoners than in the general population [57, 58].

The stressful working conditions of soldiers and police officers, the intensity of exposure to trauma, and harsh living conditions for prisoners may be risk factors for suicide. As part of the fight against COVID-19, military and police faced an intense workload of monitoring compliance with planned mandatory restrictions and imposing legal sanctions. For convicts and detainees who have to lead a communal life in prisons, implementation of health strategies related to COVID-19 can be difficult. For example, it may not be possible to provide personal hygiene and maintain physical distance in convicts and detainees who cannot see their relatives due to visiting ban. All these stressful life events require caution in these special groups who are at risk in terms of suicidal behavior during and after the pandemic [59]. In addition, it should be kept in mind that people who work in funeral burials, for whom no risk for suicidal behavior has been identified, may be in a risk group for suicidal behavior. It is because, after the COVID-19 epidemic, many deaths occurred on the same day in many countries, staff working in funeral burials may have become risky for psychological symptoms and suicidal behavior due to stressful working conditions.

9. Transportation to suicide vehicles during COVID-19

Risk factors for suicidal behavior include easy access to suicide vehicles. Especially with the acquisition of firearms, applications, and legal regulations are important in preventing suicide. With the prevention of individual armament in many countries, a decrease in suicide rates has been detected [60, 61]. However, the increase in weapon acquisition and storage rates during the COVID-19 pandemic is

alarming [62, 63]. Especially in the studies conducted on this subject in the United States, attention has been drawn to the increase in deaths due to firearm suicide in young individuals [24, 64]. In another study, it was emphasized that during the COVID-19 period, the rate of purchasing firearms of those with suicidal thoughts increased, and the possibility of using some unsafe firearm storage methods increased [65]. Therefore, future studies should seek to better understand those purchasing firearms during COVID-19 and identify ways to increase safe storage among firearm owners. On the other hand, with the epidemic, many medicines and chemicals may have been stored at home. This may pose a risk for a suicide attempt. For this reason, selling institutions should be alert about the subject. Implementing sales restrictions and tracking systems with legal regulations may be important in protecting individuals at risk for suicide [66].

10. Role of media and Information pollution (infodemia) in suicidal behavior associated with COVID-19

In studies conducted so far, it has been reported that suicide news in the media has negative effects, especially on individuals in the risk group [67]. During the pandemic period, people mostly stayed in communication via social media as part of the social isolation measures. However, there has been an increase in the number of false information and fake news on social media, which can adversely affect the health and life of individuals [68]. The spread of false or inaccurate information about COVID-19 can cause panic and fear in societies. As it can make the fight against the disease difficult, it can also increase stigmatization [69]. Repeated exposure to news about rising deaths every hour around the world can increase epidemic fear and suicidal behavior. For this reason, being sensitive to news about COVID-19 in the media and following the rules of publication ethics can reduce the risk of suicide [70]. One of the most negative consequences of the pandemic is an increase in xenophobia. News in the media may have this effect. The lives of individuals exposed to xenophobia may be adversely affected by this situation [71]. Especially in these days when vaccination studies for COVID-19 start, many people may be dreaming of being able to return to their pre-pandemic lives, traveling abroad, shopping or participating in some sporting and artistic activities. However, we may now need a vaccination passport to carry out all these activities. This may be a new risk factor for stigma and xenophobia. Xenophobia can isolate people and prevent them from receiving social support. Therefore, individuals exposed to xenophobia and mentally intense stress may also be at risk for suicidal behavior [44].

11. Preventing suicide associated with COVID-19

Suicide, which is one of the most important causes of death worldwide, is actually among the preventable causes of death. Many countries try to reduce suicide-related mortality rates by including suicide prevention programs in their health policies. Since the relationship between COVID-19 and suicidal behavior is not fully explained, information on suicide prevention methods is also limited. In studies conducted to date, attention has been drawn to the increased risk of suicidal behavior in people with mental disorders due to the COVID-19 epidemic that has caused devastating consequences all over the world [72–74]. It is unclear how and to what extent this increase will occur in the short or long term [75] because the COVID-19 pandemic is still not controlled in the world, it is difficult to make any

predictions from now on. However, there may be some opportunities to develop suicide prevention programs based on what we have learned and experience from pandemic experiences over the past years. Crises related to pandemic causing mass trauma are risky situations for suicidal behavior. Among the goals targeted for interventions to prevent suicidal behavior, investigation of the causes of suicidal ideation, suicide attempt, and completed suicides during the pandemic period should be included. In order to prevent suicide-related losses during and after the pandemic, the development of suicide prevention methods should be among the urgent needs. The development of universal suicide prevention programs, especially on the economic stresses associated with COVID-19, increased domestic violence, alcohol consumption, isolation, loneliness, mourning, access to suicide tools, and the role of the media, can prevent suicide-related deaths. Also, it is important to provide economic support and job opportunities during and after the epidemic period related to economic loss, unemployment, which are among the most important risk factors for suicidal behavior [75]. One of the most important measures taken regarding the pandemic is the protection of social distance. But what is expressed here is keeping physical distance between people. Therefore, in order to reduce the social isolation, which is one of the important risk factors for suicide, especially in home isolation, quarantine or hospitalized people, it should be supported to maintain meaningful relationships with phone or video. Increasing the use of social media, especially in the risk groups for suicide, may reduce social isolation and create a protective effect for suicide [76]. Increasing access to mental health services, expanding mental health services, establishing crisis hotlines during the COVID-19 pandemic may be effective in preventing suicide [77]. During the pandemic period, hospital admissions decreased due to the fear of disease transmission. In addition, it may not be possible to conduct face-to-face interviews due to postponed examination appointments. On the other hand, it may affect access to mental health services due to the fact that mental health professionals are assigned to clinics related to the pandemic or because of flexible working practices. In the pandemic period, it is important to increase the access of individuals who have acute exacerbations in individuals followed-up due to mental illness and individuals who are victims of domestic violence to mental health services in preventing suicide. Telepsychiatry practices, which are defined as providing mental health services remotely by using technological opportunities, are gaining momentum in many countries with the COVID-19 epidemic. Studies on this subject indicate that telepsychiatry can be used to support individuals at risk of suicide [78, 79]. In the evaluation of patients in quarantine or receiving treatment with a diagnosis of COVID-19, a brief contact (telephone-based assistance) can reduce suicide rates. However, experienced mental health professionals are needed to assess telepsychiatry and suicide risk. Therefore, training of mental health professionals on the subject is important. Telepsychiatry practices and online education programs can play an important role in raising awareness in preventing COVID-19 and suicide. In addition, it is important for primary care physicians to be sensitive to the risk of suicide during the COVID-19 outbreak [80].

In suicide prevention programs, it is important to determine protective factors as well as evaluation of risk factors. It is known that solidarity among people increased after many mass disasters. During the COVID-19 epidemic, people who lived in the same place but did not know each other, communicated, and supported each other by singing songs from the balconies and windows of their houses during house isolation. In this way, the negative effects of social isolation and loneliness are reduced. Pandemic periods can change people's perspective on life. In this way, life can become more precious, and death can be more frightening. Thus, a protective action for suicide can be achieved.

12. Conclusion

As the humanity of the whole world, we are going through times that we have never experienced before. COVID-19 can cause serious sociological, economic, and psychological problems and pose a serious risk for suicidal behavior in the short and long term. It is necessary to establish national suicide prevention groups and support the development of local action plans. In addition to developing national strategies on suicide prevention, international cooperation is needed. Planning and implementation of suicide prevention training can help raise public awareness. Sensitivity, alertness, and caution for suicidal behavior will be lifesaving. Timely and adequate support for those affected by suicide and establishment of crisis centers for people in distress are important. Identifying risk groups and using online applications can be effective in preventing suicide. Having new regulations regarding the diagnosis and treatment of mental illnesses in the provision of healthcare services, well prepared mental health professionals for this difficult period may reduce suicide rates. The results of studies aimed at understanding suicidal behavior associated with COVID-19 will guide the planning of suicide prevention programs.

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Chapter 4

Mental Health Issues during Covid-19 Pandemic in Portuguese Prisons

Rui Abrunhosa Gonçalves and Joana Andrade

Abstract

During imprisonment, inmates face many difficulties to adapt to prison life well depicted in either classical works or recent research. They usually face many struggles related to the lack of contact with their families. For instance, the less the number of prison visits, the higher levels of aggressiveness and, consequently, the lower levels of adaptation. Additionally, this population is already problematic in "normal conditions" of their imprisonment. When facing crisis – such as the Covid-19 pandemic – their mental and emotional conditions become even worst. Inmates may experience higher levels of anxiety and stress due to the uncertain and high-risk circumstances they are all living. In addition, the deprivations of the support from their families, combined with the higher risk they are exposed due to the danger of Covid-19 virus' contamination, substantially increase their concerns and could contribute to their lack of adjustment. The present chapter refers to the policies implemented by the Portuguese Prison Administration to deal with the Covid-19 pandemic and a provisional balance of its effects after one year of implementation. Besides information regarding inmate's mental health conditions during pandemic, data on recidivism rates and criminal activity will also be discussed concerning their implication for future penitentiary policies.

Keywords: Mental health, Prisons, Adaptation, Covid-19, Penitentiary policies

1. Introduction

Over time, it has been highly reported the prevalence of mental health issues within places of confinement in general, and within prisons particularly [1–3]. Often, such problems already exist before incarceration but are severely exacerbated during the sentence. The overrepresentation of psychopathology within the prison context is a reflection of both the vulnerabilities that these individuals usually show and the lack of healthful conditions of penitentiaries. Indeed, prison settings are thought to have the potential to damage individual well-being and social functioning. When entering in prison, individuals often are confronted with a new reality, facing a set of challenges. The concept of prisonization refers to the process of individuals' enculturation into the culture of imprisonment, which usually entails the learning and adoption of maladaptive "norms" [4]. Indeed, other studies underlined the pejorative effect of the "prison code" on inmates' adjustment and rehabilitation [5]. Besides, imprisonment affects not only the adjustment and

well-being while in prison, but also the ability to retain supportive networks after release. All these concerns should be attended during the condemnation in order to minimize the negative impact of prison on individuals' lives.

Despite the origin of this problem is undoubtedly old, this reality has been receiving special attention give the exceptional conditions we are living, all over the world, as a result of the pandemic Covid-19. Worldwide, efforts have been made to minimize the pejorative effects of the pandemic. In fact, the coronavirus pandemic affected individual lives as well as institutions functioning, including correctional facilities [6]. Firstly, people mobilized themselves for social distance to prevent virus expansion, which is actually particularly difficult within prisons due to their close proximity during their routines [7]. In addition, this population is typically more vulnerable since their health profile is often more severe compared with the community [8, 9], and they are usually facing poorer hygiene conditions, poorer nutrition, and drug addiction problems [7]. During the pandemic, decision-makers imposed some restrictions to prevent a serious outbreak. Such constraints also raised adverse conditions for inmates' mental well-being, increasing their difficulties to adapt to the prison environment.

The present chapter presents an overview of the prison setting and the problem of mental health within this context. Secondly, it refers to the policies implemented by the Portuguese Prison Administration to deal with the Covid-19 pandemic and a provisional balance of its effects after one year of implementation. Finally, information regarding inmate's mental health conditions during the pandemic, data on recidivism rates, and criminal activity will also be discussed concerning their implication for future penitentiary policies.

2. Pandemics effects on inmates' mental health

2.1 Prison environment and mental health

Prison life relates to a constellation of difficulties and challenges that can affect in a tremendous way inmates' mental well-being. Frequent sources of problems refer to conflicts with others, dissatisfaction with lifestyle in prison, frustration regarding the restrictions, lack of future direction, and loneliness or depression [10–12]. The importance of social climate has also been studied in the context of imprisonment [12, 13]. Indeed, adaptation of prisoners is generally multidimensional and different factors – social, material, emotional, and moral – affects the way people adapt to the environment. Previous studies emphasized the dreadful effect of the prison atmosphere on individuals' mental well-being. Nurse, Woodcock and Ormsby [12] found that prisoners often report the pain resulted from their isolation, assuming to have some maladaptative coping strategies to deal with the tedium, such as drug misuse.

The prevalence of psychopathology in prison has been highly reported. Prison populations are known to exceed the incidence of mental health disorders in the general population [10, 14]. Previous systematic reviews focused on mental health disorders found robust evidence of a higher occurrence of psychopathology among prisoners [15–17]. Overall, inmates seem to be more likely to be diagnosed with personality disorder [18], anxiety, mood disorders, risk of suicidal behaviors [19, 20], and substance use disorders [19, 21]. According to some studies, the problem of overcrowding reinforces these difficulties [22] and is often associated with negative effects on prisoners [23].

Notwithstanding the detrimental conditions of the prison, which increase the risk to develop mental illnesses, it is also important to note that many offenders

already reported symptoms before imprisonment, and those symptoms contributed to criminal behavior [24, 25]. Thus, we must acknowledge that imprisonment is both a cause and a consequence of psychological maladjustment.

Despite the prevalence of mental illness in prisons, the barriers to treatment seem to increase an inadequate reaction to this problem. Indeed, previous studies underlined that imprisonment itself gives rise to some difficulties for mental health treatment [10]. Often, these barriers start with the reception of inmates since they usually show reluctance to ask for help by themselves [26]. Additionally, the screening at reception often presents some limitations regarding mental health since it gives a bigger focus on physical health [27]. Besides, the screening is commonly conducted by staff who does not have previous training about mental health issues [28], which contributes to the inappropriateness of such assessments.

2.2 The specific case of pretrial detainees

The remand detention is a measure to be applied for a person accused of committing a crime to prevent his/her criminal activity or inhibit unlawful interference with the investigation at the pre-trial stage. This measure should be applied as last resort, and only when other non-custodial alternatives don't seem to be appropriate [29].

The negative effect of pre-trial detention has been greatly reported [30, 31]. Previous studies underlined that those who are in prison awaiting trial are more likely to have mental disorders as well as to exhibit suicidal behaviors [32, 33]. In addition to the difficulties also shared by the sentenced prisoners, these individuals suffer from the uncertainty of their prisoner status since they do not know how their future will be [34]. Despite this, they are usually excluded from the health care services and interventions due to their (presumably) provisional stay in prison.

Studies reported that pre-trial inmates usually present high rates of mental illness, particularly: depression, substance misuse, adjustment disorders, anxiety, PTSD, and personality disorders [35–39]. Considering the higher propensity for these individuals to develop adjustment and mental health problems, we expect that during a crisis such as the Covid-19 pandemic, these rates become (even more) underestimated. Therefore, the importance to ensure pre-trial detention is used only when it is strictly necessary is quite relevant, in order to prevent the development of psychological disorders as well as to diminish the problem of overcrowding in prisons.

2.3 Prison changes during the pandemic and the Portuguese example

As mentioned, during imprisonment, inmates face many difficulties to adapt to prison life, well depicted in classical works [40–42] but also in recent research [43, 44]. They usually face many struggles related to the lack of contact with their families. For instance, a study conducted by Gonçalves and Gonçalves [45] found that the less the number of visits in prison, the higher levels of aggressiveness, and consequently, the lower levels of adaptation. Considering this population is already problematic in "normal conditions" of their imprisonment, during times of crisis – such as the Covid-19 pandemic – their mental and emotional conditions become even worst [46]. A study conducted by Carvalho et al. [47] emphasized these difficulties, pointing the overlap of challenges felt during this time. Indeed, inmates may experience higher levels of anxiety and stress due to the uncertain and high-risk circumstances they are all living in. On the other hand, the concerns with physical health (to heal those who are contaminated and to prevent further contaminations) could result in fewer resources to treat mental illness. Besides, demands

for professionals and staff also face additional burden, related with the danger of contagious for themselves and their families. Knowing that the spread of disease could easily occur within prisons, the anxieties related to the Covid-19 pandemic are not exclusive of inmates, also affecting those who have to take care of them [48].

Given the high number of prisons in affected countries, an outbreak within prison settings could result in a massive and unsustainable overwhelm of the prison health care services. In Portugal, at the beginning of the pandemic (March 1st, 2020), the prison population was 12.737 (11.869 men and 868 women), with a rate of occupation of 98,5%. Hence, the full capacity of the system was almost reached (https://dgrsp.justica.gov.pt). Nevertheless, and if it is true that in 2019 the Portuguese prison system as a whole had finally turned the page of a chronic overcrowded situation, this problem persists in several facilities related to the rate of the surrounding population, namely in the two main cities, Lisbon, Oporto and some local prisons.

When the pandemic reached the country, the government and the prison administration adopted some preventive measures in a global framework, to avoid the disease's dissemination among prisoners, prison staff, and visitors [5]. Consequently, visits were suspended for a certain period, prisoners' transfers were interrupted (except for security reasons), and other daily activities – educational, recreational, and religious – have been temporarily shut down. The contingency plan foresaw: (i) the establishment of infirmaries and emergency wards; (ii) the readjustment of cleaning and sanitization schedules according to the orientations of the Portuguese Directorate-General Health; and (iii) the reallocation of inmates, ensuring that those more vulnerable (i.e., elderly and/or with chronic illness) were separated from the other prisoners.

Besides, several other measures were approved for reducing overcrowding and consequently, the danger of an outbreak. The authorities decide to pardon the sentences to inmates over 65 years with a history of chronic disease and who have not committed severe and violent crimes. Overall, from April 11th of 2020 to March 1st of 2021, 1702 inmates obtained pardons in their sentences and were consequently released. Also, the time of condemnation was decreased for those who were convicted by a non-violent/non-severe crime and whose sentence was shorter than 2 years or was being served for more than two years. Besides, those who already were in the open regime had the opportunity to leave prison for 45 days furloughs, a renewable measure if the criteria used to provide it go on valid. In this sense, during the period mentioned, the prison administration allowed 887 temporary leaves and go on evaluating eligible candidates for this measure. So far, from the 887 temporary leaves that were approved, 40 of them had finished the sentence during the leave, 386 had been granted with a conditional release (from those, 40 in advance), and in 105 of the cases, the measure was revoked due to non-compliance. Furthermore, during this period, 14 inmates have returned voluntarily to prison, and the other 13 did not see their furloughs renewed following a decision from the General Director of the Prison Services. Finally, the pre-trial imprisonment was reevaluated, ensuring this condition was only applied in cases where another measure was not suitable. Therefore, since March 2020 and over one year period, the number of male prisoners remained above the 11,000 threshold, while for women only recently the threshold of 800 was, again, exceeded (see **Figure 1**).

Since part of the prison population had the opportunity to temporarily go to their homes, levels of stress, and fear may decrease as a result of the familiar and social support, as well as the sense of higher protection against the disease. The consequences of such releases should be understood not only from the point of view of the pandemic situation but also from the perspective of the rehabilitative process of the prisoners. Specifically, it could be important to assess how these inmates'

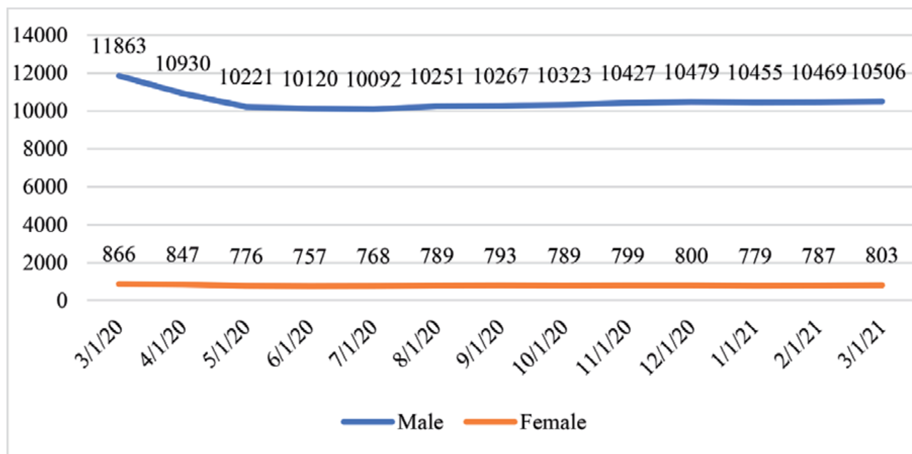

Figure 1.
Portuguese prison population between march 2020 and march 2021 (source: https://dgrsp.justica.gov.pt).

behavior was influence by the provisionally discharge, evaluating if this measure had a positive or negative impact on their adjustment. The discernment about how prisoners behaved while out of prison (i.e., either they recidivate or not), as well as how they will adjust in prison after the return might have important practical implications. Officially, as far as it is possible to recognize, of the 1702 inmates that obtained pardons in their sentences, only 170 (9,99%) of them have already returned to prison due to re-offenses, which means that until now, only a minor portion failed in maintaining a prosocial behavior.

2.4 Implications for practice

The results presented above urge critical considerations and should be discussed among practitioners and decision-makers. The costs of imprisonment for mental health are well-reported. If non-custodial alternatives were found to be effective to reduce recidivism, the use of prison should be discussed. In fact, if we found that offenders were capable to not engage in trouble, new policies regarding the decision about prison sentences for certain types of offenders might be pondered, and so, the problem of prison overcrowding and the pejorative outcomes that result from the imprisonment could be minimized. As we noticed, prisons usually lack adequate treatment conditions, and overcrowding is a problem highly reported worldwide. Reducing the rates of incarceration seems to be an urgent concern since it allows, not only to avoid the impact of incarceration for those who do not represent a danger to society but also to provide more adequate conditions for those who need to be confined, due to the seriousness of their crimes or their dangerousness for society.

A careful judgment of the overall impact of the modifications that the Covid-19 pandemic imposed on the Portuguese prison system cannot be overlooked, and as it is commonly said, crisis usually arrange for opportunities to implement appropriate reforms. As shown in **Figure 1**, during the first wave (March to July), as a consequence of the described policies, overall, the number of inmates had decreased. The downsizing was perceived until July, the month after which the situation started to invert. This change had accompanied the evolution of the pandemic. However, Portugal had faced a more difficult time between January and March 2021. We noticed that during this period, the prison population has already increased, but at a slow rate and never reaching the pre-Covid-19 beginning. In fact, despite the catastrophic situation in Portugal between January and March 2021, the correctional system did not seem to be

a problematic place for virus dissemination during the second wave. All the measures that were taken to avoid the overcrowding during this time allowed to keep in control the pandemic situation within prisons, noting that, currently, out of a universe of more than 20000 individuals (including inmates, workers, and young interns), no deaths by Covid-19 were registered, and currently, only 14 cases are positive. At this point, more than 25500 tests were administered, and about 7775 vaccines have been administered, the first ones to inmates that were declared legally insane but dangerous thus confined to forensic facilities.

3. Conclusion

The current state of the Portuguese prisons and the measures taken to deal with the Covid-19 pandemic raised several questions. First of all, there was quite a big protest from the right-wing political forces clamming that the release of several prisoners would provoke growth in crime and intensify public fear. The data proved to be contrary to this alarmist claim. Consequently, it seems that the prison services have done an adequate job in assessing those inmates that should be released, and if the criteria of the length of the sentence and the type of crime committed may be relevant, it seems that assessing the risk of (violent) recidivism using adequate tools has to be preponderant. Additionally, it might be that for those prisoners who saw their sentences partially pardoned, the previous experience of serving time could be sufficiently punitive to discourage further reoffending. Again, the “pains of imprisonment” seem to play an important role and have to be reconsidered in the way prison sentences are applied [49]. Therefore, the Portuguese penal system should reflect on how prison sentences are assigned since, in most individuals, the purpose of rehabilitation might be fully achieved with community sentences, sending only to prison those truly dangerous. These considerations would provide a better sense of justice and the use of prison sentences as more discretional rather than proverbial [50].

The absence of a regular screening procedure for mental health issues when prisoners enter the correctional system and while they are serving their sentences, unable us to depict an effective analysis of this problem in the Portuguese prison system. Nevertheless, during 2020, official reports recently presented depict an unusual increase of prison suicides that ought to be explained, whether as result of the pandemic measures or some other reasons.

Finally, the diminishing of criminal activity might be due to several causes. The absence of victims and a more effective policing might cause a deflection in crime during the first semester of pandemics. Nevertheless, this effect seems to be discouraging only for a short period. Indeed, it seems that it takes more than a pandemic situation to deter crime.

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Conflict of interest

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Chapter 5

Athlete Psychological Resilience and Integration with Digital Mental Health Implementation Amid Covid-19

Luke Balcombe and Diego De Leo

Abstract

The current pandemic's effect on mental health is uncertain with reports of it being largely negative related to loneliness and unemployment. There are different responses to pandemic stress with regards to cultural differences and social environment. Athletes are special in their experience of psychological resilience – there is a trend of positive adjustment to adversity and stress. However, further systematic review is required to confirm these findings along with an athlete-specific psychological resilience instrument. Key themes in relationships include a dichotomous mental health state marked by maladjustment and subsequent resilience, biopsychosocial factors as well as an array of cultural, social and environmental support and demands marked by stressors within and outside of sport. Digital mental health implementation is a logical next step for advancing the construct of athlete psychological resilience towards complementing an effective prevention and early intervention. However, mental health practitioners are grappling with digital mental health in a hybrid model of care. There is a need for converging on methodologies due to the rapid development of digital technologies which have outpaced evaluation of rigorous digital mental health interventions. The functions and implications of human and machine interactions require explainable and responsible implementation for more certain and positive outcomes to arise.

Keywords: COVID-19, stress, cultural differences, social environment, athlete psychological resilience, digital mental health implementation, technology

1. Introduction

The COVID-19 pandemic has led to alteration in work and lifestyle factors [1]. The resultant uncertainty has contributed to a negative impact on adult mental health in the UK [2]. The indirect effects caused a significant increase in psychological distress among the German general population, with correlation to loneliness and higher unemployment [3]. Liu et al. recommended mental health services specifically targeting female, young, unemployed, and lonely people [3]. However, Australian studies proposed the disentanglement of individual, cultural, and environmental factors with regards to the increased mental health vulnerabilities of high-risk subpopulations (e.g., children, students, athletes, domestic violence

victims, frontline heath care workers, low socioeconomic groups, people with mental health disorders, and older people) [4, 5]. For example, high-level athletes showed resilience that helped them to positively adjust after a period of overwhelming stress during a COVID-19 lockdown period [5, 6]. This group were at high-risk for Adjustment Disorder but returned to baseline stress levels [5, 6]. Furthermore, remote Australian Aborigine communities were identified as at-risk because of their compromised health status, as well as historical, systemic, and cultural factors [7]. Cultural differences and social environment require further unraveling to understand the different behavioral responses to pandemic stress as well as the implications for mental health outcomes and resilience.

Digital mental health implementation in a hybrid model of care is boosted by the current pandemic situation because of the capability to provide real-time, automated screening, tracking and treatment [4]. Specialist use of digital platforms with explainable artificial intelligence apps offer good potential to enhance resilience and mental health practitioners' ability to guide the decisions that they make [8]. The issues around this approach (e.g., effectiveness, equity, ethics, and evaluation) calls for innovative methods to better serve general populations as well as considerations and initiatives for underserved and vulnerable subpopulations [4, 8]. The likely ineffectiveness of technology (e.g., machine learning) with severe cases of mental ill-health makes it more feasible and relevant to focus on positive mental health outcomes such as resilience in low to moderate cases [8–10]. Therefore, this chapter explores the athlete population – early evidence shows a positive impact on stress and resilience in this group [5, 6, 11]. Could the psychological screening and tracking of high-level athletes be effectively integrated with digital mental health implementation to provide a basis for increasing resilience and the early intervention of stress in at-risk and vulnerable populations amid COVID-19?

2. Methods

2.1 Integrative review

An integrative review is relevant as a methodology to critique and synthesize the literature on athlete psychological resilience and digital mental health implementation to reveal a new perspective and explore the convergence of the topics. Whittemore and Knafl [12] presented a modified framework for integrative reviews with incorporation of qualitative research strategies to complement empirical and theoretical sources. This method was amended (see **Table 1**) to combine experimental and non-experimental research in the review of evidence and to identify methodological issues of the topic. There is relevance because of the comprehensive account of complex concepts, theories, or healthcare problems. The research question facilitated the literature search, data evaluation, data analysis and presentation stages. An example of integrative review methods in application was provided by Boyle et al. [13] in their analysis of extant reviews of transitions to school literature resulting in identification of theoretical perspectives and recurrent perspective across these perspectives. The main challenge of this method was addressed through a strategy for an accurate synthesis of all data from primary sources.

A systematic search of literature was undertaken in February 2021 and updated until April 2021 from searches including Cross Ref, PubMed Central, Google Scholar, and Elsevier databases to obtain relevant peer-reviewed journal articles generally from 2011 to 2021. The specific focus of the literature search was the concept of the integration of athlete psychological resilience and digital mental health implementation. Extracted data included athlete psychological resilience and how

1. Problem identification
2. Literature search:
• Participant characteristics
• Reported outcomes
• Empirical or theoretical approach
3. Author views:
• Clinical effectiveness
• User impact (feasibility/accessibility)
• Social and cultural impact
• Readiness for clinic or digital solutions adoption
• Critical appraisal and evaluation
4. Determine rigor and contribution to data analysis
5. Synthesis of important foundations or conclusions into an integrated summation

Table 1.
5 step integrative review search method.

this was applied in mental health care, as well as digital mental health and how the technology solution was used (i.e., assessment, treatment, and monitoring). This was in addition to participant characteristics, reported outcomes and authors' views on clinical effectiveness, user impact (i.e., feasibility and acceptability), social and cultural impact, and readiness for clinic or digital solutions adoption. Dual author expertise in the topics provided for purposive selection of empirical and theoretical reports, critical appraisal and evaluation of the study quality or method with guidance from **Table 1** of Whittemore and Knafl [12] with regards to scoring the data relevance (high or low) to determine its rigor and contribution to the data analysis. The overall level of evidence was guided by the Oxford Centre for Evidence-Based Medicine: Levels of Evidence (March 2009). The qualitative analysis involved a synthesis of important foundations or conclusions of each subgroup into an integrated summation of the topic [12]. The conclusions have been drawn from a summary of empirical and theoretical literature to stimulate valid, reliable, and replicable research.

2.2 Social, cultural, and environmental contexts

This integrative review considered Furlong and Finnie's exploration of cultural and societal influences on mental health during the current pandemic [7]. The relationship between exposure to stress and resilience is of interest around the world for whether there are short and/or long-term psychological effects in association with other mitigating factors e.g., uncertainty, loss of control, loneliness and isolation. Culture is important to the investigation of athlete psychological resilience because of how this collective phenomenon is experienced among different sport branches. There are also different levels of athletes (e.g., adolescent – young adult athletes, student and college athletes, high-level athletes representing their state and/or national teams as well as elite athletes and champions). Overall, this defined and bounded group share values, attitudes, norms, symbols, and customs. Furlong and Finnie utilized Hofstede's multidimensional construct of culture and determined psychological and cultural factors that foster resilience [7]. After referring to holistic and analytic systems of thought (respective to Eastern and Western cultures), it was proposed that there is a comfort zone that people generally return to at times of

stress with less adaptation than usual. Athlete psychological resilience may provide another dimension to this construct with regards to their experience of stress and maladjustment.

This review aims to bring together social, cultural, environmental contexts from different domains and disciplines, levels of expertise and experience, and research methods. Moving away from a reductionist approach, Furst et al. recommended mental health ecosystems research for implementation sciences because evidence from the local context is needed in complex interventions and geographical variations in outcomes of care [14]. It involves an interactive system of data and knowledge, expert validation of the scenarios (describing plausible combinations and options of system elements) and models (translating scenarios into consequences for system functioning). This integrative review provides a systematic and rigorous approach allowing for findings from diverse methodologies to be applied to clinical practice and evidence-based practice initiatives [12]. A systematic knowledge base aims to provide a foundation for athlete psychological resilience research to be implemented by digital mental health practice. It provides a starting point for the ecosystem to develop. i.e., a high-level athlete subpopulation who experience a phenomenon (psychological resilience after stress) with attention provided to their culture, society, and environment to branch out health care complexity.

3. Results

3.1 Athlete psychological resilience

Psychological resilience is the positive adaptation when confronted with difficulties, adversity, or long-term stress [15]. Aburn et al. conducted an integrative review of empirical literature on psychological resilience from a nursing context [15]. No universal definition was found leading to the suggestion for further research to explore this construct. High-level athletes are a suitable group with whom to investigate psychological resilience because of developments with regards to their dichotomous state of wellbeing [5]. The generally shared viewpoint is that athletes have significantly higher levels of distress than non-athlete counterparts but comparable levels of high-prevalence disorders (e.g., anxiety and depression) [16, 17]. However, valid comparisons with the general population have yet to be established [17]. A call for an early intervention framework [18] stemmed from the opportunity created from increased awareness of the issues. A range of consensus and position statements [19–24] formed a foundation for high-level athletes being proposed as fertile ground for digital mental health implementation with a focus on maladjustment and resilience [5]. Valid athlete psychological screening instruments e.g. the Athlete Psychological Strain Questionnaire (APSQ) [25] provide a path for expansion and/or complementary approaches.

The athlete psychological resilience construct evolved from studies pertaining to experimental designs from a performance perspective centered on the thoughts and beliefs of athletes who overcame adversity [26]. In a review of the literature, Galli and Gonzalez recommended the development of a sport-specific resilience measure and the use of more sophisticated qualitative approaches and advanced statistical modelling procedures [26]. There is an array of qualitative and quantitative studies, but these findings continue to be limited by the lack of a sport-specific resilience measure. The question remains effectively unanswered since the commentary of Sarkar and Fletcher asked how athletes should be measured for psychological resilience [27]. The construct has not yet been evaluated despite a call in 2016 by Fletcher and Sarkar for a holistic and systematic approach [28]. Various approaches

were developed to provide purpose and guidance e.g., the Athlete Rational Resilience Credo by Turner [29]. It was proposed in a narrative review by Sarkar that a complete understanding of psychological resilience in elite athletes is required (separate from mental toughness, hardiness, or coping literatures) and emphasized the need to focus on the context of the stress process with careful attention to environmental demands [30].

Athlete psychological resilience studies have extended from a theoretical approach. Fletcher and Sarkar provided a grounded theory on the topic after interviews with Olympic champions determined that there are various mental processes and behavior that promote positive adaptations to stress and protection from negative stress [31]. These authors built upon a resilience model by Galli and Vealey [32] which presented a continuum of interactions between adversity, sociocultural influences, and personal resources. Stressors (e.g., injury or retirement) may be mediated by social support and cultural factors as well as a self-determined positive response that results in resilience. A narrative review of athletes' stressors and protective factors provided a basis for psychological resilience in this group [33]. Stressors were categorized into competitive, organizational, and personal. Research by the authors into psychological resilience in Olympic champions found 5 main concepts (i.e., positive personality, motivation, confidence, focus, perceived social support) that have a protective effect upon stressors. The theoretical and evidence-based research called for analysis of the processes underlying psychological resilience in high-level athletes.

The sport psychology consensus that mental and physical health should be considered together with biopsychosocial studies of mental health [19] has also emerged in athlete psychological resilience studies. Fletcher established that there are various biopsychosocial factors (i.e., personality, motivation, confidence, focus, challenge, support, environment) that interact to contribute to the development of athlete psychological resilience [34]. Hill et al. proposed the dynamical system approach to promote athlete resilience studies that result in assisting practitioners with understanding the sequalae of performance slumps for optimal intervention times. Fletcher reiterated that there is yet to be effective understanding of the numerous adverse personal and situational factors that eventuate in adjustment to stress and superior performance [35]. The performance-focus of these studies with the world's best athletes is underpinned by athletes' ability to adapt or withstand environmental demands in their attaining and sustaining of success at the highest level.

It is not yet known what makes elite athletes unique in their ability to make benefit from adversity. Studies that compare baseline comparisons of stress, trauma and/or maladjustment with higher levels of functioning are required to operationalize a measure of the "transitional process" which Fletcher described as involving holistic growth [36]. Fletcher's integrative synthesis of psychological resilience and adversarial growth supports future research into holistic aspects of the athlete's life, especially to examine the aspects of development and performance that detriment on their mental health and relationships [36].

The lack of rigorous evidence-based studies that analyze psychological resilience processes in high-level athlete studies has limited its effectiveness and clinical adoption. However, feasible outcomes emerged in an assortment of athlete studies including the role of social support and associated development of psychological resilience as well as intervention at times of significant stress (e.g., via significant other/coach inclusion). High levels of resilience were correlated with the highest quality of life in a replication study with 87 (80 men, 7 women) wheelchair rugby athletes with various disabilities [37]. Those with grit, resilience, hardiness, and social support were the most engaged with their sport. A mixed methods

investigation of 8 gymnasts found that psychological resilience and social support play significant roles in the process of injury rehabilitation [38]. Future studies were recommended to investigate the direct relationships between stress and resilience. The evidence-based research was limited by a small sample size.

Qualitative studies have enriched understanding of the relationships surrounding athlete psychological resilience. A case study explored the underpinning psychosocial processes of athlete resilience from a rugby team perspective [39]. There have been further studies that included the coach perspective. Another study investigated gymnastics coach and athlete perceptions - athletic practice was found to be conducive to the development of resilience, but the implications of coaching influence were not yet established [40]. A further study that involved semi-structured interviews with 4 elite athletes, 4 elite-level coaches, and 2 sport psychologists found proactive strategies to combat stressors were effective when there were good interpersonal skills in a coach—athlete relationship and an individualized approach which involved fostering motivation, mental preparation, and promoting life balance as well as evaluating setbacks, promoting a positive mindset, and implementing lessons [41].

Evidence-based studies with junior/student athletes (centered on the relationship with the coach) investigated the underlying processes of psychological resilience in athletes. In a conjunctive moderation study with 218 student-athletes, Lu et al. found that coaches' social support fosters athletes' resilience to prevent stress-induced burnout in athletes [42]. A study with 547 semi-professional athletes aged 16–19 years analyzed the influence of coaches on emotional intelligence and on levels of anxiety, motivation, self-esteem, and resilience [43]. Trigueros et al. found self-esteem to positively predict self-determined motivation, however, anxiety had a negative effect on it. Athletes who were independently regulated (self-determined motivation) are more likely to be resilient. The social aspects of being an adolescent – young adult athlete, especially with regards to the relationship with the coach, were proposed in preliminary empirical evidence of the psychological construct of interrelations during competition and the effect upon athlete psychological well-being. Trigueros et al. found the need for further studies to confirm that self-determined motivation positively predicts athlete resilience [43].

The relationship of athlete psychological resilience and burnout has been investigated in different evidence-based approaches. A moderated regression model was applied in a study with 1372 athletes with findings that psychological resilience moderates the potential negative effect of organizational stressors on burnout [44]. In an examination of the coach-athlete working alliance in a sample of 670, Raanes et al. found psychological resilience and perceived stress to be correlated with burnout among junior athletes [45]. The cross-sectional correlation design builds upon theory but was acknowledged by the authors as limited in providing a causal pathway for the relationships. There is no empirical evidence of the intrapersonal protective factors of athlete resilience.

Valid comparisons with ethnically diverse and gender-balanced representation in studies with various high-level athletes and non-athletes are required. A structural equation model applied with 641 female football and basketball players found athletes' resilience is positive for sport engagement - it boosts satisfaction and inhibits spoiling of basic psychological needs [46]. A social justice-oriented cross-sectional study of professional and college athletes found that the stress control mindset and mental toughness constructs should be further investigated in athlete psychological resilience [47]. Scheadler et al. found a positive relationship between these constructs which led to the inference that they are important moderators if not indicators of resilience in this group. Although weak to moderate findings were reported in this correlation, these authors referred to the agreement in findings

between Fletcher and Sarkar [30] and Brown et al. [48] that metacognitive skills and reappraisal strategies are central to resilience in sport arising from the challenge to overcome performance slumps. Scheadler et al. noted a lack of diversity in the random sample as a limitation and suggested future research to include athletic identity and perceived stress as moderating variables.

A descriptive screening model [49] investigated the psychological resilience levels of 147 elite athletes from football, basketball, volleyball, and gymnastics (79 males and 68 females aged 17–21) with the Psychological Resilience Scale. The cross-sectional correlational study [49] investigated resilience along with differences with gender, doping use, branch of sport, and doing self-talk before competition. Resilience was found to be at the moderate level and below the moderate level in different branches. Özdemir found gender and sport branch differences with males and footballers being more resilient [49]. The psychological resilience process was presented with various stressors inside and outside of sport being dealt with by low or high resilience. The high resilience path included individual and environmental support, as well as internal and external protective factors that proceed to high motivation and onwards to high performance. The low resilience path led to self-confidence problems and high anxiety which were followed by low motivation and low performance. The empirical approach applied an adaptation of the Psychological Resilience Scale for the Turkish context. The study acknowledged the lack of a qualitative component. More broadly, the lack of a sport-specific resilience scale, differences in sport branches as well stressors and protective factors restricts international comparison and evaluation of screening and training programs.

The Conner and Davidson Resilience Scale (CD-RISC) was applied in two Iranian correlational studies. Firstly with 139 student athletes (96 males, 43 females), in addition to measurement of the athletes' achievement according to a rating by their coach [50]. Hosseini and Besharat found resilience and mental health were positively associated with sport achievement [50]. The second correlational study with student athletes demonstrated the importance of psychological hardiness and resiliency in protecting this group from stress, in effect maintaining and improving mental health [11]. Sadeghi and Einaky found an inverse relationship of resilience to mental ill-health. An increase in resilience in this group found a decrease in physical symptoms, anxiety symptoms, social dysfunction, and depression symptoms. Those higher in resilience and hardiness were found to have overall better mental health. The CD-RISC was applied in a random sample (n = 155 from 1400) in 3 consecutive weeks with adaptability and reliability demonstrated. The narrow sampling timeframe limits the study's findings to contributing to a theoretical perspective such as how logical decisions, ethical judgments and athletic experiences can manifest into life outside of sport. Longitudinal studies are required to confirm these findings and thus be considered empirical evidence for clinic adoption.

A longitudinal cross-sectional correlational study with 29 Australian high-level athletes provided preliminary evidence for Adjustment Disorder and resilience being considered together. Simons et al. focused on the experience of stressors and maladjustment (i.e., relocation, being away from home for long periods of time/being on tour, or injury) [6]. The study was adapted during a COVID-19 lockdown period to investigate 5 main stressors among 15 of these athletes: uncertainty about the future, decreased income, changed university teaching methods, training facilities unavailable, and season/competition cancelled. The findings led to the suggestion that psychological resilience may result from the successful implementation of coping strategies and self-guided interventions which helped athletes to positively adjust after a period of overwhelming stress in a COVID-19 lockdown period [5, 6]. Due to the small number of participants, further consideration of

stress and adjustments in brief digital screening and tracking tools was recommended to validate this finding on athlete resilience and explore the potential for effective treatments [5] e.g., mindfulness, re-framing of the events, and goal setting [6]. International comparison is necessary as it instils understanding of cultural and environmental factors for mental health and care [51].

3.2 Digital mental health implementation for athlete psychological resilience

The focus on athlete psychological resilience extends from recent reviews [4, 5, 8] by this chapter's authors. There was combined emphasis on the need for an effective, valid, and quality assured response to demand outstripping supply for mental health care amid the COVID-19 pandemic. It was recommended to develop digital mental health service guidelines, consensus and expert statements for digital platforms as part of a hybrid model of care for assisting community members with stress and transitioning to new ways of living and working [4]. The recommendation to focus on screening and tracking (with real-time automation and machine learning) was further explored in the mini review [5] to show dichotomous relationships between athlete mental health problems and resilience. There was a key finding that a subgroup of high-level athletes was resilient after a period of intense stress during a COVID-19 lockdown period [5, 6]. It was recommended to modify valid screening tools with athlete-specific versions to account for their unique stress, adjustment, and resilience. However, there is difficulty with using predictive technologies among severe cases of mental ill health especially risk assessment tools for suicidal ideation and attempts because some scales end up being counterproductive [8]. Therefore, technology-enabled services are most likely to be effective when specialists apply it with subsyndromal or low-moderate mental ill health populations. It is proposed that more equitable public health outcomes will emerge after subpopulation efficacy and international comparisons are established.

Investigations in the athlete subpopulation may potentially broaden understanding of positive psychological functioning, the sequalae of mental ill health as well as symptom and disorder interpretation [5]. The development and evaluation of eminent digital mental health platforms and associated apps tailored to athletes was proposed to address mental health disengagement among the group (e.g., stigma, underrecognition of the issues, underutilization of helpful resources and false reporting with questionnaires). The recent development and validation of the APSQ [25] provided an example of how this subpopulation is suitable to be applied as an education concept for mental health awareness as well as a pivotal group for testing of the psychological impact of the current pandemic and beyond. However, online questionnaires remain the major digital tools being used in research [5, 6, 52]. Digital technologies generally have not awaited evaluation before going on the market leaving a gap to fill for rigorous digital mental health interventions [5]. There is a lack of practical strategy and collaboration between developers and end users for how technology may be applied in the development of research and its evaluation. Integration of methodologies is required for faster evaluation and accurate preventive strategies and interventions.

The current pandemic presents the opportunity to develop well-known products and services for faster and better screening, tracking and treatment including algorithms and skillsets to use and maintain systems [5]. However, this largely depends on the nous of researchers, end users and developers to effectively address the ethical and evaluation challenges that have persisted for the past decade. Digital platforms and connected apps are currently the most used digital solutions in complement to telehealth and face-to-face consultations [8]. Explainable Artificial

Intelligence (XAI) is extending from a theoretical approach for accountability in systems that generate predictions (e.g., machine learning) through facilitating a 3-way conversation between a patient, health care practitioner, and the machine [8]. XAI is worthwhile for testing in evidence-based studies to assist with ease of understanding and responsibility in complex human-computer interactions e.g., Internet of Things, digital phenotyping, immersive virtual therapeutic interventions (e.g., virtual reality - VR) and digital tools via web-based interventions (e.g., chatbots). The safety, security and engaged retention of users are important considerations in strategies to enhance resilience. Therefore, co-design should include consider up-to-date ethics and data security checklists with input from users, mental health care practitioners as well as care providers.

4. Conclusions

COVID-19 has unsettled long-held assumptions about resilience and adaptation. It has also created new uncertainties about health and technology which are further complicated by other issues e.g., politics and the economy. This integrative review systematically investigated a niche subpopulation (athletes) for their psychological resilience and found consensus that this group is special with regards to their experience of resilience because of how they adjust to adversity and stress. However, higher levels of evidence and reduction of heterogeneity is required – identified studies were marked by individual or homogenous case–control, correlational/cohort studies, low quality randomized controlled studies (e.g., <80% follow-up), and not yet validated in different populations. Theoretical, experimental and qualitative designs, narrative reviews and commentaries provided various cultural and social perspectives in conjunction with an array of models to moderate, describe and structure the issues. Further systematic review and a valid instrument that assesses diverse aspects of athlete psychological resilience are required for efficacy in the analysis of the underlying processes. It is recommended to focus on biopsychosocial factors and holistic stressors via screening of life within and outside of sport e.g., intrapersonal characteristics, potentially stressful events/challenges, behaviors, and representations of adversity). Major relationship themes include maladjustment, as well as social, cultural and environmental support and demands.

There is a good potential that development of an athlete-specific psychological resilience instrument may complement validated psychological screening tools (e.g., APSQ) especially with high-level and elite athletes. As resilience is a transitional process it is recommended for associated tracking tools to be implemented in holistic longitudinal studies to compare baseline levels of stress, trauma and/or maladjustment with higher levels of functioning. It is possible to integrate athlete psychological resilience with digital mental health implementation. As digital health is exponentially growing – it largely depends on how well researchers and end users can collaborate with developers and technology experts and responsibly assist each other. There is an array of issues to navigate such as ethics, safety, security, human-computer interaction, XAI, external evaluation, intellectual property rights, fees, and funding. However, such issues are manageable if there is clear direction for and co-design of an eminent product/service. It is envisioned that high-level and elite athlete psychological resilience studies will provide an education for increasing resilience and the early intervention of stress in at-risk and vulnerable populations amid COVID-19 and beyond. There is a good potential for furthering understanding of the sequalae of dichotomous mental health with interesting implications for preventive and intervention programs.

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Conflict of interest

The authors declare no conflict of interest.

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Chapter 6

The Impact of the COVID-19 Pandemic on the Mental Health of Dentists

Andrea Vergara-Buenaventura and Carmen Castro-Ruiz

Abstract

Since March 2020, the COVID-19 disease has declared a pandemic producing a worldwide containment. For months, many people were subjected to strict social isolation away from family and loved ones to prevent disease transmission, leading to anxiety, fear, and depression. On the other hand, many had to close down their businesses and stop working, resulting in financial issues. Previous studies have reported that pandemics, epidemics, and some diseases can lead to mental disorders such as fear, anxiety, stress, and depression. Among those most affected, healthcare workers (HCWs), especially those on the front line, often develop mental health problems. Although there is data available on the management and care of HCWs, little attention has been paid to the mental health and well-being of dentists during the COVID-19 pandemic. Therefore, this chapter aims to review the impact of the COVID-19 pandemic on dentists' mental health and mental health-related symptoms. Finally, to recommend specific measures to avoid consequent potential implications for dentists, dental students, and dental patients.

Keywords: Anxiety, COVID-19, Dentistry, Fear, Mental health, SARS-CoV-2

1. Introduction

The severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is an airborne virus that has caused the Coronavirus Disease 2019 (COVID-19) [1]. Like other respiratory diseases, COVID-19 is transmitted mainly by droplets and contact with infected people [2]. Therefore, many governments declared quarantine to contain the rapid spread of the SARS-CoV-2 [3] and specific measures were applied to limit viral transmission, including isolation, the use of respirators, and handwashing [4, 5].

In the face of this, the mental health of the general population was compromised. Strict isolation, loss of freedom, separation from family and loved ones, and working incapacity led to different people developing anxiety, fear, and depression [3]. Moreover, quarantine produced a general perception of job insecurity [6] and a serious concern about family and friends contagion [7].

From previous epidemics, it is known that health care workers (HCWs), have a higher probability of developing anxiety and depressive symptoms [8]. Nevertheless, little attention has been paid to the mental health and burnout that dentists may suffer [9–11]. During the lockdown, dental activities were limited to

treat only emergencies and urgent procedures and use strict biosecurity measures during dental procedures [12, 13]. Many routine dental practices were suspended because of cross-infection risk during dental care [14], affecting the economy of dentists and consequently their mental health [15–17]. Not to mention dental students and dental patients who had to suspend classes and dental treatments during lockdown [18, 19].

Thus, this chapter aims to review the impact of the COVID-19 pandemic on dentists' mental health and mental health-related symptoms. Finally, recommend specific measures to avoid consequent potential implications for dentists, dental students, and dental patients.

2. Mental health problems in other epidemics and diseases

In 2008, the World Health Organization (WHO) ranked major depression as the third leading cause of global disease burden, making it a significant health concern [20]. It has been reported that different diseases and infections can lead to an increased prevalence of mental health problems and substance use disorders, including infectious, neonatal, and non-communicable diseases such as HIV [21–23].

Isolation during disease management is believed to affect mental health, but the actual effects are still unknown [24]. Quarantine and isolation measures have not only occurred in this pandemic; they were also imposed in Canada and China during the SARS outbreak in 2003 and many African countries for the Ebola outbreak in 2014 [7].

Data on past epidemics have indicated that HCWs are at risk for anxiety and depressive symptoms in the same manner as during the COVID-19 pandemic. Concerning other coronavirus outbreaks, it has been reported that HCWs were related to a substantial psychiatric burden during and after them [25]. Moreover, it has been shown that quarantined people in hospitals could develop mental health symptoms [26]. Patients infected with MERS-CoV had a considerable effect on mental health during quarantine. Common symptoms related were depression, anxiety, impaired concentration and memory, and insomnia [25].

Although the SARS epidemic was contained rapidly, it had a high human cost. Many HCWs reported mental symptoms and posttraumatic morbidities [26].

It was found that having been quarantined during the SARS outbreak and previous experience of other traumatic events increased the probability of having elevated levels of depressive symptoms three years later [27]. However, some authors do not consider the SARS epidemic as a mental health catastrophe; follow-up studies reported that these symptoms could be associated with the stress of daily life rather than with the SARS crisis [28–30].

3. Risk factors and possible stressors

There are different risk factors of Mental Health problems, such as previous history of depression or anxiety, but the best known are female gender and current medical history [8]. Risk factors for experiencing anxiety and anger after MERS infection included isolation, inadequate supplies (food, shelter, clothing), history of psychiatric illness, and financial loss [24]. Similarly, it has been shown that psychiatric impact during the COVID-19 pandemic may be more significant in females. Anxiety and depressive disorders were higher in women than in men during the COVID-19 pandemic, indicating that female gender has been identified as the strongest predictor of posttraumatic stress disorder symptoms after pandemics [31–33].

Additionally, the COVID-19 pandemic adds other essential aspects such as isolation and quarantine that produce a psychological impact on individuals [7].

Likewise, dentists, dental staff, and dental patients have faced specific problems. For instance, Dentists have also changed their priorities. Their schedules may not be sufficient to handle all emergencies and emergencies during quarantine because of the need to add time for strict disinfection [3]. At the same time, there is great difficulty in acquiring supplies needed for dental care. Many governments did not have clear guidelines in place at the onset of the pandemic leading to work disruption and economic losses [7].

4. COVID-19 consequences in healthcare workers

Mental health symptoms such as stress, depression, anxiety, and sleep problems have been reported during the COVID-19 pandemic [34]. Likewise, exacerbation of fear, depression, and anxiety [3].

Studies have reported posttraumatic stress symptoms between HCW during the pandemic [8] and one month after the COVID-19 outbreak [35].

HCW may experience evasion by their family or friends due to stigma or fear of contracting the disease from them [36]. Isolation, reduced social relations, and loneliness are well-recognized risk factors for several mental disorders, including major depression and schizophrenia [3]. During quarantine, the medical staff was more likely to develop fatigue, anxiety, insomnia, irritability, poor concentration, and resistance to work, resulting in decreased work performance [7].

Vindegaard et al. reported a high level of posttraumatic stress symptoms and found a 29% prevalence of depression among 57 newly recovered COVID-19 patients and 9.8% in quarantined participants (9.8%) [8]. Panagioti et al. [37] reported that physicians with burnout are twice as likely to be involved in patient safety incidents, provide inadequate patient care, and three times more likely to receive a low patient satisfaction rating. In the same way, a study revealed that quarantined staff in a hospital show signs of acute stress disorder nine days after the end of isolation, indicating that being quarantined in a hospital could be a predictor of posttraumatic stress [7].

On the other hand, the Covid-19 pandemic has affected health systems around the world [11]. Many institutions have to deal with the limited availability of personal protective equipment (PPE) in some facilities and the increasing need for trained medical personnel [38]. Besides, it was difficult to import medical equipment and supplies at the peak of the COVID-19 crisis due to government restrictions prohibiting their medical industry from selling outside their own countries [39].

5. COVID-19 consequences in dentists and dental staff

As in other HCWs, the mental health of dental workers could also be affected by this pandemic context. The SARS-CoV-2 pandemic has led to several mental health issues among doctors and nurses, and dentists are no exception due to the nature of their work [40]. Anxiety and mental disorders due to COVID-19 in dentists have been reported. The prevalence of symptoms related to anxiety was 71%, 60% with depression, and stress was 92% [41, 42].

Isolation and social distancing could have a detrimental impact on the mental health of patients and dental workers. It has been reported that the psychosocial consequences of the COVID-19 pandemic may be particularly severe for health professionals with a higher level of exposure [3]. An association was found between

higher fear of COVID-19, job insecurity, and depressive symptoms [6]. It was also found that dentists working in the private sector presented fewer psychological symptoms than the independent ones [42].

Khader et al. [43] reported that 71.7% of 368 interviewed dentists perceived COVID-19 as a moderately dangerous disease, and 17.7% like very dangerous. A recent study about happiness among dentists highlighted that inadequate stress management and not achieving professional satisfaction could influence the quality of delivered treatment and patients compliance, revealing the urgency among dentists to be trained in this matter [44].

Managers and team leaders may experience extra pressure concerning their roles and responsibilities [36]. Understanding the risks associated with SARS-CoV-2 transmission during dental treatment and assessing strategies for its prevention in dental offices is critical to ensure patient safety and access to oral health care [45].

The schedule of health professionals could be challenging. Time schedules could be insufficient to handle all treatments, adding the disinfection time as efficiently as before [3]. Not to mention the stress and difficulty in needed supply acquisition and the inadequate and insufficient information from governments and public health authorities on what measures to take to combat the pandemic [7].

Dentistry could be a hazardous and stressful profession [46–48]. It is well known to be associated with health concerns, including psychological stress, burnout, physical tiredness, pressure, and emotional exhaustion, directly affecting general and mental health, leading to poor work performance [49, 50]. In addition, HCW and dentists had to wear a mask for long periods throughout the pandemic with concerns about its correct use [51]. The adverse effects of this pandemic appear to be long-lasting [7]. Clinics and dental practices need to be modified to guarantee care and a safe environment [3].

6. Dental patient's concern about dental treatment in the context of COVID-19 pandemic

A significant association was found between patients' feelings about COVID-19 infection and attendance at their dental appointments. Patients, especially women, reported feeling anxious and worried during their treatments and others about prolonged orthodontic treatments [19, 52]. Similarly, patients who were going to undergo oral surgeries presented a higher increase in anxiety than before the pandemic [53]. Among the main concerns of the patients was the risk of infection and possible transmission to their families. On the other hand, worsening their oral health was also reported, and others considered that treatment outcomes could be affected [52, 54].

In the same way, there is concern about the dental treatment of children. Thirty-three percent of parents described the dental office as more dangerous than public areas. The majority of surveyed parents felt that their children could become infected more easily during dental treatment [55].

Peloso et al. [52] recommended that dentists should use technology for patient counseling about appointments and treatment to decrease their anxiety. Finally, it is necessary to share consistent information about biosafety protocols during dental care to reduce fear and anxiety in patients [56].

7. COVID-19 pandemic and the mental health of dental students

Numerous studies have informed that university students are at high risk for mental health problems that are exacerbated by the COVID-19 pandemic [57]. Ma et al. [58]

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reported that of 746,217 students surveyed, 45% presented mental health problems, 34.9% signs of acute stress, 21.1% depression, and 11% anxiety. The main factors that could influence the mental health of university students are social isolation, inability to meet with friends, concern about personal health, fear of someone in the family becoming infected, and lack of certainty about the future [59, 60]. In addition, 83% of the students showed anxiety and concern about losing their manual dexterity, and others reported fear of the new way examination process [60].

Again, an association was found with female gender and depressive symptoms [60, 61] and with having infected family members or friends [58].

In terms of clinical education, students reported that they had to adapt to changes and didactic learning; others indicated that at least one of their courses moved to virtual mode. Although 51.8% perceived some difficulties during virtual education, 48.3% perceived that faculty were prepared for the online transition [62]. Some students reported feeling stress about the risk of infection and returning to clinical classes and patient contact [63].

In this matter, faculty support is needed to help in the transition and concerns about academic progress and stress levels [62].

8. Recommendations and considerations to improve mental health

- First, if you notice any changes that concern you regarding your mental health, seek professional help [3]

- It is essential to implement and conduct psychological workshops to reinforce the moral of dentists and the correct instruction in the use of personal protective equipment [41].

- Make time to communicate frequently with family and friends; whenever you can opt for video chat to see people's expressions [36].

- If you do not have a social group, contact with a trained person such as a social worker or a psychologist [5].

- It is healthy to focus on the thought that we voluntarily stay home to care for ourselves and others and not see it as mandatory [7].

- If you have any questions about people infected with COVID, inform yourself and avoid prejudice and stigmatization. Make an effort to show empathy [36].

- Limit stressful sources or news about COVID-19 to minimize the access to exacerbated information. Look for objective data in trusted sites [3, 36].

- Attempts to use technology to reduce anxiety levels by counseling patients about their treatment, appointments, and oral health [52].

- Concerning patients, an important aspect is to inform them about the safety of dental office visits. Communication about biosafety is a crucial aspect of reducing fear and anxiety in patients [56]. It is also essential to minimize care time and reduce the intervals between patient appointments [19].

- Concerning dental students, it is essential to provide psychological and social help to students, especially those with associated risk factors [58].

- Institutions and universities should take preventive measures to support students and manage factors that could influence their mental health and crisis management [61, 64].

- Dental schools must adapt quickly and customize changes primarily for those students who may not practice their clinical or laboratory skills [60].

- Although most dentists are knowledgeable and aware of COVID-19, specific gaps require more efficient training programs, proper guidelines, and improved treatment protocols [65]. Authorities should support dentists if they have to stop their professional activities without prior planning by providing them with appropriate policies and monetary support [40].

9. Conclusions

As HCW and human beings, dental workers are coping with the consequences and effects of this pandemic. The pandemic will be over, but its impact on mental health and well-being will remain for a long time. Our call is for our colleagues to take measures to decrease those adverse effects in mental health and seek professional help in the case is needed. In addition, within our healthcare workers' position, spread this knowledge and refer any patient who could need psychological or psychiatric attention. Mental health problems after release from isolation could be prevented by providing mental health support to vulnerable individuals and providing accurate information and appropriate supplies, including food, clothing, and shelter.

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Conflict of interest

The authors declare no conflict of interest.

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Chapter 7

Evaluation of Anxiety Disorders and Protective-Risk Factors in Children during Pandemic Process

İsmail Seçer and Sümeyye Ulaş

Abstract

In this study, the possible negative effects of the pandemic process on children with anxiety disorders or anxiety sensitivity, risk factors and protective factors are discussed from a psychological point of view. In this context, were tried to review risk factors and protective factors by compiling the studies published in the literature on behavioral and emotional disorders observed in children, especially during the pandemic period. As risk factors are discussed mainly personal psychological characteristics such as traumatic experiences etc. As protective factors, personal qualities such as psychological resilience are discussed from a broad perspective. The aim of the chapter is to draw attention to the possible risk factors of children with anxiety disorders during pandemic process and their disadvantageous position resulting from this. At the same time, it is to contribute to the awareness of protective factors and measures that can be taken to strengthen children against this disadvantageous position.

Keywords: Anxiety disorder, child, pandemic process, risk factors, protective factors

1. Introduction

Because of the coronavirus epidemic, emerged in China in 2019 and has spread to the whole world, all societies has faced with problems with significant consequences medical, social, psychological, economic etc. After the World Health Organization (WHO) [1] qualified COVID-19 as a pandemic, in addition to a lot of information about the transmission status of the disease, incubation period, geographical coverage and real mortality rates, the images reflected on the visual and social media [2] caused fear and insecurity in individuals. It is thought that measures such as quarantine etc., which countries urgently take to prevent the spread of the virus, prepare the ground for the development of some symptoms depending on the epidemic in individuals of all ages. However, at the beginning of the epidemic process, it is thought that children are considerably ignored due to the common belief that the virus affects people of a certain age and above and those with chronic diseases.

Although children are the least medically affected by the epidemic, they appear to be severely psychologically and socially affected [3]. Social distance and hygiene rules, distance education, sudden distancing from friends and social environment, uncontrolled and long-term contact with the internet, facing fear of losing relatives, etc.

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for reasons, it is considered that children will develop serious psychological and social effects from the coronavirus disease and these effects will be determinant on the quality of life of children in the short and long term.

2. Covıd-19 process and its reflections on children

Children may perceive certain situations they have experienced as traumatic due to the limitations of their cognitive and social faculty, etc. The most important reason underlying this perception is undoubtedly the fear factor that develops due to coronavirus disease [3]. Fear is a defense mechanism that the individual shows in the face of dangerous situations includes the basic reactions of the individual in order to survive in threatening situations. In a state of fear, disproportionate reactions and irrational thinking styles are common. These response patterns, which appear as secondary consequences of the epidemic process are associated with various psychological disorders. Among these disorders, anxiety, stress, depression and obsessive–compulsive symptoms [4–6] etc. have an important place. In particular, it is clear that the possibility and thought of losing their parents, loved ones or family members will increase the fear experienced by children and pave the way for related symptoms.

Studies on past outbreaks supports this view. It has been determined that the fear and tension experienced by children during the recent Ebola, SARS, etc. epidemic periods have created significant secondary consequences [7–9]. Although epidemiological data regarding the psychological effects of COVID-19 on individuals and its effect on public health are limited today, the results obtained indicate the seriousness of the situation. The results of research conducted in China [10] and Japan [7] reported that one third of the people examined developed severe anxiety and approximately half of them developed a moderate level of anxiety. Especially anxiety and anxiety disorders are widely observed in children due to coronavirus disease [3]. In addition, different studies have reported that in individuals with high fear of getting coronavirus, depression, loneliness, anxiety, sleep problems, anger problems, Post Traumatic Stress Disorder, paranoid and psychotic disorder etc. cause intense emotional and behavioral consequences [11, 12].

Symptoms that develop due to the epidemic process are commonly observed in children as well as in adults and especially parents may fail to notice these symptoms observed in children and to take precautions. This situation causes the symptoms of children to become chronic and turn into psychiatric disorders. These disorders, which can be defined as secondary consequences of the epidemic process, are considered to be determinant on the quality of life of children in the short and long term. Additionally, is considered that the processes, develop due to the COVID-19 epidemic may have multiple negative consequences on the life of children and adolescent. Among these disorders; chronic and acute stress, depression, worrying about their families, unexpected grief, risk of addiction due to increased access to the internet and social media, worrying about the economic future of their families and countries, etc. can be shown [13, 14]. Therefore, it is thought that these secondary consequences due to the epidemic may cause serious psychological and psychiatric consequences [15, 16].

Therefore, on the basis of the psychological symptoms that children and adolescents will show due to coronavirus disease, the anxiety that sets the ground for the fear and anxiety created by the epidemic process can be shown. Although anxiety is a normal reaction of the individual to dangerous and uncertain situations, high levels of anxiety both interrupt life processes and cause different psychiatric disorders.

Often, this situation can be unnoticed, as children are not as adept at projecting anxiety as adults. For this reason, children may exhibit various adaptation problems and behavioral problems due to intense anxiety.

3. The effect of the COVID-19 pandemic on anxiety disorders in children

Quarantine and social distancing etc. for reasons, children and adolescents be faced with social isolation. Although social isolation is considered as a psychological symptom in normal times [17], the epidemic process forces children and adolescents to involuntary social isolation. There are research results [17, 18] showing that children define this situation as *"intolerable".* Therefore, coronavirus disease poses enormous challenges for child and adolescent mental health due to the measures taken and the practices children face [14, 19]. During pandemic periods, as in events such as disasters, children face post-traumatic stress disorder (PTSD), depression, panic, and anxiety, etc. [20–23]. So much, so that the results of research on the recently emerged H1N1, Ebola and SARS, etc. epidemics report that psychiatric disorders are common in children during these epidemic periods [21, 24–28]. Anxiety stands out as the most common psychological problem in children in this process [3]. There are studies pointing out that girls are twice as likely to show symptoms [29, 30]. These results show that children may develop many anxiety-based disorders during the coronavirus disease process, as in past epidemic periods. Anxiety is a mental problem that is the intense worry that is not usually due to a real cause or does not coincide with the situation, that something will happen to him or his relatives, that he or she will not be able to cope with a situation or difficulty that he or she may experience in the future. The inability of the individual to cope with intense anxiety or situations that cause anxiety often negatively affects the person's daily life and decreases the quality of life and functionality. Anxiety disorders; in addition to mental symptoms such as anxiety, excessive excitement, tension, restlessness, fear, distraction, and forgetfulness; it is manifested by physiological symptoms such as shortness of breath, sweating, numbness, palpitations, nausea, gastrointestinal disorders, dizziness, difficulty swallowing, feeling of throat congestion, anorexia, weakness and insomnia. It has been observed that these symptoms occur during the coronavirus disease process with many studies on children and adolescents [3, 22, 23].

The factors that negatively affect the anxiety observed in children during the epidemic process and cause psychiatric disorders are generally listed as follows [3, 10, 22].

- Restrictive practices like quarantine
- Fear of infection
- Insecurity
- Fear of death of relatives
- Suddenly taking a break from school and transition to distance education processes
- Avoiding friends and social environment
- Decrease in physical activities,

- More screen time,
- Irregular sleep processes
- Improper diets etc.

These factors, which come to the fore as mental health threats in children and adolescents, are thought to trigger psychiatric disorders [10, 31, 32]. Especially children who already have certain symptoms are thought to have a high risk of developing psychiatric disorders due to these factors. If suitable conditions are not provided for children who do not have any symptoms, there will be no optimistic situation. Because the experiences they will experience during the epidemic process and the practices they will be exposed to are considered to be of a nature that will also force these children.

Epidemiological studies on anxiety disorders associated with coronavirus disease in children and adolescents are increasing [22, 23, 33, 34] and the results obtained from these studies indicate the seriousness of the situation. In this context, Seçer and Ulaş [3] revealed that the fear of COVID-19 can trigger Obsessive–Compulsive Disorder in children and adolescents. This finding can be interpreted as that a disorder, such as OCD, whose effects can continue throughout life, may be affected by the epidemic process. Findings from different studies are thought to support this interpretation [23, 33, 34, 35]. Epidemiological studies have reported that anxiety disorders are accompanied by PTSD, intense stress, sleep disorders, and depressive symptoms in children and adolescents during the coronavirus process, and the symptoms are severe.

Considering the fact that children and adolescents are more vulnerable and fragile in times of crisis compared to adults, psychiatric disorders inevitably develop in the long run. Therefore, there is a need to eliminate the risk factors of children and strengthen their protective factors. In this direction, possible protective and risk factors are discussed below and tried to be interpreted.

4. Individual risks and protective factors for children in the pandemic process

There are important variables that determine the magnitude and severity of the impact that coronavirus disease will have on children. An important part of these variables originated from the individual qualities of the child. Some of them are related to the psycho-social conditions of the child. *Experiential avoidance*, which defines past traumatic experiences, can be shown as an important individual factor that poses a risk to the child and adolescent mental health in the coronavirus process.

Experiential avoidance can be defined as a quality that is shaped by difficult or traumatic experiences in children's past lives and has a determining role on the individual's emotions, thoughts and reactions [36]. Hayes describes experiential avoidance as showing reluctance to experience emotions, thoughts, memories, and bodily feelings that are evaluated negatively, and avoidance reactions shown to reduce the frequency or impact of these experiences [37]. Experiential avoidance is also defined as the rigid and unchangeable attitude adopted by the individual in the face of negative situations. In this sense, the individual adopts and uses dysfunctional coping approaches as an unchangeable strategy in the face of these negative situations. During the coronavirus process, when children and adolescents face the traumatic aspects of their difficult life process, they may resort to several

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dysfunctional coping methods such as distraction, denial, and repression. Although these dysfunctional avoidance approaches may give the feeling that the source of the problem has been distanced, in the long term, the effects of the avoided situation may continue and the related problems become chronic [4, 38]. In this context, it can be thought that children and adolescents with high experiential avoidance are more likely to face various psychological problems [39].

The characteristics of children and adolescents' experience levels, cognitive skills, and psychological maturity, etc. shape their coping skills in the face of difficult situations. However, in the case of negative situations, coping approaches may leave their place to avoidance responses. Therefore, the negative effect of the fear and worry caused by the coronavirus disease on the mental health of children and adolescents may further increase. Data in the literature show that psychiatric disorders such as anxiety disorders, depression, eating disorders, PTSD, etc. are significantly more common in individuals who experiential avoidance behavior [4, 40–44]. For this reason, the statement that children with high experiential avoidance tendency are at more risk during the coronavirus process is not an assertive approach. It should not be ignored that these children are at greater risk depending on the course of the disease. In this respect, it is clear that there is a greater need for practices that strengthen the psycho-social positions of children and adolescents in this process. The risk posed by the coronavirus disease should be tried to be eliminated both by strengthening the communication and support processes within the family and by using school-based social support resources. In this sense, teachers and school psychologists have an important responsibility. In particular, school psychologists should identify experiential avoidance, etc. symptoms and tendencies in children and contribute to their development of functional coping attitudes and approaches.

Against negativities such as experiential avoidance and traumatic experiences that pose a risk to the child and adolescent mental health during the coronavirus process has qualities that have a protective function. Among these qualities, the concept of psychological resilience has an important place.

Psychological resilience; is defined as overcoming the negative effects of risky situations to which the individual is exposed, coping successfully with traumatic experiences, and showing a flexible and successful adaptation despite the negative factors associated with these risks [45–49]. As can be understood from the definition, individuals with high psychological resilience quickly adapt to new situations created by difficult living conditions and exhibit functional approaches. As it is known, coronavirus disease affects all segments of society as well as children psycho-socially. Depending on this effect, various symptoms develop and the basis for psychiatric disorders occurs. In this sense, low psychological resilience makes the individual more vulnerable to psycho-social threats in the face of difficult living conditions. A high level of psychological resilience is an important factor limiting the negative effects of conditions such as coronavirus on child and adolescent mental health. In this sense, the coronavirus process is a problem area that threatens children in a family, social and academic multifaceted sense, and the risks that children and adolescents face are increasing day by day.

Although the protective role of psychological resilience on child and adolescent mental health is evident, psychological resilience is not an innate quality. It is a reflection of self-perception and self-evaluation to a significant extent, which is shaped by parental attitudes, attachment styles, and experiences. This concept, whose role in effective coping with difficult life events has been handled frequently in the literature, maybe one of the most important defense tools against the risks faced by children and adolescents in the coronavirus process.

As explained in the experiential avoidance section, parents, teachers and school psychologists have important responsibilities in assessing the psychological resilience levels of children and adolescents. First of all, it is thought that effective parental attitudes are needed for the self-confident and autonomous growth of children. Parental attitudes, which include approaches that support autonomy and the development of abilities, are an important requirement for psychological resilience. Because the level of psychological resilience is also significantly lower in dependent, withdrawn, and low self-confidence children. These children naturally have a disadvantageous position in dealing with difficult life events. It is thought that raising the awareness of parents in the early period and equipping them with positive parenting skills can contribute to the elimination of the risks caused by the epidemic and can contribute to the early period prevention of psychological symptoms that may develop in children before they become chronic.

It is thought that the resilience process can also develop through school-based psycho-social practices. Especially, is thought that children with a fragile emotional structure, low self-confidence, low problem solving skills and low psychological resilience need to be screened, and supported by both in-class practices and psychoeducation, etc. Although psychological resilience is a feature open to development, it is considered that developing it in the pre-adult period will enable the individual to enter adulthood with a stronger perception and approach and to approach the future more positively. Studies indicate that individuals with high psychological resilience have a higher potential for future orientation and future expectation [45, 50, 51]. In this sense, it is clear that high psychological resilience will facilitate the coping process of children and adolescents with difficult and traumatic life events and will enable these children to carry their future perspectives to a more positive point. It is evaluated that individuals with high future expectations can cope more effectively with the difficult processes created by the coronavirus disease and can turn to functional approaches more.

Another positive function of psychological resilience can be shown to support post-traumatic developmental processes. Although traumatic experiences create significant pressure on the individual's adaptation processes, it is considered that psychological resilience limits this pressure and prevents the effects of trauma from becoming chronic by strengthening adaptation skills. Post-traumatic development indicates that the individual has emerged from a difficult and traumatic event by acquiring new skills and that he has reached a higher level than before the traumatic event in terms of adaptation-functionality. In this sense, children with high psychological resilience will be able to get out of this process by getting stronger, even if they are faced with difficult and risky situations in terms of adaptation skills during the coronavirus process. Children with low psychological resilience will have difficulty coping with the risks of coronavirus disease, so their adaptation skills will be interrupted and the door will be opened to psychiatric disorders.

Therefore, in order to support mental health processes in children and adolescents, it is considered that there is a need to screen children in areas such as self-confidence, problem solving, social skills, etc. that indicate psychological resilience, and to resort to family and school-based psychosocial interventions for those who are at a disadvantage.

5. Online learning processes and risks

Online learning is the use of internet and some other important technologies to develop materials for educational purposes, instructional delivery and management of program [52]. Online learning processes can be seen as an approach that supports

face-to-face education practices, expands students' perspectives, and enriches learning in today's conditions. Although the distance-online learning processes have gone through a certain stage in the pre-epidemic period, being the only possible option during the epidemic process has brought education systems, teachers, parents, and naturally students face to face with a crisis situation. Because most of the groups have been caught unprepared for this process and there has been an abnormal deterioration in the functioning of traditional education and training processes. In particular, the success of the education of online education is still highly controversial and has not been fully accepted as an alternative education practice [53]. In addition, it has been suggested that the use of online learning processes as an emergency measure in the coronavirus disease process without adequate planning and structuring may negatively differentiate individuals' learning experiences [54]. For this reason, it is considered that the fact that distance and online learning processes, which are used as an urgent measure, are not the product of an effective design and planning, may pave the way for unwanted results in students' learning and academic habits [55].

One of the most challenging aspects of the coronavirus disease for children and adolescents is undoubted that face-to-face education is suspended for a long time and interactive education practices are passed. Due to rules such as social distance, quarantine, etc., distance education applications have been used as a common and urgent solution all over the world. Although education systems, educators, and parents have been caught unprepared for this process, the advances in distance education in recent years have enabled education systems to adapt quickly to the new situation and to continue their education practices remotely online. Distance education opportunities are largely carried out in the form of internet-based platforms and TV programs. Although such practices are beneficial in terms of continuing education processes without interruption, they also bring various risks. Due to the inability of children to adapt adequately to online learning processes, their interest and motivation for academic processes and learning may decrease. This is a significant risk. Because, children who have to turn to online applications for a long time in a traumatic way from face-to-face education practices and who cannot adapt to these practices may develop feelings of academic inadequacy, academic success may decrease and the risk of school burnout may occur. School burnout [56, 57], which is a concept closely related to academic motivation, can not only interrupt students' academic processes but also their quality of life, interpersonal relationships, family relations, and future expectations. That is to say, students may face various difficulties while continuing to practice online-remote learning and completing related assignments and projects. These difficulties and the stress they cause may also disrupt students' perceptions of adopting, using, and accepting online learning [58]. It is clear that it is imperative to focus on strengthening the acceptance, use, and adoption of online practices of these students, who show more adaptation to face-to-face education processes, and to diversify the policies in this direction. For this reason, it will be useful to make online learning processes more fun and interesting and to resort to practices that encourage children's participation and motivation.

6. Uncontrolled use of technology and the risk of addiction

Kor There is an increasing number of studies reporting an increase in the use of smartphones, tablets, and social media in children and adolescents during the coronavirus process. Uncontrolled access and use of social media etc. by children and adolescents will bring secondary consequences in the short and long term. With

the effect of quarantine practices, interruption of education, restriction of friends and social environments, and conflicts with parents, children are more at risk of turning to internet-based applications, game applications, and messaging services [59, 60]. Internet use has an important place in the lives of individuals in this period, both to reduce the effects of social isolation and to ensure the continuity of daily life. However, its uncontrolled and excessive use has the potential to become problematic during and after the pandemic [61]. Research results increasingly support this view. A study conducted on young people in Mexico revealed that internet and game-related addictions are quite common among young people during the COVID-19 process and that these young people also have a high level of depression and anxiety [62]. With their negative mood, young people tend to use games and social media applications more and this increases the risk for behavioral addictions [63]. The results of an international study, on the other hand, show that internet use has increased considerably among children and adolescents in the coronavirus process and messaging, online gaming, etc. found that they use the services more than adults. In particular, uncontrolled use processes are considered to be an important risk factor for addiction and psychiatric disorders in children and adolescents [63].

Increasing fear, anxiety, uncertainties about the future, loneliness, losses, etc., which are expected during the coronavirus process, can lead children to a series of unhealthy behaviors such as social media, games, and internet addiction. In addition, the uncontrolled navigation of children on various video sites increases the likelihood of encountering inappropriate, incorrect, and exaggerated content about the coronavirus disease, its effects, and consequences. It can be said that children and adolescents are in a more disadvantaged position against such content, especially considering the potential of the spread of false or even malicious information and content in social media. Children can develop depression and anxiety because of their disadvantaged position. In this context, it is an important necessity for parents to closely observe the internet, smartphone, and tablet usage processes of their children and to take care to organize their extracurricular use processes in a way that does not cause addiction problems. In other words, the time spent on such devices and applications with dependency risk needs to be managed well. At an early period mental health inspection and psychosocial intervention and treatment processes are among the important responsibilities awaiting parents whose children, are at risk of addiction or show signs of addiction. In addition, it would be appropriate to ensure that children access accurate and reliable information by using effective means of communicating with their children in this process and to avoid the consequences such as anxiety.

7. Parent- child interaction process and risk of this process and protective factors

During the pandemic, the fact that children are more at home due to the transition to quarantine and distance education may bring both positive and negative consequences. The positive aspect of this process is that children are the high possibility to spend more qualified time with their parents. Parents with positive parenting skills have an important advantage in preventing secondary consequences that may develop in children due to the epidemic. Children may develop various psychological symptoms due to the fear and anxiety they experience due to coronavirus disease, and they may face a conflict situation with their parents because they have to spend more time at home. Parents with positive parenting skills can further strengthen the communication and interaction processes with their children in this process, and in this way, they can prevent the psychological symptoms that develop

in their children from becoming chronic. Otherwise, these psychological symptoms may become chronic and lay the basis for social, emotional, and psychiatric consequences that can be seen lifelong due to the conflictual environment experienced with parents [64–66]. Evidence in the literature shows that parents' showing sensitivity to the child in the early period, the ability to establish a secure attachment relationship, and the capacity to respond to the emotional needs of the child support healthy social and emotional development processes [67]. In this context, it is an important requirement for parents to approach their children by developing and using positive parenting skills. In the literature, there are several proven effective approaches aimed at strengthening positive parenting skills [66, 68, 69]. In this process, it will be beneficial for parents who observe various psychological symptoms in their children due to coronavirus disease or who are in a conflictual relationship process to turn to such practices.

8. Conclusion

The coronavirus disease process can directly or indirectly trigger many psychological symptoms in children, especially anxiety disorders. Depending on the course of the pandemic, it is thought that the psycho-social factors that children are in may increase or limit the risk created by this effect. In this sense, it can be said that children who have traumatic experiences and those with weak psychological resilience, etc. are in a more disadvantaged position. On the other hand, it is thought that effective and positive parenting skills, etc. practices can reduce the risk of carried by children. In this process, it should not be overlooked that excessive and uncontrolled internet use of children through distance education, etc. practices will lead to the development of addiction in the short and long term. It is clear that secondary consequences such as addiction etc. will cause many negative effects in various areas in children in the short and long term, especially the quality of life, interpersonal relationships, and academic problems. In order for children to come out of the disadvantageous position created by the coronavirus disease with the least damage, important duties fall on teachers and school psychologists, especially parents. Identifying children who show various psychological symptoms depending on the course of the disease in the early period and applying psycho-social interventions will provide important gains in terms of preventing possible psychiatric disorders.

Conflict of interest

The authors declare no conflict of interest.

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Chapter 8

Anxiety, Uncertainty, and Resilience during the Pandemic: "Re-Directing the Gaze of the Therapeutic Couple"

Eda Arduman

Abstract

The present global pandemic of covid 19 requires many psychotherapists to work at a distance via telephone or the internet. At the same time a considerable number of psychotherapists work with masks while maintaining social distance. This pandemic impact draws our attention to two questions: One is the difference of working within the office vs. working online. Two is how external events impact the individuals socially as well as personally. This chapter explores clinical cases where, even though Covid and its implications imposed a horrible loss and increasing day to day unpredictability on the therapeutic space, the focus of therapy was readjusted thus igniting a process of deeper self-understanding.

Keywords: online psychotherapy, pandemic, race, loss, gaze

1. Introduction

On March 11, 2020 the world Health Organization declared COVID-19 to be a global pandemic. The threat of contagion, hospitalization, death, and loss cast its shadow on the world.

Different countries used different lenses for viewing and dealing with the pandemic. Some people worked on the frontline, while others took refuge behind screens from their homes. The pandemic hit the least privileged populations hardest. Economic and social difficulties along with restrictions set the ground for unrest. Discontent and civil disobedience were notable themes for 2020 and 2021.

Several of my family members are of the "at risk group" so I immediately converted my private practice to an online format. I along with other fellow minded psychotherapists continued to work in front of our screens in our homes. I consulted with other practitioners and invested in a more effective social media platform, a better quality computer as well as microphone.

Teaching while carrying out my private practice is both challenging and satisfying. The shared space and how it is managed by the therapeutic dyad is often a strong indicator of what's going on in the interpersonal process. Delays, sounds, and gestures all provide nonverbal information for the working dyad.

The temporal and spatial aspect of face-to-face therapy and information exchange between colleagues provide a space/time for reverie [1] which is able to

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contain negative, aggressive as well as positive and affectionate experiences. Upon transitioning online, I made space to reflect on the personal and collective impact of technology replacing our joint room with each individual, couple and group whom I was working with.

Psychodynamic psychotherapy, by allowing transference dynamics to evolve, permits the expression of negative and conflict-ridden emotions as well as peaceful, and supportive ones. In contrast to psychodynamic therapy, strength focused psychotherapy emphasizes developmental deficits and often overlooks conflict ridden impulses such as envy and aggression. By allowing space and time for the spontaneity of negative valence events to occur and reoccur during therapy, the dyad initiates the development of a capability for the negative. Keats coined the term negative capability in a letter he wrote to his brothers George and Tom in 1817 [2]. Inspired by Shakespeare's work, he describes it as "being in uncertainties, mysteries, doubts, without any irritable reaching after fact and reason."

Understanding the affective aspects of destructive emotions as well as constructive ones adds complexity and layers to the individuals. Multi- dimensional richness of the individual can only emerge when the totality of the self is allowed to flower. The therapist seeks not only the rose but the stem and thorns in total.

It is by subjecting my mind to the inner world of each individual that I am able to sustain my vigor and work interest. My personal transformation manifests by my continuing to reflect in the midst of subjecting myself to the unknown.

Since the pandemic, reliance on information and communication technologies has increased drastically. Concepts and referential scaffolding of the twentieth century will not sustain reliability or security in the era of information communication technology. "**The Onlife Initiative**" recognizes that a hyperconnected world is in desperate need of revising the referential framework on which polices are made. The fruit of the efforts of the initiative is the "**Onlife Manifesto**". The manifesto declares that the deployment of information and communication technologies (ICTs) and their uptake by society radically affect the human condition. This is largely due to the impact it presents on the individual relationship to themself, to others and to the world. Reliance on ICT s transforms the following key frames of reference: the blurring of the distinction between reality and virtuality; the blurring of the distinctions between human, machine and nature, the reversal from information scarcity to information abundance; and the shift from the primacy of entities to the primacy of interactions. For the sake of this work, I will be limited to reflecting on how the self maybe redefined in a hyperconnected era.

The restrictions and confinement of the pandemic has allowed me to reflect deeply on an extended period in my own life where, due to a major change in my externally imposed conditions (relocation and family circumstances), the rules of engagement as well as the nature of support, as I knew it, was shattered. My sole way of surviving was to retreat behind a smiling mask of depression. My personal history spurred my own interest in the internal stirrings that individuals and couples deal with in the face of these imposed restrictions.

2. External and internal loss

Interpersonal psychotherapy focuses on the unconscious links surrounding loss. Joannidis [3] describes psychoanalytical therapy, as a transformation which makes way for the creation of a new, and yet unknown structure. This emergent structure is able to generate new meaning that paves the way to the consistency and coherence of the self. The restructuring of the mental apparatus allows for self-reflection

as well as an unleashing of the symbolization processes. Self-reflection enhances further reparative moves and thus allows for the remembering of parts long lost to the self. The tools for this treatment process have been conceptualized as the "work of mourning". Exploring loss with its intricate internalization processes, can emerge within a containing bi-personal mutually reflective field. The bi-personal reflective field is the unique ground from which a separate-level-reality is generated and rendered meaningful. Psychic maturation is initiated with the severing of the individual from the fusional state of total dependence on the mother and her body. This step is crucial as well as fragile. The individual throughout life will pendulate between approaching experiences similar to fusion with the mother and experiences of a separate existence from the mother. When an individual carries independence, curiosity and is externally bound, (s)he will be tainted with a sense of loss of union. The other (mother) represents nurturing, being contained, fed, utterly dependent, and in sharing a harmonious relationship.

In "The Interpretation of Dreams "(1911) Freud [4] emphasizes that experiencing concordance between internal processes and external reality results in a pleasurable discharge of tension. The fusional union refers to the collective experience that we all have had of once being one with our mother. Its divergence between internal and external will trigger unconscious memories of the loss of this fusional union. Divergence grants the reality of loss to settle in and prompts the process of reflection. In this fashion loss is the driving force behind the reflection process.

Factors such as hour, day, wage and room where the work will take place determine the "framework" of psychotherapy. Loss of frame, loss of transitional space, loss of room, and loss of psychosomatic presence began to constitute the emerging reality of online therapy. This phenomena presents itself as a two-sided coin. The therapist must maintain a double presence that addresses what is being stirred up in the individual's unconscious while maintaining mindfulness regarding reality.

Loss is the driving force of psychotherapy and particularly in times of peril its concrete existence stamps everyone in a manner unique to each. The pandemic is an ongoing global threat, and its restrictions are disrupting our routine and sense of predictability. Uncertain conditions wreak havoc on the nervous system because the cycle of arousal and downtime is disrupted.

The cost of chronic and extreme wear and tear on our bodies, mind, and emotions has been coined as "allostatic load" by McEwan. In the face of threat or danger the body conducts a balancing act between the autonomic nervous system and the endocrine and immune systems.

Allostatic *overload* occurs when the demand on our internal resources exceeds our capacity. The fear and uncertainty fueled by the COVID-19 crisis is putting extreme pressure on our finite resources. The consequences include: poor decision-making, breakdown, and burnout.

Schwartz and Pines indicate that during a pandemic people (particularly health professionals) are dealing with two contagions, first the virus itself and second the emotions that it generates." Negative emotions are every bit contagious as the virus, and they are also toxic. Fatigue, fear, and panic undermine our ability to: think clearly and creatively, manage our relationships effectively, focus attention on the right priorities, and make smart, informed choices".

Contagion of emotions may be a reason behind increased demand on mental health professionals throughout this period. The therapist is always expected to be a gentle call to reality. The confined therapist who may also be suffering from confinement angst, health loss or loss of loved ones may be challenged in regard to their own sense of reality. As a consequence, the therapist must be being mindful of his/her own situation.

3. Technology friend or foe

Prior to the global pandemic, the procedure of telehealth has been a subject of disagreement in the mental health community. While some colleagues promoted psychotherapy online, others aggressively opposed it. During the 31st EPF conference in Warsaw a controversial panel was about psychoanalysis being conducted online. Heated positions against tele-analysis stated that several internet platforms stored session data on their servers and that a potential breach posed a significant confidentiality risk. In addition to this reliance on technology, online therapy introduces complications. Technology sourced delays, disconnections as well as screen fatigue are teletherapy concerns.

Those in favor defended their position by stating that the territorial expansion of psychoanalysis allows analysts increased flexibility. Psychoanalysts now have the option of traveling or settling in remote areas while they continue to work. The increased convenience and flexibility of working online is a democratizing movement because it allows easier access to psychoanalysis for those who cannot commute due to their location or disability. This shift results in easier access for the analyst as well as their client. Some stated that psychoanalysis could benefit from the online revolution and become less elitist and easier to access. Developments in technology are allowing communication platforms to be more reliable. After the onset of the pandemic the psychoanalytical community has started to seriously discuss territorial expansion and tele analysis as an option to psychoanalysis. The related Practicalities can be deceiving. Their opportunities as well as consequences must be considered. Technology has invaded the therapeutic link. People are beaming into the therapeutic space within seconds. Practicality and immediate access to the therapy space has robbed therapy of its time demanding aspect. Time has a structure providing function and gives way to predictability regarding the future. Deep reflection, and the related emotional processing regarding internal work often takes place in the time and space before, during, and after therapy. The seamless image of online therapy has robbed the therapeutic interaction of its traditional time sequence which allowed a gradual unraveling and emerging of unconscious dynamics.

The online format which technology provides us allows wider access to therapy. Not having to leave home or the office had some people thinking it would be easier. Individuals who were avoiding the tides of their inner world with external activities were forced to see beyond the pure physical aspect of themselves and their relationships. Previous pursuits started to lose meaning. One man found he was at odds with people he thought were his close friends and found that it would be worthwhile to prune off the weeds in his social network. He started working with a psychotherapist face to face regularly. Another man seeking therapy stated that starting psychotherapy was long overdue, the anxiety he had felt since childhood was getting worse each year. The restrictions imposed by Covid put a break on his socialization activities and he started to reflect on his life's course. Willing to work online made it easier for him to start therapy without breaking from his work or domestic responsibilities. All that a therapy candidate needs is access to technology.

The physical presence of the therapist has a containing, and a holding function. It serves as a Winnicottian "environment (m)other. The "environment mother" corresponds to the 'holding' stage of maternal care, and the complex events in an infant's psychological development that are related this holding phase. Technology allows for transborder psychotherapy and this development may permit the omnipotent illusion of omnipresence. The illusion of a therapist who can be reached through a single click may form a pretext for avoidant individuals to continue to

hide from the physical world in a virtual one. Therapy conducted without physical presence can be misleading and may lead to unrealistic beliefs regarding the therapist to take root.

Merve, who lived in a different city and consulted with me during the pandemic worked with me for several months online. I was intensely focused on her face, yet missing cues from the rest of her presence. One day she requested to visit me in my office and said, "Every week I see your face and hear your voice however I don't know how you occupy space, how you move, or your height".

She was missing her fantasy of seeing me face to face as opposed to seeing me online. On one hand, anonymity may have its advantages because it allows the patient the freedom to project. Merve held the belief that if she saw me, she could truly know my situation and feel reconfirmed. It would be oversimplifying to assume that since she now met me in person, she actually knew my true situation however seeing me in the same room deepened the impact of our work. Merve is a healthcare professional who is working on the front line of the pandemic so her need to ensure that I was real and intact may have been an enactment that satisfied her need for predictability under very unreliable circumstances.

A therapeutic relationship taking place in a common space tolerates silence, yet technology driven shared cyber space switches off following extended silence to conserve energy and bandwidth. As silence becomes even more unpredictable, online therapy's related silence tolerance is diminished, thus silence's meaning has shifted.

Variables such as space, time, and social engagement can become two-dimensional thus depriving the encounter of depth. The wholeness of the experience of psychotherapy in my mind is compromised for both parties. Face to face in-depth psychotherapy can elicit vivid, visceral emotions that can be reflected upon. The stage of the therapeutic room becomes complex and intense, yet the voice and presence of the therapist is a gentle call to reality.

4. Imposition on the therapeutic space

Telehealth has reshaped the therapeutic community. The setting and the frame of; training therapists, providing clinical supervision and conducting therapy have been beamed into cyber reality. The shared common room is replaced by two independent spaces connected through technology. The shift from a therapy room to an internet link entails a convenient speedy connection which comes with consequences.

The "Psychotherapeutic" frame and setting binds clients to their session. The hour, the day, the place, and the fee are the conditions of therapy. This framework of rules, with all its impracticality and reliability, opens a window into exploring archaic symbiotic links lurking in the backdrop of individual minds and psyches. The frame provides an opportunity to explore internalized primitive family institutions as well as unconscious aspects of identification with self and others. Factors such as hour, day, wage and room where the work will take place determine the psychotherapy "setting". This setting allows the individual to establish their "unconscious theater". Individuals who distract themselves from their internal conflict or emptiness with daily activities may react positively or negatively to the binding date and time of the therapy session. Commuting to the session, being on time, being greeted by the therapist in the room, settling in the room and ending the session on time, exchanging money and saying goodbye are part of the process. Difficulties in reunion and separation for each session can be an indication of an individual's need to establish closeness and distance with their own internalized parents [5].

Shortly after the pandemic became widespread, an avoidant woman in psychotherapy named Ece, displayed relief at not having to commute so long to each session. Ece had consulted with me because she felt isolated and anxious and suffered from social inhibition. Several years of psychotherapy had helped her in this regard, and we were in a stable stage of pre termination. Shortly after moving online, she had troubling dreams of a strange ghost-like woman haunting her bedroom and invading her privacy. As we worked through her dream it became clear that my virtual presence in her bedroom was evoking archaic fears that she had regarding her mother as an unconscious object of fear and desire. When working face to face, the commute to and from my office allowed her to regulate and deny these unconscious feelings. The fact that there was no time between work and therapy had robbed her of a space which gave her peace of mind yet was flooding her at night. The reality of my cyberpresence in her bedroom, was perceived by her as a psychic invasion. The new situation demanded that we reflect on an aspect of her that may have remained undercover in our former traditional mode of working face to face. As any new situation brings up issues, I want to highlight that perhaps what may have gone unnoticed was converted into the material of psychotherapy.

Factors such as space, time, and social engagement become two-dimensional and can deprive the encounter of depth. The wholeness of the experience of psychotherapy in my mind is compromised for both parties. Face to face depth psychotherapy can elicit vivid, visceral emotions that can be reflected upon.

5. Loss of physical presence

Confinement and social isolation coupled with constant partner and children interaction is imposing a different kind of fatigue. Pleasure providing pre pandemic activities such as holidays, sports, concerts, theaters, movies, meetings and social activities are no longer safe, accessible forms of socialization. The physical expression of greeting and meeting has evolved into a now prohibited red flag. Shaking hands, touching, face to face social engagement and all similar prosocial behavior is suddenly imposing a huge threat. It is a dystopia of isolation. The cyber-illusion occurs at the expense of loss which is not acknowledged. The loss of bodies in the session room, sudden access and an ability to move seamlessly into and out of the session is impoverished by the loss of physical encounter for the individual partaking in therapy. The cues that the individual nervous systems signal as well as the related micro expressions provide each party with a rich source of information. The material embedded in the unconscious shadows of individuals and couples may remain hidden in this frame that is lacking physical interaction.

Throughout my own clinical work and those of the colleagues with whom I consult, the impact of the loss of our common session room is expressed in different ways. Some clients were linking to therapy from inside their cars. Many of them claimed to lack a physical space to think, some of them claimed to need the car as a confined space that would contain and transmit them. Internal and external conflicts of individuals who do not have an internal mental space to reflect emerged during their sessions.

The presence of the lost common area is undoubtedly important. "Sharing assets together" within the same room provides data to both the therapist and the client. Reactions, sighs, silence are all experienced in the process and in the room. While the coverage takes place in a three-dimensional space in the common room of two bodies and dual minds, the session was no longer taking place in the therapist's area, but in uncanny cyberspace, which intermittently transmits latency sensitive sound

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and image. The shape of silence has changed. Since some platforms are deactivated in the absence of sound, long silences were replaced by expressions such as "hmm," "aha", and "yes".

The screen, by obscuring the presence of the body, can withhold information. Individuals can hold sessions wherever they want by placing virtual images on their background.

The next example illustrates how the "loss of the room to zoom" was denied and how it was enacted in the therapeutic space.

As a small child Derya, has memories of being severely shamed and subject to physical abuse. As an adult she suffered from somatizations, fainting spells and depersonalization. A small child often lacks sufficient ego autonomy to integrate the experience of being beaten and shamed. Integration of the agony of abuse by a parent is not possible because the child's ego organization is not sufficiently developed. What complicates the matter even more is that the abuser is also the parent who protects and is relied on. This conundrum is so unbearable that the psyche of a developing child will survive by splitting internal parental configurations. Such individuals will have difficulty tolerating ambivalence in the future. People and events can be perceived as either torturing, abusing or protecting and stifling. Derya recounted experiences of losing a sense of inhabiting her body (depersonalization) and a loss of her sense of reality.

Derya was required to move to another country during the pandemic and continued therapy with me. Several months later when she planned to return to her native land, she shared a dream that goes as follows:

"I am going back home yet everything is upside down. Nothing is in place. It is my home, yet it does not look like it. Two women greet me, I don't recognize them, but they know me. The younger one said she is glad to have met me, the other one gives me a big hug. I rush about trying to straighten out the house before my husband and daughter come home. They come home but my daughter is suddenly a small child, and my husband is holding her by the hand. I feel all alone. I am stunned and confused and not sure what to do." She insisted that she felt no fear but only horror. She felt the confusion to be a way of concealing the horror she was experiencing around reuniting with her therapist. During the pandemic I had moved my office and she had not seen the new space. Though very capable at navigation she was convinced that she would not be able to find the new building and office. Our online encounter provided an illusion of omnipotence. The former obstructions of parking and fighting with people enroute to her sessions with me had disappeared and remained underground for quite a while.

The reliable facilitating environment of the consulting room and its couch had been compromised and the fact that she was returning home and possibly to a new office had impinged on the mental refuge that she had established. She was returning to her treatment which became a possibility as the situation of the pandemic improved.

This dissociation found expression in her horror around not being able to find my new office. She had identified me and my former office space as one, and my moving, split my existence in her mind. My move elicited fantasies about what I had abandoned by moving to this other place. Reality does have an impact. All sorts of factors play in. The loss of access to the physical presence of the therapist along with other restrictions imposed by the pandemic set the ground for an internal breakdown. The Fear of Breakdown (Winnicott) is an organizational structure which is a defense against a state of agony that was encountered yet not integrated by the individual. In Derya's case her internalized sense of agency at being able to make it to her therapist's office broke down like a small child who gets lost and cannot find her way home.

6. Gazing at the reflection of other

This clinical vignette illustrates how current focus on racial discrimination on one hand and pandemic inspired online psychotherapy influenced the treatment. Better understanding of race opened up additional perspectives and played its way into the treatment. According to Mitchell [6] the self craves affirmation and validation from other selves: "Being fully human (in Western culture) entails being recognized *as a subject* by another human subject. There is a deep, ongoing tension between our efforts to have our own way, as an expression of our own subjectivity, and our dependence on the other, as a subject in her own right, to grant us the recognition we require ... (p. 64; italics in original) Although a vast array of literature is beginning to emerge on intersubjectivity, there is very little on its implications in intercultural therapy [7]; has discussed the mirroring function of the gaze of the (m)other as this impacts self-esteem in terms of race: the (m)other gaze, the mirroring function, whether transforming (Winnicott) or de-forming (Lacan) is internalized and becomes part of an internal/external dichotomous perception of the self ... (p. 237)".

Laura is in her thirties and married with two children. Her father is a black American man and her mother is a white European woman. She is estranged from her father due to his philandering and general lack of interest in his children. Her mother is a distant woman who later married and had another child with her second husband. She grew up with her mother, sister and stepfather.

She consulted with me approximately a year before the shift to online. She was pregnant for her second child and wanted to make sure she did not mess up the way she thought her mother had. It seemed like she was continuing therapy to enhance her mothering skills. My psychodynamic focus was on the internal struggle between her "denied wish to unite with her mother" and "reluctance to emotionally acknowledge her passage to full frontal motherhood".

Upon the birth of her second child (who had darker skin and curlier hair than her first born) she was an ecstatic and devoted mother. She did not want to nurse as long as she had with her first child. She suffered intense back pain, and rapid (unintended) weight loss following her delivery. She found it easier to delegate her second child's primary care to the babysitter.

The external reality of that particular year 2020 was "pandemic induced confinement" and the news was flooded with violent polarization between those identifying with racial differentiation and (its evil twin) racism and those denying it. In regard to racism, she spoke with compassion yet maintained her distance and claimed that she did not understand what it meant to be black. Her husband lovingly joked that she was the only one who did not know that she was black. Her mother, sister, stepfather, partner and first child were all "white". During our appointments her hair was generally done up or blown dry straight. One day it was loose and curly.

While I was privately admiring her hair, she spoke about her former best friend from whom she had been estranged from for 10 years. While she realized that their relationship was toxic, she could not understand why she was so fixated on her. She explained that this woman was the only black friend that she had ever had She could not understand why her estranged friend was always on her mind. She suddenly looked at her image and said, "My hair is disgusting today" and did it up. I was reminded of African feminist Ngozi Addichi's statement around race, femininity and hair. Addichi states, "Hair is the perfect metaphor for race in America. It shows the small ways in which racism transcends into seemingly trivial things, like beauty" I observed this woman responding seemingly violently to her own "crowning glory".

I commented that Zoom was making it impossible for her to hide the image of her textured hair from me as well as from herself. She gazed at her image and her lips curled in a way that may have been indicating disgust. She pivoted between images, affects and emotions while recalling memories of her white mother's indifference about her hair and its special needs. She recollected the loneliness and shame she felt in elementary school when her classmates teased her and called her hair ugly things. She expressed nausea, feeling unclean and dirty.

Jessica Benjamin states that the maternal gaze allows for the recognition of the similar as well as unique aspects of the self and other. Laura had not embodied the experience of being noticed for an aspect of herself that was different from her mother. I hypothesized that the racial indifference Laura's mother had towards her daughter, internally hindered Laura's ability to self-identify as a black or biracial female.

This unexpected third (her own camera induced image) invaded our therapeutic space. She felt exposed and naked. When I inquired "if I were black how it would have been?". She made it clear that she would have felt judged if I were dark black. As a white person I could not understand her experience. She was able to admit that it was only someone who was black but light enough to pass as white could understand her. She was discriminating against me for not being her color. I, due to my skin color, in her mind, just like her mother, could never fully understand her. She isolated herself again then from her mother and now from her therapist. Holding on to the belief that "She could not be understood" had been her anchoring identity. Letting go of that belief put her in a position of mourning which ultimately led to her realizing reparation and relief. Acknowledging her anchor in hate constituted a milestone in her therapy. During the following session she spoke of her younger son and how it broke her heart when he cried and about how angry she got when her husband expressed discomfort regarding their son's tears. As she softly began to cry, she stated that gazing at the image of her son cry was like seeing herself cry in the mirror and that they both had ugly cry faces.

True understanding is possible by encountering the alien [8] writes "I can deeply appreciate an aspect of me because your experience of that aspect of me provides a reference point that in relation to mine, expands my experience from a psychic singularity to one that is elaborated, dimensional. With myself, I can be; but with you, I can become."

By looking at maternal indifference through a lens of motherhood and race, Laura was able to create a link between her hesitancy with her son and her fear and guilt that stemmed from being indifferent to her son in the way that she had experienced with her own mother. Bleger [9] points out that individual identity is always conceived as being embedded within a context of an undifferentiated social framework which resonates a silent and unrepresentable not-me part of me. It is only through the gradual processes of representability that individuality can eventually emerge from the encompassing impersonal collective cultural context. These endless identifications within the ego, resulting from a constant exchange with the Other-than-me, cannot but create constant modifications of the 'I am's' constituent components. The illusory and deceptive state of unity that we are used to calling 'identity' turns out actually, to be in a state of perpetual fluidity.

Laura's experience of seeing herself in the face of her crying child, and as a woman with curly hair corresponded with her unique representation in her inner world. To hide behind the justification that it was the experience of every biracial women would rob her the opportunity to build herself a more complex and multidimensional representation. The ego is constantly reidentifying itself resulting from a constant exchange with the Other-than-me. The illusory and deceptive state of unity that we are used to calling 'identity' turns out to be a state of perpetual

fluidity. Encountering the therapist as the other is what facilitates this dynamic change of representation.

I believe that my ability as her therapist, to appreciate her uniqueness, when coupled with her own image, allowed her to initiate the process of her identifying with her blackness. This identification process is possible only after she mourned her internalized maternal image that did not appreciate her uniqueness and did not mirror her as a primary self-object would do in normal development [10]. The image on the screen directed our joint attention to the visual aspect of things.

In depth psychotherapy allows this difference to emerge. By uncovering her erroneous idea that someone who does not look like her could not understand her, she could deconstruct her belief that only people who were similar could understand each other.

7. Conclusion

The self of the individual is embedded in a system. Behavior, unconscious motives, cognitions, somatic responses, affects, and emotions are a function of the self, embedded in its internal and external interactions and corresponding dynamics. The subject of therapeutic encounters is the meeting of minds. Therapists provide a space in which the self can think about the system that they are functioning in, be it internal or external. "Therapeutic thinking" (aka reflection) is a rational, emotional as well as somatic experience that takes place between at least two people. Not unlike the parent infant bond, it has its own style of attachment, dynamic pattern, organization and rhythm. In-depth therapy gives space and time to the individual which is used to dream, remember, experience, think, and feel. Tele psychotherapy demands a shift in the "frame" of therapeutic work. The therapeutic dyad is now sharing a technology based connection instead of a joint room. Sessions can be conducted from any location therefore the containing function of the room is lost. The nature of the therapeutic relationship has shifted drastically. This shift entails loss and change. The meaning of loss is repositioned. Online therapy can entail an attempt to deny the loss of space as well as a refutation of the fatigue it imposes. The information conveyed between individuals is now limited to words. The individuals no longer have direct access to the clues provided by the soma and nervous system since they are subject to the internet or telephone line. It is impoverishing to compare the old format with the new. The new situation is unique and has its own distinctions. Training programs are redesigning and rescheduling their programs.

A generation of therapists trained online is on the way. I find myself yearning to connect in the same room with my younger colleagues. I risk flooding them with excess clinical experience. This deluge might be a means to alleviate my feelings of regret surrounding the nature of our new learning experience resulting from not being in the same room.

Freud [11] in his seminal paper on Transience (1916) (1915), when he describes a walk with a friend and a famous poet, writes: "As regards the beauty of Nature, each time it is destroyed by winter it comes again next year, so that in relation to the length of our lives it can in fact be regarded as eternal. A flower that blossoms only for a single night does not seem to us on that account less lovely." Freud articulates a fundamental aspect of the experience and its unavoidable consequences and fears. Apathy is an expression of the anticipatory mourning and the risk of the withdrawal of affection from pleasure giving objects as an experience that is damaging. "On Transience" suggests that the environment and affectively invested objects can be experienced in a peculiar atmosphere of loss and fear of the end. The

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poet is a passive witness of a possible future destruction and certainly experiences the mourning. But he does not work through the mourning: he uses a narcissistic defense to avoid the real and painful working through of the mourning by anticipating it. In this sense, beauty is lost in advance. Freud does not accept this in any way and proposes to repair and recreate the internal and external internal world. He concludes his essay with these words (p. 307): "When once the mourning is over, it will be found that our high opinion of the riches of civilization has lost nothing from our discovery of their fragility. We shall build up again all that war has destroyed, and perhaps on firmer ground and more lastingly than before."

A colleague and I very recently discussed how we missed sharing the interaction of presence in the same space and how we did not realize how replenishing it was. When this pandemic is under control one day we will see that psychotherapy will not be what it was. The current pandemic may change the way therapy is performed however I want to emphasize that even if it entails re-thinking the framework, honoring the essence of psychotherapy is more important than ever.

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Chapter 9

Psychological Factors Influencing Protective Behaviours during the COVID-19 Pandemic: Capability, Opportunity and Motivation

Jilly Gibson-Miller, Orestis Zavlis, Todd Hartman, Orla McBride, Kate Bennett, Sarah Butter, Liat Levita, Liam Mason, Anton P. Martinez, Ryan McKay, Jamie Murphy, Mark Shevlin, Thomas V.A. Stocks and Richard P. Bentall

Abstract

This chapter will explore psychological and demographic influences on citizens' ability to enact protective health behaviours during the COVID-19 pandemic. Such behaviours include social distancing and hygienic practices that have been recommended across the globe to reduce the spread of infection from the coronavirus. Such behaviours represent a seismic change in usual social behaviour and have been particularly difficult to adopt under urgent circumstances. However, human behaviour is the essential driver of the rate and spread of infection. Using evidence from a large-scale longitudinal survey conducted throughout the pandemic in the UK, this chapter explores protective behaviours in relation to the Capability, Opportunity, Motivation-Behaviour (COM-B) model of behaviour change, which presents a framework for understanding the influences on behaviour. We will illustrate how the components of the COM-B model can inform behaviour change interventions and the importance of the role of anxiety in shaping behavioural responses to the pandemic.

Keywords: social distancing, hygienic practices, COM-B model, behaviour change intervention

1. Introduction

The COVID-19 pandemic began in China in late 2019 and is perhaps one of the biggest health threats the world has faced this century. This highly infectious disease spread quickly across the globe, mutating into a number of variants that have made containment extremely difficult. It is clear that this global pandemic will leave in its wake extensive social, economic and health impacts for many years to come and we are only just beginning to recognise the extent of its legacy.

During the outbreak, citizens around the world experienced significant restrictions in terms of their social and economic activities in the form of quarantining at

home for prolonged periods of time so that social interaction (and thus, the ability of the virus to transmit between people) is limited. Behavioural guidelines to help prevent infection and slow the spread of disease have mandated the wearing of face coverings in confined spaces and recommended the adoption of a wide range of hygienic practices (for example frequent hand washing, cleansing surfaces more regularly and using hand sanitizer when hand washing was not possible). These measures have signified large-scale changes in behaviour that are psychologically burdensome for individuals to successfully achieve [1]. However, human behaviour plays a decisive role in in shaping the progression and spread of COVID-19 [2] and therefore it is a matter of urgency that behavioural scientists understand the psychological drivers that underpin such behaviour to help swiftly implement interventions to promote behavioural changes on a population level that are necessary to stem the spread of the virus and protect vulnerable groups from contagion [1, 3].

The Capability, Opportunity, Motivation-Behaviour (COM-B) model of behaviour change (**Figure 1**) [4] is widely used in behavioural science research to explore influences on behaviour. This model proposes that a person must have sufficient psychological and physical capability (strength, knowledge, skills, etc.), physical and social opportunity (time, social cues, etc.) as well as reflective and automatic motivation (intentions, planning, emotion regulation, etc.) to enact a given behaviour. Michie, West and Harvey [5] argue that each of these factors could contribute to lower levels of adherence than are needed to enact behaviours that prevent the spread of the COVID-19 virus. The COM-B model is at the centre of the Behaviour Change Wheel (BCW), which is a tool kit for designing tailored behaviour change interventions (BCIs) [6]. Thus, once a behavioural 'diagnosis' has been conducted utilising the components of the COM-B model, suitable targets for intervention can then be identified [1]. These targets will be the components of the COM-B that are most likely to influence a particular behaviour and can be developed into BCIs to improve adherence to protective health behaviours.

In this chapter, we apply the COM-B model to two key sets of COVID-19 transmission-related protective behaviours: 'hygienic practices' (including frequent hand washing and wearing a face covering) and 'social distancing practices' (involving staying at home where possible, keeping a 2-metre distance from others in public and not gathering in large groups). These behaviours are key in reducing transmission of the virus and it is likely that such measures will remain in place for some time in most countries, to some extent [7, 8]. Indeed, despite the inception of widespread vaccination programmes across the globe, maintaining protective behaviours

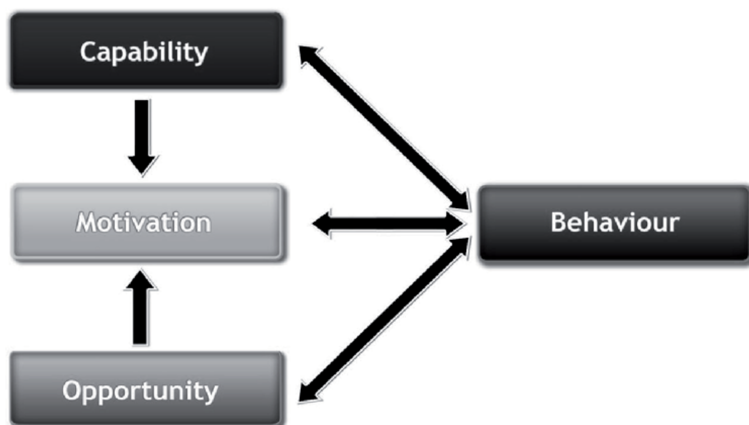

Figure 1.
The COM-B model.

will ensure the continued reduction in the spread of infection to mitigate low vaccination uptake rates, difficulties in vaccine supply and variants immune to the vaccine. It is vital therefore that behavioural scientists understand the psychological factors influencing such behaviours in the context of the COVID-19 pandemic within a theoretical framework to feed into efforts to promote continued adherence to essential protective behaviours.

2. Protective behaviours in the COVID-19 pandemic

To inform BCIs, an understanding of the drivers that underpin protective behaviours are required, along with a deeper exploration that addresses the nuances in how people might understand, accept and adhere to such a set of behaviours. As yet, there is a dearth of evidence relating to how protective behavioural practices could be adopted on a population-wide level [4] and so it is important to assess behavior under the current adverse circumstances. Protective behaviours are largely under the volitional control of individuals, in that one can choose whether or not to follow the suggested practices. Further, whilst wearing a face covering and washing or sanitising hands in specified situations represents a fairly clear set of actions, the actions required to achieve 'social distancing' successfully are arguably more complex and nuanced. Some social distancing behaviours rely on the individual themselves committing to and enacting the behaviour (e.g., staying at home) and others require the reciprocal observance of others (e.g., gathering in groups, close contact greetings). We also know that social isolation could have a negative impact on health and well-being, which impacts upon decisions about adherence to behaviours [9].

Whilst there is a wide and good-quality literature on the enactment of hygiene behaviour, especially handwashing [10], we know little about these behaviours in the current context where the drivers of behaviour and nature of the threat may be entirely different from usual circumstances.

The term 'social distancing' has been coined during the pandemic and is complex and nuanced. Although large-scale population surveys have shown that social distancing practices have been sustained as the pandemic unfolded and citizens generally support these measures (e.g., [11–13]), there is evidence that motivation to comply over time may be threatened by other psychological factors. For example, as psychological resources are cumulatively depleted over time with lengthy and repeated lockdowns [11]; as competing drivers of behaviour begin to take priority (e.g., the inherent drive for social connection) [14]; as confidence in the government reduces [15]; and 'moral' judgements impact upon decision making [16] adherence to social distancing practices may diminish.

Indeed, evidence suggests that the extent to which different groups of individuals have been willing and able to comply with these important protective behaviours is mixed. Population surveys have found that 1 in 4 individuals struggle to follow social distancing guidelines, due to difficulties in meeting up with family or friends outside because of bad weather or feeling worn out by the pandemic [11, 17]. For other groups in society, it is likely that enacting social distancing behaviours is difficult for other, more practical, reasons. For example, individuals who do not have access to a garden, those who share private spaces with other families, or those who are required to work outside the home may not have the opportunity to comply and are inevitably at increased risk of exposure and infection [18]. These 'structural' factors are likely to be more impactful on the ability to comply with social distancing in groups who are already disadvantaged and who are faring worse due to the pandemic – reflecting the 'slow burn of inequality' exposed by epidemics, described by Marmot [19].

3. The COM-B and protective behaviours

Exploring protective behaviours in relation to the COM-B is useful for understanding the conditions that must be in place for these behaviours to be successfully enacted and therefore developing BCIs that promote adherence. We conducted this investigation using data from a large-scale survey of UK citizens.

The COVID-19 Psychological Research Consortium (C19PRC) Study (www.sheffield.ac.uk/psychology-consortium-covid19) is a longitudinal study mapping changes in behaviour and mental health over time from the very early days of the COVID-19 outbreak. The C19PRC study has collected data from 2025 participants in five waves over 12 months (March 2020–March 2021) from the four UK Nations, with comparable data sets from Ireland, Italy, Spain, and Saudi Arabia. A multitude of detailed demographic, health, behavioural and psychosocial measures have been collected, including socio-demographic characteristics, health status, depression, anxiety, traumatic stress, somatic symptoms, loneliness, resilience as well as health behaviours and lifestyle habits (see McBride et al. for full methodology [20, 21]). We modelled the complex relationships between the social, physical and mental health of our sample and conducted extended behavioural analyses on protective behaviours and the COM-B model [17, 22–26].

Participants self-reported motivation, capability and opportunity to enact protective behaviours in the C19PRC survey. Items were adapted from a preliminary version of the COM-B self-evaluation questionnaire and other guidelines (COM-B-Qv1) [4, 6] and respondents indicated the extent to which seventeen statements were true for them during the COVID-19 pandemic on a 5–point scale (labelled: strongly agree, agree, neither agree nor disagree, disagree, strongly disagree). Three items measured psychological capability: e.g., "I knew about why it was important and had a clear idea about how the virus was transmitted". Two items measured physical opportunity: e.g., "It was easy for me to do it" and four items measured social opportunity: e.g., "I had support from others". Five items measured reflective motivation: e.g., "I intended to do it" and three items measured automatic motivation: e.g., "I would feel bad if I didn't do it".

Analysis of the C19PRC data revealed three main themes in relation to protective behaviours. First, we identified specific components of the COM-B model that drive different types of protective behaviours. Second, we identified specific demographic groups that have particular difficulties with such behaviours. And third, there are significant emotional drivers that influence adherence to protective behaviours.

The first set of behaviours explored in Wave 1 during the first lockdown in the UK (March 2020) were five self-reported hygienic practices: Touching eyes or mouth, washing hands with soap and water more often, using hand sanitising gel if soap and water were not available, using disinfectants to wash surfaces in the home more frequently and covering nose and mouth with a tissue or sleeve when coughing or sneezing. Response scales were 'No', 'Occasionally' and 'Whenever possible'.

After controlling for demographic variables (age, gender, ethnicity, income, etc.), psychological capability, social opportunity and reflective motivation predicted hygienic practices most and reflective motivation had the largest influence [20]. This means that adults who knew why hygienic practices were effective in reducing the transmission of the virus, who had social support, and had made plans to carry out hygienic practices were more likely to successfully carry out these protective health behaviours. Notably, we observed that older age and higher levels of household income were associated with more engagement with hygienic practices. Hygienic practices were practiced less by males (compared to females) and those living in suburban areas (compared to those living in more rural areas).

For social distancing behaviours, participants in Wave 2 (April 2020) self-reported which behaviours in the past week they had engaged in, out of seven social distancing practices; e.g., "Stayed at least 2 metres (6ft) away from other people when in", "Met up with friends or extended family (outside of your home)"; "Engaged in close contact greetings with people outside of your family (e.g., shaking hands, hugging)"; "Gathered in a group of more than two people in a park and other public space". These behaviours represented clear violations of or adherence to social distancing guidelines in the first UK lockdown (responses were: Not at all, 1–2 days a week, 3–4 days a week, Most days, Every day).

Here, a different picture emerged. Of the COM-B components, only Psychological Capability exhibited a direct and positive association with adherence to social distancing [21]. Older adults and city dwellers were more likely to report higher levels of psychological capability and women were more likely to report increased motivation for social distancing. As with hygienic practices, those with higher levels of education and income were more likely to practice social distancing.

We explored adherence to social distancing further using a list experiment, embedded in Wave 4 of the C-19PRC survey (December 2020). This method allows researchers to measure responses to sensitive items that may normally invoke untrue or inaccurate answers due to social desirability concerns. The C19PRC survey list experiment used four control states and included a fifth sensitive item, as follows:

"We would now like to ask you how willing you are to break rules or conventions. Please look at the following list of common rules and indicate how many of these you have done in the last 6 months:

1. I have driven a car at more than 100 miles an hour.

2. I have travelled illegally to North Korea.

3. I have sometimes not paid my bills on time.

4. I have borrowed something from a friend and forgotten to return it.

5. I have socialised in another household during lockdown (*sensitive item*).

One-quarter of our sample revealed that they had violated government guidelines by socialising in another household during lockdown. An examination of whether any particular social or psychological factors were associated with agreement to the sensitive item, we found that the only statistically significant predictor was anxiety related to COVID-19. This anxiety was in response to the question 'How anxious are you about the coronavirus COVID-19 pandemic?'; participants were provided with a 'slider' (electronic visual analogue scale) to indicate their degree of anxiety with '0' and '100' at the left- and right-hand extremes, respectively, and 10-point increments. This produced continuous scores ranging from 0 to 100 with higher scores reflecting higher levels of COVID-19-related anxiety. This factor was negatively correlated with agreement to the sensitive item - indicating that experience of COVID-related anxiety was strongly associated with a tendency to follow the lockdown rules.

Previous research has found that emotions are an important influencing factor in the behavioural responses to pandemics; in particular, worry has been found to motivate action to control danger [27]. Liao et al. [28] conducted a multi-wave longitudinal survey study in Hong Kong during the influenza A(H7N9) pandemic and reported that worry about infection from the virus was positively associated with the enactment of protective behaviours (e.g., avoiding crowds, rescheduling travel plans). The authors reported that, as worry about the virus changed over time,

so did protective behaviours, implying a causal link between worry and engaging in protective behaviours. Other evidence from the Swine Flu pandemic also illustrates how emotional status mediates behavioural responses; Jones and Salathe [29] reported that self-reported anxiety over the epidemic mediated the likelihood that US citizens engaged in protective behaviours such as social distancing. Exploring emotional factors that might mediate protective behavioural responses during the current pandemic, may help enormously with the design of BCIs to promote the enactment of essential protective behaviours such as social distancing.

4. Behaviour change interventions to promote protective behaviours

The findings of the C19PRC Study in relation to the COM-B have clear implications for the design of BCIs to promote protective behaviours at a population level. For hygienic practices, interventions should focus on increasing and maintaining motivation to act and should contain behaviour change techniques (BCTs) that focus on self-regulatory processes involving planning and goal setting. We have suggested utilising implementation intentions, a specific planning technique found to help successfully bridge the 'intention-behaviour' gap [30, 31]. Further, to make it feasible that individuals are able to enact such techniques independently (e.g., during the lockdown), we suggest utilising the compendium of self-enactment BCTs [32] in intervention design (self-regulatory techniques #5 - #18 are especially relevant for hygienic practices). Our data show that groups in particular need of targeting for interventions to increase hygienic practices are males and those living in cities and suburbs.

For social distancing, interventions should focus on increasing psychological capability and include BCTs that bolster knowledge around social distancing and why it is important, to enable citizens to develop psychological skills in enacting and maintaining these behaviours. For increasing psychological capability, it is important that it is clear why social distancing is important and how social contact transmits the virus; as well as specifying the situations in which social distancing should be enacted and exactly how to do that. BCIs would help people to overcome physical or psychological barriers to action (or inaction) and should be specifically tailored to those sociodemographic groups who display particular difficulties in enacting social distancing, namely, younger people and those living in cities. For those with lower incomes and lower levels of education, who may struggle with social distancing for more practical reasons, wider functions of intervention from the BCW would need to be employed, whereby economic and social policy would assist in overcoming practical or structural barriers to enable these groups to follow guidelines (e.g., if working from home is not possible, ensuring COVID-safe workspaces where social distancing is achievable and implementing paid time off for isolation). It is important that individuals who feel anxious about COVID-19 are supported in managing their anxiety levels.

5. Conclusion

This chapter has explored psychological and demographic influences on citizens' ability to enact protective behaviours during the COVID-19 pandemic. We have discussed how enacting social distancing and hygienic practices are influenced by different components of the COM-B model and made recommendations for intervention. Behavioural scientists face the challenge of urgently developing interventions that help citizens to maintain adherence to protective behaviours to control the spread of the COVID-19 virus.

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Chapter 10

A Ray of Hope: Resilience Amidst Uncertainty and Other Psycho-Social Issues during COVID-19 Pandemic

Kanwar Hamza Shuja, Arfa Mubeen and Shazia Tariq

Abstract

The chapter explored the various psycho-social issues that the general masses are still suffering from due to the sudden arrival of COVID-19 pandemic and how the impending uncertainties, regarding almost every aspect of routine life and their own existence, played a major role in moderating the effects of these psycho-social issues. Additionally, amidst all of these uncertainties, how resilience of people whether social, mental or religious helped people in overcoming their different fears and psycho-social issues. The chapter incorporated findings achieved from different samples such as that of students, employees, health workers etc. And the role of resilience throughout the history in helping humankind overcoming such disastrous situations. Moreover, the chapter also tried to incorporate the protective strategies which can be useful in overcoming the prevalent uncertainties that still remain.

Keywords: COVID-19, resilience, uncertainty, psycho-social issues, protective strategies

1. Introduction

Being a survivor of Novel Coronavirus, it can positively be affirmed that the suffering of not being able to breath is unbearable and knowing that the total death toll is around 3,499,712 [1] it could be insinuated that enduring the ordeal itself is fortunate. During the time of the experience of infection and isolation the thoughts that were most common were those of anxiety, death and despair. However, one thing that supported and motivated the recovery, at least psychologically, was the will to live and survive. As being human one of our particular traits, throughout the extensive history of our existence, is that of resilience and survival. We have witnessed humans surviving many ordeals, similar and far worse during their time on earth such as Influenza pandemic (1918-1919) with 20-40 million deaths; black death/plague (1348-50), incurring around 20-25 million deaths, AIDS pandemic (through 2000) with a death toll of 21.8 million and so on. Nevertheless, against all odds humans have survived and prospered through their persistence and resilience and will so again from the current pandemic.

2. Emergence of Covid-19 and associated difficulties

Coronavirus disease, a national health emergency, was initially reported in Wuhan, China, in the last month of 2019 [2]. Since its emergence, it has burgeoned all over the world disrupting the whole economic system, while claiming the lives of many [3]. Its fundamental features include dry cough, tiredness and fever; with difficulty in breathing, sore throat and body pain [4]. According to a 2020 report presented by the World Health Organization (WHO), around 30% of nations had no plans or preparation for an outbreak like that of COVID-19 [5]. As initially there were no vaccines or medicines available and the number of affected patients kept increasing in hospitals leading to shortage of supplies like ventilators, beds, staff, etc. [6–9].

Due to this rapidly growing burden on the health care industries around the world, lockdowns and quarantines were placed [10, 11]. People were instructed to act upon the guideline of infection prevention and control (IPC), where in some countries these guidelines were even enforced through punishment or fines [12, 13]. As a result, most of the world population was restricted to stay at their homes, thus hindering their routine social lives [14, 15]. During the initial spread, the most vulnerable population was that of more elderly people. as the initial findings suggested more elevated rates of infection in older populations. This fear led to scenarios where the older people were confined to their rooms for the sake of their protection. However, though this might have protected them from contracting the virus the confinement left them isolated leading to psychological issues such as depression and anxiety [16, 17, 19, 25, 40]. Researches have shown heightened depression, adjustment issues and posttraumatic stress in old age people [17–19, 25, 40].

Another vulnerable population was that of the children who were incapable of comprehending the severity of the situation. Other than that, the uncertain situation and financial constraints included increased strains on the families. It resulted in reporting of increased number of cases of child abuse through helpline numbers. The reasons hypothesized for this increase include unemployment, feeble mental health of the family members and frustration of being stayed at home for a long time [17, 19, 25, 40]. Owing to the precautionary measures to restrict spread of COVID-19, the academic institutes were also closed which increased the psychological vulnerability of children at home. Hence it was suggested to train school staff for screening such signs and to deal with such children [20]. IPC instructions include social isolation and maintenance of social distance leading to decreased intimacy [21, 22].

According to Gopalan and Misra [23] socio-economic implications due to the onset of the coronavirus badly affected the mental health of people. Moreover, diverse effects on mental wellbeing of family members have also been highlighted by Cosic et al., [21]. However, it was also found that it was also affecting the social identity of people all around the world along with the impact on mental health [24, 25]. Global health care system has also been impacted by social and economic conditions due to COVID-19 [23]. A number of factors leading to psychological problems like fear, isolation and loneliness [6, 26], unavailability of recreational activities [11, 27, 28], lack of intimacy and social isolation [29] social and economic factors [30], social and physical distancing [31, 32], fake news and misinformation [14] and socio-economic cost of safety equipment [33] have been highlighted in studies. It was reported in studies that situations got worse when rumors were full of unverified pieces of information [34].

Lovari [35] and Tapia [36] stated that fake news augmented the situations as people used to be fearful of being infected. But it resulted in more consciousness of

people about the coronavirus which was beneficial [13]. However, negative impact of fake news was also noted as people suffered from psychological and social issues due to them [37] but concerns for health were also noted [38]. Pennycook et al. [39] stated that social media was a source of information for most of the people which had an impact on psychosocial lives of individuals as people suffer from tension, stress, anxiety, fear of infection and distress, etc. [40]. Pandemic is a continuous source of stress associated with the death of loved one, friends and colleagues [41]. Along with these health issues, financial problems, depression and threat of economic crisis have also been observed. Pandemic resulted in the closing of many educational institutes and workplaces.

There was an increase in travel restrictions, self-isolation and consumption of medical products and decrease in employees in the economic sectors [42, 43]. The attitude of people towards social distancing and vaccination played a great role in spreading of infection. Coping ability of people towards risk of infection and dread or grief of losing dear ones were also few of those factors which may increase psychological issues. Moreover, such situations worsen the condition of those people who already had psychological issues before the advent of COVID-19 [19]. Wang et al. [44] conducted a cross-sectional study to investigate levels of anxiety, stress and depression in the initial period of the outbreak of COVID-19 and found that severe psychological effects of the pandemic were noticed in 53.8% of the sample. Pandemic and lockdown impacted adolescent and young children socially and emotionally more as compared to those who are grown up. Increased clinging behavior, inattention and irritability were observed in them of different age groups [45].

It was also reported by parents that children suffer from inattention, separation anxiety, poor appetite, disturbed sleep, agitation, nightmares, fearfulness and uncertainty during that period [46]. Lee [47] stated that closing of educational institutes negatively affected around 91% of students all over the world. Moreover, youth and older adolescents were also found tensed on cancelation of academic events, exchange facilities and examinations. Some studies have also argued that isolation through closing of educational institutes can prevent 2 to 4 percent additional deaths which is less when compared to usage of other precautionary measures. So it was suggested to policy makers to implement other strategies in educational institutes which are less disrupting [45, 47, 48]. Instinctual survival behavior has also been indicated through panic buying during times of distress [49]. Moreover, hoarding behavior has also been observed in adolescents [50]. Due to closure of special education institutions, special children lack access to opportunities of learning and skills development which resulted in relapse of their condition [47]. Similarly, gap in speech therapy also resulted in delay in next milestone as online learning is difficult [51]. It also became difficult for parents to engage children with Attention Deficit Hyperactivity Disorder in meaningful activities [52].

Obsessions and repeated behaviors due to infection contamination and hoarding also increased during that period [53]. Pre-existing social inequalities deteriorated due to the economic turn down. Deprivation of protection and nutrition was observed in underprivileged children, due to imposed lockdown. It may have a negative effect on the development of such children [54, 55]. Even presence at home was a threat of abuse and violence to some children [56, 57]. A study showed that as compared to boys, girls have less access to electronic devices, which affect their learning through online platforms especially in underprivileged families [58]. It was also concluded that due to this prevailing inequality, there are chances of increased dropouts of female students from schools once they are opened again after the pandemic [59].

3. Resilience amidst pandemic

Grounds for resilience and optimism have been researched by scientists extensively during the pandemic. As it has helped people struggling in the past to overcome their challenges, thus becoming stronger than ever. It happened after the incident of 9/11 when 35% of people in New York City showed resilience and 23% recovered from symptoms of post-traumatic stress in the next month after the incident [60]. It was also researched that teamwork, spirituality, kindness, love, leadership, hope and gratitude increased after that event [61].

Such research can help researchers get guidance in designing studies to investigate the factors helpful in resilience and coping for COVID-19. It was also found that such people manage well psychologically who found meaning in aligning their personal values with the incidents. Heightened self-esteem and sense of self control have been achieved by many individuals after the event, just by providing others with practical and emotional support, thus evaluating their actions as positive contributions. Rumination and self-recrimination was least in such individuals and they were confident in their actions [62]. In short, people survived after such a tragedy and they move on. Same will be the case with COVID-19. Although social distancing is one of the main characteristics of COVID-19 which distinguishes it from other tragic events of history; however, value-based behavior can help build the raptured social bonds. Modern technology can also be helpful in this regard for reaching people not dependent on face to face engagements. It can be achieved through expressing empathy, considerate behavior and active listening.

All such strategies can help people cope with frustration and fear of the global pandemic. Isolated people can also participate in self-care activities, even in threatening situations, just to make their life best to live. It may include a number of activities such as learning a new language, listening to relaxing music, puzzle solving, singing, reading, instrument playing, television watching, playing computer games and having insight on life after the pandemic. These engagements can help people increase psychological health and decrease symptoms of post-traumatic stress [63]. These behavioral activations also known as coping activities are sources of mind diversion and build positive emotions. They also help in returning back from negative experiences [64], minimizing the psychological troubles due to persistent stress, adjusting to different daily demands and not to consider the psychological concerns restricting the contentment in daily life [65]. Same patterns are followed in showing resistance and coping in management of affective responses during natural disasters.

A model called 3 Cs has also been developed by stress researchers [66] which focus on connectedness, control and coherence. Personal beliefs reflect goals which assume that in pursuit of value goals, personal resources can also be accessed. Goals can be short or long term. Short-term goals in situations like pandemics can be achieved by considering many means. Few examples may include, by getting enough sleep, considering the factual information, laughter time, need based exposure to news, setting laughter time, store enough food to meet the needs, checking on dear ones and spending each day with planning, etc. As studies have shown physical and psychological benefits can be achieved through disclosure of emotions and expressive writing, similarly, keeping a diary of life lessons, goals and daily events encountered by adversity may prove helpful [67]. Long term goals counterbalance anxiety and fear with pondering and preparation for future goals (i.e.) thinking about life after the pandemic. It is assumed that difficulty will be faced by survivors while re-entering back to normal life after the end of the coronavirus. Difficulties may be faced in a few of the domains like implementing and following educational plans, activities of ordinary life, attending life remembering events and

interaction with friends, etc. Anticipating and planning related to such domains may provide links of present to future and ideas about unfolding the unpredicted.

The second "C" of the model, that is coherence, is evident in human needs for making sense of the world. Establishing an account for the past and future to live fully is although challenging but it is rewarding too. Acceptance based coping is another engaging point. Acceptance based coping assumes change of relatedness of the individuals ranging from responses to source of stress to outcomes by non-judgmental concerns of internal states for acceptance [68]. Relating it to pandemic, the stance is that fear should not be dominating even though coronavirus is fatal. Rather, focus should be on accepting realistically, observing reactions and adapting reasonable responses. Acceptance based coping can be facilitated by posing realistic questions. The answers may reveal motivation of the individuals, their interests and their goals during the dark time [69] and long-term resilience outcome. The principles of mindfulness and acceptance-based coping are somehow the same. Practice of mindfulness can be observed in eating routine and mediation exercises, etc. It can be beneficial for minimizing anxiety and post-traumatic symptoms [70]. Moreover, it can act as a facilitator for awareness of sensations, feelings, emotions and thoughts which can help targeting the coping techniques, thus pointing out the issues to be addressed. It also reduces the effect of negative feelings thus releasing cognitive and emotional resources to make meaning, reflect and appreciate the difficult event and to establish value-based goals [71].

The third "C" of the model refers to the desire for human support and contact, which has been one of the main factors for resilience in natural disasters [72]. New bonds built through contact through social media or telephone etc. not only help in alleviating sadness, stress and anxiety but also establish empathy and pro-social behavior [73]. It is helpful in coping and recovery. It provides a sense of oneness and togetherness by showing that we all are in the same situation. Meditation practice helps turn positive emotions to oneself and to love one. It is associated with psychological health and social interaction [74]. Thus, it is useful in COVID-19 era as it facilitates resilience and social interactions. Resilience is also based on projective and risk factors linked with individual differences, family environment and other social characteristics. The outcome can be influenced by extent of exposure, but other factors also facilitate resilience. These factors include personality and social environment.

Overall these suggestions highlight the power of resilience and how it can help the affected population overcome this pandemic. As in present it may seem like an immense task, however, instances from past suggests that humans have always overcame such difficult times and current pandemic is no different. With the right help and mindset people will definitely overcome this pandemic and be prepared for other similar issues to come in the future.

4. Conclusions

By reviewing the extensive literature, it can be said without a doubt that human beings are resilient and have gone through major changes since their inception on earth to this day. And though right now the things might seem bleak with no end to the ongoing sufferings of people around the world due to the current pandemic. It can be hoped that the humans together will fight against all the odds and will overcome this pandemic as well. With new innovations in medicines and researches it is not far that a proper cure would be found and the world will leave behind the traces of this pandemic in the books of history as a reminder of human resilience, for future generations to come.

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Chapter 11

Promoting Resilience in the Face of Fundamental Uncertainty

Anant Jani

Abstract

Complex systems at different levels (states, organisations, individuals) undergo phase transitions when faced with a sudden shock. The phase transitions are unpredictable and can lead to unstable states and also introduce a source of fundamental uncertainty about the future. In the face of this type of fundamental uncertainty, we know from pioneering work on population health that social determinants (e.g. education, employment, housing, etc.) will have a substantial influence on the ability of individuals and society to be resilient and recover from these shocks. This chapter will start with an overview of complex systems, phase transitions and the nature of fundamental uncertainty. These concepts will then be discussed in light of the COVID-19 pandemic. The importance of social determinants in promoting both mental and physical health, and thus resilience at individual and population levels, will be described and the chapter will finish with an exploration of historical and contemporary examples of means that can be used to support individual and collective resilience in the face of fundamental uncertainty.

Keywords: Population health, social determinants of health, phase transitions, complex systems, resilience

1. Introduction

The COVID-19 pandemic has been devastating and it has affected all aspects of society around the world. Three areas that have been particularly negatively affected are the economy, health and education.

In 2020, we saw a 5.2% contraction in global GDP and estimates suggest that the global unemployment rate could increase from 4.9–5.6% [1–3]. Per capita income has also contracted globally and in the largest proportion of countries since 1870 [1]. In aggregate, the negative impacts on the economy could lead to up to 300 million people internationally falling below the poverty line and between 70 and 100 million people may have fallen into extreme poverty in 2020 [4, 5]. And all of this despite the various efforts by governments to shore up economies leading global debt to increase by $24 trillion over the past year – a level of debt much higher than seen with the 2008 global financial collapse [6, 7].

Overlaid onto the negative impacts on the economy are affects the pandemic has had on health beyond COVID-19 infections. Disruptions to global trade saw global food prices increase by ~20% between January 2020 and January 2021, which, combined with reduced incomes, means that households will have to decrease the quantity and quality of food they are consuming [8]. Indeed, country surveys across countries globally indicated up to 40% of households were running out of food or

reducing their consumption with an average of 50% of households in the poorest countries confirming that someone was skipping at least one meal [4, 8]. Across 79 countries, the total number of acutely food insecure people was expected to increase to 272 million by the end of 2020 [8].

Mental health has also been impacted by the pandemic and its associated lockdown measures. Individuals with existing mental illness have experienced a detrimental impact on their mental health with some countries seeing a two-fold increase in the number of adults experiencing some form of depression [9, 10]. The increases in unemployment, increased financial difficulties, social isolation, uncertainty about the future and disruption to clinical services could contribute to increased alcohol intake as well as an increase in suicides [3, 11–13].

The pandemic has also been difficult for children and youth. The lockdown measures associated with the COVID-19 pandemic represents the largest disruption to education systems in history and has affected over 1.6 billion learners in over 190 countries, which represents 94% of the world's student population [14–17]. The shift to remote learning was helpful for some but many students globally, especially those of poorer households, lack access to internet and digital technologies and will fall further behind. It is estimated that we will see a 25% increase in the proportion of children below minimum education proficiency [15, 18]. School closures also affects the provision of essential services and benefits (e.g. access to nutritious food, supporting the ability of parents to work, etc.) to families in need [16, 17].

The short-, medium- and long-term impacts we are seeing with the COVID-19 pandemic, and which we will continue to see in its aftermath, will have unpredictable impacts because of the complexity of the systems (states, organisations, individuals) being impacted. When faced with a sudden shock like the COVID-19 pandemic, or other crises like the 2008 global financial collapse, complex systems undergo unpredictable transitions that could have significant impacts on the ability of individuals and society to be resilient and recover from these shocks. The fundamental uncertainty about if, when and how these transitions occur for complex systems makes it difficult to know exactly what will happen and/or what to do to reduce potential negative impacts.

This chapter will start with an overview of complex systems, phase transitions and the nature of fundamental uncertainty, which will then be discussed in the context of the COVID-19 pandemic. The importance of social determinants of health in promoting both mental and physical health, and thus resilience at individual and population levels, will be described and the chapter will finish with an exploration of historical and contemporary examples of means that can be used to support individual and collective resilience in the face of the fundamental uncertainty of the world post-COVID-19.

2. Phase transitions of complex systems: contextualising fundamental uncertainty

2.1 Complex systems

Systems are present everywhere. A simple definition definition of systems is a set of interconnected elements that produce their own patterns of behaviour. The system will have its internal drivers and will also be influenced by external factors – how a system responds to external factors through its internal mechanisms is an inherent characteristic of a given system [19]. Starting with this basic definition, one quickly realises that the world can be seen through the lens of systems – whether that be at an organismal, organisational, societal, state and/or global level.

A key consideration for any system, at whatever level, is its complexity because how a system behaves is not always simple, or even possible to predict.

The complexity of a system is related to the number of elements it has and their connections and feedback loops. These considerations reveal that complex systems:

> *...exhibit a phenomenology that is difficult to predict. The elements and rules by which they interact may be considered well known, however, it is far from easy to explain the emergent properties at a higher level of observation as a consequence of the properties of the elements at a lower one [20].*

Nonlinearity, interconnectedness and emergence are three characteristics that make it difficult to predict exactly how a complex system will behave. The nonlinear behaviour and interconnectedness of a complex system's elements means that it is subject to irreversibility - external factors or inputs into a complex system can be removed but that does not mean that the complex system can return to its original state – as well as the power law, which means that an effect on the complex system will lead to an impact that is much greater than would normally be expected. These two factors combine to support the emergent behaviour of a complex system which sees large impacts resulting from simple, small-scale changes – or to put it another way, the sum is greater than the parts. The implications of these features of complex systems means that if a complex system is subject to a sudden external shock, the changes to the system are not predictable, reversible and, in many cases, manageable [21].

A classic example demonstrating these three factors in action is a traffic jam. Over a large range of car density on a highway, car speed is only slightly affected but there will be a threshold/tipping point, characteristic of a given highway, beyond which a small increase in car density can lead to a disproportionate decrease in traffic flow resulting in a traffic jam. Another example is the transition of water from solid to liquid or liquid to gas – there is a critical threshold of pressure and temperature at which water will freeze, ice will melt, water will become vapour and vapour will become water but the exact threshold cannot be predicted. All of the aforementioned changes are linked because they represent transitions of the system from one phase to another [19].

2.2 Phase transitions

In complex systems, phase transitions occur at thresholds or 'tipping points' that are characteristic of the system. The macroscopic phase transitions we witness are the result of small changes within the system. It is difficult to account for the macroscopic change in phase by observing the small changes witnessed at a microscopic level – but these abrupt transitions are due to the nonlinear relationships and interconnectedness between the different elements within the system [21].

Going back to the example of a phase transition of water turning to vapour, one can observe that at a certain range of temperatures, the water will heat up and then progress to an ordered simmering. As small and incremental amounts of heat continue to be added, there will come a point where the change in the movement of the water molecules is no longer ordered and it becomes chaotic as the simmering water transitions to a boil. This transition is continuous and it will only take a gradual increase in temperature to transition to a chaotic boil. The point at which this phase transition occurs is the threshold or 'tipping point' – a critical point at which "...the system is nearly unstable, with tiny disturbances possibly leading to global effects" – and demonstrates the emergent behaviour of complex systems [21].

Because of the nonlinear nature of complex systems, it is not possible to predict what the point of criticality will be and/or when a phase transition will occur. Furthermore, for complex systems that are self-organised, like organisations or our society more generally, the response of the system to external disturbances is even more difficult to predict because the response depends on the state of the entire system, which represents the history of inputs and responses to inputs within the system. When and how phase transitions occur and what the impact will be on the system as a whole as well as its individual elements represents a situation of fundamental uncertainty.

2.3 Fundamental uncertainty

In situations of fundamental uncertainty, like phase transitions, the outcomes that will result from a given set of inputs into a complex system are unpredictable and are too unique to allow for statistical analyses that can yield reliable probability estimates. Two important factors to account for in situations of fundamental uncertainty are that it is context-dependent and it is dynamic and not static. The context is important because though knowledge and methods to collect data on how different elements interact within a system at a microscopic level exist, this information does not yield insights to enable accurate predictions on outcomes within the system at a macroscopic level because of the dynamic and non-linear nature of the system. It is important to recognise this limitation to avoid classic problems of overfitting, where methods used to understand and manage risk are incorrectly used to address situations of fundamental uncertainty [22].

3. Fundamental uncertainty in the context of COVID-19 and its aftermath

3.1 Negative impacts of COVID-19's aftermath

The COVID-19 pandemic will trigger phase transitions at multiple levels – individuals, communities, organisations, societies, states and globally. The negative impact of the pandemic will not, however, end with the acute effects we are currently witnessing. COVID-19's aftermath will be equally as devastating and if we have learned from previous crises, it will take us many years to recover from it, particularly for the economic, education and health sectors.

The recessions triggered by the pandemic will have medium-long term impacts on the economy because of lower investment and fragmented global trade, which will dampen the global economic outlook resulting in a slower recovery for unemployment rates. This trend was also seen with the 2008 global financial crisis where unemployment rates took seven years to return to pre-2008 levels [1, 23]. It is important to note that the experiences of unemployment will be heterogeneously distributed with youth unemployment expected to be particularly high, a trend also seen with the 2008 global financial crisis [24]. Job losses and unemployment have long-lasting effects on the employment, earnings and income prospects of laid-off workers also leading to the 'scarring effect' for youth which leads to permanently lower earnings by ~1.2% per year for each additional month of unemployment [24–26].

For the education sector, simulations suggest that ~0.6 years of schooling will be lost globally due to school closures with the largest proportion occurring for children of lower socio-economic status [4]. This could have knock-on effects for these children with many at risk of never returning to school - studies suggest

that ~24 million additional children and youth may drop out or not have access to school in 2021 [15–18]. Effects on education of children and youth can extend beyond acute periods and produce negative impacts years later with models suggesting that students currently in school may lose $10 trillion in earnings over their work life if schools are closed for five months [4, 16–18].

Learning from previous crises, we know that the negative impacts on the economic and educational prospects of individuals will also have medium to long-term health consequences [2]. Unemployment and job insecurity are linked with several negative health outcomes including increases in all-cause mortality, death from cardiovascular disease and suicide and higher rates of mental distress, substance abuse, depression and anxiety [14, 24, 26, 27]. Nutritional deprivation of children and mothers can also negatively impact cognitive development of young children [4, 8].

Combined, these negative impacts on the economy, health and education of individuals and society will also increase inequalities and reduce social mobility. The largest welfare impacts will occur for the poorest households, which will lead to slower recoveries for them as well as unpredictable intergenerational effects - trends also seen with previous pandemics as well as the 2008 global financial crisis [1–4, 26].

3.2 Fundamental uncertainty of the phase transitions triggered by COVID-19 and its aftermath

Given the wide-ranging impacts of the COVID-19 pandemic and its aftermath, it is not possible to predict exactly what will happen to individuals or systems. Acknowledging this fundamental uncertainty, it is also important to acknowledge another key characteristic of any complex system – namely that it will not be reversible to a pre-COVID-19 state. The reversibility of a complex system, particularly self-organised systems like the organisations and societies we create, is informed by the concept of hysteresis, which points to the importance of a particular phase on

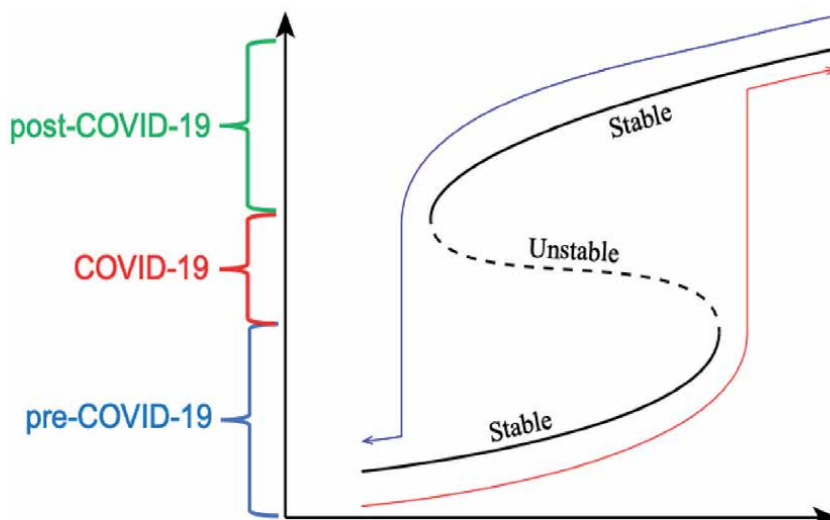

Figure 1.
Hysteresis-informed conceptualization of the COVID-19 pandemic and its aftermath. Hysteresis curve demonstrating how the transitioning stability from pre-post COVID-19 will lead to a new post COVID-19 stable state. The solid line in the curve indicates a stable state and the dashed line corresponds to an unstable state. (Figure 1 adapted, with permission, from reference [29]).

its history of inputs and responses to those inputs [28]. We can imagine our systems in a stable pre-COVID-19 state that is suddenly hit by COVID-19 which represents a shock to the system and drives it towards the system's threshold and past its point of criticality to an unstable COVID-19 state. The unstable COVID-19 state will last for some time and as the acute effects of the COVID-19 pandemic subside, the system will stabilise and approach a stable post-COVID-19 stable state (**Figure 1**).

Viewing our world through a complex systems-lens subject to hysteresis, it is important to note that a stable state only indicates that the system is not subject to unpredictable fluctuations experienced in response to systemic inputs that could lead to a phase transition – the stable state in this context does not indicate that the system is fair, equitable or equally beneficial for all elements of the system. Furthermore, once the system has reached the post-COVID-19 state, the irreversibility of our complex system will assert itself because we will not be able to go back to our pre-pandemic states – we will need to come to terms with a new 'normal'.

4. Designing heuristics to cope with the fundamental uncertainty caused by COVID-19 and its aftermath

4.1 Heuristics in situations of fundamental uncertainty

When devising strategies to cope with the fundamental uncertainty thrust upon us by the COVID-19 pandemic, it is important to understand the distinction between situations of fundamental uncertainty and risk. In situations of risk, we have knowledge about how different variables interact and also have the ability to accurately and robustly measure, and often times predict, the impact of inputs into a system. In a situation of risk, more data will increase the ability to make predictions about outcomes. In a situation of fundamental uncertainty, however, more data can lead to the problem of overfitting. In these days of big data, there is a tendency to expect that more data will always be helpful and enable us to make better predictions. This holds true for situations of risk but not for situations of fundamental uncertainty where the outcomes of our actions are unpredictable and large amounts of data will only give one a false sense of security. This problem of overfitting was demonstrated recently at an international level with Google Flu trends [22, 30].

In situations of fundamental uncertainty, studies by Gigerenzer and other behavioural economists have shown that simple approaches known as heuristics can outperform complex algorithms based on big data models. Heuristics are strategies adapted to a decision-maker's local context and can avoid overfitting, reduce resources required to make decisions while also supporting more accurate judgements by ignoring complexity, which can never be fully understood or controlled. Some examples of heuristics include the '1/N rule' for investment where investors allocate resources equally to N alternatives to help to diversify portfolios and 'satisficing', where a decision maker explores alternatives and selects the first option that exceeds the decision-maker's aspiration levels. In empirical studies, the '1/N rule' has been shown to outperform optimal asset allocation portfolios and 'satisficing' has been shown to lead to better choices compared to chance [22].

4.2 Social determinants of health-informed heursitics in COVID-19's aftermath

The COVID-19 pandemic and its aftermath represent nonlinear events that will drive phase transitions in fundamentally uncertain ways, and often times with negative outcomes. Despite the fundamental uncertainty decision-makers are facing, actions must be taken to try to reduce the negative impacts our citizens

and societies face and, ideally, a more proactive approach should be taken to build a more sustainable, resilient, fair and equitable post-COVID 19 stable state. The ideal approach to cope with the changes we are seeing now and will see in the future is to design and implement appropriate heuristics but a key question that must be addressed is what these heuristics should focus on.

The heuristic we see being used across the world by many governments currently is to issue debt to support economies, healthcare systems and society more generally. While this has been the correct approach, it is important to recognise that the $24 trillion that has been introduced into our global systems is necessary but not sufficient to fully address the suffering our citizens will be facing now and in the future [1, 6, 7].

It is well established that 70–80% of health outcomes are due to social determinants of health, which include factors like access to housing, education, jobs, transportation, nutritious food, clean air, clean water, support services for substance misuse, support services to domestic abuse, etc. [31–33]. Heuristics designed to address social determinants of health at individual and societal levels will go a long way to improving resilience and supporting recovery and, ideally, preventing phase transitions to states of poor health whether that be at individual, organisational, societal, state or global levels. Actively promoting health, instead of just focusing on preventing disease, requires that we shift away from only focusing on the highest risk groups in our population to working to shift the entire risk profile to a lower risk status by addressing the factors that have the greatest impact on health – i.e. social determinants of health (**Figure 2**) [31, 32].

In light of COVID-19's negative impacts, it is even more imperative that we focus on social determinants which have such a large impact on health because it will not be possible to accurately predict the thresholds beyond which phase transitions into states of poor health will occur. Furthermore, once transitions have been made into higher risk groups and into states of poor health, the level of intervention needed to bring the systems back into a state of good health will be much higher and, in many cases, may be irreversible – i.e. for some individuals thrust into poverty, they will have difficulty escaping from poverty traps. Our best option is to promote resilience in the face of COVID-19 and doing so requires focusing on social determinants of health.

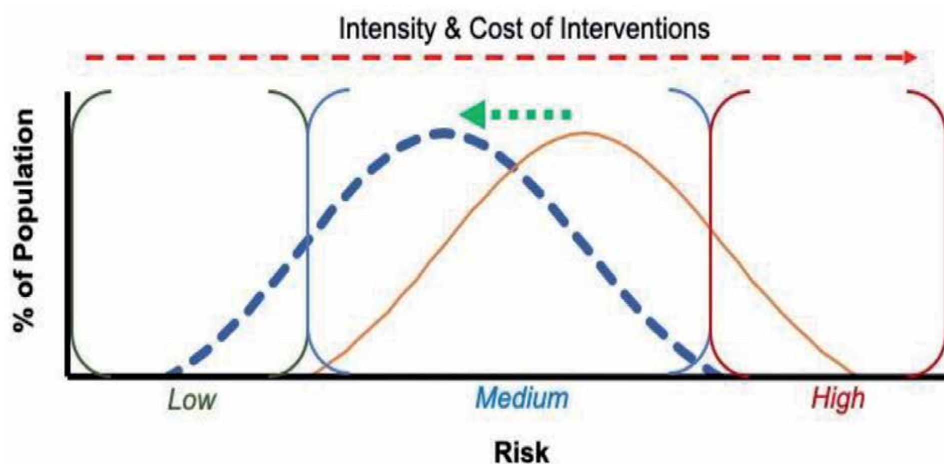

Figure 2.
Shifting risk profiles to promote health: Rose's model of improving health by shifting risk profiles. The x-axis represents different risk subgroups going from low risk at the left to high risk at the right. To improve health, transitions (green arrow) must be made from the yellow bell-shaped curve to the blue dashed bell-shaped curve. Overlaid onto the different risk strata are the intensity and cost of intervention needed to prevent the strata from transitioning to states of ill health (red arrow above). (Figure 2 adapted, with permission, from reference [29]).

5. Promoting resilience in the face of COVID-19 and COVID-19's aftermath

5.1 Resilience within complex systems

For complex systems, resilience entails progression to a new stable state and "...the resilience of a system is measured by the speed with which it returns to the stable fixed point" [21]. Resilience within complex systems is multidimensional and is supported by both internal and external factors. Focusing on health, external factors that can influence resilience rely heavily on social determinants, as described in Section 4. Internal factors for individuals and communities will also have an important role to play but they will often times be more subjective.

Every individual will have a different threshold at which they transition from states to health to lack of health or vice versa. Leveraging a contractualist perspective, individuals' actions will be internally driven – information supporting their decisions can come from external sources, but an individual's actions will be driven through internal processes of deliberation. These processes of deliberation see that an action:

> *"...'would be the most convenient, economical, pleasant, etc. way' of realizing something one already cares about, as well as thinking about how the pursuit of various concerns one already has can be combined, considering which of various conflicting aims one attaches most weight to, and 'finding constitutive solutions, such as deciding what would make for an entertaining evening, granted that one wants entertainment.'" [34].*

The process of deliberation itself will be influenced by individual subjective motivational sets which are "dispositions of evaluation, patterns of emotional reaction, personal loyalties, and various projects, as they might be called, embodying commitments of the agent." Subjective motivational sets can undergo various changes in response to an individual's experiences, as well as external sources of information, and are important from a resilience perspective because they are the core driver for determining the approach an individual takes to bring themselves back to a stable state, notwithstanding the external influences that can support or constrain the individual's progression to a stable state – in our case, to one of good physical and mental health [34].

To promote resilience, some broad approaches that can be taken are to [21]:

1. shift thresholds so that more inputs can be introduced into the system before a phase transition occurs;

2. to reduce extreme events that can introduce inputs that can drive phase transitions and/or

3. Create strategies that can adjust the pattern of input introduction into the system so that their potential destabilising impacts can be dissipated.

Approach 1 would be an ideal way of making our systems stronger and more resilient. At an individual level, they would require that we work to augment subjective motivational sets through education to drive individuals to engage more proactively in health-promoting activities. While very attractive, and ideal, it is difficult to create a standardised way to influence subjective motivational sets

because they will be very heterogeneous within and across societies and across the individuals within a given society. This variability, in itself, introduces an important and unavoidable source of fundamental uncertainty.

Approach 2 would be great from a prevention perspective but, as COVID-19 has demonstrated, is out of our control in many cases. Approach 3 would rely on alternative mechanisms to dampen the potentially destabilising impacts of inputs into a system. For COVID-19, this would entail creating approaches to address the areas that will be impacted most and could increase the chances of individuals and societies transitioning to states of poor health. As discussed in Section 4, social determinants of health are an ideal starting point for building a set of interventions informed by Approach 3.

Given the fundamental uncertainty related to Approach 1 and the lack of control we have for Approach 2, this chapter will finish by providing a set of recommendations to promote resilience that focus on social determinants of health in a way that could help to dissipate the negative impact of the COVID-19 pandemic and its aftermath (Introduction and Section 3.1) and prevent transitions to poor states of health.

5.2 Social determinants of health-informed heuristics to promote resilience in response to COVID-19

COVID-19 has already had a substantial negative impact on individuals and societies, with some already transitioning to poor states of health. We know from previous crises that the trajectory of the future negative effects (Section 3.1) will affect the areas that can have the greatest impact on the short-, medium- and long-term health of individuals and populations. Three specific areas, which are captured within the broad domains of social determinants of health, are employment, education and health. To promote resilience in the face of COVID-19, addressing these areas will be an important mechanism to dissipate the impact of COVID-19 on our systems and subvert any potential phase transitions to states of poor health. We also know from previous crises that addressing these areas can dramatically affect recovery trajectories for dimensions of health as well as inequality [4, 26, 27].

5.2.1 Employment

For businesses, improving access to low-cost financial products can help them to survive and/or become more competitive, which could help to prevent unemployment at source, while also positioning them to create new jobs if they are able to become more competitive [4].

For struggling individuals and households, supporting them through augmented social welfare (e.g. furlough schemes) and benefits support schemes n(e.g. food vouchers for poor households) can help to keep them in a state of health for longer [1].

For those already unemployed, several approaches could be taken to prevent the negative long-term social and health-related effects of unemployment. Temporary income support in the form of unemployment insurance, redundancy payments and social assistance programmes can be provided to support displaced workers [4, 25, 27]. National job guarantee programmes with governments functioning as an ‘Employer of Last Resort’ through support of public works programmes such as green infrastructure (i.e. the ‘Green New Deal’) can create new jobs while also supporting and strengthening the wider economy [35]. Finally, active labour market

programmes such as labour exchanges, education and training and support for subsidised employment programmes can help to support more people to get back into work [4, 25, 27].

5.2.2 Education

For interventions aimed at education, three focus areas can be to cope, manage continuity and then to more proactively work to improve and accelerate improvements to education systems to improve outcomes, address inequalities and reduce learning poverty [18].

Supporting education systems to cope and manage continuity in response to the COVID-19 pandemic is essential. In order to do so, school capacity should be strengthened to help schools reduce risks of disease transmission while also supporting mechanisms to ensure schools do not lose children, particularly vulnerable groups and students below learning proficiency standards, to drop-out. These approaches can include re-enrolment campaigns as well as cash transfer programmes [4, 18].

Some of the focus on changing education systems can also be directed to understanding approaches that can be taken to strengthen and accelerate improvements through investments to support teacher training, addressing any deficiencies in existing curricula and bolstering school infrastructure through technology-enhanced learning [18]. If designed and implemented well, these improvements can also include the introduction of methods to augment the subjective motivational sets of children and youth to help them choose health-promoting behaviours and make them more resilient (Approach 1, Section 5.1).

5.2.3 Physical and mental health

Programmes addressing core aspects of health will be essential. One of the most important will be to support food security through approaches like school meals and food subsidies to ensure we can avoid the short-, medium- and long-term negative consequences of malnutrition. In addition to this, where possible, using approaches like social prescribing to support individuals with conditions that can be brought into remission can help to promote health and also reduce demand on overstretched healthcare systems [36]. They also have the added benefit of supporting more health-promoting subjective motivational sets.

In addition to preventing transitions to ill health and supporting individuals to improve their health, healthcare systems will need to augment existing services with more staff and infrastructural support to provide care to those who are already ill and have not been able to access services and/or individuals who have acquired non-COVID-19 related illnesses during the lockdowns and have not been able to receive care. Given that we will also expect increased mental illness during and post-COVID-19, steps should be taken to prepare for this by raising awareness about mental health issues and also strengthening services such as hotlines and psychiatric services [3].

In the short term, identifying and supporting individuals at the highest levels of risk for falling ill can also be helpful in preventing acute and severe exacerbations of their existing conditions. This can be supported through social registries to ensure these individuals do not transition to states of severely poor health and to also track emerging risks within the population [4]. Caution must be taken with this approach, however, because it promotes an approach that addresses severe risk and preventing disease rather than actively promoting health (**Figure 2**).

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6. Conclusion

The state of our post-COVID-19 future is uncertain and unpredictable. This can be very unsettling but, taken another way, it can also provide a sense of hope. Using the right approaches, we can use the opportunities given to us with the current drives to action to build a more sustainable, resilient, fair and equitable post-COVID-19 future. We will need to understand our constraints and be honest about where our ignorance lies so that we can take the most appropriate actions. A starting point for these actions should be to focus on social determinants of health because they have such a large impact on the health and wellbeing of individuals and societies more generally. As we progress to our post-COVID-19 state, some insights from Donella Meadows are helpful in keeping us humble, hopeful and focused as we look to continue to build our resilience:

> *"For those who stake their identity on the role of omniscient conqueror, the uncertainty exposed by systems thinking is hard to take. If you can't understand, predict and control, what is there to do?*
>
> *Systems thinking leads to another conclusion, however, waiting, shining, obvious, as soon as we stop being blinded by the illusion of control. It says that there is plenty to do, of a different sort of 'doing'. The future can't be predicted, but it can be envisioned and brought lovingly into being. Systems can't be controlled, but they can be designed and redesigned. We can't surge forward with certainty into a world of no surprises, but we can expect surprises and learn from them and even profit from them. We can't impose our will on a system. We can listen to what the system tells us and discover how its properties and our values can work together to bring forth something much better than could ever be produced by our will alone" [19].*

Conflict of interest

The author declares no conflict of interest.

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Chapter 12

Impact of COVID-19 on Psychological Status of General Population

Yuvaraj Krishnamoorthy, Ramya Nagarajan, Gayathri Surendran and Manikandanesan Sakthivel

Abstract

WHO has declared COVID-19 as a pandemic on March 11, 2020. Like the virus affects the entire body, the pandemic affected the entire global trade and economy, leading to the loss of jobs and businesses. Thus, it would be appropriate to quote COVID-19 as a social disease rather than treating only as a medical condition. The COVID-19 pandemic, being a social disease, affects all the individuals of the society in terms of their physical, mental, social health and challenges the economic status of the entire population, irrespective of whether they were physically sick. However, the mental health impact of the COVID-19 pandemic has been overlooked, given its benign nature. We can anticipate a higher prevalence of psychological distress during any pandemic than typical situations. The COVID-19 instils fear and anxiety among people. Isolation and quarantine to reduce disease transmission have a negative impact on one's mental health. The lockdowns lead to the closure of educational institutions and workplaces, loss of jobs, economic loss, lack of physical activity, restrictions on travel and gatherings. All these factors cumulatively affected the mental stamina of millions worldwide. Given its importance, we have reviewed the impact of COVID-19 on the psychological status of general population.

Keywords: Anxiety, COVID-19, Mental Health, Pandemics

1. Introduction

Years later, when there will still be arguments, discussions and research on whether a virus is a living organism or not, we will recollect the devastating effects a virus can cause. Till December 2019, probably no ordinary person, even the scientific community, would have thought that a tiny organism would challenge all human beings across the globe, despite their race, culture, ethnicity, religion and socioeconomic status. On December 31 2019, a cluster of atypical viral pneumonia cases of unknown cause was reported from Wuhan, China [1]. Days later, the infectious agent was identified as a novel coronavirus, with similarity in structure to Severe Acute Respiratory Virus (SARS), and therefore named as SARS-CoV-2. The World Health Organisation (WHO) coined the term Coronavirus Disease 2019 (COVID-19), given the fact that the first case was detected in December 2019. Since its discovery, the virus has affected over 139 million individuals

globally, claimed nearly three million deaths in just 500 days, and the effect still continues [2]. The virus, besides primarily affecting the lungs, attacks almost all the essential organs, such as the heart, kidneys, and liver, to name a few. Given its novel nature, transmissibility, alarming levels of spread and severity and susceptibility of the entire world, WHO declared COVID-19 as a pandemic on March 11, 2020 [1]. Several countries worldwide resorted to a complete lockdown to minimise the spread and prepare their health system, although the duration and frequency of the lockdowns varied across nations. Like the virus affects the entire body, the pandemic affected the entire global trade and economy, leading to the loss of jobs and businesses [3]. Thus, it would be appropriate to quote COVID-19 as a social disease rather than treating only as a medical condition. The COVID-19 pandemic, being a social disease, affects all the individuals of the society in terms of their physical, mental, social health and challenges the economic status of the entire population, irrespective of whether they were physically sick. Research studies on the physical impact of COVID-19 in terms of disease complications are being done globally. The social and economic aspects of the pandemic are also studied by the subject experts, as it affects day-to-day living. However, the mental health impact of the COVID-19 pandemic has been overlooked, given its benign nature.

We can anticipate a higher prevalence of psychological distress during any pandemic than typical situations [4]. The COVID-19 disease instils fear and anxiety among people. Excessive availability of misinformation in social media and lack of awareness among the general population leads to misinterpretation, misconception, stigma and rumours. Isolation and quarantine to reduce disease transmission have a negative impact on one's mental health. The lockdowns lead to the closure of educational institutions and workplaces, loss of jobs, economic loss, lack of physical activity, restrictions on travel and gatherings. All these factors cumulatively affected the mental stamina of millions worldwide. Besides, people recovering from COVID-19 can have its impact even beyond three months after recovery, known as long COVID. Mental comorbidities have a sizeable contribution to the long COVID symptoms.

Despite being benign, the psychological morbidities can affect the quality of life and productivity, mainly due to its chronic nature. Thus, it is essential to identify and treat, and wherever possible, prevent psychological morbidities for a better quality of life and productivity during and after the pandemic. A review of research studies quantifying the prevalence of various psychological morbidities among the general population during the COVID-19 pandemic will help understand the psychological needs and gaps.

2. Impact of COVID-19 pandemic on psychological status

2.1 Anxiety

The pandemic situation has raised a general sense of alarm in the world. In situations of uncertainty, people tend to get anxious about the problems quite quickly. Various literature shows that it was not only COVID-19 patients but also the general population and the health care workers who experienced mental crisis. The prevalence of anxiety has increased in all the groups compared to the pre-pandemic situation [5]. COVID-19 patients fear being stigmatised in society and experience guilt for spreading it in the community. Health care workers are anxious about acquiring the infection from the patients, and the excess workload also deprives them of sleep, rest and appropriate nutrition. Simultaneously, the general public

experiences alteration in the lifestyle due to imposed infection prevention and control measures, leading to anxiety.

While anxiety to the pandemic situation is a normal response, too much anxiety can start to cause harm. It is advisable to seek help in case of excess anxiety. Friends and family play an essential role in providing mental support. Those who are prone to anxiety need to be careful about curating their exposure to social media updates and news on mass media to avoid triggers.

2.2 Depression

Depression is one of the common mental health issues faced in today's world. In all the previous pandemic situations, a rise the prevalence of depression was documented, and the COVID-19 pandemic was no exception to that. Various research was done to assess the prevalence of depression during the COVID-19 pandemic, and almost all the studies reveal an increase [6].

Wearing masks by everyone is a new initiative adopted by all the countries for the COVID-19 pandemic. It has changed the lives of the general population drastically by the way they view this disease. Masks on everyone's face are a symbol and a constant reminder of the deadliness of this disease. It also negatively impacts many people. Consistent and repeated alarms about the COVID-19 have increased the fear among the general population. The strategies to prevent the spread of diseases, such as lockdown, quarantine, and isolation practices, have also installed fear. Lockdown has caused a severe economic crisis in many countries. It has affected the daily income of many people and leads many families into poverty and hunger. Quarantine and isolation have kept people away from each other, thus depriving them of a social life. This loneliness is also a prime driver of depression.

Most people experience somatic symptoms such as body pain, headache and joint pains. Endless treatment for these conditions by ignoring the depression behind all these symptoms is of no use. Engaging in communication with friends, family, and other social groups can make one feel less isolated. In case the symptoms persist, it's better to seek the help of health care providers. Adequate support for mental health is largely lacking in the current scenario due to diversion of the health workforce towards critical care although various organisations like World Health Organisation and Centre for Disease Control have highlighted the importance of the same for the betterment of the people [6, 7]. Wherever available, it is advisable to create and widen awareness about the existence of such services so that those in need may avail the necessary help.

2.3 Stress and PTSS

Pandemic situations are likely to disrupt the everyday lives of people and not everyone takes up these lifestyle changes casually. Any deviation from everyday life leads to altered mental status in many individuals. As we are currently facing the COVID-19 pandemic, we are more involved in studying the dynamics of the disease. But what we are neglecting is the mental health of the people. COVID-19 has changed the lifestyle of all people across the world, with new rules being implemented daily. Public health interventions that are essential to control the spread of infection have also isolated the people. Many are experiencing increased stress due to this. Stress leads to increased fear, anger, sadness, or frustration, Changes in appetite, and interests, Difficulty concentrating and making decisions, difficulty sleeping, physical reactions, such as headaches, body pains, stomach problems, and skin rashes, worsening of chronic & mental health problems and Increased in substance abuse.

There are specific ways to deal with stress, such as increases physical activity, eating a healthy diet, avoid watching excess news channels on COVID-19 situations, talking with a loved one, and connecting with the community via social media. Talking with your friends and family will reduce your stress levels and alleviate their fears and anxiety regarding the situation. In case of experiencing a mental crisis, it is better to seek health care advice rather than dealing with the problem by yourself. In case of extreme stress, people may have thoughts of suicide. It's advisable to contact the toll-free number for suicide control in your country and seek health care immediately.

The COVID-19 pandemic has been creating serious social and financial distress that has led to heightened traumatic stress reactions [8–10]. The stress might also be a reaction to fear of developing the infection for themselves or for their family and friends [11]. The unpredictability associated with the outcomes of COVID-19 infection and uncontrollable burden leading to multiple waves in most of the countries across the world has further worsened the psychological stress among the general public [12]. Though, such stress reactions are expected during any pandemic situation, it is the long-term implications of such condition that makes it worrisome. Prolonged exposure to stress can lead to exacerbations of chronic disease conditions and accelerates the development of disease processes [13]. It can also increase the risk of other comorbid mental health conditions such as anxiety, depression and make the people to take up harmful habits such as smoking, alcohol consumption and drug abuse etc. [14].

Recent evidences have also reported that such stress reactions along with disturbed re-experiencing and intensified arousal is prevalent [15, 16]. However, the exposure to pandemic does not fit into the definitions of post-traumatic stress disorder (PTSD) or its prevailing models [17, 18]. The prevailing models and the DSM-5 criteria [19], has attributed the traumatic stress disorders to the past and direct exposure to a life-threatening event. Hence, the emerging evidence of COVID-19 and its association with PTSD do not account for these models or definitions. The stress reaction to the COVID-19 or any pandemics relates more to the future rather than the past, indirect exposure through media coverage rather than direct exposure to the virus, and stressful situations such as poverty, unemployment, social isolation that does not meet the Criterion A such as actual/threatened death, injury or violence [15]. There have also been previous evidences that shows that traumatic stress reactions can be related to the future, indirect exposure to the trauma, and non-Criterion A events [20, 21]. Addis DR has suggested that the imagination and remembrance are basically the same process as both those events has involved the mental rendering experience [21, 22]. It is because the evidences have pointed out that the neural networks underlying the past and future remembrance are similar [23].

Given the scale and nature of COVID-19, it is possible for the general public to develop PTSD related symptoms, especially during the initial weeks of the pandemic due to the unpredictable and unknown nature of the infection. Media exposure play an important role in the development of PTSD symptoms as it further worsens the fear among the general public by seeing the daily rise in the cases and deaths due to the pandemic. Moreover, people search for additional information about the pandemic through social media and it can raise their fear level given the number of conspiracy theories and false information circulated around in the social media handles. Hence, it is possible for them to experience PTSD by indirect pandemic exposure through the 24-hour news cycle. This shows that the people would experience PTSD in response to the COVID-19 pandemic, regardless of the direct exposure to virus or indirectly through different forms of media or due to negative impact of other experiences such as lockdown, quarantine, isolation etc.

2.4 Sleep quality and insomnia

Sleep is an essential part of a human life. During the times of pandemic, it becomes much more essential in terms of both quality and quantity, as it has several mental and physical health benefits. Lack of sleep and poor sleep quality can seriously impair the psychological functioning of the people and affect their decision-making process. It can also jeopardise the people's immune response and render them more susceptible to contracting the virus and developing the disease [24]. Recent evidence studying various psychological problems among general public, healthcare workers and COVID-19 patients together have pointed out that the poor sleep quality was the most common psychological morbidity during this COVID-19 pandemic [25]. Among the general public, it was found to be the second most common psychological problem [25]. Another review conducted to study the sleep problems exclusively, have also found that almost 40% of the population have poor sleep quality [26]. Despite such high burden, sleep problems are underestimated compared to other mental health problems during any pandemic.

Sleep related problems during a pandemic should not be ignored as it can lead to some serious consequences in their future. Poor sleep quality or insomnia during a pandemic can lead to future risk of obesity, cardiovascular & metabolic conditions, cognition and mood disorders, and can even lead to suicidal ideation and death [27, 28]. This can also result in accelerated cellular senescence leading to rapid and overall ageing. Stressful nature of the pandemic in combination with the personal vulnerability factors plays an important role in the mechanism and pathogenesis of the sleep disturbances [29]. This can exacerbate an existing sleep related conditions and also facilitate the emergence of a newer condition. During this pandemic, several countries have implemented widespread lockdowns, leading to marked change in the habits, customs and practices at workplace and home in the entire population. Combination of this stress of widespread infection, abrupt stop in the social interactions and disruption in the daily routines might have dramatically affected the people's sense of well-being and security and influenced the sleep disturbances [30].

3. Factors influencing psychological impact of COVID-19

The impact of COVID-19 on the society's psyche has been affected by various existing differences and touch upon the core ideas of equity and intersectional experiences of people along cultural, racial, professional and economic lines. The COVID-19 pandemic has been not only a health crisis but also a crucial situation that affected societies and economies to the core and increased inequalities at a global scale.

4. Health threat, fear and uncertainty

The unprecedented nature of the pandemic created a sudden sense of uncertainty regarding not only health but also educational and economic circumstances. As an emerging disease, scientific evidence has been scarce from the start related to various infection characteristics like transmissibility, routes of transmission, signs and symptoms and options for treatment. The information received from reliable sources changed as per the emerging evidence, which gave way to doubts and mistrust in the general public, creating a fertile ground for misinformation and disinformation. This leads to more people being victims of fear than of the actual

disease [31]. At the height of panic, there were even reports of people resorting to suicide for fear of disease-related complications [32].

The source of fear has been hypothesised to be four-fold. These are fears arising for self, for others, of not knowing, and of what action needs to be taken. In case of fear of the self/body, people become hyper-aware of any changes and immediately start associating it with a possible infection leading to morbidity or death. The fear of/for significant others relates to relationships. There might be a sense of guarding oneself against any external person who might prove to be a source of the disease, as well as fearing that someone close to one might get affected. Fear of the unknown is a prime driver of anxiety as it leads to frantic searched for any updates during which crucial updates from reliable sources might actually end up being missed. Fear of courses of action pertain to doubts regarding carrying out daily activities like shopping in the scenario of social distancing, and a pull towards other hyperactive compensatory behaviours like increased social media usage to cope with the altered routines. These may be managed by clear awareness regarding susceptibility, fostering proper attachments with people and promoting emotional support and responsible behaviours [33].

Fear of the disease has proven to be a double-edged sword. Functional fear of contracting COVID-19 has been shown to be the only predictor of positive behaviour change like social distancing and hand hygiene irrespective of political interventions [34]. While some level of fear is good to ensure that people stick to national guidelines, preventive protocols and social distancing, it had the potential of generating panic in the community and increasing psychological distress. There have been records of delayed health-care seeking behaviour for emergency conditions due to fear of COVID-19 leading to negative outcomes, which entails that the public should be made aware of the risks posed by general health conditions even in the light of the pandemic [35].

5. Impact on livelihood

COVID-19 created one of the worst worldwide economic crises in recent times. The abrupt suspension of trade routes and public health measures like shutting down of factories and marketplaces had a direct effect on halting the cash flow; shutting down banks impeded access to transactions. In addition, governments were burdened with the sudden rise in cost of healthcare including management of hospitals, quarantine and isolation facilities, procurement and/or production of protective equipment and sanitisers, as well as funding for research drives in areas of prevention and cure.

The United National Development Programme (UNDP) through its global assessment of the socio-economic impact found that COVID-19 was found to affect people in varied ways. An estimated 40–60 million people may get pushed to poverty because of economic shocks. While the corporate workforce largely retained job security throughout the pandemic due to the option of working from home, historically marginalised communities like those from the unorganised sectors bore the brunt of the economic standstill. Around 1.6 billion informal workers are expected to have lost jobs by the end of the pandemic of which 60% will have little or no savings and no access to social security. This in turn will also fuel an increase in food insecurity, mostly in low- and middle- income countries [36]. Survey's report 62% of households in India with a disruption to their dietary habits due to reduced access, particularly for high-nutrition foods like vegetables and dairy products [37]. Nearly 94% of Bangladeshi persons from lower income groups reported that the pandemic had affected their livelihood, and recorded high stress scores due to the

worries regarding livelihood in addition to fear of infection [38]. Impact on livelihood was found to be a major predictor of mental health problems among Chinese adults [39]. Lower economic classes typically have less financial literacy and lower savings as well as lack of access to manage financial safety nets like emergency funds or access to banks and loans, which worsen their existing plight.

These situations heavily compound the gravity of the pandemic as well as complicate the ability of the general public to stick to COVID-19 protocols. The choice between earning a livelihood and possibly contracting the disease puts a large amount of mental stress on the working population.

6. Lockdown and restrictions

The COVID-19 pandemic typically came with four types of restrictions: large-scale regional lockdowns and curfews; isolation of all identified patients; home-based or institutional quarantine of those expected to be at risk; and general public health safety measures like limiting access to social spaces like restaurants, movie theatres. These created widespread implications of the same that were different from place to place, and across different income groups. In countries like India, where there exists a large migrant working population, a sudden lockdown without mechanisms generated panic due to a sudden loss of livelihood. Most migrants faced problems like eviction, access to food, healthcare, lack of transportation and severe economic stress. Almost no mechanism existed to provide psychological support in those circumstances [40].

Studies that looked at reactions to the lockdown reported moderate to extremely severe scores of anxiety and stress [41]. The process of lockdown was marked by large-scale catastrophising, including speculations and predictions of an apocalyptic nature [42]. The psychological effects have been documented to increase with the progression of the lockdown, while personal quarantine had significant effect on emotional responses like anger, fear and anxiety from the beginning [43]. Irrational activities like panic buying were noted across the globe as people resorted to hoarding as a coping mechanism. There are five main causes for psychological effects of the lockdown – prolongation of the lockdown beyond an expected duration, fear of contamination and infection, feelings of frustration and boredom, inadequate access to essential items and inadequate access to information [44]. Lack of information was primarily faced by people without access to internet or electronic mass media. What has been described as a parallel pandemic is a worsening of symptoms in those with existing mental health problems due to sudden disruption of routine activities and decreased access to healthcare (both due to suspension of health centres, transportation issues and curfew). Lack of access to healthcare was a major cause of stress to older persons as well, who were typically on chronic medications that required follow up and re-fill, as well as belonged to the high-risk population in terms of morbidity from COVID-19, resulting in another conflicting situation. Setting up telemedicine units and deploying on-call services helped to an extend in areas where the infrastructure allowed for it [44].

7. Social stigma

Stigmatic behaviour in health entails associating labelling, stereotyping, and discriminating against people due to a perceived association between them and a disease that is usually based on misinformation [45]. Theorists have postulated

that stigma and discriminatory behaviour are put in place by ideologies that justify the requirement of the same and consider the same as fair and appropriate [46]. Although the question of why stigmatic behaviour arises is complex, the reactions during the pandemic arose due to a fear of the unknown that created more often than not they arise against existing groups, like persons of a certain ethnicity, faith or economic status. The COVID-19 pandemic saw a gradual shift in stigmatic behaviour that affected different sects of people at different points of time. The immediate target after the acknowledgement of the disease were Asians, especially of Chinese descent. In spite of calls by the United Nations and World Health Organisation to stick to the scientific name of the pathogen, large groups including politicians and media houses resorted to terming it the "Chinese virus" or the "Wuhan" virus, thus enabling a rapid spread of hatred aimed at those communities. There were incidents of abuse and bullying against Asians in many parts of the world, especially in cyber spaces like Twitter. In some cases, it extended to calls for boycotting their businesses and disallowing entry to educational institutions. The next group to be affected were healthcare and frontline workers who faced substantial social ostracization including eviction from housing societies and public transport in various countries around the world in the misbelief that they acted as carriers of transmission [47]. The identification of a case cluster at a religious convention led to widespread communal hatred against a specific religious community in India [48]. Persons who failed to follow preventive measures or broke curfews were also identified as targets for public shaming and bullying in line with the concept of 'the immoral other', labelled as 'potential murderers' and 'super spreaders' and even faced criminal charges in many places to the point of facing murder charges [49].

The impact of stigma is multi-fold. It creates an unhealthy environment where people hide their illness and health seeking behaviour gets impaired, which in turn leads to delayed testing, diagnosis and the possibility of higher morbidity and mortality resulting from delayed care, as well as higher transmission probability. The psychological impact of the social behaviour thus translates to being a driver of the pandemic. Various ways suggested to deal with the crisis and reverse the effects of stigma were to actively discourage any associations with ethnic groups by using the appropriate scientific terms, keep the general public updated on the latest information using popular culturally appropriate media platforms, discouraging criminal punishments aimed at those who fail to follow protocols.

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Chapter 13

Psychoanalysis and Non-Adherence to Medical Advice: An Ethical Dilemma in Covid-19 Pandemic

Paolo Azzone

Abstract

Mitigation measures required by Covid-19 pandemic have posed severe restrictions on individual freedom and have been met with persistent opposition in minority circles. As non-adherence to preventive measures is believed to increase health risks for the society at large, dissent from official policies has been a source of concern. Within this framework several eminent psychoanalysts have suggested psychoanalysis should be enrolled as a component of health related public opinion campaigns. The chapter will discuss the historical relation between mental health institutions and social control strategies and will formulate a psychoanalytic model of the social dialectic associated with the Coronavirus pandemic. The model will allow the author to offer grounded ethical perspectives on the issue.

Keywords: Psychoanalysis, Adherence to medical advice, Ethic, COVID-19 Psychological Sequelae, COVID-19 mitigation measures

1. Introduction

Psychoanalytic and psychiatric practices have often got me in touch with people displaying a disproportionate fear of infectious diseases. They wastes their life among washing and cleaning rituals, but can get back no sense of safeness. The patient's partner or relatives – at length even the patient himself – get to realize his anxiety about infectious risk is clearly unrealistic and that he is wasting all of his existential energy. So, in the end a professional help is sought, and a psychiatric diagnosis is formulated, which generally includes phobic neurosis or hypochondriasis.

Anxiety about inter-human contact has a long story and no doubt antedates our modern understanding of the etiology of infectious diseases. In primitive or archaic societies contact with certain members of the community was associated with the violation of severe religious prohibitions. The anthropological literature speaks of *taboos* [1, 2]. In the caste system, which till now has a substantial impact on Indian social structure, the even indirect contact with members of inferior castes is bound to elicit a dangerous pollution.

In Europe the culturally accepted representation of pollution had gone through several stages over time. Medieval Christianity focused on improperly polluted sexual

contacts. The water of Greek-Roman ritual purifications gave so way to the sacrament of Penance, which included magical components and often featured a compulsive quality.

In modern societies the danger associated with inter-human contact has often been equated with an infectious threat. So the feared contagion diffused by supposed plague spreaders has repeatedly replaced sexuality as a paradigm of pollution. In his masterpiece, *I Promessi Sposi*, Alessandro Manzoni [3] taught the readers how the populace is permanently willing to unleash against guiltless minorities whenever health and physical life are supposedly endangered.

Nowadays, humanity is confronted again after decades with an infectious disease characterized by significant morbidity and mortality rates, particularly so in older people. And fear grows more and more. Epidemiologists, the government, the media, and the public opinion are racing in the pledge for more and more restrictive measures which put severe limits to individual freedom.

Hostility among citizens is increasing by the day. Older retired women use to blame the rare pedestrians when they fail to properly wear their face masks; fierce checkout girls spell detailed hygienic regulation to fearful consumers; zealous citizens report to the police their neighbour for any supposed violation of lock-down measures; young people with substantial internet skills expose innocent runners or reckless children to mediatic shame.

No doubt: the SARS COVID-19 Coronavirus had yielded a deep and dramatic cultural change. The epidemic mitigation measures have called for an interpersonal distancing which is unprecedented in western history. Social and economic problems which have been tripping European governments over the last decades have been suddenly put aside, while public wealth has been wasted without reserve in the unfortunately useless attempt to stop the spread of the disease.

In a recent book [4], the well-known philosopher Gorgio Agamben formulated the coronavirus epidemic within the framework of German theory of the state as a *state of exception* [5], an emergency against which the constitutional guarantees appear as absolutely irrelevant, needless concern for trifler jurists. Freedom, social justice, religious experience and the whole lore of values on which our society is based – values which could be established only through long and bloody struggles – have suddenly lost all of their importance.

Fear has gained a core position in current socially shared representation of human reality. The politicians, the media and the public opinion have unanimously agreed that all the social structure and the economic organization should be rapidly reformulated according to illness prevention needs.

Just as in primitive or early modern societies, contagion, contact and fear occupy the centre stage. Hypochondriac anxieties have begun to spill out of the corner where modern thought and the advancements of medicine had confined them. The phobic parts of personality have taken control of contemporary culture.

So, in XXI century advanced societies, hypochondriasis becomes the official, or rather the single accepted thought, and severe opponents of critical thinking call for a strict censorship of any dissent.

The dissidents have been the victim of a savage mediatic campaign which associates them explicitly to neo-Nazi's intellectuals. Just as the latter strive to negate the width of Hitler instigated butchery of Jews during World War II, the opponents of the health related state of exception would be negationsists, *i.e.* obviously insane or even demented people [6].

Against such a background several eminent psychoanalyst have taken sides. They have openly blamed dissidents. They have suggested psychoanalysis gives up its traditional option for neutrality and enlists beside traditional institutional powers in the repression of dissent.

Over the last years a greater integration of psychoanalysis within the healthcare system has been authoritatively advocated [7]. Now Austin Ratner [8], an advisor to the American Psychoanalytic Association advocacy, public information, messaging, and branding task force, stated that psychoanalysis should contribute to fostering the citizens' widest consensus to contagion preventing measures.

In Italy, many mediatically prominent psychoanalysts are sharply critical of the opponents of the government. Massimo Recalcati ("I paradossi della tirannia sanitaria" *La Stampa*, October 13th, 2020) writes that lockdown critics fall prey of an "underestimation of the clinical and epidemical severity of the virus". The opponents of institutional power would be only immoral "libertines", unable to tolerate the wise limits which political institutions have to pose to an unrestrained freedom.

In an interview to the TV network *La7* Umberto Galimberti does not hesitate to name the dissidents mad and delirious. "With lunatics you can't easily discuss. Can you persuade those who deny reality that reality is different? It is very difficult". Meanwhile, from the pages of *Il Sole - 24 Ore* Vittorio Lingiardi and Guido Giovanardi summon all psychoanalytic colleagues to join forces against any dissent to the management of the pandemic emergency.

Lingiardi and Giovanardi have no doubts: any opposition to infection prevention measures "increases the number of cases and deaths due to coronavirus infections" and is dependent on a primitive mental functioning, where denial is a basic defense mechanism. Psychoanalysis should therefore leave her century old withdrawal from the political arena and become "a force for social change" merging within public health institutions with the aim to reeducate and free from their own neuroses the scanty army of the dissidents.

Sarantis Thanopolus, current President of the Italian Psychoanalytic Society, in an article for the *Huffington Post, Italian edition*, chose a more balanced position. He believes psychoanalysts should stick to a mainly clinical attitude and be available to treat both patients denying the severity of the epidemic risk and the phobic excesses which the pandemic emergency might induce in predisposed subjects.

2. Mental health and social control

How could this deep change be brought about? How could psychoanalysis turn into a compliant device for the management of public opinion? In order to answer this question we will now cast a look at the history of the relations between professionals and praxes of mental health, on one side, and control of socially improper behaviors, on the other.

Our review will begin with the late Middle Ages. In the year 1321, authorities close to the King of France began to spread (obviously forged) evidence that a dangerous international plot was underway ([9], p 5–28). The plot would have been supported by Islamic powers along the Mediterranean coasts and maybe by international Jewish elites.

The plot was aiming to overthrow legitimate Christian sovereigns and establish a new rule. The inquirers had no doubt about the main agents in the conspiracy: people living at the margins and all the more dangerous as suffering from an infectious disease. The Pope couldn't but yield to the overwhelming evidence and authorized the civil servants to take appropriate action.

The lepers' slaughter began in June, 1321, in several cities. The outraged populace took active part in the repression of the rascals, enthusiastically welcomed the authorities' recommendations and, should these prove late, initiated the rampage without waiting for "a judge or a bailiff".

As could be expected, such a wide slaughter could not be completed. The surviving lepers were therefore permanently confined within *ad hoc* institutions. Focault [10] taught us that in the Baroque age lunatics will become the heirs of these very places devoted to seclusion and control.

Official psychiatric narratives celebrates Philippe Pinel as the man who gave back freedom to lunatics, in 1795. Actually Pinel released lunatics from workhouses where their behavior had been controlled and their vices punished, but their psychiatric condition had never been treated. However, in the state hospital which succeeded to workhouses as a place for the specialized treatment of mental disorders, behavioral control rapidly reemerged as a basic institutional goal. In Italy, it took to Franco Basaglia decades of political fight to obtain a law who banned psychiatric hospitals, in 1978.

Psychiatrists in clinical practice know all too well that to the general public madness has always amounted to a frightful ghost, a gloomy, lurking danger which needs to be put under control at all costs. I will not discuss here the upsetting condition of contemporary psychiatric care in Italy or elsewhere, but none will deny that the control of improper behavior still stays a core concern of psychiatric services.

Today, against the background of epidemic emergencies, from psychiatric and psychoanalytic institutions something more is required than the sole enforcement of social norms. Nowadays, mental health professionals are called to substantially contribute to the establishment of an unrestricted compliance with institutionally proposed beliefs and ethical values.

This more ambitious social goal is however no complete novelty either. The reader may consider the role psychiatric services played in Soviet Russia as a device for the repression of political dissent [11]. In Soviet society the control of dissent relied on two concurrent and cooperating paradigms: the criminal justice and the mental health services. The Art. 70 in Soviet Criminal Code of 1958 included the crime of "Disorders and anti-Soviet propaganda". In addition, the "Dissemination of fabrications known to be false, which defame the Soviet political and social system" was the focus of the Art. 190–1, introduced in 1967.

The harsh juridical procedures were integrated by mental health interventions. A large number of dissidents were classified as suffering with mental disorders and relegated into psychiatric institutions. On a descriptive perspective, heterodox political ideas were interpreted in terms of delusion of reform, while the diagnostic category of latent schizophrenia was the most relied upon in order to justify compulsory admissions.

In the most perfect society the world over, opposition to government was obviously evidence of madness. As Khrushchev wrote on the *Pravda* of May 24th, 1959:

> *Can there be diseases, nervous disorders among certain people in a Communist society? Evidently yes. If that is so, then there will also be offences, which are characteristic of people with abnormal minds. Of those who might start calling for opposition to Communism on this basis, we can say that clearly their mental state is not normal.*

The parallel between Khrushchev's thoughts and Galimberti's unsympathetic devaluation of lock-down opponents is obvious and dismaying. In Soviet Russia political violence and repression were everyday means to enforce consensus. We do hope they will not soon infiltrate the democratic West, too.

3. Negation and negationism

Propaganda, no less than advertisement, thrives on a skillful distortion of language. Psychoanalytic theory and practice, on the other hand, requires extreme

accuracy in word selection and use. Before we develop further our review of the role of psychoanalysis with reference to health related negationism vs. conformism, we need discuss briefly some words which are relevant to the issue.

Denial may refer to both internal and external reality. This may create substantial confusion. So, in order to be more accurate, we'd better rely on the original German terms. The *Verneigung* [12] is a defense mechanism. It withdraws from knowledge a content of the Unconscious through a direct negation. Here is an example from Freud's: "Sie fragen, wer diese Person im traum sein kann. Die Mutter ist es nicht" ("You ask me who such person in the dream might be. It's not mother", ([12], p 11)). The *Verneinung* do not remove a piece of information from reality (*e.g.*, about virus lethality), it focuses on unconscious contents. It can in no way be associated with health prevention measures dissent.

The concept of *Verleugnung* was introduced by Freud in 1923 (*Die Realitätverlust bei Neurose und Psychose*, ([13], p 365)) and was further discussed in 1927 (*Fetischismus*, ([14], p 311 ff.)). *Verleugnung* tackles unpleasant realities and perceptions by directly disavowing them. In *Fetischismus* Freud mentioned two patients refusing to acknowledge their father's death.

Verleugnung is a primitive defense mechanism and is typically associated with schizophrenia or severe paraphilias. It operates on factual, universally shared realities, not on political or philosophical beliefs. It cannot help understand neither the socially spread dissent to illness prevention measures nor the poor trust in political institutions.

We may mention here *Schizophrenic Negativism*. It is a symptom of schizophrenia. It implies the refuse to perform what is required by the visiting physician. It is a symptom of a dysfunction of will, not of thought or cognition.

Let us finally come to the historical *Negationism* or *Shoah Denial*, a concept to which several supporters of educational psychoanalysis have associated any opposition to the epidemic mitigation measures. *Shoah Negationism* or *Denial* is an ideology purported by Neo-Nazi intellectuals. It denies the extent of the butchery of the Hebrew people which was implemented by Nazi institutions during World War II.

From a psychoanalytic point of view, Shoah Denial amounts to a sadistic interpersonal strategy. It aims to elicit the maximum possible emotional pain in the political enemies, through the downplaying and pollution of their most intimate and traumatic collective memories. It should not be misunderstood as a defense mechanism.

How can we then realistically describe social movements opposing pandemia mitigating measures? Which words could be the most appropriate? The core issue with preventive measure oppositions is no doubt the *dissent* with reference to the prevailing representations of and solution to the epidemic phenomenon, as are proposed by media and by scientific and political institutions. *Dissent* is the attitude of those who disagree with the prevailing ideology in a specific community.

Over the course of history, the citizens have ranged again and again along opposite poles: Catholic and Lutherans, fascists and antifascists, patriots and reactionary clericals, supporters of Stalinist Communism and democratic activists, and, nowadays, supporters of political freedom and advocates of sanitary ideology. Such ideology and identity polarization can be understood from a psychoanalytic point of view as a function of the defense mechanisms of splitting and projection into the adversary of one's own anxieties.

As for the opponents to the government policies and to prevailing social organization, a masochistic identification may play a significant role. This is particularly obvious whenever opposition implies facing overwhelming threats, like was the case for Christian undergoing martyrdom, for various national heroes wasting

their life for the good of their community, to Solzhenitsyn in the Gulag or Cato the Younger choosing freedom over life.

In the next section we will try to formulate a more articulated model which could help us better understand the splitting which has recently appeared within contemporary society and the harshness displayed by the two opposing sides.

4. Biological viruses and emotional viruses

What happened to contemporary man? How could a whole society get ill with fear? Can psychoanalysis contribute to the understanding of the changes which the Coronavirus pandemic has yielded in our society and of the amazing consensus which the ideology of social distancing has won the world over?

Wilfred Bion clinical and theoretical work during and after World War II cast an original light on regressive phenomena in groups [15]. Whenever a group experiences distress and helplessness, it regresses to primitive functioning patterns where emotional exchange and the search for the truth are replaced by Super-ego imperatives and prejudice.

Bion termed such patterns *basic assumptions*. Under such perspective the flooding of the social space by an irresistible feeling of fear can be associated in Bion's system with the basic assumption of *fight or flight*, where the unconscious fantasies shared within the group are annihilated by the experience of an overwhelming threat.

At the core of contemporary society an enigmatic and ominous threat is lurking, then. What frightens contemporary man? Why do as much or even more dangerous social threats – you may think of terrorism, nuclear war, climate change or cancer – exert a much milder impact on our emotional social life than an infectious disease? Which gloomy resonance can a respiratory virus elicit in Western cultural space?

In order to answer such questions we must firstly remember that modernity relies on a specific epistemological option: our society and our culture have explicitly opted for a strict and rigid materialistic reductionism. This has brought about an inevitable devaluation of emotional experiences and an underestimation of their role in the society and in the individuals' lives. Under this perspective, the pain associated with experiences of separation has been the object of a particularly fierce denial.

The life cycle brings about an inevitable amount of emotional pain (*cfr*. [16]). Growth implies more or less traumatic separations. Aging undermines adult's social and family roles. Even in the hyper-medicalized society of antibiotics, vaccines and organ transplants, illness and death stay embedded in the human condition and are followed by an inevitable trail of suffering in the family and the community.

Against such experiences, contemporary culture has tried to put up an impassable wall, through the activation of massive defensive mechanisms. It has isolated and sterilized death within the hospital container. Has hidden corpses in far-flung crematoria.

We all know the impact such cultural structures have had on the elaboration of the response to Coronavirus epidemic. Besides, the distancing between generations, but also within the sexual couple, which is so obvious in contemporary society, dates back to some decades before virologists have agitated the threat of intrafamilial contagion.

The ever increasing and now undisputed success of the paradigm of the nuclear family and the concurrent spread of permanent celibacy give evidence of a widely shared fear and uneasiness with close interpersonal relationships and amount to an exasperated response to the issue of interpersonal and couple conflicts.

No human interaction, though, can be immune from a meaningful exchange of emotions: happy, but more often sad ones. Any contact within the couple or the family conveys not only viruses but also an unavoidable burden of anxiety, pain, conflicts and fears. This is the very contagion which frightens contemporary men: the emotions which arise in interpersonal interactions.

No safety measure, though, no surgical or FPP3 mask can spare us this emotional contagion. From the toil of interpersonal relationships can only the most extreme autism free us. Or death.

We will now report a psychoanalytic case, which may offer some further insight in the phenomenon of pandemic related anxiety and the use of social distancing as a way to regulate emotional distance in relationship.

5. Nedda and social distance

COVID pandemic stroke during the third year in Nedda's second analytic experience with me. Nedda – then about 50 years old - had been referred to me for a depressive state some years earlier. Her first treatment segment had been focused on her interpersonal patterns. The analytic work had revealed a severely dependent oral structure with inability to handle separation from mother and sisters within a large family.

Since the first consultation, Nedda's imposing appearance had given further evidence of a severe dysfunction in her oral libidinal organization. Her severe obesity seemed to have stripped her body from the most obvious female shape markers. Her dressing style, her attitude and her behavior all concurred in reassuring the interviewer that she represented no sexual challenge or opportunity. In fact, she was compliant with every social norm or widespread ethical ideal, and made every effort to let the interviewer feel at ease and in control. She never questioned treatment rules and conventions.

In the first treatment segment the interpersonal sources of depressive symptoms had been a major concern and interpretative interventions had been limited to the more superficial components of transference. Nearly two years elapsed before Nedda sought again my help.

In the second treatment segment, the question of weight control took the foreground in sessions for a while. Due to her obesity, she experienced severe abdominal problems, which required surgical treatment. For a few weeks, she attended self-help meetings for eating disorders. However, at the time of the onset of COVID-19 epidemic in Italy, the issue of weight control had already slipped back in the background or, rather, it had even been forgotten.

Nedda was now completely focused on her unique marital relationship. Consistently with her developmental pattern, the relation was very close, nearly suffocating, and the spouses' social interactions outside the couple were limited to immediate relatives. A single medication supported intercourse, on the wedding night, had been extremely dissatisfying, and was followed by no other attempt over 15 years. Nedda and her husband used to spend all of their free time in their apartment, but their relationship was strained, with chronic hostility and coldness, and occasional rage outbursts.

Nedda seemed absolutely unaware of her contribution to the permanent sexual inhibition in the couple. Her husband's poor availability to undergo treatment for a possibly somatically based impotence was to her the undisputable evidence of his guilty indifference. While never considering the option of becoming a mother through artificial insemination, she laid on him all the blame for her having missed the experience of motherhood.

She consumed sessions after sessions in complaining of her husband's insensitivity. If her house was usually in a mess and the furniture had never been completed this was due only to her husband's insufficient motivation and general fear of responsibility. Consistently, Nedda believed her consistent devaluation and coldness had no impact on the chronic depression he had been suffering for years. This highly ambivalent but obviously symbiotic lifestyle was bound to get even more strained due to the impact of COVID 19, as we will soon see.

Sessions with Nedda used to develop along one of two possible patterns. In the first pattern, which we might term *warm*, Nedda flooded the office with her emotions and words. Outrage and blame were the prevailing affects.

The object of blame might vary: the boss, a colleague, a sister or a sister in law. Usually, the husband seemed to carry most of the guilt. When a session unfolded according to this *warm* pattern I had limited room available for my interventions.

Generally, the misdeeds of the guilty character were described in detail and took most of the session. I had only the option to listen in silence or ask for some additional information. Whenever I could finally have a chance to offer an interpretative intervention, Nedda would immediately got overcome by emotionality and tears.

In the subsequent session or sessions, Nedda would typically appear quiet and satisfied. She would waste the session in trivial chatter, which offered no meaningful material for my interventions. I will term this second associative pattern a *cold* pattern. During *cold* sessions I often felt uninvolved and needed a substantial effort to keep adequate attention.

At the time COVID-19 epidemic reached our country, I was dissatisfied with Nedda's treatment. I could envisage no clear goal or therapeutic pathway. I began to believe Nedda was unable to sustain any interpretative work. She apparently came to the sessions to the only aim of checking my continuing availability and keeping at bay any interpretative effort by me.

COVID pandemic unavoidably had a substantial impact on the therapeutic relation. As a physician spending some hours a week in an inpatient psychiatric facility, located within a general hospital, I expectedly got ill with Coronavirus syndrome early, even days before the epidemic had been officially recognized in Italy by local health authorities. I could personally inform Nedda of my condition, which kept me from meeting her in session for some time. Nedda had no difficulty in getting back to analytic work as soon as I had recovered.

While back in my office, I felt clearly relived by my somewhat easy recovery. Although I needed no hospital treatment, the experience of a potentially lethal condition is bound to bring about a closer awareness of the reality of death. In the first session after the interruption, I often realized my interventions included a measure of basically improper optimism about the epidemic, which gave evidence of the activation of manic defenses.

Nedda's behavior in session showed a clear compliance with what she guessed were my unconscious expectations. Neither then nor later she showed any hesitation in attending sessions with me, and the treatment was suspended only over a short time period, when a general ban on outpatient health services was enforced by authorities for epidemiological reasons.

However, in her life outside the analytic situation, Nedda stuck to the opposite attitude with reference to contagion prevention. As time went by and the morbidity and lethality associated with the COVID 19 disease came to be more and more apparent, Nedda's social isolation got absolute.

She worked only on a remote working basis. She left her house only to purchase food. She meticulously disinfected each shopping bag. She ceased meeting any relatives of her, including her old mother.

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At the time the illness was ravaging in Italy, her life choices were far from exceptional within the general population. However, as the months elapsed, most citizens kept to the restrictions suggested by official health institutions and avoided any further preventive procedures.

Nedda, on the other hand, continued to lead an extremely secluded life. At length she got back to office every now and then, but met her mother and sisters only in a couple of instances (two funerals) over an entire year. She had no other human contact beside her husband. However, oddly enough, particularly as the media were emphasizing the epidemiological risk associated with healthcare professionals, Nedda never questioned meeting me regularly in sessions. Nedda used to enter the room with some hesitation, as if she feared the contact with me might be actually the cause of an infection, but once inside she seemed to lose any inhibition, and even occasionally dropped her face mask as a matter of course.

I will now report a sequence of sessions which yielded novel insights into Nedda's specific transference patterns and into the anxieties elicited in her by the COVID pandemic. Nedda began a session by reporting how the COVID pandemic had painfully affected her own life. She particularly missed very much a chance to meet again her mother physically. I pointed out to her that the COVID-19 epidemic had led her to a nearly complete withdrawal from social and even family life, but that she apparently didn't fear meeting with a physician in occasional clinical contact with COVID patients.

Nedda felt the need to justify herself. She had not forgot her mother. She got in touch with her daily on the phone. Beside, the choice for a definitive physical distancing from her had not been completely her own, and had actually been forced on her by her youngest sister. Nedda had always described the latter as aggressive and authoritarian. Against her will, no one in the family, and particularly Nedda, dared to act.

I told Nedda that the COVID-19 pandemic had dramatically changed her own life. She had lost the relationships which had meant so much, which had even meant all to her till some months earlier. I acknowledged her view that her sister's pressure had been a meaningful factor but formulated the hypothesis that she was less in need of contact with her relatives than before.

The patient acknowledged only that she felt some annoyance towards her sister. She had felt rejected in a couple of episodes. She did not appeared particularly moved or interested by my comments.

Some sessions elapsed and Nedda entered my office in a state of deep distress. After some unsubstantial interpersonal memories, she focused on her husband. She was fed up with him. She reported that he had been withdrawn and depressed for a couple of weeks. She was not willing to put up with him any longer, and in fact she had been more explicitly aggressive and devaluing towards him than ever.

Nedda went on reporting that during a quarrel her husband had even put his hands at her neck, and could only with difficulty control the drive to chock her. I, too, found some difficulty in controlling my countertransferential response to the patient's communication.

I felt the patient was in some way provoking me no less than her husband. She was apparently precipitating an explosive couple conflict which could prove dramatically dangerous. After years of analysis, she was still turning more to acting out than to associations in the analytic room as a communication device. I could exteriorly control my helplessness feelings and shared with the patient my concern for her health and even life. Nedda spent most of the last part of the session in tears but did not express any manifest comment on my intervention.

In the following session things were different. Nedda was outraged and flooded the room with savage blaming. The focus was no more the husband, though,

rather myself. In a way disregarding my manifest comment on the dangers she was exposed to, she relied on an intuitive insight into my countertransferential feelings. To her I was implicitly siding with her husband, a violent, murderous man. I wasn't defending her from him, even when her own life was at stake.

At the time, Nedda's transference was obviously dominated by an oedipal unconscious fantasy where a heroic knight was bound to rescue her from the hand of an impotent but murderous father. Nedda's fantasy may also have included a dawning awareness that her enormous body would never allow her to compete with mother's beauty and erotic power.

Nedda talked in a loud voice and vomited her blames on me one after the other. For several minutes I was unable to stop her complaint. I felt both hurt by her authoritarian projective blames and helpless. Finally, I commented that she was realizing psychoanalysis, particularly psychoanalysis with myself, was different from what she expected and maybe even from what she could actually need.

She was looking for someone to encourage, support and praise her, someone who could show agreement with all she made and said. I admitted a relation like that – which we can here characterize as regressive and narcissistic – could temporarily ease her emotional pain, but made clear that psychoanalysis was something different.

It amounted to an interaction with a professional who has his own identity, and just because of that can offer novel views and open new doors. This was the only way genuine interpersonal change might be brought about.

The intervention proved able to loose tension in the session. The patient told me she didn't need now to interrupt the treatment as she had decided before entering the office.

To me the session had been extremely informative and had offered the elements I was badly in need to properly formulate Nedda's transference. I was now in the position to answer some questions: Why had Neddda exceeded authorities' recommendations and turned to a phobic avoidance of most human interactions? Why did she meet her analyst with no apparent anxiety and even occasionally and deliberately pull off her face mask?

In fact, Nedda feared nothing more than an object, an interpersonal object. After weaning she had never accepted her mother could no more directly answer her oral emotional needs. And had turned to concrete, material nourishment in order to sustain the fantasy of an omnipotent mother which was indefinitely available to her oral wishes.

Her regressive oral inner world was at ease with self-object and only with self-objects. A male sexualized object did not frighten her because of his valuable gifts or his ability to elicit libidinal forces within her body. Rather, she deeply feared the emotional exchange which any interaction with an external object is bound to yield. An object has his own wishes, fears and memories. An object hosts his own fantasies within his own inner world. An object can receive projections, can react empathically, but may also be withdrawn, hurt or enraged.

In the transference, she was often unable to resist her own oral greed. She felt forced to close distance to the analyst, to meet at last a human being, to find a listener to her pain. Such transference wish brought about *warm* sessions, where communication in the analytic situation was intense.

However, this very transference communication and exchange was bound to enhance her deep fears. Her need to be fully in control in any interpersonal relationship was severely threatened. She felt helpless, exposed, dependent on the transference object for her emotional well-being. To her, human interactions included then a virus, an emotional contagion. In the *cold* sessions which systematically followed the warm ones, she wore again an emotional mask and meaningful communication got restricted.

In Nedda's case, exaggerated illness prevention measures amounted to a strategy to control interpersonal interactions and keep at bay her unlimited interpersonal greed. The severe social and interpersonal withdrawal Nedda had gone through in the third analytic year was not based on health related concerns. It was Nedda's strategy to shelter herself from the threats implied by close interpersonal relationships and particularly by the transference relationship.

Nedda's case teaches us that the primitive part of personality may be continuously concerned with the emotion elicited by interpersonal relationships. The resulting persistent conflict between the unlimited longing for close interactions with significant others and the concomitant fear of being flooded with projections by the interpersonal objects has played a significant role all through human history. We have mentioned above how widely shared cultural representations and institutions offer evidence that inter-human contact is dangerous. Contemporary society enhanced concern with the threat of infectious diseases, a concern which dates back much earlier than coronavirus epidemic, is very likely to thrive on this very unconscious threat.

To a psychoanalytic eye, the general public representations of compliance vs. nonadherence to prevention measures are massively infiltrated by socially shared unconscious phantasies based on the dangers of interpersonal contact. As both clinically active and theoretically informed psychoanalysts, we are consistently called to understand the unconscious roots of these very phenomena.

6. Psychoanalysis and freedom

Sigmund Freud developed psychoanalysis as an antidote against the hypocrite moralism of Victorian Europe. Freud believed that the freedom with which he had been able to explore human sexuality was the most important source of the opposition psychoanalysis met in the to him contemporary culture.

Psychoanalysis still remains a theory and a practice which allow those who have been silenced to open their mouth at last, which lend to the repressed unconscious contents an unexpected freedom of speech. Psychoanalysis is a subversive discipline.

Psychoanalysis has always been unwelcomed in totalitarian regimes. In Soviet Russia it was banned altogether [17]. In Nazi Germany it underwent a process of *Gleichschaltung* (integration) within Nazi state institutions, and was submitted to the leadership of Mathias Göring, the cousin of the infamous Hermann Göring, Hitler's close co-worker [18].

Within the framework of the dramatic reality we are currently experiencing, psychoanalysts, no less than other citizens, can agree with various different preventive strategies and support various political forces. They must always remember, however, that the psychoanalytic endeavor implies a position of strict neutrality vis-a-vis political and social issues.

In *Tatbestandsdiagnostik und Psychoanalyse,* Freud [19] wrote that psychoanalysis is a *sui generis* science of the inner world, i.e., of the wishes and representations which haunts the patient's unconscious. Psychoanalysis can in no way contribute to the testing of factual reality. It can validate no political or ideological statement.

Freud believed psychoanalysis thrived on the search for truth ([20], p 94), but psychoanalytic truth is never an external, objective truth. It's always a subjective truth, better a dyadic truth, which is piecemeal constructed within any specific patient-analyst couple.

In order to effectively reach such subjective truth, the psychoanalyst is required to keep to a position of strict neutrality with reference to the object of his

investigation. There's no doubt: a psychoanalyst will never be able to enroll his or her professional skill in the service of any ideology or social model, however valuable to the society at large it might be, without permanently infringing his or her professional ethic.

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Chapter 14

Anxiety and Depression in COVID-19 Times

Hamilton Lima Wagner

Abstract

The millennial generation has been known as the most anxious and depressed one, due to lack of more physical attachment. During these COVID-19 times, these problem had been widened for everyone - many had been panic about the illness, the media had played an awful hole on it, creating a scenario of huge risk for lives and jobs. We are facing a perfect storm, where we are not allowed to do most of the recreation and healthie programs - like visit the ones beloved, go to gym, go to a party. The use of internet have a lot of misinformation about the pandemic and even physicians, scientists and health politicians overload us with useless information. It was really hard to identify what was important. In this situation, dealing with uncertainty, anxiety and depression had created a huge problem for physicians and psychologists. How to help and support that. There are many strategies that we have used. First to diminish the search of information over COVID-19, selecting one trustable source. Second, contact your beloved ones, if possible with video call on an everyday basis. Third, develop a routine of physical activities in order to keep your body health. Fourth try to develop a health pattern of food. Together they can diminish the chance of having anxiety and depression. But if you need support for a professional, it's important to have teams of professional available to give attention to that issues. The very first is a phone support or internet support, by teams that could discuss the problems and develop a personal strategy to deal with this situation. But when that is not enough, we must have a consultation with a physician or a psychologist. The approach must discuss fillings, worries and how to plan this isolation times. Most of us have a hidden agenda and fear that must be addressed and at this time it is important to allow the patients to talk about freely, and to develop empathy with their worries. After that we can promote some activities to diminish the fillings of anxiety and depression.

Keywords: anxiety, depression, COVID-19, therapy

1. Introduction

Much is said about the epidemic of mental problems due to the pandemic caused by COVID19, particularly anxiety and depression. People have difficulties in dealing with confinement and more than that, facing excessive information - usually causing fear and panic. The scenario completes the fact that a very large number of families lost family members and acquaintances as a result of the complications of COVID19 [1–6].

But beyond all that, the world population, in particular the western one, has experienced a radical change in living conditions, life expectancy, mobility and

access to information without precedent. For those who did not make this reflection, in the year 1900 - that is 121 years ago - there were no radio broadcasts, the telephone was a novelty and rare people had access. The automobile was being invented and there was no aviation. More than 90% of the western population knew nothing more than 10 km from their place of birth. And the vast majority were illiterate, unable to read simple texts or understand the context in which they were inserted.

Over these 121 years, the exchange of information has become increasingly accelerated and people have come to consider formal education an essential need and today it is mandatory in most of the western world. But this is not linear and even in developed countries there are many people who have difficulty interpreting texts and information, dealing with divergent information and knowing how to separate it by assessing what is relevant is even more complex. All of this is already a powerful stressor, generating feelings of inadequacy and difficulties in adapting.

With the emergence of the pandemic, the first movement was one of denial - both by governments and the population. But the bill came heavy, Italy, Spain, France, Belgium and England had an explosion of cases in the beginning of 2020, with many deaths and an inability of the health sector to offer an adequate response - not to mention the mortality of health professionals, generating more care deficit.

This, plus the action of the media, which dedicated a huge portion of its programming to address the issue, generating stories that scare and misinform more than anything else. First, doctors and scientists had no appropriate answers to offer, and speculation only served to increase anxiety. Secondly, the lack of consensus on the best attitudes to be taken and what response should be given has generated a complex and certainly inconclusive debate, as there was no experience and scientific knowledge to support the decisions [7].

2. Anxiety

By definition, anxiety is the suffering caused by the anticipation that something will happen and people suffer from it, losing sleep, being afraid to perform tasks or being exposed to situations that would be part of their lives.

DSM-5 [8] defines it according to the following criteria:

A. "Excessive and inappropriate fear or anxiety for the individual's level of development in relation to his separation from those to whom he feels attached, evidenced by at least three of the following circumstances:

1. Excessive and recurring discomfort when a separation from home or the closest figures is anticipated or experienced.

2. Excessive and persistent preoccupation with the possible loss of the most attached figures or who may suffer possible damage, such as illness, injury, calamity or death.

3. Persistent and excessive concern about the possibility that an adverse event (for example, getting lost, being abducted, having an accident, getting sick) will cause the separation of a highly attached figure.

4. Persistent resistance or refusal to leave the house, go to school, work or elsewhere for fear of separation.

5. Excessive and persistent fear or resistance to being alone or without the most attached figures at home or elsewhere.

6. Persistent resistance or refusal to sleep outside the house or sleep without being close to a figure of great attachment.

7. Repeated nightmares on the subject of separation.

8. Repeated complaints of physical symptoms (eg, headache, stomach pain, nausea, vomiting) when separation from the most attached figures occurs or is expected.

B. Fear, anxiety or avoidance are persistent, lasting at least four weeks; in children and adolescents it is usually six.

C. The disorder causes clinically significant distress or impairment in social, academic, occupational, or other important areas of functioning.

D. The disorder is not best explained by another mental disorder, such as refusing to leave the house due to excessive resistance to change in an autism spectrum disorder; delusions or hallucinations related to separation in psychotic disorders; refusing to go out without someone you trust in agoraphobia; concern about health problems or other harm that may happen to close people or other significant people in generalized anxiety disorder; or worrying about having a disease in the anxiety and illness disorder".

At a time when there was persistent talk about the death of many people, the possibility of contagion and the need for social isolation, it is easy to imagine that anxiety symptoms become common, and people who are prone to develop pathological symptoms related to this feeling.

3. Depression

It is a defense mechanism of the brain that, losing the perspectives of an organized and structured life, descends to the depths of its interior, leading individuals to close themselves in their inner worlds, not always with pleasant memories and experiences. This can lead to isolation and feelings of worthlessness, with ideation of death. But the process is usually self-limiting, tending to spontaneous recovery in a period of 6 to 12 months.

DSM-5 [8] defines it according to the following criteria:

A. "Five (or more) of the following symptoms were present during the same two-week period and represent a change from previous functioning; at least one of the symptoms is (1) depressed mood or (2) loss of interest or pleasure.

Note: Do not include symptoms that can be clearly attributed to another medical condition.

1. Depressed mood most of the day, almost every day, depending on whether you get subjective information (eg, you feel sad, empty, hopeless) or other people's observation (eg., it is observed weeping). (Note: in children and adolescents, the mood can be irritable.)

2. Significant decrease in interest or pleasure in all or almost all activities most of the day, almost every day (as can be seen from subjective information or observation).

3. Significant weight loss without diet or weight gain (for example, more than 5% change in body weight in one month) or decreased or increased appetite almost every day. (Note: in children, consider failure for expected weight gain.)

4. Insomnia or hypersomnia almost every day.

5. Psychomotor agitation or retardation almost every day (observable by others; not just the subjective feeling of restlessness or slowing down).

6. Fatigue or loss of energy almost every day.

7. Feeling of worthlessness or excessive or inadequate guilt. Self-reproach (which can be delusional) almost every day (not just self-censorship or guilt for being sick).

8. Decreased ability to think or concentrate, or to make decisions, almost every day (from subjective information or observation by others).

9. Recurring thoughts of death (not just fear of death), recurring suicidal ideas without a specific plan, attempted suicide or a specific plan to carry it out.

B. Symptoms cause clinically significant distress or impairment of social, occupational, or other important areas of functioning.

C. The episode cannot be attributed to the physiological effects of a substance or other medical condition".

Note: criteria A - C constitute an episode of major depression.

Note: Responses to significant loss (eg, grief, financial ruin, losses due to a natural disaster, serious illness or disability) can include feelings of intense sadness, rumination about loss, insomnia, loss of appetite and weight loss listed in Criterion A, and can simulate a depressive episode. Although these symptoms may be understandable or considered appropriate for the loss, the presence of a major depressive episode, in addition to the normal response to significant loss, should also be considered carefully. This decision inevitably requires clinical judgment based on the individual's history and cultural norms for the expression of distress in the context of loss.

D. The episode of major depression is not best explained by a schizoaffective disorder, schizophrenia, a schizophreniform disorder, delusional disorder or other specified or unspecified schizophrenia spectrum disorder and other psychotic disorders.

E. There was never a manic or hypomanic episode.

Note: This exclusion does not apply if all episodes of the manic or hypomanic type are substance-induced or can be attributed to the physiological effects of another medical condition."

The feelings triggered by the orientation to isolate oneself, to move away from loved ones and especially the loss of love and acquaintances to COVID19 can lead to feelings very close to the situation described as depression. Not to mention the modern language, which calls all sadness a depressive episode or depressed mood.

4. Reflecting on the functioning of our brain

The human brain is apparently redundant, as it has one side focused on logic and the control of volitional functions, but the other side of the brain works by understanding contexts and is based on feelings and emotions - which the logical side usually cannot explain. This concept, developed by Watzlawick [9], helps to understand people's difficulties in controlling their feelings and why complex contexts, such as the one experienced during the COVID pandemic19, generate responses of suffering and anguish, sometimes leading to the emergence of pathologies.

The rapid changes in the way of living, which have occurred over these years, alone have already caused adaptive disturbances. This led to changes in family structures, with greater absences from adults - necessitating the development of work activities to support families. This led the elderly or institutions to take care of the education and training of children and adolescents - without them having a parental presence. Add to that the revolution caused by the mass media and more recently by access to the internet.

Social models were diluted and behaviors became more related to external models, living and acting in different contexts. This creates a complex stress context that is difficult to interpret by people and families, and the systemic context approach [10] is central to understanding adaptation difficulties.

Considering the model proposed by Grassano [11] it is from adults that one learns to be a person, to survive in the world, it is from this primary coexistence that the individual develops and he learns to relate to his surroundings and to have stable social relationships and balanced. The loss of this benchmark generates insecurities that are profound and are often not easily understood by people.

The lack of understanding of feelings and emotions - explored by Watzlawick [9] - makes personal, family and peer conflicts difficult and is often not even properly perceived. And this without the presence of the pandemic.

With the advent of it, the situation of anguish with the illness and death of acquaintances, friends and relatives, people seek internal support to deal with the pressures. But what if these are not solid? How to face loneliness and isolation, especially if you do not know how to deal with your own emotions? What strategy to develop to deal with the fear of falling ill, of losing loved ones, the fear of losing your job or business?

Abruptly, the pandemic created the need to look within oneself, to reflect on the choices and possibilities. For many, this rethinking in life is healthy and opens up horizons to seek more suitable paths to dreams and perspectives, but for people who cannot be just with themselves, this is frightening.

For them, living depends on third parties, and the absence - either by distance or by illness or death - is traumatic. It causes suffering and insecurity that can lead to the development of mental illness.

In a very digital world, like the current one, relationships and experiences are often fictitious - people play games to get in touch, post their presence in places they do not know and talk to strangers about their own or third party fantasies. This world turns out to be a house of cards, and the pandemic makes isolation and fear bring the castle down.

5. Dealing with information overload

The first step, which is fundamental to controlling feelings of insecurity, anxiety and depression, is to reduce the consumption of information. As much as possible using the most reliable and the minimum necessary to orient yourself.

The massacre of the media when talking all the time about the spread of the pandemic, about the numbers of serious cases and deaths, only increases the panic. It does not guide or allow the stabilization of people in the search for suitable alternatives to move on with their lives.

The pandemic is complex due to its high transmissibility, although the rates of serious cases and deaths are not very high - as it has a very high volume of people, it ends up generating frightening numbers. This causes overload of health services and restriction of care. To increase the complexity, many health professionals fell ill and several died from the disease.

Today, more than a year after the onset of the condition in Wuhan - China (12/2019), there is still no adequate response and studies on different therapeutic approaches still do not indicate an appropriate treatment.

Even mass vaccination, a response proposed by the World Health Organization [12], generates insecurities - typical of the rush to develop immunizers quickly and without the necessary studies. This also generates the refusal of many to become immunized.

It is this conflict of information that the media exploits - often even with political overtones, supporting or discrediting government officials. The more people read this type of information, the more insecure they become and this makes the environment prone to suffering and anxiety. For this to evolve into mental suffering is a step.

The selection of less sensational sources is a necessary path, and the need to seek confirmation of data, avoiding the magnification that ends up occurring within social networks. And the people who take refuge in these networks, for not being able to deal with their moments of isolation, are victims of this unbridled exchange of dubious and alarming information.

Social networks deserve a separate paragraph. The quick access to the networks made the relations progressively more virtual, reaching absurdities of people in the same room exchanging messages over the networks instead of talking. This cooling of interpersonal relationships, generates the need to be accepted and supported by virtual friends - often unknown and in no way significant in real life. But these virtual contacts end up being artificial life and the cause of many to despair.

It is essential to search for real contacts, even if virtual - with real people who have meaning in people's lives. And this first strategy is necessary to maintain balance and mental health in a time of collective stress. Listening to people and dealing with real consolation when people close to them eventually fall ill or perish is essential for the emotional maintenance of the population.

People's credibility must be valued, and if there are people who are very anxious or who propagate dubious information, it is essential that this is worked on to keep the group of relatives and acquaintances stable and healthy. Seeking balanced and well-informed references helps to keep this under control.

Studies about how does emotions had been built show the complexity of paths, and that an answer flashes when it had been provoked, but when it starts, it is out of control [13].

6. Anxiety and depression in times of pandemic

The human being is gregarious, by definition, has difficulties in dealing with loneliness and needs to work on his self-knowledge to become more independent.

But the accelerating changes of the past 120 years have slowed down many processes. It is more and more frequent to see adolescences extending to 30, and sometimes more. People are unable to become autonomous, living with their parents and not assuming their role as adults. They find it easier to live with their mothers who pamper them with favorite foods and taking care of their rooms and clothes as if they were still children.

This makes establishing mature relationships with peers and loves become difficult and at any difficulty people escape to their comfort areas, without learning to deal with the difficulties that life presents, or even accepting that relationships with other people go through sharing feelings and difficulties and giving in is essential for harmony to be developed.

In the present situation, in which the pandemic generates many uncertainties, this adolescent attitude - in which the consequences of the actions taken are not foreseen, in which the comfort of protectors who welcome fears and insecurities is sought, it is very easy to develop symptoms.

Developing autonomy is fundamental and the approach to people who show symptoms must start by understanding the stage of personal development that the person presents, their surroundings - including family and personal contacts. According to Sluzki [14] realize how is the people's social network, its functionality and balance helps to perceive the resistance to the aggressions that the environment offers. The work of strengthening connections and expanding networks helps to maintain health, and is essential to reinforce the emotional balance of people who have symptoms.

Encouraging conversation about signifiers - identifying weaknesses, such as virtual contacts with people who are physically unknown or very distant, favors the person to identify their needs and seek a more balanced network. Within the conditions caused by the pandemic, it is essential to recognize that very fragile networks will have difficulties to be expanded, but even so, the recognition of the weaknesses and the work for this to become a goal, makes life more concrete and reduces the risk of becoming ill.

Personal development failures, resulting from the absence of more significant people during childhood and the weaknesses in structuring concrete and healthy connections are one of the essential difficulties to be faced. But as the problem recognition block exists, being inherent to the emotional side, a conversation is essential in which these factors are explored.

Watzlawick [9] presents us with the difficulties to access deep areas of the emotional side and how people react, denying problems and difficulties. How to explore this is the key to care without the use of drug therapy, which can hinder a more adequate solution - making people dependent on drugs or feeling unable to face the problems that life presents.

Using a protocol developed by Schutz [15] and adapted by Doherty and Colangelo [16] for health interventions, it is possible to explore the forms of communication between people, how they perceive themselves within their different groups and how this defines the way of interacting.

Exploring how the person perceives his communication, how much he perceives himself heard and understood opens the door to the emotional side. By adding questions about how central (or not) the person perceives herself in her own life, it allows deep feelings to spring up. Within this context, the social network is being explored, and the reinforcement for understanding their own uncertainties and difficulties for true relationships. The flaws in the construction of personality, consequence of the lack of models, become apparent, making a more curative and constructive approach possible.

It is from these keys that it is possible to reduce the feelings of fear, anxiety and worthlessness, which are often characterized by the pathologies described as anxiety and depression.

Once the difficulties are identified, it is necessary to reframe the difficulties so that the potential and competences are perceived. Strengthening resilience and helping to improve symptoms.

7. Conclusion

Working in a time of extreme pressure, either due to the volume of cases and mortality associated with them, or due to pressure from the media and the population itself, frightened by the proportions of the situation, is not an easy task.

The search for viable alternatives to support the stress situations generated requires creativity and the ability to find collective and applicable solutions - as much as possible - via mass communication or in group activities. Seeking to guide the population on the different ways to better deal with social isolation, with care to avoid contamination of their own - and of third parties, in addition to stimulating the search for alternatives to obtain the most efficient and soonest possible immunization.

But when the need for individualized care arises - it is central to seek a holistic approach, using a systemic approach and deepening the study of the emotional side of patients - in order to give transparency to the deep reasons for fears.

The reframing of skills and ways of dealing with past problems will offer the possibility to find appropriate responses to the present situation. That will allow an ethical answer, respecting the history of the individual and strengthen their on capacity to face challenges.

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Chapter 15

Adversity, Uncertainty and Elevated Symptoms of Obsessive Compulsive Disorder: A New Understanding through Resiliency and Positive Psychotherapy

Sevgi Güney

Abstract

The content of thought, which emerges from the processing of information from the social context lived, is a critical factor that guides whether the behavior is psychopathological or not. In cases where worry, anxiety and fear are dominant in the content of thought, the individual may find himself in some psychopathological processes. Adversity and uncertainty are the main factors that lead to the experience of worry, anxiety and fear which is the last point of these. Uncertainty of information from the social context lived, when matched with adversity, may lead to chaotic situations at the cognitive level, e.g., thought contents such as distortions in thought, severe anxiety and fear. Obsessive compulsive disorder derives from severe worry and anxiety. Although the disorder is classified under anxiety disorders, it is actually a thought distortion disorder. The individual finds himself repeating the strange behavior patterns accompanied by strange thought contents in order to get rid of the severe anxiety and accelerated thought cycle he is exposed to. Ambiguity and uncertainty also may lead to the accelerated thought cycle, ruminations, severe thought distortions, over-generalizations. Ruminations, especially, impair the individual's ability to think and process emotions gradually. Obsessive Compulsive Disorder will be discussed in terms of ambiguity and uncertainty with the combination of adversity. Positive Psychotherapy, which is one of the latest effective technique in recovery processes of the diseases, will be mentioned.

Keywords: Adversity, Uncertainty, Obsessive Compulsive Disorder, Positive Psychotherapy, Resiliency

1. Introduction

The concept of mental health corresponds to the individual's ability to function satisfactorily in his intellectual, emotional and behavioral adjustment. Events experienced in the ongoing flow of daily life, when combined with certain conditions, negatively affect mental health and even physical health. As long as the conditions that cause these negative effects persist, the groundwork is prepared for the occurrence of mental health disorders. That's why there is a motto among

mental health professionals: "No mental health illness can occur overnight." This is a process. The content of thought, which emerges from the processing of information from the social context lived, is a critical factor that guides whether the behavior is psychopathological or not. In cases where worry, anxiety and fear are dominant in the content of thought, the individual may find himself in some psychopathological processes. Adversity and uncertainty are the main factors that lead to the experience of worry, anxiety and fear which is the last point of these. Uncertainty of information from the social context lived, when matched with adversity, may lead to chaotic situations at the cognitive level, e.g., thought contents such as distortions in thought, severe anxiety and fear. When this process is not managed properly, the disorders may occur.

The World Health Organization (WHO) defines being healthy as follows: "... It is not only the absence of disability or illness, but also the state of all mental and social well-being" [1]. Dealing with mental health, the organization describes that mental health includes, as well as other things, subjective well-being, perceived self-efficacy, self-confidence, autonomy, competitiveness, intergenerational dependence, and the ability to realize own intellectual and emotional potential. The World Health Organization (WHO) also adds the following to the definition of mental health; "It also includes the individuals' well-being to realize their abilities, cope with daily stress, be productive and beneficial to the society". As can be understood from the definitions, mental health is a complex phenomena. Therefore mental health disorders are not occurred due to one factor. Multiple factors come together and reveal about the relevant mental health disorder. These factors are called as "risk factors". The risk factors can be discussed under three subheadings. These are biological, psychological and social factors. These factors shortly explained as follows;

Biological factors contain problems during birth or pregnancy period, someone in the family has a mental illness, suffering from traumatic brain injury, having chronic medical physical disease such as cancer, diabetes, Alzheimer's etc., eating problems, alcohol abuse and/or drug use.

Psychological factors covers negative self-perceptions and experiences in the past and present. For example low self-esteem, perceived incompetence, negative perspective of World, traumatic life experiences such as serving in the armed forces, suffering from long term financial problems, physical/sexual abuses etc.

Social factors include poor communication and social skills, suffering from discrimination, experienced adverse events, suffering from long term adversity, having an abusive relationship, suffering from bullying, being abused or neglected as a child, prolonged mourning, lack of social support resources etc.

Having all these or some of the risk factors do not necessarily mean being exposed to a mental disorder indeed. However the combination of these risk factors and difficult life events/conditions may somehow create a predisposing ground for mental disorder in some individuals.

2. Adversity

Adversity may lead to lots of short and long-term psychological problems. It may compromise functioning of the nervous system and even immune system. The more adverse experiences in everyday life routine, the greater the likelihood of mental health problems.

Adversity has a critical influence on especially anxiety related disorders such as obsessive compulsive disorder (OCD), adjustment disorder, post traumatic stress disorder (PTSD), phobic disorders, panic disorder, and somatoform disorders.

The somatoform disorders correspond to the symptoms being ambiguous, in other words it means that no physical cause that could explain the current discomfort was found as a result of the medical examination. From the definition, it is also directly related to uncertainty too. Moreover there is an interactive relation between adversity and worry especially during uncertain times and under pressure. Weinberg [2] pointed out two components of anxiety; 1. Cognitive anxiety, 2. Somatic anxiety. He defined cognitive anxiety as "a mental component of anxiety during worry, and apprehension." As known cognitive component of anxiety deals with the thought content in feeling pressure and threatening during adverse and uncertain situations. Naman [3] stated that worry and rumination are transdiagnostic and both worry and rumination are include in DSM 5 under the three disorder categories. These are OCD, PTSD and GAD. While stating that OCD is a though disturbance, she also mentioned that "OCD is a disorder including recurrent and persistent thoughts, urges or images being experienced at some time during disturbance, as intrusive and unwanted and that in most individuals cause marked anxiety". She added that "in order to relieve distress from intrusive and repetitive worries, individuals engage in compulsions. Rumination is a common type of compulsion." It is well known that thought disturbance is triggered by adverse and uncertain conditions.

Psychosocial adversity is taken into account as life-influencing happening that may be concluded obsessive thoughts and compulsions.

2.1 Resiliency after experiencing adversity

There are many theories that go beyond the classical theories of mental health. One and most effective of them is Positive Psychology. Number of studies throughout human mental health have demonstrated that there is an interconnected and mutually reinforcing gain/achievement to be found in suffering during last two decades. It is also known by mental health professionals positive gains can come about as a result of suffering [4–8].

Resiliency is defined as the individual's ability to cope with adversity and uncertainty. In other words, resiliency deals with a successful adaptation to highly adverse conditions, and situations. Resilient individual is able to bounce back from adverse conditions with competent functioning. To be resilient is not an unusual capacity or ability. Every individual, by the way, have this ability as there is a tendency to handle with the adverse conditions. It is a kind of process rather than a characteristic to be had. A resilient individual develop healthy coping strategies allowing him to effectively deal with the adverse conditions. There is a critical key in the thinking atmosphere of a resilient individual, this is creating a balance between adversity and positivity of the conditions. As everyone has already this ability, it is functional to let the individual to realize their resilient abilities. For this, positive psychologists have been identified the components that make the individual resilient [7]. Some of them are as follows;

- Optimistic thinking style
- An ability to regulate emotions
- A positive attitude
- An ability to perceive negative events as a form of helpful feedback
- Perseverance

- Courage
- Humor
- Flexibility

According to positive psychologists, everyone has these characteristics. During therapy, it is aimed to raise awareness that they have them and to teach to use when they need all of these.

3. Uncertainty

Uncertainty is associated with the future and what happens. It is often experienced in the routine of everyday life. It causes fundamental restrictions on the behavior of the individual, whatever the decision is, regardless of his observation, in daily life. Lack of sufficient clues about any observed situation may cause worry, anxiety and even fear about the situation or related situations. Uncertainty has three main components. These are respectively 1. A feeling in the individual that the situation cannot be controlled, 2. Feeling and worrying that there will be some negative consequences in the future, 3. Perceiving an imaginary experience or situation as a threat as if it were experienced.

Uncertainty, although, is not expressed as a cause for anxiety according to Quantum physics, it also has a tendency to create a serious problem in the process of human behavior. How can uncertainty, which is in the usual routine of life, act as a factor that negatively affects human life? Human being strives to minimize uncertainty in the face of life events. For this, assumptions are put forward, and tested. Individuals' perceptions of what happened may differ according to their preferences, lifestyle, and even educational status. On the other hand, the perceptions about what should be, in other words, the perceptions about the value system can appear as a life order with more certain and defined it's border, far from uncertainty. The differentiation between values, that is, what should be and the life routine, that is, what happens, directly corresponds to the need for change. If the individual tries to survive through a resistant personality structure to change, uncertainty may lead to severe psychopathological situations. Under the resistant structure, an interactive process takes place in every social situation where there are many layers and many actors in these layers. Which decision is taken for whom for what and why is passed through the reasoning filter of the mind and the situation is tried to be made certain. In order to avoid uncertainty, participatory, fair and open ways of coping where the opinions of others are included and are applied. Under the imperceptible circumstances, uncertainty clues are percept and this may elevate the tendency of control the process. Today it has been demonstrated when the dynamics in the social situation are imperceptible, and therefore not mobilized, the tendency to control processes is increased [9–12].

There is a term for explaining why some people much more effected in uncertain situation; "Uncertainty Paralysis". It is defined as "Uncertainty Paralysis represents a sense of being stuck and unable to respond effectively when faced with uncertainty, resulting in a paralysis of cognition and action" [13]. However intolerance of uncertainty plays a major role in the formation of psychopathology especially anxiety and mood disorders. Many studies have demonstrated intolerance of uncertainty, worry and emotional regulation process [14–17]. It is described "tendency of a person to consider the possibility of a negative event occurring as unacceptable and threatening irrespective of the probability of its occurrence" [18]. Intolerance of Uncertainty (IU) have been taken into account a vulnerability factor for OCD.

4. Obsessive compulsive disorder as a way of coping with adversity and uncertainty

As in all mental disorders, the roots of obsessive – compulsive disorder come from the risk factors such as biological, psychological and social factors for mental health. The interaction of these factors may lead to suffering from the disorder. Although the disorder is classified under the anxiety disorders, the main component is on the thinking and perception style. The content of thought, which emerges from the processing of information from the social context lived, is a critical factor. In cases where worry, anxiety and fear are dominant in the content of thought, the individual may find himself in some psychopathological thinking style processes. Obsessive–compulsive disorder (OCD) derives from severe worry and anxiety. Within the atmosphere of the severe anxiety, the individual finds himself repeating the strange behavior patterns accompanied by strange thought contents in order to get rid of the severe anxiety and accelerated thought cycle he is exposed to. In this point it is a thought disturbance disorder. In the disorder, compulsions, that's why, is so resistant to stop as they are automatic response in the habitual way that are easy to perform them without thinking. For every rehearsal, the individual can avoid the anxious thoughts content. In all cases, the triggering stimuli is uncertainty, adversity and the resistance to change. Today it is well known that OCD symptoms may worsen in the times of severe adversity conditions and uncertainty.

Ruminations are another thought distortion problem. The individual thinks about the same thoughts which tend to be in two-ended, good or bad, sad and dark. This thinking circle goes on and on avoiding the tension from anxious thought content. In the content of OCD thinking style, ruminations become a kind of habitations. The individual cannot stop himself, this process, unfortunately impair the healthy thinking ability and emotions. They leads to isolation as the individual push his social environment away. The isolation also may cause gradually intensive depression. Which factors cause ruminating? Personality traits, perfectionism, low self-esteem, difficulty in expressing emotions and self, excessive focus on one's relationships with others, encountering ongoing stressors either from uncertainty and the conditions cannot be controlled, over generalized thinking style, ineffective and/or maladaptive coping style, poor social skills and so on.

Why the individual has difficulty in stopping obsessions and compulsions? The answer is on the road of adversity and uncertainty dichotomy. The main characteristic of Obsessive Compulsive Disorder is trying to make situations certain. This effort is the result of the controlling thought content. As the individual cannot bear uncertainty, he produces symptoms to reduce the anxiety caused by uncertainty. As will be remembered, one of the common thought contents in Obsessive Compulsive disorder is resistance to uncertainty, innovation and change. This resistance develops with the belief that the individual is attributing these situations potentially dangerous. Uncertainty sometimes feeds ambiguity. In situations perceived both uncertain and ambiguous, the individual experiences discomfort, tension, worry and reacts in the form of rigidity, anxiety and avoidance behaviors as he cannot stop the obsessive thoughts from running through his mind. There are number of research studies related to causal role of uncertainty [14, 15, 18]. They have studied the causal role of intolerance to uncertainty. For example Gentes and Ruscio [15] found that higher anxiety level may come from the intolerance of uncertainty. Dugas et al. [14] describes the term of intolerance to uncertainty as the "individual's dispositional incapacity to endure the aversive response triggered by the perceived absence of salient, key, or sufficient information and sustained by the associated perception of uncertainty". They found intolerance of uncertainty was related to obsessions/compulsions in nonclinical sample. Further the

relationship between intolerance and worry statistically significant with combined adversity. Fergus and Wu [18] have examined the intolerance of uncertainty and the symptoms of Obsessive Compulsive Disorder (OCD) and the related cognitive process such as threat estimation, perfectionism, desire to certainty, and the control thoughts. They found that the only intolerance of uncertainty was the cognitive component predicting the unique variance in OCD symptoms. Fourtounas and Thomas [13] examined two hypothesis; 1. The prospective intolerance of uncertainty (IU) was associated with checking behaviors 2. The inhibitory IU was associated with procrastination.

Childhood Trauma and the severity of the symptoms of OCD had been studied by Carpenter & Chung in 2011 [19]. They pointed out that a significant correlation between severity of OCD and intolerance of uncertainty. Boger et al. [20] reached the same results. However as in the all this kind of studies, their sample size is so small and the intermediate variables could not be controlled so the results of the studies are far from being scientific evidence. Longitudinal studies should be done.

4.1 What can be done?

There are number of ways to bear with uncertain situations and adversity. In uncertain situations, to stop ruminations,

a. It is so helpful to find a distraction for breaking the thought cycle. For example watching something i.e. film, movies, documentary etc. This will help to reduce over valued ideations in thinking content [21].

b. It is so functional to realize repeating the same thought over and over again does not work. For planning to take an action; Analyzing the problem causing the thought cycle by using stepwise method with paper-pencil method will be helpful for deciding what to do. Writing is a good tool in first step, and then the second and so on, up to understand what is the problem. It is critical to be specific as possible and realistic [21].

c. Since avoiding from some worried thoughts, not only efforts to control occur but also to cope with the situation. This process also create some psychological problems with paradoxical effects. These are related to rule governed behaviors. Realizing what to do, it is good to take an action. After taking an action, the ruminative thoughts finish as the obsessing stimuli is not strong anymore [22].

d. Questioning the thought cycle. While ruminating a troubling thought, it is helpful to put the repetitive thoughts in perspective [23].

e. Realizing perfectionism and unrealistic problem solving ways may cause ruminations. Perfectionism may lead to use unrealistic problem solving ways as it refers to beliefs about situations in almost every segment of your life. A perfectionist believes that everything must be perfect in environment, relationships and at work. Please start writing; what is perfectionism for you? Are you a perfectionist? If your answer is "Yes", in what areas of your life are you a perfectionist? Then make a costs and benefits table on to be a perfectionist. Is "to be a perfectionist" something that helps to you solve problems really? This awareness method also will help to overcome depressive episode combined with OCD [24, 25].

f. Enhancing self-esteem; exercising to realize strengths of personality, and social support and sources [24].

g. Joining a positive group therapy and/or positive therapy sessions.

5. Positive psychotherapy for elevated symptoms of obsessive compulsive disorder

Group/individual therapies are systematic evidence-based improvement methods used in the rehabilitation process of social skill deficiencies or insufficiencies, impairments in thought content, and thus behavioral problems.

Positive group and/or individual therapies aim at uncovering five main components of self-actualization. These are in a nutshell trust, responsibility, self-awareness, adaptability, and sense of purpose. It is rooted on the strength-based approach explored by Chris Peterson [26], and primarily is based on Martin E.P. Seligman's [27] work on happiness and psychological well-being. He has formulated to be happy via PERMA which has scientifically measurable and teachable five components. The formulation of PERMA corresponds to (P) Positive emotion, (E) Engagement, (R) Relationships, (M) Meaning and (A) Accomplishment. Rashid [28, 29] explains that positive therapy consists of 14 sessions, the topic of each session and the strengths the session corresponds to. These 14 sessions are general components of Positive Psychotherapy (**Table 1**).

Session	Subject	Character Strength
1	Orientation to PPT	Emotional Intelligence, Authenticity, Courage
2	Character Strengths	Emotional Intelligence, Perspective
3	Signature Strengths & Positive Emotions	Creativity, Hope & Optimism & Gratitude
4	Good & Bad Memories	Gratitude, Appreciation of Beauty & Excellence
5	Forgiveness	Forgiveness & Merry, Kindness, Social Intelligence, Self-Regulation
6	Gratitude	Gratitude, Love, Social and Emotional Intelligence, Authenticity
7	The Forgiveness and Gratitude Assignments Follow up, Review of Signature Strengths	Perseverance, Perspective, Self-Regulation
8	Satisficing vs. Maximizing	Self-Regulation, Gratitude
9	Hope and Optimism	Hope & Optimism
10	Positive Communication	Love, Kindness, Curiosity, Social Intelligence
11	Signature Strengths of Others	Love, Social Intelligence
12	Savoring	Appreciation of Beauty and Excellence, Gratitude
13	Positive Legacy & Gift of Time	Teamwork, Kindness
14	The Full Life	Perspective

Exactly quoted from the article of Rashid [30].

Table 1.
The general components of positive psychotherapy (PPT).

Throughout the sessions the individual realized his not only personal resources but also social ones. By discussing the each subject of the sessions, it is gained awareness on confidence, responsibility, emotional mastery, open to challenging beliefs and assumptions, able to manage adversity, and sense of purpose in their life. As working through on positive exercises during sessions, the individual cultivates positive emotions such as gratitude, and savoring. In contrast the negative thinking content and emotions which is the basement of ruminations were constricted.

6. Conclusion

Obsessive Compulsive Disorder (OCD) derives from severe worry and anxiety. Within the atmosphere of the severe anxiety, the individual finds himself repeating the strange behavior patterns accompanied by strange thought contents. At this point OCD is a thought disturbance disorder.

Stopping obsessions and compulsions is a serious problem in obsessive compulsive disorder. Worry and ruminations together may lead to obsessions as well known ruminations are a common type of compulsions. On the other hand worry is a cognitive process which is directly related to feeling anxiety coming from a threats and/or danger. In all cases, the triggering stimuli is uncertainty, adversity and the resistance to change. Today it is well known that OCD symptoms may worsen in the times of severe adversity conditions and uncertainty [31–33].

Positive psychotherapy directly helps to increase self-esteem, self-confidence, to build optimistic thinking style, courage, perseverance, and flexibility.

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Chapter 16

Anxiety, Uncertainty and Resilience during the Pandemic Period-Anthropological and Psychological Perspectives

Ranjan Bhattacharyya

Abstract

Following any natural disaster, tragedy, calamities, there are upsurge of mental health issues found worldwide. COVID 19 is no exception to them. Public health and infection control domains were the first hit at the peak of pandemic. The news and information were bombarded in traditional print and electronic Medias as well as in social Medias. The tsunami of infodemic was a recent topic of discussion. The responsible reporting, media role, role of Government and Non Government organizations are immense. To combat these challenges and ensuring peace and tranquillity are the biggest task of the policymakers ahead.

Keywords: Pandemic, infodemic, psychological first aid, social media, mental health issues

1. Introduction

It all started with the ophthalmologist Dr. Li Wenliang. In the pages of history, probably his name will be printed in golden letters for being the whistle blower of COVID-19 pandemic. He was born on 12th October, 1986 in a tinsel town Beizhen Liaoning in the Republic of China. He was a student of Wuhan University and was watching closely the developments. After going through the papers he suspected the presence of this deadly virus and shared his findings in WeChat group. He had been manhandled by the police of Wuhan city for which they extended apology letter. In this process Dr. Li Wenliang has contacted with SARS CoV2 and died on 7th February 2020 at the age of only 33 years [1, 2].

In the seminal paper published on 24th January 2020 about 59 suspected cases presented with fever, dry cough in Jin Yintan Hospital at Wuhan, China, 41 patients were confirmed to be infected with 2019-nCoV. The Signs and symptoms were typically respiratory symptoms which include fever, cough, shortness of breath, and other cold-like symptoms. Majority of cases (82%) reported to date have been milder; about 15% appear to progress to severe cases, some 3% are critical. Less than a 25% of cases experienced severe illness. Chinese authority's reports on 2% of people infected with the virus have died [3].

The Coronaviruses belonging to the family of *Coronaviridae* infect both animals and humans. Human coronaviruses can cause mild disease similar to a

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As per phylogenetic analysis, the expert estimate suggested an origin of the virus sometime between 22 and 24 November 2019.	South China Morning Post claimed that the very first person was infected with COVID-19 on 17 November 2019.
Patient zero - his symptoms started on 1 December.	First hospital admission fell on 16 December A patient with exposure to the Huanan seafood market.
First public message in the pandemic-31st Dec, 2019.	PHEIC (Public Health Emergency of International concern)-31th January
Infodemic-15th February, 2020	Pandemic -11th March.

Table 1.
Chronology of development OF COVID-19.

common cold, while others cause more severe disease (such as MERS - Middle East Respiratory Syndrome and SARS – Severe Acute Respiratory Syndrome). Some coronaviruses found in animals can infect humans and thus called zoonotic diseases [4].

1.1 Source and mode of transmission

Based on current information, an animal source seems the most likely primary source of this outbreak. It is likely that an intermediate host played a role as well in the transmission of the disease from our understanding, there are two types of transmission: zoonotic transmission (transmission from animals to humans) and human to human transmission. Current estimates of the incubation period range from 1 to 12.5 days with median estimates of 5–6 days [5, 6]. The chronology of how COVID 19 has evolved has been summarized in **Table 1**.

1.2 Active case finding

To control any pandemic there should be a dedicated, systematic, team approach needs to be followed. For each case the possible contact tracings needed to be done. One infected person is capable of infecting 3–4 people. Therefore initial approach of the public health experts were active case finding involves a wider search, focusing on certain key areas summarized in **Table 2**.

1. Patients and their visitors in health care facilities where the confirmed patient sought treatment.
2. Health care providers who cared for or cleaned the room of an infected patient.
3. Social, familial and work contacts of the infected patient.
4. Contact tracing.
5. Identify contacts of the infected patient and record
6. Names, contact, demographic information
7. Date of first and last exposure or date of contact with the confirmed or probable case.
8. Date of onset when fever or respiratory symptoms develop.
9. The common exposures and type of contact with confirmed or suspected cases should be thoroughly documented for any contacts that become infected.

Table 2.
Systematic tracing of contacts of cases.

1.3 The modification of search engines

If one clicks over to Google, type in "coronavirus", and press enter, the results will bear little resemblance to any other search. There are no ads, no product recommendations, and no links to websites that have figured out how to win the search engine optimization game. Government, NGO and mainstream media sources dominate. Algorithms and user-generated content are out; gatekeepers and fact checking are in. Silicon Valley has responded to the "infodemic" with aggressive intervention and an embrace of official sources and traditional media outlets.

2. COVID-19: a pandemic or infodemic: a real story from Iran where hundreds die over false belief

Alcohol poisoning in Iran has skyrocketed amidst the corona virus pandemic as being an Islamic country sale of ethyl alcohol is prohibited. More than 728 people have died from ingesting toxic methanol alcohol since February 2020 [7]. John Zarocostas, WHO informed about WHO's newly launched platform to combat misinformation. He mentioned that, "To combat Infodemic all stakeholders need to join hand with hands." [8] Immediately after COVID-19 was declared PHEIC, WHO's risk communication team launched WHO Information Network for Epidemics (EPI-WIN) [9]. Sylvie Briand, director of Infectious Hazards Management at WHO told "We know that every outbreak will be accompanied by a kind of tsunami of information, misinformation, rumours, etc [10]. Aleksandra Kuzmanovic, social media manager of WHO told *The Lancet* that "fighting infodemics and misinformation is a joint effort including Facebook, Twitter, Tencent, Pinterest, TikTok etc. Kuzmanovic noted that Google has created an SOS Alert on COVID-19 for the six official UN languages, and is also expanding in some other languages. Dr Tedros informed that WHO also uses social media for real-time updates. WHO is also working closely with UNICEF and other agencies having extensive experience in risk communications e.g. International Federation of Red Cross and Red Crescent Societies. WHO Director–General Tedros Adhanom Ghebreyesus at the Munich Security Conference on 15 February 2020 said that; "We're not just fighting an epidemic; we're fighting an infodemic", WHO Information Network for Epidemics (EPI-WIN) was launched as a new information platform after COVID-19 was declared as a Public Health Emergency of International Concern (PHEIC) [11].

2.1 Social media infodemic

As an example, CNN had anticipated a rumour about the possible lock-down of Lombardy (a region in northern Italy) to prevent pandemics, publishing the news hours before the official communication from the Italian Prime Minister. As a result, people overcrowded trains and airports to escape from Lombardy toward the southern regions before the lock-down was in place. Another example of hazards attributable to improper health communication can be drawn from Nigeria. In India, a father of three was reported to commit suicide upon hearing his diagnosis of COVID-19 [12].

2.2 Interventions to address misinformation/rumours

The rumours are widespread which added salt to the wound to people affected globally [13, 14]. Some of the interventions to control the spread of rumours or misinformation are mentioned in **Table 3**. It is also important to flatten the infodemic curve also to break the chain of misinformation (**Figure 1**).

The frontline healthcare providers should be equipped with the most recent research findings and accurate information, which can be used in direct caregiving and communicated with the patients or populations at risk.	Mass media, community organizations, support groups, and civil society may play critical roles in disseminating authentic information.
For this, it is necessary to build strategic partnerships at local and global levels, connecting offline and online resources in a coordinated manner so that validated information is communicated across platforms.	All hoaxes and rumors should be removed from all online platforms.
Only scientifically sound information should be allowed to increase awareness among mass people.	Social media and other online providers should adopt such measures to identify and eliminate potentially harmful misinformation and rumours.
Local and national regulatory authorities and law enforcement agencies should be made aware of these challenges to address these challenges in respective contexts comprehensively.	Online portals and personnel involved with the production and propagation of such misinformation should be brought to justice.
In this regard, governments of many countries have arrested individuals involved with the spread of such rumours.	Individual responsibility before judging and forwarding: think twice act wise.

Table 3.
Steps to prevent hoax news, false information and infodemic.

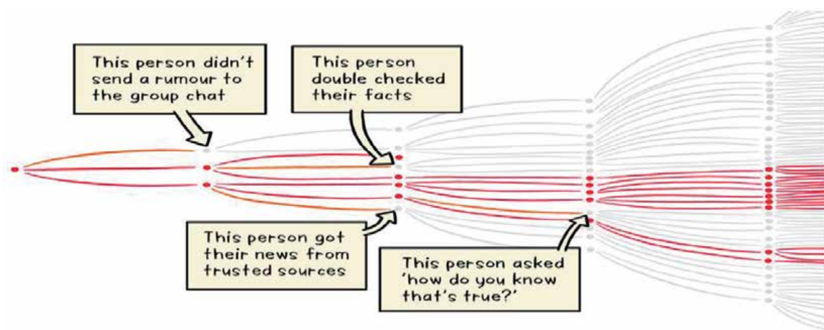

Figure 1.
Flattening the 'infodemic' curve (adapted from WHO website https://www.who.int/news-room/spotlight/let-s-flatten-the-infodemic-curve).

From birth to death an individual is invariably exposed to various stressful events. The modern world is not only called as world of achievement but also a world of stress. The term has been defined as external pressure that comes from the environment and perceived as strain within the person. Though the term originally coined for the purpose for physics, but in Medicine it was coined by Canadian endocrinologist Hans Selye. It's defined as the capacity of our body to adjust to a new challenging environment. The environmental stimuli tries to misbalance the homeostatic process and our body tries to bounce back to balance with tensions. The high level stresses also incur high expenditures by virtue of increase health service utilization. Stress persists beyond the period of absenteeism causing much longer period of disability. A stressor, which can be a biological or chemical agent, environmental condition or external stimulus arising in a person due to high pressure in professional and personal life. The physical factors, life events, environmental factors, personal factors coloured by own perception and emotion determines the severity and outcome of a stressful event. The different kind of stressors has been summarized in **Table 4**.

Physiological Stressors	a. Chemical agents b. Physical agents
Sources of stressors	• **Internal stressors**: comes from within, medical illnesses like T2DM, Hypertension, Cancer, Depression and Anxiety disorders. • **External stressors:** comes from outside environment like birth, death, marriage, loss of job. • **Developmental stressors**: Best described with Piaget's and Erikson's developmental stages which occurs in specific phases of life and is omnipresent in individuals entire life. • **Situational stressors**: COVID situations, admission in hospital, examination etc.
Physiological indicators	• Overactivation of sympathetic, parasympathetic systems, neuroendocrine systems of the body. • Pupillary dilatation, sweating, tachycardia, piloerection, dry skin, decreased urinary output, skin pallor, apprehension, helplessness.
Stress management & Lifestyle Modification	• Express empathy, applying mature defence mechanism like humour, altruism, sublimation etc.
Autogenic training	• As described by German psychiatrist Johannes Heinrich Schultz (1932), practicing thrice a day each session lasting for 15 minutes.
Relaxation Exercises	• By which one initially contracts entire body muscles initially (paradoxically) then relaxing the same which helps to control heart rate, blood pressure, respiratory rate, releases endorphin and rejuvenates immune system.
Deep breathing exercises	• In which an individually takes deep breathe through one nostril, closing the other and then exhaling the same through other nostril opening the eyes very slowly. This process being repeated with other nostril in the similar manner.
Fractional relaxation or Jacobson's Progressive Muscular Relaxation (JPMR)	• It is a method of contracting and relaxing one dermatome or muscle of the body gradually. This approach is often used in deep trance and hypnosis.
Pharmacological Management	• It's absolutely necessary for immediate control and prevent relapses mental health issues including suicide which take a heavy toll on quality of life and socio-economic productivity. SSRI (Selective serotonergic reuptake inhibitors), SNRIs (Selective norepinephrine reuptake inhibitors), NaSSA (Noradrenergic specific serotonergic antidepressant), NDRI (Norepinephrine dopamine reuptake inhibitor), Tricyclic antidepressants (TCA) are prime antidepressant drugs. Short time use of anxiolytics judiciously be used in consultation with a psychiatrist. A holistic, integrative management is the call for the day.

Table 4.
Symptoms and management of stress and its consequences.

The role of psychiatrists has been felt when there is widespread panic, fear, apprehension (in the stage of fear) when people became fanatic and lots of mental health issues in are piling up in addition to their normal duty schedule which have been summarized in **Table 5**.

2.3 Psychological first aid

It has been described as humane, supportive response to a fellow human being who is suffering and who may need support [15]. PFA involves the following themes which are highlighted in **Table 6**.

• Routine OPD & inpatient care.	• Training of fellow colleagues, nursing & other staffs (PFA).	• PFA to persons in Quarantine centres & in Isolation wards.
• PFA to family members & relatives.	• Managing primary psychiatric disorder.	• Managing new psychiatric illnesses.
• Managing relapses and recurrences.	• Monitoring ADR or TEAE.	• In person or Tele-consultation.

Table 5.
Role of Psychiatrists in COVID 19 pandemic.

1. Providing practical care and support
2. Assessing needs and concerns
3. Helping people to address basic needs (for example, food and water, information)
4. Listening to people, but not pressuring them to talk
5. Comforting people and helping them to feel calm
6. Helping people connect to information, services and social supports
7. Protecting people from further harm.

Table 6.
Psychological first aid.

Figure 2.
Caesarian delivery were not locked down.

All the processes were not locked down during this pandemic. COVID positive mother deliveres beautiful child (**Figure 2**). The Health workers including doctors, nurses, paramedics, medical tecchnologists, Gr C & Gr D staffs, sweepers worked in tandem selflessly and whole heartedly at a strtch for 8–12 hours wearing PPEs and without drinking or eating anything and going to toilets. Other frontline warriors, police, fire fighters, media personal, municipality workers extended all kinds of services to distressed people (**Figure 3**). The general wards, condemned building, newly constructed extensions have been converted to isolation and SARI ward in no time (**Figure 4**).

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Figure 3.
Health check up team waiting to receive Migrant workers.

Figure 4.
SARI ward & CCU constructed and renovated.

3. Types of stress

3.1 Positive stress

As per Yerkes-Dodson's law (**Figure 5**), some amount of positive stress is beneficial during initial phase which enhances the performance.

3.2 Eustress

A positive form of stress that helps us to perform, and is usually experienced when we are going through happy events like a graduation, a wedding, the birth of a child, a competitive event, or a vacation.

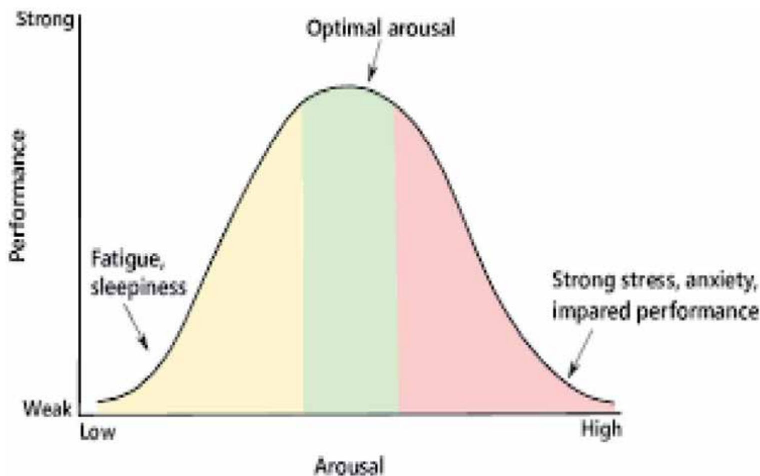

Figure 5.
Yerkes-Dodson's law.

3.3 Negative stress

This can be of three types.

i. **Distress:** This is one of the types of stress that the mind and body undergoes when the normal routine is constantly adjusted and altered (acute and chronic stress).

ii. **Hypostress**: is lack of stress, experience by people who are constantly bore.

iii. **Hyperstress:** is the type of negative stress that comes when a person is forced to undertake or undergo more than he or she can take (job). So, hyperstress can't be equated to positive stress though may sound similar.

In **Figure 5**, it has been shown clearly that some amount of stress/arousal (x axis) is beneficial for performance (y axis). It looks like a symmetrical bell shaped curve. Initially with stress, performance enhances, used as a marketing strategy to enhance performances of employees. The same can be observed before examination. But at the optimum level (dy/dx), in marketing it's known as break-even point where marginal costs equal to operating cost, more arousal/stress has detrimental effect on performances. The maximum level of stress a person can handle (optimal arousal) is known as following which all stresses become distress.

The most common stressors during quarantine are (i) Fear of infection, (ii) Duration of quarantine, (iii) Frustration, (iv) Inadequate supplies. In this pandemic we have gone through three phases as mentioned below [16].

i. **Stage of fear:** Overbuying, purchasing unnecessary grocery items, medicines, masks, sanitizers.

ii. **Stage of learning**-Filtering information, minimizing exposure to news and media, control and mastery over things.

iii. **Stage of growth**-Use skills to benefit others, Think of others and help them, Try to live in present moment, not in past or future, appreciate and cherish loved ones, try to be positive, practice patience and creativity.

The resilience is defined as the capacity of an individual to bounce back successfully against the adversity and building up academic, social and vocational competence amidst severe stress. The vulnerable population lie children and elderly need to be care with utmost vigilance. The certain determinants like attitude, behavior, practice decide the future vulnerability of an individual at home, school and college and work place with respect to law abuse violence and use of alcohol and other drugs. The factors that strengthen social competence are – Responsiveness, Care, Empathy, Communication skills, Flexibility, Application of Mature defense like humor and other prosocial behaviour, problem solving skills, autonomy, healthy expectancies, Gold directedness etc. The competence and confidence are achieved at comparatively younger age which makes an individual more resilient. The strength of character, moral fortitude, tenacity, connectivity, communication skills are key factors which enable resilience especially during this pandemic. The positive and adaptive strategies during the presence of adverse stressful is called coping. When the individual becomes self reliant with adaptability and positive coping strategy he or she gains mastery and control over the situation. The Resiliency wheel comprises the following components

i. Set clear and consistent boundaries

ii. Teach life skills

iii. Provide caring and support

iv. Seta and communicate high expectations

v. Meaningful participation with available opportunities

The conditions that buffer individuals from the negative impact of COVID pandemic are promotion of positive behavior general and psychological well being and strengthening external (Time management, empowerment, boundaries and expectations and support and internal (positive values and identity social competencies and commitment to learning) assets.

The protective factors can be built by social development strategies, healthy beliefs and bonding which improves personal skills and shape up individual characteristics. The COVID pandemic has taught us how to strengthen up attachment, bonding and commitment (ABC) at individual (positive peer pressure, school (online classes and activities, community (caring neighborhoods' being a role model and serving community at various levels and finally at family level by providing support, communication improving relationships participating in music, art, drama, sports and hobbies. The seven C's of positive development are competence, confidence, character, connection, contribution, coping and control [17]. The adolescent are exposed to adverse childhood experiences (ACEs) which can have deleterious effects and make them more vulnerable to behavioral issues and suicidal ideation. This can be dealt by addressing the unique needs of adolescents, building the concept of nurturing resilience [18]. The ten phase process described on resilience are as follows: (1) Practice story, (2) Phenomenon of interest, (3) Theoretical lens, (4) Preliminary core qualities, (5) Reconstructed story, (6) Mini – saga, (7) Refined core qualities with definitions, (8) Concept definition, (9) Model, (10) Mini synthesis [19].

The core structure of nurturing resilience is built up with a processed manner amidst environmental hardships. The four stages nurturing resilience are secure connections, self acceptance, temper reactivity and resilience. The building

resilience in regional youth in a study in Australia described 6 stages of module which are (1) Taking good care, (2) Introducing masterpiece, (3) Obstacle courses, (4) Media messages, (5) Changing worlds, (6) New beginning. The sources of stresses among adolescent can come from school work, friends and family. However

Sympathetic nervous system (SNS)	**Molecule**	**Location & effect**
Norepinephrine	Improves cognitive alertness and vigilance in individuals with stress. It modulates fight-or-flight response; the higher activation inhibits functions of prefrontal cortex.	Abnormal regulation of bran's NE function is seen in PTSD with symptoms of re-experiencing, hyperarousal and autonomic nervous system overactivity. Reduced responsiveness to NE could be linked to resilience.
Neuropeptide Y	It's a 36 amino acid peptide produced mainly in hippocampus and amygdale.	The higher concentration of NPY enhances physical and psychological performances, now applied as a novel therapeutic agent in the management of PTSD.
Galanin	30 amino acid neuropeptide encoded by GAL gene, has neuroprotective activity in PNS and promotes nmeurogenesis.	It's released simultaneously with activation of noradrenergic neurons.
HPA AXIS	HPA axis plays a crucial role in human and animal stress response.	
CRH	41 amino acids peptide hormone, during stress CRH is released in hypothalamus-hypophyseal portal system. CRH stimulates ACTH which stimulates Cortisol and DHEAS.	CRH1 receptor found in neocortex, basolateral amygdale, hippocampus and CRH2 receptor found in dorsal raphe nucleus, medial & cortical nuclei of amygdale.
Cortisol	Increases attention, vigilance, arousal, consolidation of memory and selective attention	Repeated cortisol administration may cause significant cognitive impairment.
DHEA & DHEAS	Two endogenous hormones secreted by adrenal cortex. Higher levels of DHEAS and DHEAS: Cortisol ratio have protective effects against stress.	They have anti-inflammatory and antioxidant effects, controls obesity, improve sexual functioning.
Dopamine	Monoamine that has attention, drive, motivational and motor controls. Stress inhibits its secretion from nucleus accumbens.	Optimum release of stress induced dopamine in medial prefrontal cortex facilitates behavioural response.
Serotonin	This monoamine is helpful in maintaining appetite, sleep, feeling of happiness and general wellbeing.	It also helps to alleviate mood and anxiety (5HT2A blockade and 5HT1A stimulation) symptoms.
BDNF	This neurotropic factor is present in various regions like amygdale, basal forebrain, hippocampus and prefrontal cortex.	Expression of BDNF TrkB (Tyrosine kinase) receptors have potential role in neurogenesis.
Allopregnanolone (ALLO)	from progesterone which is It's synthesized a cholesterol derived having steroid structure synthesized in two steps with the help of 5 reductase and 3 hydroxysteroid dehydrogenase enzymes.	Allosynthesis thus can be alter by disregulation in the HPA access due to chronic stress.

Table 7.
Molecules (neutotransmitters, neuropeptides, hormonal) factors mediate stress and builds up resilience.

the source of strength in adolescents comes from social connectedness, self reliance and personal attributes [20]. Mental issues related to the health emergency, such as anxiety, depression, post-traumatic stress disorder (PTSD), and sleep disorders are more likely to affect healthcare workers, especially those on the frontline, migrant workers, and workers in contact with the public. Job insecurity, long periods of isolation, and uncertainty of the future worsen the psychological condition, especially in younger people and in those with a higher educational background. Multiple organizational and work-related interventions can mitigate this scenario, such as the improvement of workplace infrastructures, the adoption of correct and shared anti-contagion measures, including regular personal protective equipment (PPE) supply, and the implementation of resilience training programs [21]. A study on 152 doctors completed responses in an online survey showed 34.9% were depressed and 39.5% and 32.9% were having anxiety and stress. Significant predictors for psychiatric morbidities found in this study were experience in health sector, duty hours, use of protective measures, and altruistic coping. In another online survey it was revealed that (71.8%) and one-fifth (24.7%) of the respondents felt more worried and depressed, Half of the respondents (52.1%) were preoccupied with the idea of contracting COVID-19 and one-fifth (21.1%) of the respondents were repeatedly thinking of getting themselves tested for the presence of COVID-19. only a minority of the respondents (2.2%) took help through the helpline [22, 23]. The COVID-19 pandemic provides unique opportunities for robust evaluation of interventions. When selecting interventions aimed at supporting frontline workers

SNS related genes	Polymorphism in Alpha 2 receptor gene leads to autonomic hype responsiveness. Mice knocked out by Alpha 2 receptor model have displayed stress protective function. NPY gene haploid leads to more vulnerability to stress among youth.
HPA related genes	HPA contribute biological based stress response to build up resilience. Polymorphism in CRHR 1 gene and FK 506 binding protein 5 gene interact with early childhood traumatic experiences (abuse or neglect)
Noradrenergic & dopaminergic gene systems	Polymorphism in COMT gene affects Noradrenergic and Dopaminergic system. Val158met polymorphism in related to stress and associated with stress and PTSD. Polymorphism in DAT1 (Dopamine transporter gene results in susceptibility to PTSD. DRD2 and DRD4 polymorphism have also been found to be associated with stress, trauma and PTSD.
Serotonergic gene system	Interaction between stress and polymorphism in promoter region of 5 HTTLPR (Serotonin transporter gene) has been linked with depression in PTSD
BDNF gene	Val166met polymorphism is linked with BDNF Which shows association with stress related disorders like MDD, PTSD and other anxiety related disorders
Epigenetic factors	It corresponds to alterations in chromatin structures which modifies gene expression and DNA sequence. DNA methylation and acetylation are responsible for epigenetic influences in depression and PTSD.
DNA methylation	NR3C1 gene (Excon1,7 glucocorticoid receptor) linked with decreased hippocampal GR expression. DNA methyltransferance (DNMT) 3B gene expression has been found to be increased in frontoparietal cortex linked with GABA A promoter region in patients diagnosed with PTSD.
Histone methylation & acetylation	Histone methylation is a key process for effective stimulation of neural pathways necessary for learning and long term memories.
Developmental factors	Stress resilience effectively helps to mature cognitive, emotional and developmental process. The painful, unpleasant, negative stress can lead to depression and anxiety which reflects the 'Learned helplessness model.

Table 8.
Genetic and Epigenetic factors related to stress and resilience.

(FLWs) mental health, organisational, social, personal, and psychological factors may all be important [24]. Resilience is used in different fields including but not limited to psychiatry, psychology, social sciences, anthropology, medicine and allied healthcare systems. The healing and healthy lifestyles governed by various protective and salutogenic factors are key players to build up effective resilience. The rising above the adversities in challenging times and shedding off negativities and imparting positivity all around helps an individual to bounce back to normal life. It's like the tensile strength of an elastic material which is acquired with empathy, personal strength and constructive criticism [25]. The factors that improve to build up resilience are support system, inner strength, capacity to handle adversities and toughening up self to fight against stressful working environment, balance in professional and personal life, maintaining connections and reconciliations etc [26].

The interplay of genetic, epigenetic, environmental, hormonal factors and involvement of neuropeptides, neurotransmitters, neural circuits decide the ability to cope up against stress related disorders which has been summarized in **Table** 7 [27].

The improved resilience also helps to delay the aging process and improve quality of life which can be strengthened by modelling and input from mentors. The genetic and epigenetic factors implicated in stress and building resilience with effective coping strategy have been mentioned in **Table 8** [28, 29].

The biopsychosocial and spiritual dimensions can be effectively changed by resilient coping strategies which can decrease the caregiver's burden, reduces emotional distress and improves quality of life [30]. In literature, various interventions durations, complex programmes have been mentioned to improve resilience [31].

4. Mental health and psychosocial considerations during the COVID-19 outbreak

- People who are affected by COVID-19 have not done anything wrong, and they deserve our support, compassion and kindness.
- Do not refer to people with the disease as "COVID-19 cases", "victims" "COVID-19 families" or "the diseased". They are "people who have COVID-19".
- Minimize watching, reading or listening to news about COVID-19 that causes you to feel anxious or distressed.
- Protect yourself and be supportive to others.
- Share stories of people who have recovered or who have supported a loved one and are willing to share their experience.
- The current situation will not go away overnight and you should focus on longer-term occupational capacity rather than repeated short-term crisis responses.
- Ensure that good quality communication and accurate information updates are provided to all staff.
- Ensure that staffs are aware of where and how they can access mental health and psychosocial support services and facilitate access.

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- Orient all responders, including nurses, ambulance drivers, volunteers, case identifiers, teachers and community leaders and workers in quarantine sites.

- Manage urgent mental health and neurological complaints.

- Ensure availability of essential, generic psychotropic medications at all levels of health care.

- Honor corers and healthcare workers supporting people affected with COVID-19 in your community.

- If you have an underlying health condition, make sure to have access to any medications that you are currently using.

- Learn simple daily physical exercises to perform at home, in quarantine or isolation so you can maintain mobility and reduce boredom.

- Stay connected and it's important to maintain your social networks.

- During times of stress, pay attention to your own needs and feelings.

- It's only a tough time that brings our true-self outside.

- A lot of uncertainty surrounds all of us right now.

- It's NOT only the coronavirus that's highly contagious, our own stigma, prejudices, apprehension; discriminations are equally contagious if not more.

- It's easy to start a cycle of fear, threat, misinformation and worst apprehensions of people.

- Stop doubt, pessimism, cynicism, shaming, fault finding and blaming others.

- Rise above religious, national, political or social differences.

- Try to be a role model for everyone else in your vicinity.

- Accept more and discriminate less.

During this pandemic we have learnt many things. We've learnt how much resources are required for an individual for the livelihood. We've learnt to help each other. We have rediscovered our family and friends. The history repeats itself, the Gripe Esponela (the Spanish influenza flu) almost 102 years ago (1918) had been revisited in literature to compare with COVID 19. But one thing for sure, the budgetary allocation should give the priority on health and education. More funding is required for Research & Development as we've enough manpower but unfortunately we're running ultramodern software in a heavily loaded hardware. Soon this phase will pass away and we'll live in a world with 'new normal' adaptations.

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Chapter 17

The Grief Elaboration Process in the Pandemic Scenario: A Group Intervention

Silvia Renata Lordello and Isabela Machado da Silva

Abstract

The COVID-19 pandemic has claimed thousands of victims worldwide. To deal with loss is a formidable challenge for all, especially those who experienced losing their loved ones. The grief elaboration process is complex, and the pandemic adds some specific challenges, such as the restrictions to funerals and farewell rituals or the impossibility of saying goodbye due to the sanitary measures. This chapter presents a group psychological intervention aimed at people who lost their relatives to COVID-19. The therapeutic groups were carried out virtually through six sessions and brought together people from all over Brazil. Narrative therapy was the theoretical model adopted. The participants mentioned the moment of diagnosis as decisive for experiencing the disease's terminality and anguish, promoting guilt and anxiety in the family. In the group, the participants found space to share the painful experience, and throughout the sessions, they were able to develop coping resources. They mentioned strategies, such as activating the family and social support network, recalling legacies and moments they shared with the deceased, and elaborating farewell rituals adapted to the pandemic circumstances. The participants evaluated the group intervention as very important for reframing the pain of loss and restoring future projects since they counted on the help and inspiration of the other participants who went through this painful experience in similar circumstances.

Keywords: group counseling, support groups, grief counseling, traumatic loss, COVID-19

1. Introduction

One of the greatest challenges to Psychology that arose from the COVID-19 pandemic was the accommodation of several mental health demands. The cases of anxiety, depression, sleep disorders and so many other complications resulting from the collective trauma faced by the global population are undeniable [1, 2]. However, after more than one year of pandemic, especially in Brazil, where in May 2021 the tragic mark of over 450,000 deaths was reached, grief has been one of the most frequent and significant reasons for requests for interventions in mental health. The complex process of mourning involves several variables and, with the sanitary restrictions that have prevented meaningful rituals practiced in the culture from happening, the impacts have been intense. The purpose of this chapter is to present a psychological intervention experience aimed at people who have lost their loved ones

to COVID-19. The sessions were held virtually and gathered people from different regions of Brazil, and also abroad, for six weekly two-hour meetings. The theoretical basis adopted was that of Narrative Therapy, for proving itself a conceptual model that has contributed significantly to redefine the experiences of loss and trauma.

2. Death, mourning and meanings in narrative therapy

Understanding death and losses in natural situations is, in itself, extremely difficult, for it invokes the theme of finitude of the materialized form in a society in which this theme is taboo. In the pandemic scenario, large-scale deaths, associated with deprivation of physical contact as a result of sanitary measures, require the bereaved to have even more resources to deal with adversity and get in touch with their own pain. In several situations, the thinking that prevails among people who offer social support is that the mourner should let go of the person who passed away, be involved in actions that distract them, and avoid thinking about the deceased. According to Campillo, it's reprehensible what modern thinking advocates about recovering from the pain of loss through the mechanism of moving on with life without a loved one, letting them go [3]. The postmodern proposal expands and enriches this vision, proposing a new look. In this conception, death is not considered an end, but an invitation to a new relationship, in which connections may keep on growing and improving even after death. White in his work "Saying hello again" develops this less hegemonic way of acting with people devastated by the loss of loved ones, because faced with this suffering, the author understands that one doesn't lose only a person, but with them also goes part of one's sense of identity [4]. The author's proposal is that the emptiness and paralysis that the mourners experience should move towards the recovery of the relationship with the departed. Listening to the experiences with those who have passed away and bringing the importance of their presence in the life of the mourner and their contributions to the mourner's sense of identity becomes a work with grief capable of promoting new meanings.

3. Building a welcoming space: the conditions and attitudes for working with grief

Imagine the pain of one who has experienced mourning in the conditions of the pandemic. Receiving the COVID-19 diagnosis is culturally represented as a sentence in which death is quickly considered. Therapists, from the moment of first contact with the mourner, already need to convey the idea of a space where they should feel comfortable. It is necessary to clarify that the participant is the one guiding the conversation, electing what to share and when to do so, characterizing a respectful and collaborative process [5].

For White, it is very important that the therapeutic interaction is centered on the person being assisted and not on the therapist [6]. According to White and Epston, the narrative method places the person as the protagonist or as a participant in their own world [7]. For the author, retelling a story is telling a new story. It is understood, therefore, that the therapist is the specialist in the process and the client is the specialist in the content, hence the importance of the questions and of the accommodating space without judgment or restrictions that may intimidate the spontaneous retelling of those who want and need to share their stories.

Campillo points out the importance of the double listening in the therapist's job in the case of mourning and of people who have undergone recent traumas [3].

What does that mean? While the therapist must give full importance to what the person wants to report from their traumatic experience, they must also be attentive to expressions that show how a person responded to this traumatic event. The double listening observes any sign of events, values and desires that the person shows, even when reporting the story saturated with problems, which is the description of trauma. Through the double listening the therapist plays the role of the external witness, who will seek to identify in the conversation words that imply other meanings, and in reflecting them to the participant, allow them to listen in their own words their desires, values, dreams, life principles, resources and everything that was observed in their narrative that was obscured by emphasizing the problem.

4. Conversations of re-membering

The main bases of this work of reconnecting with significant people is what White called conversations of re-membering [8]. This therapeutic practice was inspired by the work of cultural anthropologist Bárbara Myerhoff. The metaphor is based on the idea of a life club, in which there are members that are validated or canceled. Thus, the mourning process rescues the relationships built with the person who has passed away, considering the identities, life knowledge, legacies and mutual learning. White warns that they are not passive memories, but intentional engagements that promote identity marks. These conversations are based on two sets of questions for this mapping. The first set refers to retelling how the meaningful figure has contributed to the person's life, detailing how this connection has promoted this process, while the second set invites the person to see the contributions that they themselves have given to the life of this meaningful figure, detailing how this has happened.

It is important to mention that conversations in Narrative Therapy generate contexts for activating skills for creation of meaning. The process allows deconstructing ideas contained in the stories to find different conceptions, allowing new meanings for the lived experiences.

5. Accommodating people who lost their families to COVID-19: mourning and their stories

The pandemic declared in March 2020 in Brazil brought as one of its most nefarious effects the death of over 450 thousand Brazilians in the period of 14 months. Unfortunately, even with the advent of vaccination, control over contagion and the intense need for hospitalizations has not yet occurred and the number of deaths is still on the rise. Therefore, there are thousands of mourners who demand an urgent look at their mental health and help in the grieving process.

As members of the Committee for Mental Health and Psychosocial Support of the University of Brasilia, we offered a support group, with a proposal for six weekly two-hour long sessions, in which, based on the work of narrative therapy, we developed a welcoming space to people from all over the country and even abroad who shared the experience of having family members who passed away due to COVID-19.

The groups were open to anyone who was 18 years older and had internet access. We published invitations to the support group on social networks, the university's website, and the local media. It was offered for free. Those who were interested in participating fulfilled an online application form. After applications,

the groups were divided according to the participants' age. Two psychologists acted as co-therapists and facilitators of each group, accompanied by undergraduate psychology students who observed the sessions and were responsible for their written records. The two authors of this chapter supervised both the psychologists and the students. The weekly supervisions were divided into two moments. In the pre-session, the team discussed the topics that would be approached in the following session and possible doubts or questions. In the post-session, the team discussed what had occurred in the session, the therapists' interventions, feelings, and resonances, as also plans for the next session. During the sessions, the supervisors were online available to assist the therapists in case of need.

We will now describe the procedure and report the experience, connecting it with the theoretical aspects on which we have based the intervention (**Table 1**).

In this proposition, the first meeting is crucial for the construction of a collaborative, dialogical proposal, in which members of the group can feel that their emotions will be welcomed in all their expressions. It is fundamental that in the online model, the bond and the creation of a welcoming virtual space are ensured so that all of them can feel belonging to this community that has signed up to share their painful experience with people who are able to understand it. In the groups we offer, it is very common for this moment to be one of openness and expectation. After clarifying how the group will work, it is common for participants to be anxious to reveal their painful processes of accompanying their loved ones, from the moment of diagnosis until death, revealing the hurtful, intense and fast period in which the disease develops and worsens. Participants usually bring impactful reports and, for the most part, describe the experience as traumatic, touching others with their emotional narratives.

This session clearly shows what Campillo points out about the need for people who experience recurrent trauma to be heard about everything they elect to share about the traumatic experience [9]. But at the same time, it is vital that in our listening as facilitators we notice the signs that the person continues to value their life, despite what they have experienced. The author states that no person is a passive recipient of trauma. As severe as the experience of loss may be, it is always possible to recognize a movement and this can and should be recognized by those listening. Even in the face of a trauma of great magnitude, people tend to take the necessary measures to protect themselves and preserve what they value.

The initial question of the session is intended to promote the narrative practice of double-listening, where we are interested in listening to more than one story [10, 11]. The tendency is that people present only a narrative of negative effects, which hides responses of resistance and resources, seeming to trap them in their impotence. Double-listening allows us not only to listen to the first story, centered around the effects and impacts of trauma, but to a second story, based on the

Themes of the sessions
1. Knowing the group and establishing agreements.
2. Investigating the support network and resources
3. Introducing the loved one and their stories
4. Connection between the people introduced and resonances
5. Searching for community resources and networks
6. Moving forward and revitalizing projects with the strength of legacies

Table 1.
Themes of the sessions.

responses, on the strategies used, and on what they value in their lives. For narrative therapists, committed to an emancipatory action, this will allow to awaken the sense of agency and the discovery of a favorite story, which shows that despite the trauma, there is no submission and passivity [12]. A clear example, in the grief for having lost family members by COVID-19, is the attitude of wanting to be in a group, sign up, be present and bravely share their emotions. Another example is when one participant exposes how inspired they were by the attitude of another in regards to the responses and resources; they feel surprised and are able to see through the eyes of the other their own sense of identity recognized. The idea of Michael White (2006) was to deconstruct the "no pain, no gain" saying, creating a space in which is possible to relive less of the details of trauma and instead create a safe territory of identity for people to express their experiences. It is not avoiding the description or intimidating it, but warning about conversations about only one story.

In the second session, people who have not yet described their traumatic experience of loss are encouraged to speak. The beginning of the session happens with people speaking about how it felt to be in a group sharing so much pain and resources. Although the reports mention the pain experienced in listening to the traumatic losses, the group members recognize the positive stories even through adversity. As facilitators, we have also chosen not to emphasize the dominant discourses that are destined to tragic stories, highlighting the horror of death and lamenting the details of the rapid assisted degeneration. We invest, as facilitators, in the exceptions that compose the alternative story, such as the ways of expressing love and care, so delicately described by the participants when reporting their actions along this journey. Our questions and interventions always look for practical stories of hope and it is possible to see that in the retellings. For example, in one of our groups, a daughter blamed herself for not being able to say goodbye. Instead of emphasizing the practice of this ritual that is suspended by the pandemic, we revisited all the manifestations of celebration of her father's life, while she was in his company. These positive expressions took the daughter away from her helplessness and filled her with hope about how good it was to know that her father died having received so many gestures and words that showed her love.

This session is also dedicated to the narratives about which support they could count on at that time. According to Campillo, all support is valid, whether it includes people, communities, spirituality or others [3]. The conversations should center on how these resources worked in other situations and whether they could be used in this moment of death of family members by COVID-19. The kind of questions that are asked invites not only to investigate the support received, but also the way in which they are seeking this support and whether they are managing to formulate this request.

To illustrate, we observed that there are surprises around this network capable of supporting this moment. For instance, in one of our groups a person brought their outrage about the way the inventorying process occurs, with tight law deadlines which disregard the pain of the mourner. To help solve this, they counted on professionals who worked with their deceased father and who knew how to conduct this moment with great sensitivity, helping with practical resolutions as well as being emotional supportive. The group also frequently expresses how much some of its members have played this supporting role, by promoting identifications with stories and resources reported in the group. Even if no answers are obtained, it is very important to suggest reflection. In this regard, something else that appeared were networks which, instead of supporting, judge and prescribe behaviors for the experience of mourning, and which are also narratives that must be accommodated. At the end of this session, we propose a conversation of re-membering and how

they would like to introduce in more detail the people who passed away, bringing the metaphor of the life club and how it would be their action to make this person a member, seeking the permanent connection, regardless of their physical absence, and sharing their legacy. So we propose that this introduction be accompanied by photographs, objects, songs, and whatever else the mourner wishes to bring to represent the deceased person and illustrate their relationship with them.

The third and fourth sessions are dedicated to conversations of re-membering, which are mediated by sets of questions that retrieve stories and testimonies about the person who has passed away. According to White, the questions are specifically to create a space where those in the group can incorporate the presence of the deceased person in their own life and identity in a more enriching way [6]. Speeches that recommend forgetting the one who has passed, overcoming the pain and moving on seem to belittle the richness of the stories that are lived by people with their loved ones. So the questions turn to another aspect: recovering this connection with the deceased person, which allows them to see how much this person is present in their life and that this relationship remains after death, although they need other ways to relate. For this, we suggest that these people be introduced to us through photographs, stories, songs, objects, texts; in short, that they seek this connection so that, when telling about the person, they recover affective memories that also transmit values and legacies.

The participants work hard to share these narratives in the group and this moment is accompanied by a lot of emotion. Initially we invite them to retell how this significant figure contributed to their life, and following that, how this connection impacted their identity and who they are today. This first set of questions is very easy to detect, since the countless stories and adventures lived with these people quickly flood the session with laid-back moments. It is common for very beautiful narratives to emerge, narratives that describe scenarios of action, with adventures, strolls, family habits, recent and old photos that retrieve an account of many contributions from this person to life and to what they take as learning and transformation of themselves from this relationship.

However, this is not the biggest challenge of the conversation of re-membering. The most difficult, but necessary, is the second set of questions, which address the contribution that the participant left in the life of the person who has passed away. Here, the way in which this person contributed to the identity of the deceased person is also recovered. These are questions that many times were not considered by the participants. The power of this last set of reflections is in the concept of agency. The person who lost a loved one so far only saw a void left by their absence and saw themselves as a victim of this loss. But seeing the transformations they have promoted in the life and identity of the deceased person also shows the reciprocity of this transformation.

After the loss of a dear person by COVID-19, it is common for one to have their sense of self reduced and to feel lost about what to value. Invigorating this sense from their values and the restoration of their projects is the objective of this session. In some of our groups, we observed participants who managed to revitalize these connections based on our questions about this contribution: a mourner daughter made it clear that her deceased father had not known how to express gestures of affection and that it was in his relationship with her that he learned. Another participant pointed out how much her mother was able to understand that her strictness and perfectionism were unnecessary stressors and this was learned with her as a daughter. Other members of the group pointed out the deconstruction of prejudices and other forms of revision of values as a merit of living with the deceased, which led to the awareness of their active role in the contribution of values that were also transformed in the lives of those who had passed away. At that moment, it is clearly

observed that the bereaved person does not see passively the legacy of those they have lost, but sharpens the sense of agency, as they themselves have also promoted changes and left legacies in those who passed away.

A common point between the third and fourth sessions was the resonances that the members of the group shared, revealing how much they felt touched and inspired by the stories of relationships presented in these conversations of re-membering. Many started referencing to images, songs, words that reverberated in them from the others' stories.

Session five has as its main purpose seeking community resources and networks which allow facing this moment and assist in the restoration of personal and family projects that can be remodeled in the face of the physical absence of that member. Group participants are invited to think about strategies observed in the group that dialogue with their own coping stories. In some of the groups that we mediate, people have identified themselves with forms of records that could eternalize the stories of the deceased, some with the goal of generational transmission, others of searching and getting in touch with their family ancestors. The way to deal with meaningful dates such as Christmas, Mother's Day, Father's Day, birthdays and anniversaries are usually challenges that lead the group to reflect a lot on the resources in themselves that they have made available to deal with these moments and that are very inspiring for others. This session always brings back very concrete experiences about the complexity of the grieving process and allows for very profound reflections about how this does not happen in a linear way or with determined times and manifestations. Accepting this ambiguity of feelings and expressions without judgment is always pointed out as a positive factor in the group, as the idea is not to prescribe guidelines or to assess crises as pathological, but to manage them in a healthy way with the collective understanding that their paths are personal and dynamic.

The sixth and final session proposes a more prospective look at the grieving process, including the theme of revitalizing projects with the strength of the loved one's legacies about whom we have talked so much in the conversations of re-membering. Instead of advising on forgetting and moving on, suggesting avoidance or distraction behaviors, it is in our life club, with the departed member re-associated, that the projects that restore the sense of identity and future projects will be outlined. This session has a conclusive tone, in which people revisit the way they arrived at the group and how they have developed over these weeks. We do not romanticize here an elaboration of grief or any miraculous change in the way of understanding their pain, but recognize this space as a dialogical opportunity that has allowed many constructions, each in their own way and anchored in their past experiences.

In general, the data collected from what was experienced in the group corresponds to what Campillo recognizes as principles of the grieving process within the narrative perspective: the conclusion that life and the relationship with the person goes on and does not end with death [9]. For the author, discussing the death provides opportunities for stories and experiences full of love that last for a long time after. The questions play an important role: they generate meaningful memories that in the future can be useful when reminiscing, and highlight creative thinking within the constraint of reality that would be fixed as time and proximity. The narratives allow us to seek for resources that are within ourselves and recover the flexibility of stories that transcend death. Promoting the act of membering again lives and relationships is also a very strong principle that manages suffering in a healthy way, refusing to limit it to the insignia of saying goodbye and being a fertile ground for the co-construction of stories of hope and love. According to Hedtke, loved ones who have passed away can continue to play a crucial role in our

'life club' [13]. Re-membering practices represent ideas that distance us from the notion of finitude, while supporting a continued symbolic connection with the departed person. This connection is respectful, as it facilitates a person's continued legacy in the context of the work with death [6, 7].

The sixth session allows us to recover these steps that were taken collectively to prevent the aggravation of a possibly complicated grief situation and to modify its effects, making room for the preservation of what is important to the person and, in a concrete way, identifying tools and skills which are necessary for this knowledge not to be submerged in the experience of loss, without our being able to see it. Such knowledge is built throughout life and is related to what we value. According to Campillo, everything we value in life brings purpose to live, gives us meaning and marks the path ahead [3].

We end the sixth session by asking them to give us a word on how they felt in this group, encouraging them to express themselves in writing. But the common oral feedback in the various mourning groups we offered mentioned how much the members felt affected by the each other's stories and the reverberation this promoted when they got in touch with their own content. These interpersonal learnings presented themselves as important therapeutic factors, as they clarified the participant's memories in relation to facts that at that moment they would not have selected to tell. Acknowledging several positive aspects of the process and gratitude for the members' trust in sharing such intimate stories, the session concludes with the clarity that the process does not end there and that the challenges are daily. The final moments represent exchanges of personal contact information, networking with group members and scheduling a new group meeting, usually on a date in the following month, for an opportunity to follow up on what was experienced in this dialogical space, when they begin to observe what was experienced there in their everyday demands.

6. The therapist and the group of mourners: emotional mobilization and learning

It is not possible to address this experience with a group of mourners without mentioning what this work is able to promote in therapists who are facilitators. Initially, it is important to highlight the challenge of living during the pandemic, which is faced both by the therapists and the group members, who are equally inserted in the pandemic collective mourning process. While this insertion favors great empathy, as we are also experiencing close and significant losses, it can also promote discomfort and paralysis in the face of so many touching contents reported by the participants in their trajectories of intensive care that were unable to prevent death.

Although this is a group whose main characteristic is dialogue and collaboration, the therapists do not play a leading role. In the role of facilitators, the therapists are experts in the process and invest in asking questions that help participants identify what White called absent but implicit, that is, finding insights into what people plan in their lives, but that they do not always identify in their stories [14]. In each session the therapists promote that, in this collaborative space, in which respect for the narrative of the other is always exercised, meanings are articulated that, when recognized, help create a platform that allows re-examining the effects of the problem, taking an alternative position and creating new lines of identity. To illustrate this process, we mention an excerpt from a letter from one of the participants of the group, who describes among so many positive and emotional impressions, a clear view of the process by mentioning:

"... I think the implementation of these groups is really effective, for it's through them that we open up our weakness, but in the end are surprised by our strength. And that's how I saw myself, having a space for speaking, listening, venting, building and rebuilding, of common ties, of gathering reasons and purposes to remain strong. Looking at myself and seeing myself is something I was already doing, but looking at myself and seeing my mother and seeing myself in her was something magical."

There are several aspects that we could illustrate about this short excerpt selected, but the main one is observing the attributes of identifying strength in face of weaknesses and the power of reconstruction and purposes. There is also mention of the connection with the deceased mother through the legacy and preferred identities, in which the problems and impotence of mourning give way to reconnection.

Regarding the therapists' assessment, the management of grief groups is reported as an indescribable experience, which at the end of the process allows several gains not only for the therapists, but also for the participants. We highlight here the importance of getting in touch not only with the content of others, but with oneself, seeing the emotional mobilization promoted by the tragic stories, but also the power of the process that sets all the pain in motion, aiming for resignification. And this involves all the actors in the process. To sum up, therapists verbalize the opportunity to transform and be transformed by the complexity of all the experiences that the group allows them to feel.

7. Final considerations

This chapter was intended to describe the experience of a group of mourners who had lost family members due to COVID-19. Seeing as this was about an extremely delicate and, at this time of pandemic, very necessary clinical management, it is considered that the social relevance of this work is indisputable. Death by COVID-19 is a reality that affects people all over the world and that requires initiatives from professionals trained to work in mental health. The positive assessments from the participants encourage our attitude to multiply and publicize the adopted methodology, seeking to inspire new experiences and encourage professionals to promote offers of these actions. Psychological work involving grief is not limited to the period of the pandemic, but will be necessary for a long time, due to what the countless losses represent. Assertive actions that rescue affective connections and resignification of relationships with deceased people may be a good path through sadness and longing.

Constructing and re-constructing narratives is an essential part of the process of understanding our experiences, attributing meaning to them, and becoming who we are [15, 16]. Therefore, narratives represent a valuable resource for professionals from different areas who seek to develop socially equitable relationships that place clients or patients at the center of the care process [16]. Narrative Medicine is an important representative of this trend. Rita Charon, also influenced by White and Epston, developed a theory based on the principle that "recognizing, hearing out, receiving, and honoring the stories of illness may give doctors and nurses and social workers to ease the suffering of disease" [16, p. 199].

Finally, although we believe the group's potential to develop resources that may contribute to preventing complicated grief, professionals must be aware of signs that suggest the need for additional referrals. If signs of suffering remain constant or seem to worsen throughout the sessions or suicidal ideation is present, referral for psychological or psychiatric treatment should be considered. Other risk factors they should keep in mind: a history of mood or anxiety disorders, alcohol or other

drug abuse, the coping strategies used, attitudes towards death, the experience of multiple losses, scarce social support, conflicts with family and friends, and financial strains [17, 18]. Considering the high number of deaths faced during the COVID-19 pandemic, governments and civil society need to prioritize developing and promoting strategies to deal with the emotional and social impacts of losing one or multiple family members.

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Chapter 18

Uncertainty in Pandemic Times

Liliana Lorettu, Davide Piu and Saverio Bellizzi

the unsecurity of knowledge was the same as the security of no-knowledge
C. Bukowski

Abstract

The Covid-19 pandemic has burst upon us as a general test for humanity, for which we were woefully unprepared. We all faced the pandemic with little knowledge and no experience. It is the first pandemic of our lives. Over this period, we have seen a range of conflicting statements, positions and behaviours. On occasion, the scientific community and health professionals have failed to speak with a single voice to convey the urgency of the situation, as their views got lost and scattered in rivulets of opposing theories ranging from denying to ringing the alarm. So many elements were in place for the 'perfect storm' to get unleashed ... and it did. And as the pandemic wreaked its havoc, many health workers have paid a high price for their selfless dedication and professionalism. We have worked in the absence of clear-cut guidelines, in situations where even the cornerstones of medical ethics have faltered. On the other hand, the fruitful aspects of uncertainty also emerged.

Keywords: pandemic, uncertainty, risk, management, communication

1. Introduction

Uncertainty has always been inherent in human existence, part and parcel of our experience as we move through life. We are born with only one certainty, that of our death; we live our lives in the uncertainty of waiting. As in the ancient tale, we do not know whether 'the Lady in Black' will meet us at the market or at Samarra; she will decide.

As humans, we have a fundamental need to attempt to control and/or reduce uncertainty through the use of rules, norms, recommendations, prohibitions, safeguards, impediments, vetoes, even at the cost of limiting our freedom. However, the relentless change and transformation of society does not allow us to reach a stable condition of certainty. Evolution is continuous, and uncertainty follows evolution like a shadow. In the past, the concept of uncertainty was distinguished from that of risk, which denotes a state of measurable 'uncertainty' in which certain possible outcomes generate an undesirable effect or a significant loss and preventive measures can be planned [1]. Currently, the two terms are used interchangeably, and risk is often regarded as uncertainty [2], especially, as is often the case in today's society, when many risks are not measurable and thus increase uncertainty [3].

According to Bauman [4], postmodern society is a society of uncertainty, in which the ongoing transformations have led to an 'erosion of the certainties' of modern society, and a loss of collective identities.

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Castel [3] argues that current uncertainty is the effect of the gap between a socially constructed expectation of protections and a society's actual ability to make them work. As humans we constantly strive to reduce uncertainty by continually changing our environment; however North [2] observes that 'there is no guarantee that we will understand correctly the changes in the environment, develop the appropriate institutions, and implement policies to solve the new problems we will face.' The use of science and technology is certainly an important attempt to manage uncertainty and channel it into defined and controllable patterns. However, while science often offers solutions, it is often itself a cause of problems as it can cause 'a flood of particular, conditional, uncertain and detached detailed results (...) impossible to survey' [5]. Moreover, we often do not know the implications and consequences of innovations once they leave the laboratory and interact with other innovations in totally unpredictable ways [6]. Increased awareness of the risks associated with human choices also entails the need to assign responsibilities for decision-making processes and their consequences [5].

However, uncertainty also has its upsides.

While it generates anxiety, uncertainty can also fascinate and stimulate the senses and the mind. Socrates has taught us that accepting uncertainty makes us wise. His thought based on 'the knowledge of knowing nothing', the awareness of a definitive lack knowledge, and therefore of uncertainty, becomes a fundamental stimulus of the desire to know and remains a very topical warning. Thus, uncertainty asks us to search constantly, to fight against dogmas and the status quo and is a source of possibilities to be explored.

We should highlight the fruitfulness of uncertainty. When we are uncertain, we are always much more open to change, including unforeseen change. We respond to change more quickly by reprogramming our reactions, coming up with new solutions and rapid decisions, especially when confronted with an unforeseen emergency.

The spread of the Covid-19 pandemic has caused an unprecedented humanitarian emergency and has projected us into a global scene fraught with uncertainty.

The Covid-19 pandemic has burst upon us as a general test for humanity, for which we were woefully unprepared. We all faced the pandemic with little knowledge and no experience. We feel as if Nature put us to the test through an unknown virus. The Covid-19 virus has revealed itself as an unknown enemy that knew very well the frailties and limitations of our humanity and was able to hit our weak spots.

This article describes the uncertainty linked to three aspects of the pandemic response: management, medical treatment and news reporting.

2. Uncertainty in the management of the pandemic

The current Covid-19 pandemic is the first large-scale pandemic we have faced in our lifetime. The previous major pandemic dates back to the period from 1918 to 1922, exactly 100 years ago, so individuals living today have no previous experience to refer to.

A major role in the management of epidemics and pandemics has been assigned to the WHO. The WHO has played this role. Although at times its positions have been widely criticised, it is worth pointing out that the WHO had to grapple with a pandemic spread by a completely unknown virus.

The World Health Organisation (WHO) was established in Geneva in 1946 as a satellite organisation of the United Nations, with the aim, stated in its Constitution, of 'bringing all peoples to the highest attainable standard of health'. This objective is pursued through the WHO's own functions, which include, among others: to act as the

directing and co-ordinating authority on international health work; to furnish appropriate technical assistance and, in emergencies, necessary aid upon the request or acceptance of Governments; and to promote co-operation among scientific and professional groups which contribute to the advancement of health [7].

It may also propose conventions, agreements and regulations, and make recommendations with respect to international health matters and perform such duties as may be assigned thereby to the Organisation and are consistent with its objective. Each Member shall report annually on the action taken with respect to recommendations made to it by the Organisation and with respect to conventions, agreements and regulations. One of the instruments through which these functions are managed is the International Health Regulations (IHR) of 2005 (the first Regulations were adopted in 1969 and have since been revised several times). The IHR is an international legal instrument that aims to 'ensure the highest protection against the international spread of disease, avoiding unnecessary interference with international traffic and trade, by strengthening the surveillance of infectious diseases to identify, reduce or eliminate the sources of infection or contamination, improving airport sanitation and preventing the spread of disease vectors' [8].

A Public Health Emergency of International Concern (PHEIC) is a formal WHO declaration of 'an extraordinary event which is determined to constitute a public health risk to other States through the international spread of disease and to potentially require a coordinated international response'. A PHEIC is declared when a situation arises that is 'serious, sudden, unusual or unexpected' and 'carries implications for public health beyond the affected state's national border' and 'may require immediate international action'. Under the 2005 IHR, states have a legal duty to respond promptly to a PHEIC [9].

The WHO should be notified whenever the answer to at least two of the following four questions is yes: Is the public health impact of the event serious? Is the event unusual or unexpected? Is there a significant risk of international spread? Is there a significant risk of international travel or trade restrictions? [10].

WHO Member States have 24 hours within which to report potential PHEIC events to the WHO [10]. *A potential outbreak does not need to be reported by a Member State, since reports to the WHO may also be received informally* [11].

From 2009 to 2020, there have been six PHEIC declarations: the H1N1 (or swine flu) pandemic of 2009, the polio of 2014, the 2014 Ebola outbreak in Western Africa, the Zika virus outbreak of 2015–2016, the Ebola outbreak in Kivu of 2018–2020, and the COVID-19 pandemic of 30.01.2020 [12].

On 2 May 2021, a report by an independent panel, expressly requested by WHO Director-General Thedros Adhanom Ghebreyesus, confirmed the WHO's delay in declaring the new epidemic a 'public health emergency of international concern' (PHEIC) [13].

The report highlighted the time lost from 31 December 2019, the day the WHO received the first information from its China Country Office about a new 'pneumonia of unknown origin' reported in a press release of the Wuhan Municipal Health Commission, to 30 January 2020, the day the new outbreak was officially declared a PHEIC. Perhaps the PHEIC could have been declared as early as 22 January 2020, after the initial findings of the first mission of experts sent to Wuhan by the WHO, who spoke of human-to-human transmission of the virus, but also said that further investigation was needed to understand the extent of transmission [14]. Taiwan warned the WHO of possible human-to-human transmission as early as 31 December 2019, but the WHO did not give the information any weight [15].

The Emergency Committee (EC), made up of 15 independent experts as required by the International Health Regulations (IHR), was convened on 22 and 23 January, but failed to reach a consensus on the danger of the new outbreak, postponing the

decision to declare PHEIC. By that time, the virus had already spread to Thailand, Japan and the United States [16]. The PHEIC was declared on 30 January 2020, after a mission of the WHO Director-General to China and another meeting of the Emergency Committee. At that time there were 7818 confirmed cases globally in 19 countries in five WHO regions [17].

It is worth pointing out that this delay, which has been fully acknowledged by the WHO, stemmed, among other things, from uncertainties due to the lack of knowledge about the virus and has, in turn, created a cascade of further uncertainties.

The measures, recommendations and suggestions for managing the pandemic have not always followed a linear course, as they needed to be revised and updated as the scientific studies produced by the international scientific community provided increasing understanding and certainties about the virus.

One example among many of the shifting recommendation is the advice on face masks. On 6 April 2020 [18]*, the WHO advised that masks were useful in combating the spread of the virus when worn by sick people and were indispensable for health workers, but cautioned against their use in the wider community setting, stressing that there was no scientific evidence that masks could help healthy individuals to avoid infection, and warning of the false sense of security they might create. The guidance acknowledged that it was 'possible that people infected with COVID-19 could transmit the virus before symptoms develop'. It also admitted that 'Studies of influenza, influenza-like illness, and human coronaviruses provide evidence that the use of a medical mask can prevent the spread of infectious droplets from an infected person to someone else and potential contamination of the environment by these droplets (from an article published in Nature Medicine on 3 April 2020)* [19]*, but added: 'there is limited evidence that wearing a medical mask by healthy individuals in the households or among contacts of a sick patient, or among attendees of mass gatherings may be beneficial as a preventive measure'. On 6 June, the advice changed, as it was stated that 'Masks alone are not enough, but they can help to protect oneself and others'. Therefore, they should certainly be worn in community settings 'because they provide a barrier to potentially infectious droplets'* [20]*. Then, in August 2020, the Director-General of the WHO himself launched the 'Mask Challenge'* [21]*, inviting people to send in photos of themselves wearing a mask via social media under the message that 'everyone has a role to play in breaking the chains of transmission'. In Italy, Legislative Decree No 125 of October 2020 imposed the use of masks 'in all outdoor places except in those settings where isolation from other people is guaranteed continuously'* [22].

In Italy, as in other countries, the management of the pandemic required, among other things, the adoption of restrictive measures never experienced before. In light of the grave threat to public health, 'extraordinary' measures were taken, which also entailed limiting individual freedom. Some restrictive measures such as isolation and quarantine are well-known health measures, defined as 'ordinary' because they had already been used in the past, in line with current health policies and not in conflict with individual freedom. However, the scale of the threat posed to the health of individuals and communities by Covid-19, the scarce scientific knowledge about the virus, and the rapid spread of the pandemic also required the taking of 'extraordinary' measures. These measures, grouped under the generic term of 'lockdown', included, among other things, 'stay at home' rules and curfews, the blocking of numerous work activities, the closure of all schools for all age groups, the prohibition of certain behaviours and activities, social distancing, and the use of personal protective equipment. All this happened in the context of a general and widespread climate of uncertainty that affected individuals, communities, policy-makers and health professionals, in the attempt to reduce the risk and the spread of the pandemic.

The certainties about daily routines, work and personal life were lost, as were those about protecting our health. But the impact was not only on the daily routines of one's life, which for better or for worse give us a framework of certainty and predictability to which we can anchor ourselves. We also lost certainty of the future: for a long time, no planning for the future was possible because the seriousness of the health emergency had swept away all certainties about it. Everyone may fall ill and die. Covid-19 has proven to be a very 'democratic' disease, as it has affected all social classes, age groups, ethnic groups and religious denominations. Above all, the lack of knowledge about the virus initially prevented full understanding of its means of transmissions, the measures to avoid infection and the most appropriate treatment for infected patients. Fear of death became ever more present and tangible. Throughout our lives, we are all aware that sooner or later we will die, yet we all live as if we were immortal, banishing reflection on the end of life to a distant future. The pandemic has forced us all to revise our thinking and acknowledge that death could come at any moment. Many people have experienced the impact of the disease either directly or through a loved one. Many have lost a family member or an acquaintance, and had the feeling that 'the bombs were falling closer and closer and it seemed impossible to get out unharmed'.

In 2020, the total number of deaths from all causes was the highest ever recorded in Italy since World War II: 746,146 deaths, 100,526 more than the annual average in the period 2015–2019 (+15.6%) [23].

Our certainties concerning our 'health status', also promoted by major health education campaigns, have collapsed. Health screening programmes, disease prevention and monitoring, access to hospital services and to the national health service, arrangements for visiting and assisting relatives staying in hospital, have all been suddenly wiped away leaving behind an empty space of bewilderment and confusion. Many patients feared that they would not be able to access healthcare. Some died in an ambulance while waiting to be admitted to hospital, others in their own homes waiting for an ambulance, the fate of many was decided by 'the lottery of life'.

The disruption of healthcare services caused by Covid-19 has impacted a number of specialties such as cardiology, paediatrics, oncology, neurology and psychiatry. The fallout is likely to continue for a long time [24].

A European study on the relationship between Covid and heart attack highlights the impact of delayed treatment and of the fear of going to hospital, leading to an estimated burden of 20,000 excess CVD deaths in Italy [25].

The link between patients and their families and that between health care workers and caregivers was disrupted during the hospitalisation of patients, going counter to more than 20 years of research and care practices highlighting the benefits of the healthcare provider-patient-family relationship [26]. Many patients have died in hospital, alone and in pain.

In the early stages of the pandemic, uncertainty mainly revolved around the 'health dimension', as many questions remained unanswered, or received contradictory, incomplete, inaccurate or misleading answers. The enemy to be fought was a little-known entity. As the lockdown dragged on, uncertainty also extended to the 'economic dimension' as individuals were hit by the shutdown and restriction of economic activities and the resulting economic crisis.

In EU, 2,7 million citizens lost their jobs last year as a result of the pandemic (Eurostat data). In Italy, the employment rate fell by 0.9% [27].

Initially, we all believed and hoped that the restrictions would be temporary, but the hope was dashed as fresh waves of the pandemic led to the restrictions being extended, wreaking havoc on the economy and opening up frightening prospects for individuals and society. The sheer duration of the pandemic has generated a dramatic value conflict between the need to save lives and the need to protect

livelihoods, plunging many individuals into a dispiriting health and financial uncertainty, and putting into sharp relief a circular and unsolvable existential dilemma, since there is no work without health and no health without work [28].

The pandemic also caught our **policy-makers and governments** by surprise. They too, experienced the uncertainty dictated by the unknown enemy, the virus. Policymakers did not know the virus and were unable to give clear indications of 'what to do' to guarantee citizens' safety. Many of the measures taken turned out to be ill-advised, no measure was risk-free, and many measures accompanied by reassuring statements were later found to be wrong and unsafe.

In 2005, the WHO had recommended its Member States to develop and constantly update their own influenza pandemic plans. Italy drafted its Pandemic Plan in 2006 (Agreement of the Standing Conference of the State Regions and Autonomous Provinces no. 2479 of 9 February 2006) [29].

The lack of clear and reliable information as to the actual revision status of the plan has fuelled doubts about the response to the Covid pandemic, which has often been inconsistent in affecting public compliance with the restrictions.

Each country has addressed the pandemic in its own way, developing its own national response. After China, Italy was the first country affected by the spread of the virus, giving other countries some extra time to plan their response, also in the light of the Italian experience. However, the different social, economic and health characteristics of each country did not always allow them to learn from the mistakes and/or experience of other countries. Thus, no uniform response was implemented on the basis of a collective process drawing on and combining the different experiences. Each country appeared to act according to an almost neurotic 'compulsion to repeat mistakes'.

The pandemic has shone a light on the inadequacies of health policies, which, in the wake of the globalisation of modern society, have often applied the McDonald business model to the health system, impacting its resources, increasing inequalities and affecting the fragile and vulnerable [30].

During the pandemic, many policymakers have taken advantage of the Covid issue to raise their profile and boost their votes, instead of focusing on the good of the community. Citizens were often given information that quickly proved to be false. Several politicians openly recommended irresponsible or unsafe behaviour, capitalising on discontent and impatience with restrictions and undermining the principles of collective responsibility and solidarity. Others have attempted to politicise the management of the pandemic. However, the pandemic has always resisted any political labelling, constantly reasserting its disturbing independence and uniqueness.

Uncertainty has also affected **health workers** who, for the first time in their lives, were confronted with a pandemic caused by a virus that they had never studied in their textbooks.

Patient management, treatment protocols and the management of healthcare facilities had to press the reset button: for all 'it was the first time'. Medical procedures were developed in the course of the pandemic through trial and error.

In addition to the uncertainties regarding treatment, the doctors faced other uncertainties.

The rapidly rising patient numbers soon led to shortages of ICU beds and produced situations recalling 'disaster medicine' [30, 31]. Well-established standards and procedures for the access to and termination of intensive care, routinely followed by health workers, proved inadequate to the sharp upsurge in demand. This made it necessary to set aside the criterion of the appropriateness and proportionality of care, and to introduce criteria of distributive justice and appropriate allocation of limited health resources, often applying the criterion of 'greater life expectancy' to select patients. Uncertainty affected the procedures and guidelines but also the

ethical principles of medicine, as health professionals were faced with new and unusual ethical challenges for which they were all unprepared [30]. Health workers faced the challenge with dedication and courage, attempting to make up for the scarcity of health care resources. They lost the certainty and hope of working in a safe manner; they knew that their work meant putting their lives at risk and those of their loved ones. Despite this, they continued to work and ... die. In the early stages of the pandemic, health workers had inadequate personal protective equipment, while later they had to learn how to use it correctly to protect their safety at work. Health workers have been called heroes, but many have also suffered assaults [32]. In Italy, approximately 450 health workers died, mainly during the early stages of the pandemic [33]. Some cases of suicide were also reported. More than 100,000 health workers were infected. Although other European countries were also affected by the pandemic, the number of deaths among healthcare workers in those countries is lower. Fortunately, the infection and death rates among healthcare workers have come to an abrupt halt with the start of the vaccination campaign.

3. Uncertainty related to treatment

The etiopathogenetic mechanisms of the Covid-19 infections were not initially clear. Moreover, in the early months of the pandemic, there was a ban on performing autopsies on patients who had died with Covid. This decision prevented and delayed key insights on the etiopathogenesis of the disease, which in turn can help to plan treatment. In the absence of a clear and known etiopathogenesis, there were no reliable guidelines for the patients' clinical management.

Health professionals made reasoned choices in the light of the knowledge and experience available at the time, and modified their treatment protocols as clinical evidence and scientific literature became available.

In a situation of high uncertainty, various drugs were alternatively recommended or prohibited. The virus has repeatedly refused to be pinned down.

Each covid unit followed its own protocol based on the results available at the time. However, developing a set of treatment recommendations based on a scientific rationale to reduce the risk of serious complications while ensuring adequate treatment safety was all but easy.

On 30 November 2020, the Ministry of Health published a guidance document on the home management of patients with SARS-Cov-2 infection [34]. On 10.12.2020, the Italian Medicines Agency (AIFA) issued guidance on the treatment of patients in hospital and at home, establishing the standard of care in light of the evidence available at that time [35].

Although the vaccine is not a treatment but a prophylactic measure against the disease, the arrival of the vaccine in record time was an extraordinary achievement and a fundamental breakthrough in controlling the pandemic.

However, vaccines too were and still are surrounded by many uncertainties.

The first uncertainty concerned the guarantee of immunisation. After the vaccines were approved by the regulatory body, the uncertainty concerned the availability of vaccines in different countries and in different parts of the same country. Distribution was patchy at first, beset by logistic and supply problems, and many people did not know whether or when they would receive their vaccine. This contributed to maintaining a general climate of uncertainty, while we were going through the third wave of the epidemic.

Another type of uncertainty concerned the priority order for accessing the vaccine. In Italy, especially in the first wave of the pandemic, many elderly people died: an entire generation, a heritage of culture and love, was wiped out by Covid-19.

The elderly population was classified as 'fragile' and was therefore given priority in the vaccination campaign. Another priority group was healthcare personnel. These were the only initial certainties as to the order of access to vaccines. For the rest of the Italian population, access to immunisation was not uniform across the different regions.

Lastly, particularly serious uncertainties and concerns have been and are still felt about the efficacy and safety of the vaccine.

As to efficacy, the level of actual 'protection' afforded by the vaccines has been hotly debated and bitterly disputed, fuelling controversy over disparities in treatment according to the type of vaccine used. Eventually, the regulatory authorities, on the basis of clinical evidence, have clarified the real efficacy of all the available vaccines. However, the appearance of virus variants has ushered in new uncertainty.

As to the vaccines' safety, too, the uncertainties are still many and evolving. Although side effects, even serious ones, were to be expected, it has proven difficult to maintain public confidence in vaccination and dispel uncertainties. In addition, in some cases (e.g. the Astra Zeneca vaccine), the rules issued by the authorities have fluctuated wildly.

4. Communication in a pandemic: the paradigm of uncertainty

One of the ways we try to control uncertainty is through knowledge, by continuously searching for useful information to reduce it. However, it is not always possible to obtain the kind of precise information that allows us to reduce and/or control uncertainty. Often the information is insufficient, limited, distorted or inaccurate, and ends up generating more uncertainty. We can define this type of uncertainty as 'cognitive uncertainty', since it is linked to the inability of human beings to collect, process and select information and knowledge' [36].

Cognitive uncertainty has mushroomed during the pandemic and still today fuels and maintains the many global uncertainties generated by Covid-19.

In January and February 2020, the news coming out of China and from the authorities was little, fragmented and uncoordinated. On the other hand, multiple and contradictory voices soon started revealing to the world what was happening. Especially at the beginning, there was no system to coordinate and clarify the flow of information.

The huge amount of data fed to the public has been dubbed an 'Infodemic' by the WHO [37]. This shorthand term was first used to refer to the overabundance of information and news published at a continuous rate during the SARS epidemic. The word is a neologism coined in 2003 by a journalist from the Washington Post, and is defined as '*a rapid and far-reaching spread of both accurate and inaccurate information about something, such as a disease. As facts, rumours, and fears mix and disperse, it becomes difficult to learn essential information about an issue*.' [38].

The trend to attention-grabbing news has been pervasive. The aim of many has been to provide continuous information, to produce scoops, often without proper fact-checking. Moreover, various pieces of news, which were accurate when published, were soon after rebutted by fresh scientific and clinical evidence.

The media outlets have ridden the waves of the pandemic as extensively and emphatically as possible. The aim of the media has been to supply a constant stream of news stories, often paying little attention to fact-checking.

In order to provide breaking news and keep the public glued to their screens, headlines or social media pages, the media have reported data and figures taken from the latest scientific studies on the coronavirus, often without checking the authenticity of the information, for example by publishing data from not yet peer-reviewed studies.

TV talk shows have mixed and mingled scientists with businesspeople, politicians, ubiquitous opinion-makers and commentators, all expounding about issues such as Covid swabs, treatments and vaccination campaigns.

The scientific world has been flooded with an incredible amount of data and studies. Some of the major, highly regarded scientific journals have published several studies on SARS Cov-2 and Covid-19 only to withdraw them a few months later.

Often, both the scientific community and health professionals have failed to speak with a single voice to convey the urgency of the situation, as their views got lost and scattered in rivulets of opposing theories ranging from denying to ringing the alarm, giving in to the seduction of fame. Many have vehemently advocated a position only to then reverse it with disquieting speed and ease. Rather than communicators, they have been skilful weavers of uncertainty.

The authorities too have failed to provide clear information. Sometimes, even political leaders such as heads of state have given wrong information on scientific issues related to the pandemic, sharing fake news or engaging in questionable behaviour. The political world appeared uncertain in its attempt to reconcile fundamental human values such as health, individual freedom and the economy. Communication often seemed to fuel the conflict of values and, consequently, uncertainty.

In Italy, in March 2020, the government chose to present data and information to citizens via Facebook live streams of the Prime Minister and daily press conferences on television, by the head of the Civil Protection authority, in what Mario Marangio calls the 'Institutional Phase' of communication in the time of Covid [39]. Live briefings on social media were a first for government-to = citizen communication in Italy.

In terms of communication style, the briefings often resorted to war imagery, liberally using words such as 'war', 'battle', 'fight', 'attack', 'defence', 'curfew'; treatments and vaccines became 'weapons' against the 'enemy', and citizens were exhorted to rally together in the fight against the 'common enemy'.

This language actually fuels the widespread feeling of uncertainty, since war is by definition a time steeped in uncertainty. Anyone who raises a doubt or asks a question about the Covid strategy, even in good faith, is immediately singled out as colluding with the enemy, as a problem to be solved or a voice to be silenced. But this attitude does not help dispel the citizens' uncertainties and legitimate doubts.

The understandable uncertainty of scientists, policymakers and the media in managing the huge mass of data has fuelled a flood of misinformation, fake news and conspiracy theories, which have on occasion generated violent results, such as the setting of 5G telephone towers on fire, the chasing and damaging of ambulances, and Covid denialist movements such as the 'anti-mask', 'anti-vaxxers' and 'anti-curfew' groups.

As stressed by the National Bioethics Committee (CNB), accurate information is crucial to encourage people to comply with the restrictions: when individuals are informed of the facts and scientific progress and trust that the public authorities are acting with absolute transparency, they are generally more likely to comply for their own sake and that of others [40]. However, accurate information has often been lacking.

5. Conclusions

As discussed, uncertainty has been a major feature of this pandemic. The process of containing uncertainty and/or risk through rules, standards, measures or

prescriptions, prohibitions and restrictions has not been easy. This process is necessarily flexible and fluid; it requires continuous adjustments as new clinical evidence emerges, and is still far from reducing uncertainty. The advancement of knowledge, which is a key factor in the process of reducing uncertainty, has been hampered by the changing nature of the pandemic, which has hindered the efforts to bring it under control. Science has once again proved fundamental in the response to the pandemic, thanks to breakthroughs such as the development of vaccines in record times.

Nevertheless, uncertainty has taken various forms and has given rise to a cascade of personal and social dimensions.

One consequence of uncertainty, on an individual level, is certainly anxiety. This is a complex psychopatological dimension characterised by the fearful expectation of a vague and terrible threat, stemming from real or perceived uncertainty, the loss of control over the external environment and the inner dimension. Anxiety differs from fear, which is an alarm response oriented to an identifiable and specific threat, and from distress, a condition of severe suffering, due to a catastrophic interpretation of reality and a sense of impending misfortune [38, 41]. These three conditions have often characterised the response of individuals to the pandemic disruption and the uncertainties it has caused.

Another particular dimension is the lack of trust. Trust is defined as '*reliance on or confidence in the dependability of someone or something. In interpersonal relationships, trust refers to the confidence that a person or group of people has in the reliability of another person or group; specifically, it is the degree to which each party feels that they can depend on the other party to do what they say they will do*' [41].

Sociology recognises that trust plays a role in informing and maintaining the social order and distinguishes three types: *systemic* or *institutional* trust, aimed at natural and social organisation; *personal* or *interpersonal* trust, aimed at others; and trust in oneself [42, 43].

The uncertainty surrounding the pandemic has undermined all aspects of trust. There has been a decline of trust in the institutions, which often seemed unable to protect citizens because of measures that were perceived as incomprehensible and unfair. There was often a widespread sense that official communication was distorted, incomplete or inaccurate. This led to the perception of being in a changeable and dangerous situation, with no clear answers. An unambiguous assessment of the facts, which is a basic element of trust, was not possible given the circumstances, but the lack of transparency in communication, the discordant and fluctuating positions also contributed to the loss of trust.

Interpersonal trust also weakened, partly because the social distancing rules imposed by the lockdown reduced the opportunities for interpersonal contact, enhancing the feeling of loneliness. Individuals focused on their self-interest, alienating themselves from the principles of solidarity and cooperation: the 'other' was often seen as a possible source of infection or demands.

Lastly, trust in oneself has been undermined by the persisting uncertainty and the individual and collective inability to bring the pandemic under control. Individuals have been burdened with anxiety and fears, losing awareness of their own and others' resources for overcoming the situation.

Moreover, distrust has heightened the difficulty in accepting the lockdown restrictions. Individuals had to balance the principle of individual freedom (understood as freedom in the choice of treatment and disease prevention measures) with the principle of solidarity, which must also take into account the health of others and requires the persons at lower risk to protect themselves in order to avoid infecting more fragile and vulnerable people.

Mistrust has contributed to fuelling a number of violent incidents having various forms and targets. Health workers and health facilities have often been threatened by denialists who accused them of sowing terror and falsifying pandemic data. These attacks were accompanied by smear campaigns on social media and discrimination of health workers, suspected to have spread the virus.

Numerous violent episodes by youths have also been reported: they are a cause of social alarm because they are probably the tip of an iceberg and an expression of widespread disaffection which seems likely to continue in the future.

The situation that has arisen reminds us of the condition described by Durkheim as 'anomie': a situation of unease and malaise in a society where social norms are absent or weak and conflicting [42]. The individual dimension of anomie involves a profound state of malaise, whereby individuals are unable to choose what to do, do not know what others expect from them and do not know what to expect from others. The objective dimension, referred to the social context, involves a strong risk of disruption of the social fabric and deviance [44, 45].

More than a year (18 months) after the start of the pandemic, uncertainty persists despite the major breakthrough of the vaccination campaign. We seem to be playing a dangerous game in which the rules are constantly changing, and we are constantly falling short in our attempt to 'build certainties'. The development of vaccines in record time does not seem to guarantee safety. Moreover, the pandemic has heightened inequalities and vulnerabilities.

The strong global inequalities in distribution of the vaccines do not bode well for overcoming the pandemic, as they allow continued circulation of the virus and the emergence of variants. It is worth noting that these inequalities also carry risks for the people on the apparently favoured side.

The present feeling of loss of confidence bears an uncanny resemblance to that described by Stefan Zweig in The World of Yesterday [46], where the author reminisces of a world in which '*everyone knew how much he possessed or what he was entitled to, what was permitted and what was forbidden. Everything had its norms, its definite measure and weight*', which strongly contrasts with our current uncertainty. It is fascinating, although not surprising to note, that 'conditions' reoccur in the world and that the conditions of 100 years ago are quite relevant to today's world. It is disturbing to realise that so much suffering still awaits us because '*only he who has experienced dawn and dusk, war and peace, ascent and decline, only he has truly lived*'.

Even today, a year and a half later, the pandemic is not over; uncertainty is still pervasive, amid the hope and expectation of a return to a normality that will never be the same again.

However, we also have the certainty that human beings are able to respond and take action even in conditions of uncertainty, even when they fear their own death. This is proven by the work of Italian health workers, who have paid a high tribute to the pandemic, and have earned a nomination to the Nobel Peace Prize. Health workers have followed the path of the fruitfulness of uncertainty.

The lesson for us is that we cannot stop. We must start anew; with humility to learn from our mistakes, responsibility to pursue our duty, solidarity to reduce inequalities and reach out to those in need.

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Chapter 19

Stress and Resilience among Medical Students during Pandemic

J. Shivananda Manohar, Rajesh Raman and Bindu Annigeri

Abstract

Medical students who are future physicians are faced with a lot of uncertainties during this pandemic. It includes both academic as well as clinical difficulties. Previous literature has revealed that the stress among medical students is higher when compared to their peers. The stress has even been more during the pandemic as their role during the pandemic is not clear. The purpose of medical training is to produce good doctors but not at the cost of the integrity of the individuals.'Moral inquiry' is a term used to represent the ethical dilemma faced by doctors during life-death situations. Helplessness faced by students during emergencies leads to moral inqury which in turn leads to more distress. Most of the Medical universities have responded to the pandemic rapidly, by switching to online mode in teaching. This unpatrolled response also has to lead to more stress among medical students. Resilience, by definition, is the capacity to bounce back productively during a stressful situation. Resilience can be viewed as a personality trait or as a fluid process that nurtures according to the situation and the individuals' reservoir. In this article, we have tried to emphasise the importance of Resilience.

Keywords: Medical students, Stress, Anxiety, Perceived stress, Medical training

1. Introduction

Medical training to become a doctor, a profession dedicated to the caring of patients can at times be detrimental to an individual's health. 'Stress' by definition is an unpleasant feeling or strain because of external demand [1]. Medical training itself can be stressful because of various reasons which include sleep deprivation, academic burden and exposure to life-death situations [2–5]. When compared with the general public, a medical student's satisfaction in life and mental well-being is compromised [6].

1.1 Research method

Here we are trying to present a narrative review. We have tried to focus on specific topics, rely on observations, recommendations, and conclusions. The terms we used for the search included stress, resilience, medical students, and pandemic. The original articles, systematic reviews, reviews and guidelines were included to prepare this article.

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2. Academic and clinical learning during pandemic

During the pandemic there have been unforeseen changes in not just the pattern of their learning, but in their entire routine. Also during such an emergency situation, an institution's response to the pandemic in terms of academics is rapid, with committed delivery of academic services causing minimal disruption in this regard. This unpatrolled reorganisation may also be distressing for many students [7]. It has also affected the timeline of the training program. They are also under stimulated, being confined to home, with less than adequate interaction with peers. Clinical teaching, which is the centre of medical education has been totally compromised during this pandemic. They have had to rely on technology for all their learning and communication. In this context, some may have had hassles with internet connections. In addition to this, the enhanced screen time results in eye strain and sleep disturbances. When enquired about their attitudes towards e-learning, it was perceived by a majority of them (75%) that they were wasting their study potential due to the pandemic and resultant closure of the college. About 50% agreed that the pandemic had affected their personal wellbeing, and the same number was worried about being exposed to COVID-19 during their clinical training. A little less than 50% of the respondents felt that COVID-19 had no impact on their career and future specialty training and that their faculty had provided guidance for students during the pandemic. There are mixed responses regarding the acceptability of e-learning. Most do not accept that e-learning could help clinical training [8]. Although, the didactic lectures can be easily transitioned to the online mode, the human interactions which take place through clinical exposure cannot be substituted for. The institutional response to the pandemic is rapid in most of the places. The unparalleled reorganisation which may include academic as well as clinical, itself may be a factor to induce stress in the medical students.

Some universities have postponed the examination while others have resorted to online modes of assessment. Rapid restructuring of examination means those who are preparing for examination should contend with the new test format within a short period of time. Many institutions have considered alternative approaches like dropping grade point system and mandating pass grade only. This approach may negate the time and effort put by the students to achieve higher grades which will have negative impact on their future. Rescheduling exams for the final year students and recruiting them for the patient care earlier than expected – also have led to uncertainties [9].

Exposing final year students as frontline is also a concern raised in many countries. While, some universities have recruited them for patient care, others have completely stopped them from interacting with patients in the background of them yet being amateur doctors [10]. An earlier study conducted in 2019 has revealed that nearly 60% of students were willing to volunteer during an infectious crisis and among them, 91% reported that altruism is the motivating factor for volunteering. The question is whether altruism is the only factor to deploy them as volunteers. Earlier studies have also revealed that though there is a willingness to help, only 4% reported their preparedness in terms of skill. Hence, it is worth noting that though, being motivated to work during such situations is commendable, it cannot replace the clinical efficacy of trained professionals [11].

2.1 Stress among medical students

Though stressors like exposures to life-death situations and academic pressures are inevitable, it does not imply medical competence should be acquired at the cost of one's health. The medical profession is governed by the Hippocratic principle

of doing no harm. This also should be applied in training of future physicians so that they are better equipped to handle necessary stress and avoid unnecessary ones. This is especially important during the pandemic where uncertainty itself leads to stress, which in turn results in reduced empathy. The essence of medical education is not only to provide competence but also to preserve the integrity of the individual.

A systematic review of 29 studies of varying qualities showed a wide range of prevalence of 7.7–65.5% for anxiety among medical students in general, although the global prevalence rate of anxiety among medical students is 33.8% [12]. This is most prevalent among medical students from the Middle East and Asia. About one in three medical students globally have anxiety which is substantially higher than the general population [13].

The prevalence of depression (45.3%) and anxiety (48.1%) was found to be high during COVID-19, according to some researchers. More than half the trainees (57.3%) reported experiencing mood changes and difficulty in concentrating since the start of the COVID-19 crisis. One in four trainees felt inadequately supported, and about a sixth confessed to having considered a change in their choice of profession since the beginning of the pandemic in America. Temporary closure of the college and suspension of classes and education, impeding the quality of their education may have contributed to the anxiety [14].

A high level of anxiety and depression was found among medical students, of whom 31.3% exhibited a high likelihood of experiencing depressive symptoms, and 10.5% may have anxiety symptoms. A previous study performed among Libyan medical students during the early phase of the COVID-19 pandemic, found that 11% of medical students have anxiety symptoms, 21.6% have anxiety symptoms, and 22.7% have suicidal ideation.

Among Chinese college students, 0.9% suffered from severe anxiety and 2.7% experienced moderate anxiety symptoms during the COVID-19 outbreak. A meta-analysis of anxiety research studies on 69 medical students showed that 33.8% of them experienced anxiety symptoms when the results were pooled [15].

A recent meta-analysis done on eight studies on anxiety in medical students during COVID-19 showed an estimated prevalence of anxiety of 28%. But, this prevalence of anxiety of 28% is lower than the prevalence prior to COVID-19 for medical students globally, which was estimated as 33.8% in a meta-analysis. Most of the anxiety in medical students is related to academics and it is possible that online learning might have eased the burden of over-loaded academic programs. Also, keeping the medical students away from hospitals might have helped in reducing anxiety. Remaining at home with family might have also resulted in more bonding and the availability of support for medical students who might otherwise struggle to seek it. Being with parents and social support were found to be protective factors for anxiety [16].

The onset of the pandemic has brought about an anxiety of being infected and inability to handle a patient with COVID 19, inadequate clinical exposure and practical learning, compromised confidence in dealing with real patients as all learning is being virtual.

Some universities have prohibited medical students from any patient interaction, whereas others have engaged them for hospital-based roles as either students or early graduated frontline workers [17].

Medical students may pose unnecessary risk for patients, other clinicians and themselves because of an inadequate clinical experience. Being a part of a medical college alone does not substantiate these risks. However, encouraging medical students to participate in roles in which they have been prepared for may be more helpful.

The downside of all this is that, lockdown may prevent students from engaging in other activities such as exercise and interaction with peers, which are vital for the physical and emotional development of young people. Quarantine and lockdown may also limit access to psychiatric services, which could lead to an exacerbation of previously established anxiety disorders [16].

Resilience is relatively a new concept and there is not much research in educational field to make any pedagogical implication [18]. Resilience is one of the important skill which helps to adequately manage painful feelings, failure, and illness and these individuals have stable life satisfaction [19]. Prior studies have found that resilience acts like a buffer during negative life events, and also men are more resilient when compared to women. The concept of resilience has changed from it being a trait to being a dynamic process. Goodman et al. defined resilience as "the interactive and dynamic process of adapting, managing, and negotiating adversity". Resilience can change over a period of time as a result of development and one's interaction with the environment. Trauma affects people differently. Some people deal with it very soon, while others struggle with it for a longer time [20].

Self-efficacy and self-esteem are noteworthy factors in predicting psychological distress among medical students during the COVID-19 pandemic. It could also be influenced by factors like, female gender and suburban place of residence [21].

Resilience-It is not precisely clear how one goes about promoting resilience; this personality trait may depend on various factors, not all of which can be addressed by an institutional intervention. It is inversely related to stress, which implies that being more resilient leads to lower perception of stress. Medical students have higher levels of stress but, they are not more resilient than their peers matched by age and gender. Among medical students, there is a gender difference in perceived stress, resilience, and coping. Male medical students are known to have higher positive coping scores than general population peers and higher resilience, and lower perceived stress than female medical students. If resilience is considered predominantly as a personality construct, screening during entry to the medical school becomes vital. Emmy Werner conceptualised resilience as a fluid process, which is built through constant interaction with the stressors. Resilient students are more friendly, responsible and conscientious [22].

3. Pandemic preparedness

It is clear from the available literature that the medical students are not aware of the implications of working during the pandemic. The pandemic requires students to socially distance and also to wear masks while treating a patient, which can be confusing and traumatic to someone who has decided to have a career as a doctor and treat patients. Very young and inadequately trained interns and final year medical students being posted for COVID 19 duty might inadvertently put them through premature stress and we might have a generation of emotionally unprepared doctors who are not mentally prepared to face the new wave of the pandemic. More than seventy percent who were in the final year medical program felt that they were unprepared. Inclusion of topics like pandemic preparedness and disaster management in the curriculum is the need of the hour. Training in pandemic preparedness not only includes academic competence but also on logistic challenges faced specifically during the pandemic. Training in logistic preparedness include leadership courses in disaster response, emergency preparedness exercises, and problem based learning [23].

Suitable preparedness also involves awareness about the tools and aids available for maintenance of student mental health. While working during the pandemic,

It is well documented that mental health sequel is equal to physical risk in the frontline workers. The difficult decisions made during the pandemic might directly oppose the moral and the ethical principles of the frontline workers. Challenges in providing the care include apportion of inadequate resources among equally deserving patients. It also includes aligning the duties among patients, family and friends. Providing care for severely unwell patients with the limited and constrained resources is also a challenge. 'Moral Inquiry' is a term used to conceptualise a psychological sequel resulting after witnessing events contrary to the personal beliefs. It includes the feelings of shame and guilt due to inability to have righted the wrong commitment. Medical students experiencing 'Moral Inquiry' due to unprepared exposure to trauma have already been documented [23].

To prevent the adverse mental events it is important to take measures to mitigate the distress. Medical colleges cannot continue to be stressful and lonely places. Newer initiatives and activities need to start happening for fostering an emotionally balanced generation of doctors who are capable of handling stress. Burnout, depression, lessons to take care of their own mental wellbeing and the importance of a healthy lifestyle should be advocated to all students from the beginning [23].

Rigorous programs that can identify and address mental wellbeing of students should start happening from the first year during induction programs. Mentoring is one method of fostering connectivity among the students apart from student support groups. Different year students can face different set of challenges and Stress in different years. Regular feedback and mental wellbeing assessments need to be done regularly for all students of different years so that tailor-made programs can be introduced in depending on the year in medical school for tackling different issues faced by the students. Studies which have attempted to train physician in stress management and resilience with a focus on attention and interpretations found that human attention inordinately and instinctively focuses more on threats and imperfectness. Assisting in cultivating attitudes of delaying judgement, gratitude, forgiveness, compassion, acceptance, and higher meaning: showed decreased burnout, increased mindfulness and quality of life. One of the most effective way is helping students in developing resilience. Resilient individuals believe they are in control of the environment and were able to distance themselves from dysfunctional situations. If we look at resilience as a dynamic process, it is very essential to include resilience-building strategies in the medical curriculum. These strategies include mental health screening, sensitive workplace infrastructure, peer support, focus on diet, nutrition, sleep, and lifestyle. Previous studies report resilience as an independent predictor of life satisfaction. Finally, medical education has to be redefined with more emphasis on building empathy and the inclusion of humanities as part of the curriculum [23].

The importance of physical activity cannot be more emphasised. In a study on physical activity during the confinement due to the pandemic, health promotion and reduction of stress were the most frequent reasons for being physically active in both genders. The men chose it for health promotion and women for reduction of stress. Women adapted their pattern of physical activity to the confinement better; they involved in doing strength exercise, HIIT and mind–body activities more than men did. In addition, more women than men enjoyed doing physical activity more during than before the pandemic. These results should be considered to promote physical activity whether strict restrictions of movement are imposed or not [24].

At the administrative level, mental wellbeing and emotional health should have stringent guidelines, adequate staff and a system for medical colleges to implement. This should be made mandatory for all medical colleges with periodic checks. All medical colleges should actively invest, with the required number of staff in the departments of Psychiatry and Psychology for the mental wellbeing of medical

students and bring out successful new generations of resilient doctors. Half-hearted cost cutting attempts at improving resilience of the new generation of doctors will not succeed after the COVID pandemic. Periodic interactive programs on mental and emotional wellbeing should be regularly organised. Training of medical students as gatekeepers for prevention of suicide can be helpful. Reverse mentoring and a platform for students to voice their grievances should be encouraged and started in all colleges. Stringent guidelines against substance use on the campus and periodic awareness programs need to be in place. These guidelines should be brought out by the national bodies that bring out recommendations for medical education, like National Medical Commission in India.

4. Conclusion

Since we do not have robust data as to what interventions work in helping in aiding Resilience we need to start using interventions in different age groups and studying them instead of waiting to find a meta-analysis which will give us a magic pill. We need to prepare to cushion the psychological well-being of a few generations of children that have had no adequate social contact because of lack of school. They were witnesses to prolonged lockdowns and deprived of play in natural areas. The most common reason for anxiety in a child may be a parent and this will be crucial in the assessment of the child and there needs to be interventions done for the parent, it might require a multidisciplinary approach [25].

Mental health specialists in most countries are lacking in numbers so how governments will mobilise balance advocacy activism and implement basic needs for mental health of a population will be an uphill task [26–30].

Resilience needs to be addressed keeping in mind culture ethnicity and religion in different countries as there may be different factors that may aid in Resilience in different cultures.

All ethical workplaces and universities dealing with students should have regular periodical assessments of students and the workforce for psychological well-being and burnout. They should take the guidance of local mental health experts to do this in a methodical way. National bodies of Psychiatrists and Psychologists should come out with timely recommendations and guidelines for such evaluations [31].

Three levels of response are required to address the ever-increasing stress among medical students. At the institutional level, it is the responsibility of the administrators to help promptly, appropriately, and sensitively. The institutions should also make sure that training is not stressful and should include steps to help students look after themselves. At the individual level, students should learn to look after themself and their well-being. Designing a curriculum that includes looking after oneself during stress is very crucial. The third level of regulation includes making intervention available, accessible for the needy.

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Chapter 20

Loneliness and Psychological Distress: A Mediating Role of Meaning in Life during COVID-19 Pandemic

Murat Yıldırım

Abstract

The COVID-19 pandemic represents a health crisis with a high amount of loneliness, which in turn may be associated with negative mental health outcome like psychological distress. This chapter aimed to investigate if meaning in life mediated the effect of loneliness on symptoms of psychological distress. A young adult sample (N = 605, 75.7% women) completed the measures of loneliness, psychological distress, and meaning in life. The results indicated that meaning in life mediated the relations between loneliness and psychological distress symptoms. This relation was significant at low, medium, and high levels of meaning in life. The study shows that experience of loneliness is associated with symptoms of psychological distress. Level of meaning in life differentiates the direct and indirect effect of loneliness on psychological distress. Knowledge about the effect of loneliness in response to a health crisis is important for developing treatment and prevention strategies for loneliness, psychological distress, and meaning in life.

Keywords: COVID-19, loneliness, psychological distress, meaning in life, Turkish youth

1. Introduction

On 11 March 2020, the World Health Organization (WHO) declared the COVID-19 pandemic [1]. Currently, the world experiences an unprecedented scenario and disruptions from the pandemic are not only mirrored in daily activities but also in physical and mental health, social security, economy, environment, and other aspects of the society. As of March 21, 2021, more than 122.5 million people around the globe have been infected with the COVID-19 and over 12.7 million deaths have been reported because of the virus. In Turkey, there have been nearly 3 million confirmed cases of COVID-19 with approximately 30 thousand deaths [2].

Unlike to previous infectious diseases like MERS-CoV emerged in the fall of 2012 in the Arabian Peninsula and SARS-CoV occurred in the fall of 2002 in the Guangdong Province, China, global efforts to develop a vaccine have been relatively very successful in record-breaking time to treat and prevent the COVID-19. These accomplishments have not been reflected by similar progresses in applying the principles of mental well-being within health services. While mental health

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professionals know a lot about treating mental illness, they know far less concerning promoting of well-being and mental health during the pandemic. The accumulating evidence documented that the above-mentioned pandemic has adversely affected mental health of general population [3]. Therefore, it is important to identify psychological factors to promote psychological health. In this regard, human strengths become focal point of research. In this chapter, I attempted to examine how meaning in life functioned as a mitigating factor in the relationship between loneliness and psychological distress during the COVID-19 pandemic.

1.1 Psychological distress

The current pandemic can be a major stress factor affecting psychological health of people around the world [4]. Psychological distress is a common emotional experience that people are likely to report in adverse life situations. Psychological distress can be a serious mental health issue. If untreated, it can cause adverse mental health challenges such as depression and chronic anxiety [5]. Given the high fear, uncertainty, stress, and unfriendly environment caused by COVID-19 pandemic, people are at risk of developing symptoms of mental health problems. COVID-19 stress has found to be positively associated with depression, anxiety, and stress [6]. A high prevalence of depression, anxiety, stress as well as worry and severity associated with COVID-19 pandemic has been reported [7].

A wide range of critical protective factor for psychological distress have been identified. For example, psychological resources like meaning in life, hope, optimism, resilience, and happiness functioned important roles in reducing the negative psychological impacts of pandemic on mental health and well-being [4, 8, 9]. Another study reported that female gender, older age, being widowed, having lower education level, being unemployed or experiencing financial difficulties, lower perceived social support, and higher degrees of stress were found to be associate with psychological distress [10]. Mental health services and research should be conducted to those with a pre-existing mental health conditions and groups determined as at high risk for high in psychological distress. It is vital for mental health providers to develop intervention and prevention strategies to help people coping with the distress and promote psychological health and positive psychological resources in difficult times.

1.2 Loneliness

Loneliness is one of the negative feelings that people experience during the COVID-19 pandemic. Loneliness is characterized as psychological state represented by a sense of uselessness and emptiness, lack of control, and personal threat [11]. Even though loneliness is an inescapable experience across the lifespan, a considerable body of research, including cross-sectional and longitudinal studies, have indicated that loneliness is an important psychological problem for a substantial portion of the population, experienced more in the young and in women [12]. In a nationally representative sample of 38,217 UK adults during a strict lockdown, Bu, Steptoe and Fancourt [13] identified four classes of loneliness ranging from low to high. In the first a few weeks of lockdown in the UK, levels of loneliness heightened in the highest loneliness group, reduced in the lowest loneliness group, and remained relatively stable in the middle two groups. In their study, younger adults, female gender, individuals with low income, the economically inactive, and people with mental health problems were more likely to experience loneliness at the highest level relative to the lowest. In addition, close friendship or higher social support, living with others or in a rural area can function as protective factors.

Although limited, several longitudinal studies have also been conducted to longitudinally examine the correlates of loneliness and psychological distress in individuals exposed to the COVID-19 lockdown. For example, in a large sample of Spanish adults, Losada-Baltar and his colleagues [14] demonstrated that changes in loneliness indicated a linear longitudinal trajectory over time, while changes in psychological distress indicated a U-shaped association over time. In the same study, older people reported lower level of psychological distress because they tend to be more resilient to protect their mental health in stressful situations. Adolescents and younger adults may be more vulnerable to adverse effects of psychological distress [15]. Another longitudinal study conducted during the COVID-19 pandemic reported that loneliness has a predictive role in explaining higher depression, anxiety, and stress though time. Emotion dysregulation was found to mediate the longitudinal association between loneliness and both depression and stress, but not between loneliness and anxiety [16]. Loneliness can be considered a critical marker to vulnerability of psychopathology, particularly in the face of adversity. Therefore, it is important to provide insights regarding the underlying mechanism between loneliness and possible psychological outcomes like psychological distress. In this regard, psychological strengths, and resources (e.g., meaning in life) can play important roles in mitigating the impact of loneliness on psychological health during coronavirus pandemic.

1.3 Meaning in life

The concept of meaning in life has become a topic of scientific examination. Meaning-making model proposes that situational meaning is based on the context of a stressful situation and reflects beliefs regarding this particular stressful situation [17]. Evidence suggests that meaning in life can protect mental health and minimize risk of diseases [18].

The literature is consistent in indicating that meaning in life is a robust predictor of well-being and mental and physical health. A wide body of research suggests that meaning in life has a favorable effect on many mental health outcomes including greater positive affect, lower depression, anxiety, and negative affect [19]. Meaning in life was found to be positively associate with adaptive religious coping and negatively associate with maladaptive religious coping and loneliness in the context of coronavirus pandemic [19, 20]. Meaning in life shows not only importance for well-being and mental health outcomes, but also for physical health. In a systematic review and meta-analysis study including 66 studies and a total of 73,546 participants, meaning in life was found to be an important predictor of physical health with a week-to-moderate effect size [21]. Given the influence of meaning in life on psychological health outcomes, it is critical to understand potential intervention (in this case meaning in life) in enhancing psychological health of people in the face of adversity.

In this chapter, I focused on the link between loneliness and psychological distress in times of health crisis and explore how meaning in life could be more effective to promote psychological health. My central argument is that mental health professionals will need to prioritize human strengths (e.g., meaning in life as presented in this chapter) to promote well-being and mental health rather than treating illnesses.

Most previous research focused on the associations between psychological distress, loneliness, and meaning in life and examining the factors affecting the three. However, studies focus on the mediating effect of a certain factor are limited. Such research in Turkey is still in its infancy particularly in the context of pandemic. The purpose of the study is to examine the mediating role of meaning in life in the

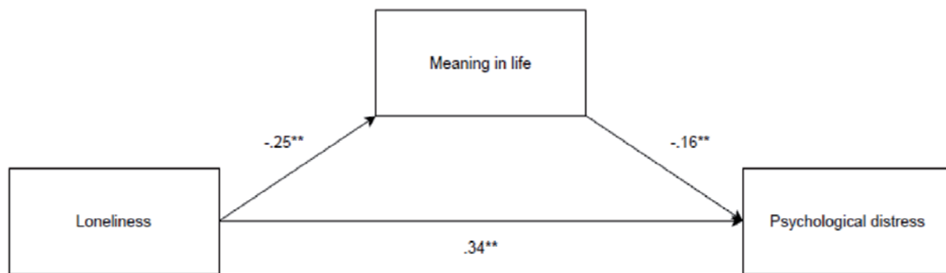

Figure 1.
Mediation model indicating the mediating effect of meaning in life in the relationship between loneliness and psychological distress.

association between loneliness and psychological distress. Based on the findings of earlier research and theoretical background, I hypothesized that loneliness would have a significant effect on meaning in life. Loneliness and meaning in life would have significant effects on psychological distress. Furthermore, meaning in life would mediate the association between loneliness and psychological distress. The hypothetical model of the relationship between loneliness, meaning in life, and psychological distress is presented in **Figure 1**.

2. Method

2.1 Sample characteristics

The sample comprised 605 adults (75.7% women) drawn from general public in Turkey. Participants ranged in age between 18 and 58 years (M = 26.5, SD = 9.7). With regard to the educational level, the majority of participants were university graduate (74.4%), followed by high school and below graduate (16.1%) and post-graduate (9.5%). Concerning perceived socio-economic level, 80.7% of participants reported that they had average economic level, followed by below average (10.6%), and above average (8.8%). Of the participants, 3.5% were confirmed positive with COVID-19.

2.2 Measures

2.2.1 Psychological distress

Psychological distress was assessed by the Kessler Psychological Distress Scale (K10; [22]), which includes 10 items, with each being scored from 1 (none of the time) to 5 (all of the time). The total score varies from 10 to 50, with higher scores showing greater severity in distress. The scale has excellent internal consistency reliability estimates among Turkish adults [23]. Excellent internal consistency reliability estimate (α = .93) was reported in this study. Internal consistency reliability estimate was .72 in this study.

2.2.2 Loneliness

Loneliness was measured by ULS-8 Loneliness Scale [24], which consists of 8 statements, including 2 positively worded statements (Item 3: "I am an outgoing person," and Item 6: "I can find companionship when I want it"). Each item is answered a 4-point Likert frequency score, with rating choices ranging from 1

(never) to 4 (always). The total score is between 8 to 32 points, with higher scores indicating a higher degree of loneliness. Satisfactory reliability and validity evidence has been reported for the scale in Turkish [25].

2.2.3 Meaning in life

Meaning in life was measured by Meaning in Life measure [26]. The scale includes 8 items that are clustered into two subscales: experience (4 items) and reflectivity (4 items). Each item is scored a 5-point Likert scale, with rating choices ranging from 1 (strongly disagree) to 5 (strongly agree). The total score for each subscale is between 4 to 20 points, with higher scores reflecting higher levels of experience and reflectivity in meaning in life. The scale has not yet been translated in Turkish. Therefore, I used forward-backward method to adopt this scale in Turkish. I performed exploratory factor analysis (EFA) to examine the factor structure of the scale using the maximum likelihood extraction method with promax rotation. The EFA results indicated that all items loaded on two factors with eigenvalues >1 that explained nearly 45% of the total variance for reflectivity subscale (eigenvalue = 3.53; λ range = .43–.89) and 15% of the total variance for experience subscale (eigenvalue = 1.18; λ range = .45–.60). The internal reliability estimates of the subscales were strong (α = .85 for experience and .89 for reflectivity). Following exploring the factor structure of the scale, the confirmatory factor analysis (CFA) was carried out to verify the resultant factor structure. The initial model was poor in terms of data-model fit: $\chi2$ = 167.11, df = 19, p < .001, CIMIN/DF = 8.80, CFI = .90, TLI = .85, SRMR = .06, RMSEA [95% CI] = .11, [.10, .13]. After drawing co-variance between the item 1 and item 2 on experience and item 3 and item 4 on reflectivity, the model improved substantially, $\chi2$ = 65.94, df = 17, p < .001, CIMIN/DF = 3.88, CFI = .97, TLI = .95, SRMR = .04, RMSEA [95% CI] = .07, [.05, .09]. The standardized factor loadings ranged from good to excellent (experience λ range = .46—.58 and reflectivity = .71—.79).

2.3 Procedure

A cross-sectional survey design was used to collect the data. This quantitative research was carried out online in Turkey. The inclusion criteria of participants for this study were as follows, (1) eligible participants had at least either smartphone or laptop or any other devices that they could use to participate in the study, (2) having access to the internet (3) showing willingness to take part in the study and (4) being over the age of 18 years. Participants who did not meet the above-mentioned criteria were excluded. Before taking part in the online survey, participants gave their consent. They were assured about the confidentiality and anonymity of responses. They were fully informed about their rights before, during, and after participating in the study.

2.4 Data analysis

Descriptive statistics were used to present sample characteristics and the distribution of main variables (loneliness, meaning in life, and psychological distress). I reported mean with standard deviation, skewness, and kurtosis values for the distribution of main variables. The correlations between the main variables of this study were explored using Pearson correlation coefficients. A simple mediation analysis proposed by Hayes [27] was performed to investigate mediating effect of meaning in life on the association between loneliness and psychological distress. I used 10, 000 bootstrap samples with 95% confidence interval. Data were analyzed using IBM SPSS statistics 25 software for Windows.

3. Results

Preliminary results showed that that skewness and kurtosis values fell within the acceptable—good levels (skewness range = .46 and – 1.93; kurtosis range = .10 and 4.06), meaning that the analyzed variables had a relatively normal distribution. Furthermore, reliability analysis demonstrated that all measures revealed good—strong internal reliability estimates with the current sample. Additionally, correlation analysis showed that loneliness had a negative correlation with meaning in life and a positive correlation with psychological distress. Meaning in life was also negatively correlated with psychological distress. Descriptive statistics, correlation analysis and reliability estimate of the variables are presented in **Table 1**.

A simple mediation analysis was conducted to examine mediating effect of meaning in life on the relationship of loneliness with individuals' psychological distress. Results from mediation analyses indicated that loneliness had a significant negative predictive effect on individuals' meaning in life and explained 6% of variance in meaning in life. Loneliness had a significant positive predictive effect on

	Descriptive statistics					**Correlation**		
Variable	**Mean**	**SD**	**Skewness**	**Kurtosis**	**α**	**1.**	**2.**	**3.**
1. Loneliness	15.05	4.06	0.48	0.10	0.72	—	–.25**	.38**
2. Meaning in life	33.80	6.13	–1.93	4.06	0.90		—	–.24**
3. Psychological distress	25.02	9.96	0.46	–0.56	0.93			—

Note. Correlation is significant at the 0.01 level (2-tailed).
***p < 0.01.*

Table 1.
Descriptive statistics and correlation between the variables.

	Consequent			
	M (Meaning in life)			
Antecedent	Coeff.	*SE*	*t*	*p*
X (Loneliness)	–.38	.06	–6.67	<.001
Constant	39.53	.89	44.42	<.001
	R^2 = .09 F = 44.43; p < .001			
	Y (Psychological distress)			
X (Loneliness)	.83	.09	9.12	<.001
M (Meaning in life)	–.26	.06	–4.25	<.001
Constant	21.27	2.73	–7.78	<.001
	R^2 = .16 F = 64.67; p < .001			
Paths	Effect	SE	BootLLCI	BootULCI
Loneliness–>meaning in life –>psychological distress	.10	.03	.04	.16

Note 1. SE = standard error. Coeff = unstandardized coefficient. X = predictor; M = mediator variable; Y = outcome variable. Note 2. Number of bootstrap samples for percentile bootstrap confidence intervals: 10,000.

Table 2.
Unstandardized coefficients for the mediation model.

psychological distress and meaning in life had a significant negative predictive effect on psychological distress. Loneliness and meaning in life collectively accounted for 16% of variance in psychological distress. The indirect effect of loneliness on psychological distress through meaning in life was significant since 95% confidence interval did not contain zero. Standardized predictive effects depicting the association between the analyzed variables are presented in **Figure 1**, and **Table 2**. This suggests that meaning in life is a key resource to mitigate the adverse impacts of loneliness on psychological health among Turkish adults during the health crisis.

4. Discussion

This research was carried out during the COVID-19 pandemic in the Turkey to examine the specific effect of the loneliness experienced during the COVID-19 pandemic and lockdown on the psychological distress by considering the mediating role of meaning in life. The authorities in the Turkey implemented social distancing and lockdown measures to contain the spread of novel coronavirus infections. However, prolonged lockdown and uncertain experiences related to the virus have likely had psychological outcomes, as COVID-19 significantly changed many individuals' daily lives [4]. As such, it is imperative to identify individuals at an increased risk of experiencing negative influences of this pandemic on the psychological health.

In this study, I aimed to test meaning in life as a mediator between loneliness and psychological distress during COVID-19 pandemic. I tested three hypotheses and drew a conceptual model showing loneliness as a predictor, psychological distress as an outcome variable, and meaning in life as connector. All our hypotheses were confirmed by mediation analysis. More specifically, this study showed that there were direct temporal associations between loneliness and psychological distress. Additionally, meaning in life was a significant mediator in the association between loneliness and psychological distress.

These findings correspond with earlier research demonstrating that loneliness is negatively related to meaning in life [19, 20, 28] and positively related to psychological distress [14, 29] and that meaning in life is a potential factor in reducing psychological distress [30]. The findings of the current study further suggest the existence of meaning in life in the association between loneliness and psychological distress. Moreover, the findings extend the evidence base to general population in Turkey.

The present findings are also in line with earlier research outcomes regarding the association between loneliness and mental health and well-being [31, 32]. More specifically, cross-sectional results from the context of current pandemic showed that loneliness is positively associated with negative indicators of mental health and negatively associated with positive indicators of mental health [19, 20, 33, 34]. Moreover, studies demonstrated that psychological strengths were found to be effective in reducing mental health problems and improving well-being [8, 33]. As such, the relationships between loneliness, meaning in life, and psychological distress found in this study are consistent with prior findings.

4.1 Implications and limitations

Based on the current study's findings, several implications can be suggested. First, the mediated effects found in the present study concerning the effectiveness of meaning in life-based therapy on individuals' psychological health suggest that mental health providers should take presenting meaning in life-based therapy into account to mitigate psychological distress among people during difficult times.

With the reduction of loneliness, psychological distress among people may be minimized. Second, given that the current study indicated the direct effect between meaning in life and psychological distress, mental health providers may consider using strength-based approach directly to improve psychological health for people. As a result, people's psychological health may be improved through two pathways: a direct pathway from the reduced loneliness on psychological distress and an indirect pathway from the improved meaning in life.

This study is not without limitations. First, representativeness of the sample needs to be improved. The findings of this study cannot be generalized to all Turkey as this study was limited to those who owned a smartphone/laptop and have access to internet. It is also difficult to generalize the present findings to the populations in other countries. Second, all the measurement employed in this study were self-report. Therefore, the current study suffers from the common biases stemming from subjective measures such as social desirability (i.e., the participants may have tried to overestimate or underestimate their experience of loneliness or distress) and recall biases (e.g., the participants may have had challenges in reporting their loneliness and psychological distress). However, as reported in this and previous studies, all the measures utilized in this study were reliable and valid. Notwithstanding, it is suggested that future research should employ additional measures where appropriate (e.g., peer reports) to offer additional insights in the relationships between the analyzed variables. Finally, although the design used in this study provides partial support for a potential causal effect among the factors of loneliness, meaning in life, and psychological distress, much solid evidence is required to establish the causal effects among the analyzed variables using randomized controlled trials. In particular, randomized controlled trials can facilitate us understand whether the reduction in loneliness leads to reduction in meaning in life, which in turn causes more psychological distress.

4.2 Conclusions

This study provides a clear understanding of how meaning in life can mediate the relationship between loneliness and psychological distress in the face of adversity. In the context of loneliness affecting psychological distress, meaning in life can be regarded as a mediating variable to influence its effect. Loneliness was negatively associated to meaning in life and positively related to psychological distress, and that meaning in life was negative related to psychological distress. I can make full use of this relationship to adjust the impact of loneliness on psychological distress by enhancing meaning in life. Offering more promotion opportunities for people to enhance meaning in life, planning online courses, and paying attention to reduce individual loneliness and psychological distress. In this study, I also provided evidence showing that the Turkish adaptation of Meaning in Life Measure is reliable and valid measure which can be used in research and practice.

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Chapter 21

Sleep and Resilience during the COVID-19 Pandemic

Sara A. Cloonan, Emily C. Taylor, Michelle R. Persich, Natalie S. Dailey and William D.S. Killgore

Abstract

Since early 2020, the COVID-19 pandemic has had a profound effect on the mental health and wellbeing of much of the population. Rates of depression, anxiety, loneliness, suicidal ideation, and other mental health concerns increased during the first year of the pandemic, with heightened fears of the virus, social isolation, and economic instability. Psychological resilience remains a key factor in sustaining healthy emotional functioning during the crisis and facilitating rapid recovery as we move forward to build a better post-pandemic world. Our research, and that of others, suggests that healthy sleep is one of the most powerful aspects of psychological resilience. This chapter will summarize the current literature on psychological resilience, particularly as it relates to the pandemic, and describe the important role of sleep as a key component of resilience capacity. We will discuss novel empirical data linking sleep and resilience during the pandemic. We will conclude with concrete, empirically based suggestions for modulating sleep to sustain psychological resilience during the present crisis and those that may emerge in the future.

Keywords: sleep, insomnia, resilience, mental health, COVID-19

1. Introduction

Resilience is a key factor for protecting and sustaining healthy psychological functioning after exposure to stress and trauma. The first year of the pandemic has resulted in significant increases in a number of mental health problems, including increased anxiety, depression, suicidal ideation, and alcohol abuse, among others [1]. Despite the general increases in mental health problems during the pandemic, there has also been considerable variability in the magnitude of these effects, suggesting that many people have demonstrated remarkable resilience in the face of uncertainty and adversity. It is critical that we identify the factors that have contributed to these positive outcomes. Furthermore, as the recovery continues, we need to identify methods for bolstering resilience and protecting individuals against future adversities. Previous research has shown that sleep is a vital component of resilience and is significantly related to mental health outcomes. However, sleep was one of the major health outcomes that was negatively impacted during the pandemic, potentially hampering resilience in many people. In this chapter, we will discuss the relationship between resilience and psychological outcomes before and during the COVID-19 pandemic, with particular focus on sleep as a key contributor to resilience and mental health outcomes. We will first review the existing literature

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on these topics and then present concrete, empirically based suggestions on how to improve sleep and bolster resilience during the pandemic and other similar crises.

2. A brief overview on resilience

Resilience can be defined as one's ability to successfully and positively adapt to, and overcome, adversity [2]. This definition can be extended to mental health outcomes when an individual is faced with a traumatizing situation or other potentially life changing adversity [2, 3]. Furthermore, while resilience may include many stable traits and capacities within an individual, most view the expression of resilience as a dynamic process with a trajectory that can change throughout a person's life [2, 4]. Personal resilience can ebb and flow throughout the course of our lives depending on various personal biological, environmental, or systemic factors [3]. Thus, resilience is an evolving interaction among our character traits, biological propensities, and the environment that allows us to positively adapt and bounce back from adversity.

Importantly, resilience is not generally conceptualized as simply the absence of mental disorders, as posttraumatic stress reactions and other adverse stress-related outcomes can still occur concurrently with resilience-related growth [4]. Instead, resilience refers to one's personal ability to overcome adversity and mitigate the effects of stress on the development or worsening of mental disorders [5, 6]. Likewise, resilience can also be a mechanism for accelerating recovery from adversity-related mental health problems such as posttraumatic stress disorder (PTSD) [5, 7]. While mental health research has typically focused on the risk factors for psychiatric disturbances, recent work has incorporated resilience into models of mental health to study factors that facilitate positive mental health outcomes following perceived adversity [5]. It is critical that we examine the role of resilience during the COVID-19 pandemic, which has had a significant impact on life functioning and well-being for millions of people worldwide.

3. Mental health and resilience during COVID-19

The COVID-19 pandemic has resulted in a significant decline in mental health across the globe and it is clear that this has become a co-occurring public health crisis [8]. The combined impact of COVID-19 on major life domains such as social life, occupational status, and financial security has proven to be a significant source of adversity. While many individuals found these adversities nearly insurmountable, others seemed to find ways to cope effectively in the moment, and still others may have been initially overwhelmed but were able to "bounce back" and extract the positives from an otherwise bleak situation. This bounce back capacity can act as a buffer against the onset or worsening of psychological distress and mental disorders [2]. In the context of the first year of the pandemic, researchers found resilience to be inversely related to depression [9, 10]. and anxiety [9–12]. Individuals with higher measured resilience at the beginning of pandemic experienced markedly lower levels of psychological distress compared to those with average or below average resilience, who experienced increased distress over the course of the pandemic [13]. These findings exemplify how resilience can sustain psychological health during persistent exposure to stress, and even more importantly, why it is critical to foster resilience over these prolonged periods of adversity.

But how do individuals remain resilient during prolonged stressful experiences like the COVID-19 pandemic? The use of resilience-based strategies to cope with

stress, such as employing a positive appraisal style (i.e., trying to see the positive aspects of a threatening situation and telling oneself there are worse things in life) [14, 15] or using adaptive coping skills (e.g., active coping, planning ahead, positive reframing) [6, 16, 17] have been found to reduce pandemic-related stress and protect against poor mental and physical health outcomes related to stress. Importantly, one of the most consistent factors related to resilience and mental health is perceived social support. Unfortunately, the primary mitigation strategy during the first year of the COVID-19 pandemic involved a combination of social isolation (e.g., lockdowns; quarantines; stay-at-home orders), social distancing, and face coverings, which may have all contributed to a reduction in perceived social support for many individuals. These factors led to early feelings of loneliness, increased depression, anxiety, and suicidal ideation [1, 12, 18, 19]. As the pandemic response moves into the next phases, it will be important to find healthy ways to facilitate adequate social support and human contact while safely addressing infection spread.

In addition to perceived social support, another key factor related to resilience that needs to be considered is sleep health. Because sleep is vital to normal emotional functioning, it provides the bedrock foundation for resiliency. As we will discuss in the following sections, sleep is a critical aspect of psychological functioning and resilience, and it has also been significantly impacted by the COVID-19 pandemic.

4. Sleep disturbances and insomnia during COVID-19

When COVID-19 first emerged, because it was a novel virus, there was a lack of existing information on critical epidemiological factors, like how the virus was spread, how to contain the virus, who was most at risk, and how infectious or how lethal the virus was, contributing to an overwhelming feeling of uncertainty for many. Additionally, many people experienced ongoing disruptions to their usual daily routines due to the various sociocultural changes enacted to mitigate the spread of the virus. Combined, these factors may have contributed to the significant negative impact of the pandemic on sleep health, with many studies reporting a sharp increase in sleep disturbances, including insomnia. The pandemic and its related stressors may have contributed to both a magnification of pre-existing sleep difficulties and also the rise of new-onset sleep problems for many [20–22].

During the first year of the pandemic, several studies reported on the prevalence of general sleep problems. In a global online cross-sectional survey of 59 countries, over a third of participants reported having more trouble falling asleep or more frequent night waking compared to before the pandemic [23]. In France, 74% of respondents endorsed having sleep problems or trouble sleeping over the previous week compared to 49% reported in 2017 [22]. In the United States, the number of adults experiencing any difficulties falling asleep and staying asleep nearly doubled from 2018 to 2020 [21].

Overall sleep quality has also been impacted by the pandemic. A global online cross-sectional survey involving 63 countries reported the prevalence of poor sleep quality to be 73% [24], while other cross-sectional reports from Italy listing the prevalence ranging from 52.4% [25] to 81% [26], with other countries also falling within that range [27–29]. Several longitudinal studies were able to describe changes in overall sleep quality reported before and during the pandemic. In India, around a quarter of those surveyed reported worsening sleep quality during the early stages of lockdowns compared to pre-pandemic levels [30], while no changes in sleep quality were reported among participants in Italy [31] and Argentina [32]. Interestingly,

a longitudinal study of adults in the U.S. surveyed before and after quarantine implementation found that while 29% of participants experienced a decrease in sleep quality, 47% actually reported improved sleep quality during the early quarantine period of the pandemic [33]. In Ref. [33], this improvement is attributed to increases in reported sleep duration, delayed bedtimes and wake times, and fewer reported sleep disturbances. Previous research has shown that sleep quality is associated with resilience [34–39], which highlights the importance of addressing sleep quality issues in order to maintain and boost resilience during the pandemic.

Regarding clinical insomnia, the reported prevalence during the COVID-19 period has varied widely across countries worldwide as well as within individual countries themselves. Insomnia symptoms can include sleep-onset and sleep maintenance difficulties, low sleep satisfaction, impaired daily functioning due to sleep problems, and increased concern or distress related to sleep problems [40]. Insomnia prevalence during the pandemic has been reported from a low of 10–13% in India, similar to the pre-pandemic prevalence [30, 41], to a high of 56% in Morocco [42], with other countries reporting results falling between these extremes [43–45]. Studies in China reported that among those classified as having insomnia during the pandemic period, 13.6% reported developing new-onset insomnia while 12.5% reported worsened symptoms of prior insomnia [20]. Thus, while insomnia and other sleep problems have varied over time and location, in accordance with disease transmission rates and other social factors specific to the locality, it is clear that sleep has been significantly impacted during the pandemic.

4.1 Demographic factors associated with sleep problems during COVID-19

While increases in sleep problems and insomnia have been reported worldwide, these issues have not affected everyone in the same way. There appear to be certain demographic factors associated with higher prevalence of insomnia and other sleep problems during the pandemic, indicating possible areas of focus for sleep-related interventions. For example, age appears to be one important factor for heightened sleep problems, with several studies from France and China indicating that younger people (i.e., 35 years and younger) not only had the highest prevalence of sleep problems during the pandemic, but also reported greater severity of these issues [22, 46, 47], although, a study of Chinese adults found that older age (i.e., 50 years and older) was associated with increased sleep problems [48]. Because age is associated with many other pandemic-related factors (e.g., vulnerability to complications from COVID-19; impact on social interactions; job expectations; etc.), and general susceptibility to sleep problems, further work will be necessary to disentangle these complex associations. Several studies have found that women reported more sleep problems than men during the pandemic, and this trend has been observed worldwide [20, 22, 29, 43, 47–49]. Studies in China, Greece, Spain, France, and Italy found that women reported significantly worse insomnia and other sleep problems, both in terms of frequency and severity, compared to men during the pandemic [20, 22, 43, 46, 48–50]. However, these findings need to be interpreted within the context of higher prevalence of sleep problems among women in general, as well as higher rates of anxiety and depression in women, which could exacerbate sleep-related responses to pandemic stress. Other factors associated with sleep problems during the pandemic include unemployment and/or being laid off due to the pandemic, classification as an on-site "essential worker" unable to work from home, working rotating shifts or being a shift worker, and living in urban areas [23, 29, 33, 42, 43, 49]. All of these occupational factors add stresses to an already adverse situation, so such findings are not unexpected.

4.2 Pandemic-related factors affecting sleep health

The effects of the COVID-19 pandemic are far-reaching and have resulted in significant behavior changes to prevent the spread of the virus (e.g., sheltering-in place; working from home; reduced movement; reduced exposure to sunlight and social interactions; etc.). Some of these behavioral changes can negatively impact the body's sleep regulation due to changes in the homeostatic sleep drive, circadian rhythms, and the arousal system [51]. These adjustments have had a profound effect on almost every aspect of daily life including employment, working conditions, school and education. Restrictions on regular social activities like exercise, team sports, and religious services have also disrupted daily routines for many individuals. The timing of daily activities, including daily wake time, daily light exposure, and mealtimes, helps regulate the body's circadian rhythm [51–53]. Changes in the timing of these daily activities will lead to dysregulations in the circadian rhythm resulting in changes in sleep patterns [51–53]. Changes in routines and daily activities has led to a shift in the amount and timing of daily light people are exposed to, and as mentioned above, daily light exposure is a critical component of regulating the circadian system. For some individuals, the lockdown period has allowed them to spend more time outdoors, however for others the pandemic has resulted in disruptions that have reduced daily natural light exposure, which has critically affected regulatory processes related to sleep [51]. Further, some studies have reported increased exposure to electronic screens during the stay-at-home orders, and exposure to this type of light, especially before bed, has been associated with poorer sleep quality during the pandemic [25, 30, 54]. These disruptions have important consequences for daily functioning, since sleep plays a key role in overall mental and physical health.

Disrupted sleep and insomnia are associated with anxiety, depression and suicidal behaviors, and the COVID-19 pandemic has further exacerbated this association [1, 11, 20, 24, 25, 38, 41, 44, 47, 51, 55–60]. Furthermore, insomnia has been shown to mediate the relationship between pandemic-related anxiety and suicidal ideation, meaning the heightened insomnia symptoms experienced as a result of increased pandemic-related anxiety can lead to a greater likelihood of suicidal ideation [44]. The increased symptoms of anxiety and stress reported during the pandemic, have been attributed to a wide range of factors including novel worries about one's own health and the health of loved ones, the financial impact of the pandemic, changes in social life and increased loneliness, as well as significant disruptions to work and other aspects of daily routines [43]. These recent increases in general anxiety and stress as well as COVID-19 related stress have been associated with diminished sleep health, including increased sleep difficulties, disrupted circadian rhythms, poorer sleep quality, and insomnia [11, 20, 24, 25, 33, 41, 43, 44, 47, 58–63].

Sleep problems also appear to be significantly elevated among several groups directly impacted by COVID-19 including: those diagnosed with COVID-19, those who had someone close to them diagnosed with COVID-19, those who were uncertain of their COVID-19 status, or those who knew someone who died from COVID-19-related causes [22, 29, 33, 45, 47, 49, 61].

Finally, COVID-19 related loneliness may play an important role in sleep disruption as well. With the abrupt halt of all in-person social activities and subsequent decrease in social interactions in efforts to curtail the spread of the virus, feelings of loneliness have become a major factor in sleep and mental health during the pandemic. Loneliness, made worse by the lack of accessible social support, has been associated with poor sleep quality and increased insomnia symptoms since the start of the pandemic [24, 43, 45, 61, 63]. Moreover, the link between loneliness and

sleep is stronger among those with more COVID-19 related worries and those with lower resilience [63]. Furthermore, there appears to be a bidirectional relationship between loneliness and insomnia during the pandemic [43]. In Ref. [43], the authors suggest that a) loneliness may increase cognitive arousal by inducing feelings of vulnerability; and b) sleeping poorly and/or keeping an abnormal sleep–wake schedule may further disrupt social interactions and increase frustrations associated with social isolation. During the period of pandemic-related lockdowns, these higher levels of loneliness have been linked with elevated levels of depression and suicidal ideation, further emphasizing the need to address social isolation and sleep problems during the pandemic [19].

4.3 The effects of the COVID-19 pandemic on sleep health in healthcare workers

Healthcare workers in particular have faced tremendous stress during the COVID-19 pandemic due to a range of factors, such as increased workload, long working hours, high work intensity, emotional demands, and increased risk of infection. As a result, the prevalence of sleep problems, especially insomnia, have significantly increased for healthcare workers during the pandemic [64–66]. As the pandemic continued to unfold during the first year and the number of cases and deaths continued to rise, the impact on sleep among healthcare workers became undeniable [66]. The severity of sleep problems is quite variable among healthcare workers, but these trends seem to be consistent in healthcare populations worldwide. In a study conducted at a large medical center in New York City in April 2020, during a peak of inpatient COVID-19 admissions in the city, sleep disturbances were highly prevalent among healthcare workers, with nearly 75% of those surveyed reporting at least moderate insomnia symptoms and 26% reporting severe or very severe sleep problems [17]. Similarly, among physicians working in Slovenia, those working at COVID-19 entry points were more likely to experience nighttime awakening and frequent nightmares, and to sleep less than 5 hours per night in comparison to other physicians working during the same time period outside of COVID-19 hotspots [67]. Likewise, a study among doctors and nurses working with COVID-19 patients in China found that overall sleep quality was low [59]. It is clear that the pandemic has had a significant global impact on sleep, and this effect has been particularly potent among healthcare workers.

5. Long term consequences of COVID-19 related sleep disturbances and insomnia: sleep as a cornerstone of resilience

5.1 Sleep as a critical component of emotional health

The connection between sleep and emotions has been extensively investigated, particularly in the context of insomnia. Until recently, sleep problems were viewed as a symptom of mental disorders; however, recent evidence suggests that there is a bidirectional relationship between sleep and emotions, specifically, that sleep disturbance actually precede and contribute to the onset of disorders like depression [56, 68]. Indeed, insomnia symptoms can present before the onset of psychiatric illness and can persist past remission and recovery. Evidence suggests that, among non-depressed individuals, those presenting with insomnia appear to be twice as likely to go on to develop depression as those without insomnia [56].

There are multiple theories behind the relationship between sleep and emotional health, though the common denominators in these theories seem to suggest that disrupted Rapid Eye Movement (REM) sleep and daytime symptoms resulting

from poor sleep tend to be leading contributors to emotional dysregulation [69–72]. REM sleep is hypothesized to play a critical role in emotional processing through the coordinated activation of affect-related brain regions, such as the amygdala and hippocampus, during neurochemical brain states that help to strip away the emotional intensity of memories [69–72]. Through repeated nightly REM sleep sessions, formerly unpleasant or traumatic memories become less potent, helping to maintain emotional health. Individuals with insomnia, however, often report experiences of non-restorative sleep, restless REM sleep (characterized by frequent REM arousals), as well as disruptions to REM sleep, which may hinder emotion recalibration processes that occur during sleep, further contributing to chronic hyperarousal and emotion dysregulation during the day [69–72]. Thus, REM sleep is necessary for modulating normal emotional responses to daily events. When REM sleep is curtailed, emotional responses can more easily become skewed, and this can alter an individual's life outlook and impair their ability to respond to challenges in adaptive ways.

Insomnia can also have a significant adverse impact on daytime functioning, which has also been found to be closely related to the development of psychiatric problems [72]. Insufficient sleep is associated with mood disruption and increased symptoms of depression, anxiety, paranoia, and somatic complaints [73, 74]. Daytime symptoms of insomnia include fatigue, daytime sleepiness, irritability, and reduced motivation and energy, in addition to attention and memory impairments [72]. Interestingly, although both nighttime and daytime symptoms of insomnia are significantly associated with depression and anxiety symptoms, there is a stronger relationship between the experience of daytime impairments and symptoms of depression and anxiety [72].

Additionally, there is evidence to demonstrate the bidirectionality of sleep and affective state. Poor sleep quality or lack of sleep (e.g., sleep deprivation) tends to be associated with increased negative and decreased positive affect, and likewise, negatively valanced cognitions that tend to appear before sleep-onset in insomnia patients (e.g., worrying, rumination) can also contribute to difficulties with falling asleep [72]. Daytime symptoms of insomnia are also associated with greater negative emotionality and diminished positive emotionality, which may be a risk factor for mental disorders like depression [72]. Affective states have also been found to impact sleep. For example, negative affect related to loneliness has been associated with insomnia symptoms like poor sleep efficiency and more sleep disturbances [75, 76]. This has clear relevance during the pandemic, as loneliness levels have increased dramatically due to lockdowns and quarantines [77]. Other affective states related to negative emotionality like grief, hostility, and impulsivity are all related to insomnia symptomology, such as shorter sleep duration, poor sleep quality, and daytime impairment. Alternatively, positively valanced affective states like romantic love have been associated with better sleep outcomes, such as better sleep quality and increased daytime functioning [72].

The onset of emotion dysregulation and mood disorders due to sleep problems may be facilitated by the inter-relationships between resilience, emotional functioning, and sleep [36, 38, 70]. Because sleep plays such a critical role in emotional and mental health, increased pandemic-related sleep problems are likely to have contributed to the significant increase in mental health problems observed during the pandemic [70, 78]. Even acute sleep disruptions due to the pandemic have the potential to progress to more chronic insomnia and other sleep and mood disorders [21, 51, 79]. Therefore, to prevent potential long-term sleep and mental health issues and build resilience, it is vital to address pandemic-related sleep disruptions and insomnia through appropriate and timely interventions to improve sleep and in turn, improve psychological outcomes.

5.2 The bidirectional relationship between sleep and resilience

Sleep has been identified as a key aspect of psychological health, based on its connection to emotional functioning and the stress response [36, 38, 56, 71, 72]. The role of sleep on mental health outcomes is closely interconnected with resilience, wherein resilience acts as a buffer against the effects of adversity on mental health [5–7]. Similarly, low levels of resilience have been associated with several factors related to sleep, including high stress-related sleep reactivity, emotional dysregulation, and hyperarousal [36, 38, 80]. Thus, it is critical to understand that sleep also plays an important role in resilience, especially during crisis situations.

The relationship between sleep and resilience is reciprocal in nature: better sleep can bolster resilience, and greater resilience can also lead to better sleep. This relationship has been documented in a number of studies involving both children and adults [34–37, 39, 81, 82]. In a longitudinal study of a U.S. military population, poor sleep (e.g., frequent sleep disturbances, trouble falling or staying asleep) was associated with lower resilience outcomes compared to those with healthy sleep [37]. Further, resilience among U.S. military Veterans significantly moderated the relationship between poor sleep and negative psychological outcomes [39]. Veterans who reported poor sleep had worse physical and psychological health and lower resilience compared to good sleepers, yet among the poor sleepers, those who reported greater resilience experienced fewer negative physical and mental outcomes, suggesting that resilience may be a protective factor against negative health outcomes in those with poor sleep [39]. Additionally, shorter sleep length has been associated with increased vulnerability to stress, which may contribute to the effect of sleep on resiliency during stressful times [72]. However, resilience can buffer the negative impact of stress on sleep, where higher levels of resilience can protect against the sleep disturbances that arise due to increased perceived stress [35].

As described above, insomnia can disrupt sleep processes necessary for emotional processing, leading to increased risk of heightened emotional reactivity during the day [69–72]. Furthermore, daytime insomnia symptoms are also closely related to increased negative emotionality and decreased positive emotionality [72]. Emotional reactivity is also closely related to stress, and resilience can help protect against the effects of stress on emotional responses [83, 84]. Resilience has also been found to predict negative emotional responses to stressful life events, specifically, higher resilience can buffer the effects of stressful life events on the development of psychiatric symptoms [84]. Resilience can also facilitate adaptive emotional responses to stress that are often found in psychiatric disorders such as depression and PTSD through genetic and neurological factors [85].

When individuals are low in resilience, they are also more susceptible to emotion dysregulation after exposure to stressors, which also leads to greater vulnerability to psychopathology [36]. Resilience helps bolster emotion regulation abilities through the use of adaptive coping strategies to overcome stress [80]. For example, individuals high in resilience tend to use more effective emotion regulation strategies such as cognitive reappraisal to reframe stressful situations in a positive light and decrease maladaptive emotion responses [80].

Hyperarousal is another critical factor that contributes to poor mental health outcomes and is linked to both sleep and resilience. Insomnia often leads to cognitive (e.g., intrusive thoughts, dysfunctional beliefs) and physiological (e.g., central nervous system, brain regions) hyperarousal [71, 72]. Hyperarousal can have severe consequences for emotion regulation abilities, due to the fact that sustained levels of hyperarousal can deplete cognitive and physiological resources needed to effectively regulate emotions [71]. Emotion processing deficits, especially in the context of stressful situations, can in turn make insomnia symptoms worse [36, 86]. In [36],

the authors investigated the relationship between resilience, emotion dysregulation, and pre-sleep hyperarousal and found that resilience predicted hyperarousal, where lower resilience resulted in increased pre-sleep cognitive hyperarousal. Furthermore, increased emotion dysregulation, predicted by low resilience, mediated the relationship between resilience and hyperarousal [36]. This relationship was worse in individuals with insomnia compared to good sleepers [36].

Recent research into the neurobiological mechanisms behind resilience has revealed how the neuronal systems behind sleep are closely related to those responsible for resilience [87]. Resilience and sleep are linked to similar brain regions, structures, and neural circuits that are key for autonomic activation (e.g., hypothalamus-pituitary–adrenal axis, noradrenergic system, serotonergic system, dopaminergic system) and emotional processes (e.g., hippocampus, amygdala) [81, 87]. Further, sleep loss can inhibit brain functioning in areas related to resilience, particularly those associated with autonomic activation and emotional functioning [81]. However, brain plasticity also plays a critical role in both resilience and sleep [87]. Research suggests that neural plasticity is vital for the development of resilience as a result of its connection to the central nervous system (CNS) [88]. Increased plasticity may be a sign of greater resilience, given the role of neural plasticity in stress recovery [88]. Additionally, brain plasticity plays a key role in our ability to adapt to challenges and respond to stress, due to its role in learning adaptive behaviors and emotion regulation skills in response to stress [87]. However, poor sleep quality, sleep loss, and sleep disturbances during both REM and non-REM sleep can negatively affect neural plasticity, which in turn has consequences for recovery from stress exposure [81, 87]. Research regarding the synaptic homeostasis hypothesis posits that deep sleep can enhance neural plasticity, which in turn may improve resilience; alternatively, dysregulation of synaptic homeostasis is characteristic of psychiatric disorders that involve sleep disturbances, like depression [89, 90]. Plasticity, which is critical for maintaining and enhancing resilience, is also particularly susceptible to sleep health, further emphasizing the importance of sleep for preserving resilience during prolonged periods of stress.

Resilience reflects our ability to adapt to and overcome adversity, and this ability appears to be facilitated by the emotional, physiological, and neurobiological processes of sleep. Without sufficient restorative sleep, individuals appear to lack the ability to process and regulate emotions effectively and are therefore more susceptible to the vicissitudes of life and are more vulnerable to being overcome by adversity. Likewise, when resilience is low, it becomes difficult to obtain sufficient restorative sleep. Thus, these factors operate synergistically to sustain mental health.

5.3 Sleep and resilience during the pandemic

The COVID-19 pandemic has emphasized the importance of the sleep-resilience relationship, particularly for mental health-related issues. The relationship between sleep health and resilience has proven crucial for professions that were exposed to greater amounts of stress during the pandemic, such as healthcare workers. For instance, physicians who reported better sleep during the early stages of the pandemic were able to remain more resilient at work, experienced fewer self-regulatory failures and lower negative affect [67], and greater life satisfaction [91]. Clearly, obtaining sufficient restorative sleep is a vital component to maintaining the ability of healthcare workers, and others, to effectively navigate the intense emotional aspect of their work and bounce back despite adversity. There is substantial evidence to support the bidirectional relationship between sleep and resilience, and how this relationship can have important implications for mental health outcomes. While previous research on sleep and resilience has focused on populations that are

more susceptible to mental health problems due to stress (e.g., military populations, adolescents, healthcare professions), the COVID-19 pandemic has emphasized how important the sleep-resilience relationship is for the general population. It is critical that we address the connection between resilience and sleep health during prolonged periods of stress in order to prevent or curtail a mental health crisis.

6. Future directions for improving resilience, sleep, and mental health

Thus far, the discussion has focused on the impact of the COVID-19 pandemic on mental health and sleep outcomes, as well as the critical role of sleep as a core neurobiological process underlying resilience. In this next section, we present strategies and proposed interventions for addressing COVID-19 related mental health outcomes, with a specific focus on the role of sleep and resilience. It is critical that public health officials, medical professionals, community leaders, and other management positions implement empirically based interventions to address the effects of the pandemic on mental and physical health.

Intervention programs aimed toward improving resilience by enhancing sleep specifically can have a long-lasting impact on stress and health even after the pandemic subsides. These interventions can utilize technology to maintain social-distancing requirements yet still provide access to evidence-based self-help tools, education resources, and telehealth consultations to enhance resilience and sleep, and in turn, improve mental health [24, 57]. Online intervention programs are easily accessible and can be used with or without formal psychotherapy or counseling. With more and more people spending time on their phones and computers during the pandemic, online training or intervention programs can be a way to reach many people. Overall, interventions should not just focus on the reduction of negative outcomes; they should also be designed to promote positive adaptation and educate individuals on how to capitalize on the resources they already have [92].

6.1 Resilience training

An obvious method to build resilience is to develop programs that specifically train relevant skills. Resilience training has been a topic of interest in recent years and these types of programs may prove especially useful during the pandemic. Existing research has shown that resilience can be learned, a finding that is supported by evidence that it evolves dynamically rather than remaining stable over the lifetime [2, 13]. Resilience training programs can teach individuals how to effectively utilize adaptive coping strategies to combat chronic and acute stressors such as the COVID-19 pandemic. Effective interventions often emphasize the importance of keeping a daily routine, cultivating positive emotions in everyday life, and keeping in touch with social networks to maintain one's social support system [93].

Social support plays a key role in boosting and maintaining resilience through adversity. Social support is crucial for maintaining resiliency and psychological functioning during prolonged periods of stress, and there is evidence to show how the accessibility and availability of social support has played an important role in mental and physical health outcomes during the pandemic. With pandemic-induced loneliness and social isolation having direct, negative effects on mental health and sleep outcomes, it is critical to develop creative and innovative ways to increase the availability of social support for all populations. While social support from friends and family is particularly protective [94], social support can also come in the form of investing in social capital. Social support, which refers to the size and source of social networks, and social capital, which refers to social trust and

feelings of belonging in social groups, are associated with mental health and sleep outcomes [94, 95]. As social support and social capital increase, mental health and sleep outcomes also tend to improve [94, 95], although causality is difficult to demonstrate in many of these studies due to their cross-sectional design. With this in mind, finding ways to increase social support and social capital would seem to be relevant to psychological crisis prevention programs [57].

6.2 Sleep education and cognitive Behavioral therapy (CBT)

Sleep hygiene, which involves making behavioral and environmental adjustments that support good sleep, has been shown to be effective at improving sleep health during the pandemic [47, 53, 78, 96, 97]. Furthermore, cognitive behavioral therapy (CBT) techniques can be beneficial for improving both mental health and sleep health. CBT focuses on breaking maladaptive thinking patterns that can lead to mental health problems such as depression [98]. CBT combines behavioral techniques (e.g., stimulus control, relaxation) with cognitive (e.g., learning to manage worries, intrusive thoughts) and educational (e.g., coping skills) components to address depression, anxiety, and other related disorders [98]. CBT can help with both chronic and acute insomnia, and CBT for insomnia (CBT-I) has become a leading treatment for insomnia and poor sleep health [78, 98].

CBT-I includes several key features. Sleep hygiene and sleep beliefs are critical for improving sleep behaviors and overall health and CBT-I interventions typically include an element of sleep education to address maladaptive sleep behaviors and sleep beliefs as well as information regarding the importance of reducing screen time before bed, avoiding bright light at night, and being mindful of time spent in bed [78]. Additionally, sleep hygiene should address minimizing habits that can negatively affect sleep (e.g. drinking caffeine in the late-afternoon/evening, alcohol intake, exercising near bedtime) and promote habits that keep one's circadian rhythm in balance (e.g. increasing physical exercise and daytime hours spent outside) [47, 78]. The development of digital CBT has made CBT more accessible and is especially relevant for use during the pandemic [98, 99].

6.3 Physical activity and daylight exposure

Lockdowns and social distancing guidelines due to the pandemic have had a negative impact on levels of physical activity and daylight exposure [47, 100]. Reduced daylight exposure and physical activity during the pandemic have been associated with poor sleep quality and lower resilience, which in turn have adversely affected depression and anxiety symptoms [47, 62, 94, 100]. Timing of light is critical to maintain a normal daily rhythm, and it is important to incorporate daily light exposure into daily routines and aim to spend time outside exposed to bright sunlight, especially in the mornings, while also limiting light from screens in the evening [53]. Similarly, incorporating physical activity into a daily routine can act as a buffer against some of the negative effects of the pandemic and lockdowns on sleep quality and mental health [53]. Light exposure and physical activity have the effect of resetting the daily rhythm and are associated with better sleep quality and greater resilience [94, 100].

7. Conclusions

During its first year, the COVID-19 pandemic had a powerful impact on nearly every aspect of daily life, leading to significant increases in mental health problems

across the globe. Nonetheless, many individuals have weathered the pandemic without undue harm or have rebounded from major life setbacks to be stronger than before. These individuals show psychological resilience, which reflects the ability of the individual to rapidly recover from such setbacks and even grow stronger in the process. Many factors contribute to individual resiliency, including the availability of social, emotional, behavioral, material, and physiological resources. Considerable evidence suggests that one of the key physiological resources that contributes to resilience is sufficient restorative sleep. Without adequate sleep, the brain rapidly declines in its capacity to process emotions and cope effectively with change. Cognitive flexibility becomes limited during periods of insufficient sleep, and it becomes difficult to identify effective solutions to life's challenges. Unfortunately, the anxiety and stresses of the pandemic adversely impacted the sleep of a large proportion of the population, reducing the ability of many people to cope with setbacks and regulate emotional responses.

In short, psychological resilience during the pandemic was severely hampered by the chronic sleep disruptions of the past year, and this appears to have contributed to elevated rates of mental health concerns. However, sleep is a physiological process that is highly modifiable through small changes in behavior and other effective cognitive and lifestyle interventions. While sleep is not the totality of resilience, we contend that it is difficult, if not nearly impossible, to remain optimally resilient when sleep is deficient. Accordingly, we suggest that increasing the regularity, duration, and quality of sleep will help restore and sustain the physiological foundation for resilience, and we provide several practical suggestions for improving sleep. Psychological resilience will be key to the success of the recovery effort as the pandemic subsides, and such resilience is built firmly on the physiological foundation provided by sufficient restorative sleep each night.

Conflict of interest

The authors have nothing to declare.

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Chapter 22

Potential Effects of the COVID-19 Pandemic on Children and Adolescents with Separation Anxiety Disorder

Malgorzata Dabkowska and Agnieszka Dabkowska-Mika

Abstract

Children with separation anxiety disorder (SAD) experience unrealistic fear of being separated from their significant caregivers (mostly parents). The occurrence of pathological separation anxiety is determined by many factors: parental attitudes, their mental and physical health, but also the way of perceiving the environment, traumatic events in the child's family and life, as well as genetic and individual effects. Pandemic situation and related isolation caused change in the current lifestyle. Both psychological (i.e. the novelty of the social situation, negative information in the mass media, fear of their own live and their loved ones) and daily-life routine disturbances (i.e. the closure of schools and restrictions of contacts with peers, limited contacts with distant family members, remote work of parents) generate difficulties for children and can contribute anxiety among children with SAD. Paradoxically, despite the fact that children and adolescents are at home, the COVID-19 pandemic may intensify SAD, exacerbating factors underlying separation anxiety. It turns out that family social isolation can escalate conflicts. This, in turn, adversely affects relationships between family members and can reduce children's sense of security. Due to pandemic problematic access to specialized health care, especially personal contact with a psychotherapist, children with SAD suffer from insufficient professional help.

Keywords: Separation Anxiety Disorder, Anxiety, Pandemic, COVID-19, School phobia, Children, Adolescents, Mental health, SARS-CoV-2, Adverse childhood experiences

1. Introduction

Current generation of children and adolescents has not been affected by negative global occurrence till now. Nowadays COVID-19 pandemic could serve as such an event, causing no sense of security and uncertainty. Since 2020, minors -together with adults- have constantly received information about pandemic threats, including death of family members or other role models. Pandemic has challenged different aspects of children's and adolescent's lives, i.e., an access to school and classmates.

Increase in uncertainty in the surrounding world may lead to higher prevalence of anxiety disorders in childhood. Most of the studies on children, which were conducted during COVID-19 pandemics, concerned social anxiety [1] and generalized anxiety [2], assuming, that staying at home due to the lockdown protects against separation anxiety. However, separation anxiety is associated predominately with negative family factors, e.g., lack of secure attachment pattern in the early childhood [3].

As a consequence of the COVID-19 pandemic, limitations occurred in many aspects of life, including family life. It might result in a greater number of children suffering from anxiety disorder, even despite staying at home. After the end of lockdown and come-back to school, more children may find it difficult to go out from home to attend school.

2. Definition and criteria of separation anxiety disorder

Separation anxiety disorder (SAD) is a mental disorder in the course of which a person experiences excessive anxiety, fear, distress when separated from the closest person to whom he or she is attached (most often it concerns parents, grandparents or siblings). Separation anxiety disorder is a deeper and more destabilizing form of normative separation anxiety typically experienced by children during their development [4]. SAD is an inappropriate and excessive display of fear and distress, due to being faced with a situation of separation from home or significant attachment figure [5].

The expressed anxiety is classified as atypical in relation to the expected level of development and age. The severity of symptoms ranges from anticipatory uneasiness to complete anxiety about separation. SAD can have significant negative effects on a child's daily life. These effects can be seen in areas of social and emotional functioning, family life, physical health, as well as within the academic context. The duration of this problem must persist for at least 4 weeks and must present itself before a person is 18 years of age to be diagnosed as SAD [6].

In the evolutionary context, separation anxiety is among the oldest anxiety modules developed by mammals already in Mesozoic era (approximately 140 million years ago).

In DSM-5, SAD was classified as an anxiety disorder. DSM-5 diagnostic criteria for separation anxiety disorder are as follows:

Disorder Class: Anxiety Disorders

A. Developmentally inappropriate and excessive fear or anxiety concerning separation from those to whom the individual is attached, as evidenced by at least three of the following:

1. Recurrent excessive distress when anticipating or experiencing separation from home or from major attachment figures.

2. Persistent and excessive worry about losing major attachment figures or about possible harm to them, such as illness, injury, disasters, or death.

3. Persistent and excessive worry about experiencing an untoward event (e.g., getting lost, being kidnapped, having an accident, becoming ill) that causes separation from a major attachment figure.

4. Persistent reluctance or refusal to go out, away from home, to school, to work, or elsewhere because of fear of separation.

5. Persistent and excessive fear of or reluctance about being alone or without major attachment figures at home or in other settings.

6. Persistent reluctance or refusal to sleep away from home or to go to sleep without being near a major attachment figure.

7. Repeated nightmares involving the theme of separation

8. Repeated complaints of physical symptoms (such as headaches, stomachaches, nausea, or vomiting) when separation from major attachment figures occurs or is anticipated

B. The fear, anxiety, or avoidance is persistent, lasting at least 4 weeks in children and adolescents and typically 6 months or more in adults.

C. The disturbance causes clinically significant distress or impairment in social, academic (occupational), or other important areas of functioning.

D. The disturbance is not better explained by another mental disorder, such as refusing to leave home because of excessive resistance to change in autism spectrum disorder; delusions or hallucinations concerning separation in psychotic disorders; refusal to go outside without a trusted companion in agoraphobia; worries about ill health or other harm befalling significant others in generalized anxiety disorder; or concerns about having an illness in illness anxiety disorder [6].

The largest differences between criteria DSM-4 and DSM-5 are related to broadening the criteria to better align with the presentation of SAD among adults; consequently, this should have minimal impact on childhood estimates.

3. Impact of pandemic on children's and adolescent's mental health

So far, data showed that the pandemic influences mental health of the population globally, with the increased prevalence of depression, suicide, and self-harm (apart from other symptoms reported due to COVID-19) [7, 8]. The pandemic resulted in an increase in incidence emotional outbursts, especially panic, avoidance, stigmatization and different types of fear (e.g. fear experienced when meeting other people, fear of death, fear of getting isolated).

4. Risk factors of increased frequency of separation anxiety in children and adolescents during the COVID-19 pandemic

4.1 Attachment pattern and quality of paternal care

As a consequence of social distance and governmental restrictions on gatherings, minors may be affected by reduced contact with secure attachment. During the COVID-19 pandemic, meeting other people except the nuclear family, is often impossible and against the law. Children are deprived of meeting grandparents or other adults, who could support them. In case of insufficient emotional bond with parents, during isolation from other family members, teachers and friends, the opportunity to free talk and seeking for support has been limited. In extreme cases,

it is conductive to the feeling of loneliness and helplessness. When parents suffer from depression or anxiety disorders, their children are more likely to identify with parental negative perception of the world during pandemic, as additional threat may cause exacerbation of symptoms, especially that an access to mental health professionals is limited. It seems that some triggers of SAD are enhanced during the pandemic, e.g., negative narration in the family, lack of sense of safety, difficulties in accessing health care, restrictions on attending school, limits on social contacts with peers. Burden of lockdown can raise caregivers' risk of becoming addicted to alcohol, drugs or gambling.

Separation anxiety level during pandemic may be elevated due to parents' long hours at work, especially, when their posts are crucial in given circumstances (e.g., health workers, pharmacists, shop assistants). It may generate worries about their lives in children, fear of their infection. If so, children would not be able to concentrate on distance learning, but instead they would wait with tension for a parent's safe return home.

Among publications concerning the influence of the COVID-19 pandemic on children's mental health, little is written about SAD. There was a study investigating relationship between social isolation and changes of sleep patterns with triggering anxiety disorders (including SAD), conducted with subscales from the Spence Children's Anxiety Scale- Child Report (SCAS-C) [9]. There was no relationship between duration of sleep and tendency to SAD. However, sleep duration moderated the effect of social isolation on symptoms of generalized anxiety, social anxiety and depression, but not separation anxiety [10].

4.2 Deterioration of parental situation due to pandemic as a risk factor for SAD

Children and adolescents are significantly affected by the emotional state of adults. As a result of the exposure to unexplained and unpredictable behavior of adults, children may develop an increasement of anxiety [11]. Minors may refrain from sharing their feelings to ensure they are not engaging in emotionally oriented conversations to avoid additional parental worry. As they are concerned about the condition of adults, they may try to deal with own fear by themselves, trying to protect others [12]. This can make young people feel lonely in their family [13].

One of the risk factors for developing separation anxiety in a child is the parent's poor mental state. COVID-19 has worsened mental health condition of the society. Polish survey performed with General Health Questionnaire-28 (GHQ – 28) (tool constructed by D. Goldberg) examined four aspects of mental state: physical symptoms, level of anxiety and insomnia, disturbances in everyday life functioning, symptoms of depression [14, 15]. During COVID-19 pandemic, adults display more often disturbancies in daily life (in areas such as managing duties or being satisfied with the performed activity), physical symptoms (e.g., headache, exhaustion, weakness, malaise), higher level of anxiety and sleep problems. This can also influence taking care of a child, resulting in a decrease in the child's sense of security. Participants with poorer mental health were reported to be significantly more affected by stress as assessed with a scale SS-10 (The Perceived Stress Scale) [16].

However, these participants were more likely to seek instrumental support and used unsuitable coping techniques such as denial, emotional discharge, psychoactive substance use, ceasing to act, and self-blame. These measures of non-adaptive coping strategies may result with poorer quality of parental support and increase the prevalence of separation anxiety [17].

Pandemic reality can cause enormous stress and psychological distress for all family members. Parents themselves have less competence to support the child. Nevertheless, they should explain to children the whole situation. Their help in

handling fear and anxiety to accompanying these uncertain times is crucial, as the lack of a parental safe support may initiate or intensify the child's separation anxiety.

The precarious financial situation of the family worsens the mental condition of the parents and the child. The economic recession and related factors are significantly associated with deterioration of mental well-being and an increased number of mental disorders among parents. Low socioeconomic status is a well-known risk factor for poor mental health in children [18, 19].

In British surveys, many parents reported that work and financial problems are the most frequent stressors. The Family Fund (2020) survey of parents of children and adolescents with disabilities or serious illness found 50% of participants reported loss of income due to unemployment or loss of job, with 77% reporting household costs have increased [20, 21].

4.3 Increase in traumatic experiences during the pandemic as a risk factor for separation anxiety

Due to the lockdown, the number of cases of domestic violence is increasing worldwide. There is no escape from abusers during quarantine [22–25]. Some children may be at greater risk of various kinds of abuse while in isolation. Children reported an increase in sexual abuse during the pandemic. Kooth (2020) described 51% increase in self-reports of children being the victim of domestic violence [26]. The lockdown has also created boredom and monotony among parents and children. In many households, due to the restriction of outdoor activities, children become restless and, in some cases, violent. Some people even decided to close windows and doors due to wrong notions regarding the infection. Nearly constant stream of news reports about an outbreak resulted in information- but also misinformation- creating fear, anxiety and stress. A child's response to stress may reflect in many ways, e.g., being clingy, angry, agitated, anxious or withdrawn.

4.4 Parental mental health during the pandemic as a risk factor for separation anxiety

Children always require love and attention of adults, but more so in extremely difficult times. It is crucial to allow children to be with their parents within the family, to avoid separating children and their caregivers to the extent possible manner. If separation occurs (e.g., hospitalization) regular contact (e.g., via phone) and reassurance are required [27].

Proper child development has consistently been considered as depending on the psychological well-being of parents. Among risk factors for revealing separation anxiety in a child, one of the most important is the development of anxiety in the mother. Mofrad and colleagues noticed in their study, that maternal anxiety was the main predictor for SAD, significantly related to manifestation of SAD in child [28]. What is more, maternal separation anxiety itself was positively related to SAD in child, but not over time [29]. During a pandemic, mothers can develop separation anxiety due to separation from close relatives. The threatening feelings during the pandemic COVID-19 may lead to more protective behaviors in the mother, and as such, impede the separation-individuation process in children.

Family connections and support may be disrupted. Fear of losing family members who belong to a high risk group can increase. In case of death, the pandemic disrupts normal bereavement processes of families. Grief and mourning of lost family members, especially in cases where contact with the infected member is restricted or refused, could lead to adjustment problems, separation anxiety of

young people. As it was shown in a large longitudinal study, children who experience bereavement, especially the loss of a parent, are significantly more likely to exhibit symptoms of separation anxiety, than those who have not experienced such a loss. Children in families with parental overreactivity might be at risk for negative consequences of the lockdown [30]. Young children who have lost a parent are particularly vulnerable. Under these circumstances, the child needs supportive and safe environment, with guidance how to express feelings such as fear and sadness.

4.5 Child's loneliness during pandemic

Other factors contributing to the separation anxiety in children during pandemic include an increase in the sense of loneliness. Children and adolescents face this problem due to social distancing and school closures. The increase in the sense of loneliness due to pandemic is related to the increase in anxiety in a number of studies [31, 32]. In British studies rates of loneliness during the initial phase of lockdown were high [33]. The prevalence of loneliness was 27%. Younger age group was a risk factor for loneliness, while higher levels of social support and living with a great number of adults were protective factors. The results suggest that supportive interventions to reduce loneliness should target young people.

The COVID-19 pandemic has caused that children and adolescents experience a prolonged state of physical isolation from their peers, teachers, extended family members, and community networks. As it was revealed in early indications according current pandemic, more than one-third of adolescents reported already high levels of loneliness. Moreover, further increase of anxiety may be detected not only during, but also after enforced isolation [1].

In many cases parents are infected and quarantined, so children are separated from their parents. Any disruption in the form of isolation from parents can have long term effects of perceived attachment of the child. It is found that separation from the primary caregivers can make a child more vulnerable [34, 35]. Children may develop feelings of sadness, anxiety, fear of death, fear of parents' death and fear of being isolated in the hospital which may have a very detrimental effect on their psychological development [11]. Especially younger children can feel separated or alone as they have limited knowledge and level of maturity to understand situation.

5. School phobia as a complication of the COVID-19 pandemic

The pandemic crisis has hit children in many aspects, but particular with school closures. According to UNESCO data, at its peak, in April 2020, over 1.5 billion students in over 190 countries around the world experienced school closures for epidemiological reasons (which is over 90% of all students). In UK only 5% of school-aged children of key workers have attended school during the lockdown period. The traditional daily routine, habits and patterns are failing to function in the new situation. Lack of school routine, new situation, learning difficulties and demands of students' independence may paradoxically aggravate separation anxiety despite being at home. The absence of familiar order leads to growing tensions, anxiety, irritation, helplessness and frustration. During the pandemic, children with separation anxiety who refuse to attend school may initially feel better. When the pandemic is over, avoidance behavior can worsen and prevent return to school after ending social isolation.

Minors with SAD may underperform at school than others, which may keep anxiety levels elevated and also lead to school phobia. School phobia might be a

variant of mostly severe separation anxiety disorder [36]. School refusal is reported in about 75% of children with SAD, and SAD is reported to occur in up to 80% of children with school refusal [37, 38]. Factors that contribute to pure anxious school refusal are as follows: living in a single-parent home (during a pandemic, fear for the life of the sole caregiver increases), having a parent who had been treated for a mental health problem [39]. The pandemic increases the incidence of mental disorders in caregivers [40]. Among risk factors of school phobia are environmental risk factors such as life events (for many children, negative events related to the pandemic are a source of psychological trauma) and parent–child relationship (especially in dysfunctional families, being at home promotes incorrect relationships) [30].

In a large part of families, the presence of parents at home during pandemic does not ensure a sense of security and does not improve the school functioning of children. The results of Polish research on the situation of educational care in families showed that the majority of parents are professionally active (73%). Over a half of them (54%) work online. This means that they have to combine childcare, assisting the children in learning and completing the assignments sent by teachers with full-time remote work [41].

While most children will be delighted to return to school, there will be some who may prefer home schooling. These are children who find school as a stressful experience. Some of them are children with special needs or disabilities that make attending school particularly challenging. European and Asian studies identify dependence, clinginess, and fear of others leaving the house as most commonly reported symptoms during the COVID-19 epidemic, what promotes separation anxiety and school phobia [34, 42].

6. Increased anxiety for parents and weakening of belonging

Uncertainty according health safety of parents is conducive to the disclosure of separation anxiety in children. Many respondents were deeply anxious about the health of their family, as well as harming those around them by inadvertently spreading the virus [43]. Disruptions in social relationships evoke threats to children's sense of belongingness. Youth who were social distancing because their parents made them, reported greater belongingness [44]. An increase in the sense of belonging to parents may exacerbate separation anxiety in adolescents. Some children reacted to information about the epidemic from media with sadness and anxiety.

7. Genetic factors influencing the disclosure of separation anxiety in the course of a pandemic

At the root of separation anxiety in children and adolescents are genetic factors: presence of various anxiety disorders in the family, anxiety disorders or depression in parents (especially SAD), common occurrence of depression and anxiety disorders, anxiety temperament in early life, tendency to low self-esteem, avoidance behavior in parents [45]. Separation anxiety disorder is closely linked to other anxiety and mood disorders, especially to panic disorder and agoraphobia and can be also associated with externalizing psychopathology in children and adolescents. It may be that separation anxiety disorder represents a general factor of vulnerability for a broad range of anxiety disorders [46, 47]. The dependence of separation anxiety on genetic factors in the family exposes the disorder to the severity of children in their families, in which the pandemic multiplied psychiatric disorders in parents, especially such as anxiety disorders and depression. The pooled prevalence

of depression appears to be 7 times higher during pandemic COVID-19 [48]. Women are more vulnerable to stress than men. In recent studies, the prevalence of anxiety, depression and stress during COVID-19 pandemic is shown to be higher in women than in men [49]. The family origin of anxiety disorders was confirmed, especially between child and maternal anxiety disorder. Results of Cooper's and colleagues´ study showed that all child's anxiety disorders were associated with several forms of anxiety disorder in the mother. Some specificity in the form of anxiety disorder in the child and the mother was apparent for social phobia and separation anxiety disorder [50]. Some people are more vulnerable to adversity as a function of inherent risk characteristics [51, 52]. Studies presented that young children show more significant separation problems [53].

Vantage sensitivity hypothesis explains that some genetic variants moderate outcome of positive intervention. The definition of vantage sensitivity includes as follows: reflecting variation in response to exclusively positive experiences as a function of individual endogenous characteristics [54].

8. Increase in comorbid disorders in pandemic as a risk factor of separation anxiety

As separation anxiety disorder often coexists with other mental disorders (mainly with panic disorder, generalized anxiety disorder, depression or addictions), higher prevalence of these diseases may lead to higher prevalence of SAD. In the pandemic, there was observed an increase in the frequency of depression and anxiety disorders in adolescents [2]. At the same time, quality and possibilities of medical and therapeutic care were worsened, periodically limited to phone consultations. In many places, group psychotherapy has been withdrawn and sociotherapeutic activities have been discontinued.

9. Factors protecting against the disclosure of separation anxiety in children during pandemic

Protective factors against the disclosure of separation anxiety in children during the pandemic include: early identification of a group of children and adolescents at risk, taking care of families particularly affected by the pandemic, taking care of families that cannot support children, parents with mental problems, children with school difficulties, children with peer relationship problems, families that isolate themselves from society for a long time, families who experience illness or death from COVID -19 infection. It is beneficial to include an early psychoeducation program for parents, which may reduce the risk of developing anxiety disorder. The main protective factors are social support in the presence of traumatic experiences and coping skills in the resilience to anxiety [55]. It seems important to undertake actions to increase the resilience capacity of individuals to coping with traumatic events. The current imposed social isolation caused by the COVID-19 pandemic forced families to spend more time together and created the opportunity to participate in many joint activities, which evokes positive feelings [41].

10. Conclusions

The severity of social anxiety is influenced by the presence of a fear culture, especially in Western countries. According to F. Furedi, contemporary level of

saturation of our consciousness with fear is higher than ever [56]. Mass media contribute to the culture of fear by continuously disclosing information about impending catastrophes and natural or man-made disasters. Media information about an epidemic may be an aversive stimulus that causes fear [57].

So far, no studies have been conducted on the severity of separation anxiety in children and adolescents in the course of the pandemic, assuming that staying at home will prevent the disorder. Paradoxically, social isolation, general increase in insecurity, intensification of mental problems (including anxiety disorders and depression in parents), intensification of traumatic events and domestic violence during lockdown, exposure to complications and death caused by Coronavirus infection, increased parental frustration, financial problems, chronic limitation of social contacts outside the family, long-term removal from school and peers may generate separation anxiety. It will be particularly difficult for children with separation anxiety to return to school after lockdown.

Prolonged stay at home, without stimulation to undertake activities outside, promotes the consolidation of avoidance behaviors and the risk of refusal to attend school.

It is necessary to provide early psychotherapeutic interventions to this group of children and their families, and to prepare school staff for the upcoming problems after the schools are opened.

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Chapter 23

Child and Adolescent Anxiety as a Result of the COVID-19 Pandemic

Jie Luo and Alfred Shaw

Abstract

As the coronavirus disease 2019 (COVID-19) pandemic has spread, so has the psychological impact of the disease been felt worldwide. Among the various types of psychological problems that are caused by COVID-19, anxiety poses a great threat to the physical and mental health of children and adolescents. With an aim of advancing the current work of diagnosing and treating child and adolescent anxiety as a result of the COVID-19 pandemic, this chapter discusses this noticeable global health issue focusing on the following key parts: possible etiology, clinical characteristics, diagnosis and available therapeutic options.

Keywords: COVID-19, anxiety, mental disorders, child and adolescent

1. Introduction

The COVID-19 pandemic has led to a huge global health crisis, including mental and psychological problems in children and adolescents. Since their physical and mental aspects are not fully developed, they are more susceptible to psychological problems and mental disorders associated with the COVID-19 pandemic [1]. Among the various types of psychological problems and mental disorders caused by COVID-19, anxiety poses a great threat to the physical and mental health of children and adolescents.

Compared to generalized anxiety disorder, child and adolescent anxiety derived from the COVID-19 pandemic has clear inducing factors that are closely correlated with the development of the pandemic, and thus has its unique characteristics. During pandemic prevention and control, limitations in diagnostic and therapeutic options have a huge impact on the physical and mental health, as well as social functions of children and adolescents. Therefore, can it be classified as a new disease? What are the possible explanations for its emergence? What are the main clinical features of this disease? When the disease occurs, do we have a complete diagnosis and treatment system to deal with limitations of the scope of medical activities in special periods? For similar anxiety problems caused by public health emergencies, can we learn from this incident and improve on response measures?

1.1 Child and adolescent anxiety as a result of the COVID-19 pandemic

Anxiety is a normal emotional experience for children and adolescents. It helps in improving their adaptability and coping skills in daily life. However, when anxiety lasts for too long or when anxiety is too serious resulting from some stress factors,

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which exceeds the reaction of normal children of the same age, children cannot freely recover from long lasting anxiety, and it seriously affects their daily life. Such anxiety is pathological, referred to as anxiety disorder [2]. Using current diagnostic systems (including ICD-10 and DSM-5), children and adolescents with anxiety disorders can be grouped into two. Those grouped as adults include those with generalized anxiety disorders, panic disorders, obsessive–compulsive disorders and so on. The second grouping involves disorders that only occur in children, and they belong to the childhood emotional disorders (F93) in ICD-10, such as childhood dissociative anxiety disorder, childhood phobic anxiety disorder, childhood social anxiety disorder and etc. Selective silence is also included in DSM-5. There are many typical characteristics of COVID-19 associated anxiety disorders in children and adolescents. However, there are no appropriate and effective diagnostic approaches or therapeutic options. Therefore, child and adolescent COVID-19 associated anxiety can be defined as an anxiety disorder that occurs in the context of major public health emergencies, and develops as a result of the pandemic. It is characterized by a series of anxiety symptoms and behavioral problems that are directly or indirectly induced by large-scale public health emergencies, which seriously affect physical and mental health, learning, life as well as communication abilities of children and adolescents. Disease outcomes differ among people, some patients may self-heal, and through intervention, can quickly eliminate anxiety symptoms. Other patients may develop severe mental symptoms, including depression and suicide, as the condition progresses. The disease course is persistent, but may intermittently fluctuate as quarantine measures of COVID-19 change (**Figure 1**). Disease diagnosis and treatment should be simple, accurate, efficient and with a wide reach for large-scale public health emergencies. Regarding the disease, there are more prominent features in children's normal development, rather than their own abnormalities, so it is different from adult neurological diagnosis. The significance of classifying COVID-19 associated child and adolescence anxiety in childhood mood disorders is worthy of discussion.

Next, the possible etiology, characteristics, diagnosis and therapeutic options for COVID-19 associated child and adolescent anxiety are discussed.

In the figure, the irregular curve represents the development trend of the COVID-19 pandemic, the smooth curve represents the predicted development trend of the Child and adolescent anxiety as a result of the COVID-19 pandemic, the abscissa represents time, the ordinate represents the daily new cases of the COVID-19 pandemic and the predicted point prevalence rate of the Child and adolescent anxiety as a result of the COVID-19 pandemic (**Figure 2**).

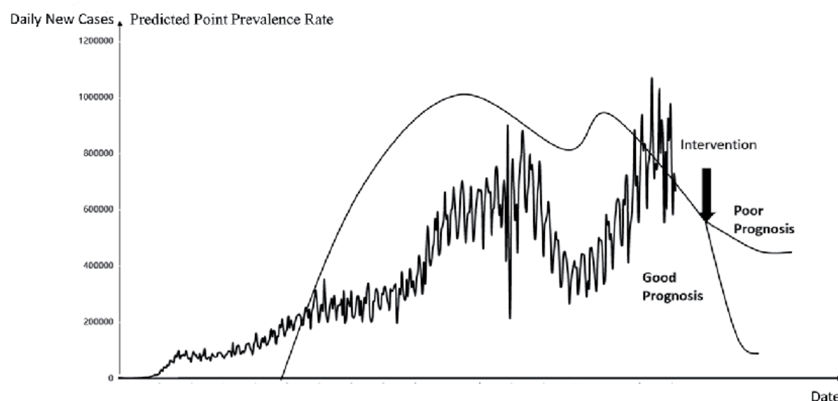

Figure 1.
Prediction of disease development trend.

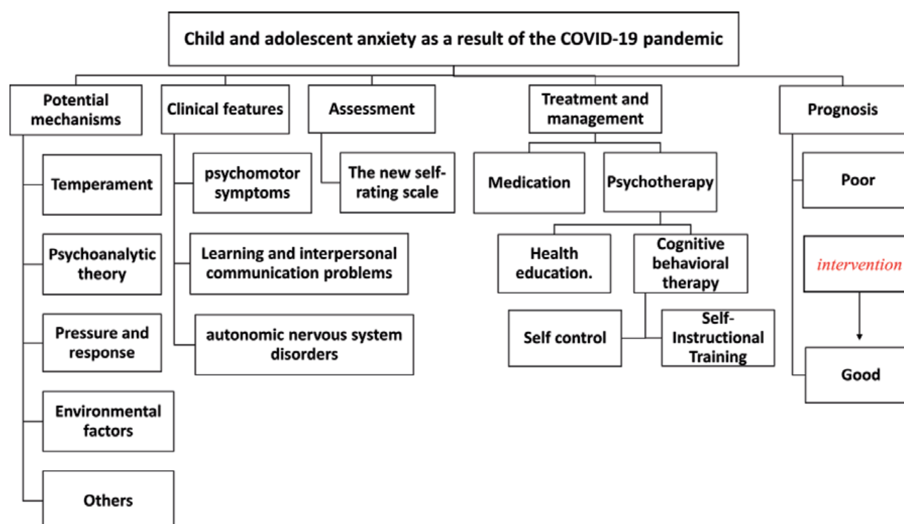

Figure 2.
Child and adolescent anxiety as a result of the COVID-19 pandemic.

2. Potential mechanisms

2.1 Temperament

Temperaments are stable psychological characteristics associated with the intensity, speed, flexibility and directivity of psychological activities. Differences in human temperament are congenital and are correlated with nervous system processes [3]. Individuals who cry too much and are too active in infancy are introverted, cautious, shy, timid and unwilling to accept the new environment in childhood. These children, with behavioral inhibition temperaments, often exhibit behavioral characteristics of "inhibition, avoidance and timidity" in the face of life challenges [4]. During the pandemic, implementation of measures such as home isolation is associated with great changes in children's lifestyle. Children with behavioral inhibition temperament are often very uncomfortable and prone to anxiety [5].

2.2 Pressure and response

Lazarus and Folkman were of the opinion that stress is a kind of psychological state that is caused by specific connections with any environment [6]. When environmental pressure exceeds the range that an individual can bear, he must mobilize other resources to deal with it. Coping has three characteristics: i. Coping is a quality; ii. Coping is a process and iii. Coping is a resource. Quality means that people always respond to the environment in a similar way; process refers to people's cognitive and behavioral efforts in dealing with all kinds of harmful environmental effects beyond their personal coping resources, and these efforts are constantly changing while resource refers to the condition or internal quality of people to reduce their sense of stress or improve their coping behaviors. When children face stressors, they often resort to coping strategies. Coping strategies are a series of purposeful, conscious and flexible strategies that are aimed at adjusting cognition, emotion and behavior. They are situational and unstable. During continuous coping, people constantly adjust their coping strategies, constantly update and repair themselves,

internalize the cognitive experience into coping resources, so as to quickly balance the pressure of the environment in the process of coping to achieve adaptation [7]. When external environmental pressure is too big, an individual cannot develop efficient coping strategies and the balance between the inner mind and environmental pressure cannot be maintained. Therefore, there will be internalization disorders (also known as emotional disorders), and an individual will develop anxiety. For children and adolescents, the COVID-19 pandemic is a stressor whose coping process is associated with great challenges [8]. The uncontrollable spread of the disease has enhanced unpredictability of stressors. Young children have little experience in public health emergencies; therefore, they are unable to adjust their actions by using the experience of dealing with similar situations. Continuous changes in national pandemic prevention policies make it impossible for young children to make corresponding plans to adjust their own handling of stressors. The home isolation policy limits the support provided to children. In this case, it is difficult for children to balance the environmental pressure, and thus the stable emotion is broken, leading to elevated anxiety levels, which has a significant impact on their own social functions and seriously affects their physical and mental health [9].

2.3 Psychoanalytic theory

According to Freud's view of personality development, personality consists of "Id, Ego and Superego". "Id" is the most primitive and instinctive part of personality. It includes instinctive drive and repressed habit tendency. The younger the age, the more important the role of "Id". "Ego" is part of consciousness structure. As children grow older, they consider the consequences and the role of reality. "Superego" represents the moral standard and advanced direction of human life [10]. When a disease is prevalent, children will have a sense of fear when facing a real threat of infection risk. Under strict epidemic prevention conditions and changing living habits, the needs of the Id are repeatedly suppressed, and those may trigger the child's internal immature defense mechanism. Defense mechanisms are unconscious strategies whereby people protect themselves from anxious thoughts or feelings [11]. However, when this defense mechanism deviates from the logical method of consciousness, it is abnormal psychology. For children who are mentally immature, this defense mechanism is obviously more prone to deviation, the needs of the Id always clash with the needs of the Superego, and the defense mechanism cannot alleviate children's internal conflicts, which leads to anxiety [12].

2.4 Environmental factors

The pressure brought about by the pandemic does not only affect children, but parents too. For families with poor parenting environments, mental illnesses or emotional problems, special pandemic prevention requirements increase the contact time between parents and children, and bad family relationships predispose children to anxiety [13]. In addition, children's social communication at this time lacks authenticity, effectiveness, timeliness, and their social support structures are greatly reduced [14], which predisposes them to anxiety.

2.5 Others

The government's home restriction guidelines during the pandemic may lead to decreased activities of children and adolescents. Lack of exercise, sedentary life style, long-term screen exposure and other problems can easily lead to declined cardiopulmonary functions in children and adolescents [15]. Moreover, information

on social media regarding pandemic prevention and control exposes children to a large quantity of information [16, 17]. If there is no correct guidance, children and adolescents are prone to over cognition, and blindly express their discomfort with the new coronavirus, resulting in panic and anxiety.

3. Clinical features

Studies on COVID-19 associated psychological problems among child and adolescents show that anxiety is common among child and adolescents, especially in some specific groups, such as pre-pandemic maltreated adolescents [18]. Since the language system of young children is not perfect, their anxiety is expressed through psychomotor symptoms caused by the limitation of their activities, such as fidgeting, irritability, poor temper control, continual crying, frequent conflict with their families, difficulties in concentration and etc [19]. For relatively older school-age children and adolescents, a series of factors such as school closure, home isolation and online learning during the pandemic is associated with significant learning lifestyle changes. Children's anxiety is often manifested as nervousness and involuntary fear. Learning and interpersonal communication problems are particularly prominent and exhibit certain characteristics [20]. For maladjustment of online distance learning, short-term intensive curriculum arrangement leads to increased academic pressure, which makes children show extreme performance such as excessive worry about learning or giving up learning. Long term isolation from crowds at home, reduction of communication opportunities with peers inhibits the development of interpersonal communication skills among children, leading to tension, worry and even escape [21]. The loose schedule of work and rest is associated with changes in the living habits. A huge reduction in the amount of daily activities cause children to show the following symptoms, such as difficulty in falling asleep, easiness to wake up, loss of appetite, defecation habits disorder, fatigue and serious autonomic nervous system disorders, such as palpitations, chest tightness, dizziness, nausea and epigastric discomfort [22], and these symptoms are often persistent. In the normalization stage after the pandemic, children's sensitivity to interpersonal relationships is often more prominent after returning to school, which shows that they are unwilling to contact and communicate with others. After returning to school and classroom, students may be unable to pay attention in class, and their academic performance may decline. Studies in China have shown that anxiety symptoms in high school students and girls are more obvious [23]. This state often lasts for more than one month after the pandemic. Some children gradually adapt, and return to the normal learning and living state, while others gradually aggravate and develop depressive disorders, resulting in self injury and suicide.

4. Assessment

Due to diagnostic and treatment limitations for COVID-19, the disease should be evaluated at an early stage. The self-rating scale is characterized by simplicity and strong operability, and is especially suitable as a diagnostic tool in special periods. Currently, there is no COVID-19 pandemic related scale. Based on related symptoms, we proposed four-dimensional items, such as degree of influence, anxiety, somatic symptoms, learning and interpersonal relationships to evaluate the disease. The new scale refers to The Screen for Child Anxiety Related Emotional Disorders, SCARED [24] and The Multidimensional Anxiety Scale for Children, MASC [25] and Hamilton Anxiety Scale, HAMA [26] and Self-rating Anxiety Scale, SAS [27] and it still needs a lot of research to verify its reliability and validity.

5. Treatment and management

The management goal of COVID-19 associated child and adolescent anxiety is to find out children's condition in time and in early stages, and to introduce control measures according to different symptoms. Moreover, there is a need to improve anxiety symptoms of children and adolescents, recover social functions, curb disease development and improve on prognosis. The most appropriate comprehensive therapy involves combining psychotherapy and drug therapy. Among them, CBT cognitive behavioral therapy can be adopted as the psychotherapy, and its operability can be enhanced through structured treatment processes [28], so that it has great therapeutic significance in the closed period of the pandemic.

5.1 Psychotherapy

5.1.1 Health education

Health education especially mental health education, in the early stages of the pandemic reduces the development of anxiety [29]. Children and adolescents who know more about the disease and pay attention to its progress are less likely to develop anxiety. The content of health education should include stressors that may cause stress in children. Children should be taught on disease characteristics, inducing factors, clinical manifestations and treatment measures. In the education process, parents should be encouraged to help their children understand the disease more vividly and concretely, establish a psychological defense mechanism, and reduce incidences of anxiety.

5.1.2 Cognitive behavioral therapy

Due to the particularity of the pandemic, face-to-face psychotherapy is difficult to achieve. Remote psychotherapy should be focused on guiding children to conduct self counseling. Cognitive behavioral therapy, through cognitive behavioral intervention technology, changes individual's unreasonable ideas to adjust the bad moods and inappropriate behaviors, so as to overcome psychological barriers [30, 31]. The treatment process is relatively easy to carry out through the remote guidance mode. Cognitive behavioral therapy (CBT), such as self-control and self-directed training, is very suitable for structured psychotherapy during the pandemic.

Self control During the pandemic, home isolation disrupted the living habits of children and adolescents, who often lost their normal rhythm of life, went to bed late, got up late, reversed day and night, had irregular meals, ate when they wanted to eat, went to bed when they wanted to sleep, and played with mobile phones for a long time, resulting in their inability to delay gratification, which was closely associated with development of anxiety, impulsivity, tantrums and other performances [32]. During treatment, children should be trained to ensure effective self-control, so as to maintain emotional stability. Therapists can set goals with the help of parents. Specific goals can be refined to daily goals during home isolation, bedtime, wake-up time, daily amount of learning, amount of indoor activities and so on. When setting goals, the principle of hierarchy should be mastered. Difficulty level of the goals should be moderate and step by step. After completing the goals, children should be appropriately encouraged, rewarded and left to experience emotional changes and fluctuations in the process of self-control, so as to further cultivate their self-control ability.

Self-instructional Training When an individual has an emotional response, it involves a cognitive process that is self and unique to any individual. When children

have anxiety, the problems behind are different, and the cognitive process is also different. Each problem has its own particularity. Self- Instructional training is aimed at teaching children to understand their own problems, replace original negative self-statements with positive self-statement, and try their best to solve problems [33]. During the COVID-19 pandemic period, self-guidance training can be performed by a large number of operational methods, and its specific implementation method can be achieved through letters to send questions or through the receipt for individual guidance.

a. What's the problem?

   Do I have any emotional problems during the pandemic? Do I feel anxious or nervous, when the problems occur? Why do these problems occur? What are the stimulus sources? Am I the only one affected? What will I become if I don't solve them? Children should be encouraged to ask as many questions as possible and to recall all thoughts and feelings in all problem situations.

b. What is my goal?

   For the current situation, what do I want to change and what do I think is the best solution?

c. Looking at the problem again. Is there any difference between the current situation and the expected situation? Why is there such a difference? What are my feelings?

   Re-recognize self-awareness. Is my self-awareness caused by my negative emotions? Try to avoid negative thoughts, focus on the desired change.

d. Prepare a plan, consider how to tackle each problem, make a good plan, analyze the possible good and bad things in each plan, and then do it.

e. How it works.

   When the plan is realized, check how it is executed, whether it is feasible and whether it works.

5.2 Medication

By enhancing the role of GABA and its receptors, Benzodiazepines (BDZs) produce the effects of sedation, hypnosis, anti-anxiety, anticonvulsion and muscle relaxation, which are widely used in the treatment of adult anxiety [34, 35]. However, their safety and effectiveness in child and adolescent patients have not been determined [36]. Its main adverse reactions are sedation, de-inhibition (such as attack, irritation), respiratory suppression, movement disorders, withdrawal reactions and so on. There have been fewer reports of drug tolerance and dependence among children, but such drugs are dependent in adults and are not recommended for long-term use [37]. In the COVID-19 pandemic context, home isolation makes it difficult for doctors to assess the actual state of children and adolescents, and the risk of medication is much greater than usual. Therefore, it is necessary to be cautious concerning the use of drugs and it is recommended not to use drugs if it is not an emergency [38]. For children and adolescents who are ineffective or unsuitable for psychotherapy, there is a need to fully assess mental outcomes after

BDZs (e.g. Lorazepam) administration, and pay close attention to the presence of adverse reactions. It is advised that the treatment should not exceed 3 weeks in order to prevent the occurrence of drug dependence.

6. Prognosis

Since the disease occurs in the context of major public health emergencies and there are significant inducing factors, therefore, when COVID-19 is controlled, its natural prognosis is relatively good, patients with mild anxiety symptoms have the possibility of complete self-healing but the disease duration is relatively long. Moreover, there is a certain impact on social functions of adolescents and children. In some patients, anxiety symptoms are more serious, and the natural prognosis is relatively poor without timely diagnosis and intervention, and the likelihood of inducing other mental symptoms is greatly increased. Motor restlessness associated with long-term limited activity may lead to attention deficit hyperactivity disorder problems [39], continuous lack of interpersonal communication may lead to the development of social disorders [40], persistent increased anxiety is more likely to induce depression, serious suicidal thoughts and behaviors [41]. All types of outstanding problems continue until the pandemic has been managed, patients cannot return to school or maintain normal living patterns and their social functions continue to be impaired. In contrast, patients who were diagnosed in time, and who had adequate intervention had good prognoses, their anxiety symptoms quickly disappeared, their psychological defense mechanisms were established, and their social functions were restored. Therefore, when such public health emergencies occur, the goal should be early diagnosis, early intervention and follow-up investigations to improve prognosis.

7. Conclusion

Considering the particularity of the incidence and development process of this disease, we believe that the significance of COVID-19 associated child and adolescent anxiety, as a childhood mood disorder is well worth exploring. We have elucidated on the potential factors that may affect the development of the disease from multiple perspectives. In the COVID-19 context, there is a need to develop a new evaluation scale to assess the disease. For prevention and control, cognitive behavioral therapy-based psychotherapy plays a greater role in disease management.

Appendix (CAAC)*

1. To what extent do you think the covid-19 pandemic has affected your life?

   Almost no effect Slight effect Moderate effect Severe effect.

2. Since the outbreak of the COVID-19 pandemic, have you felt more nervous and anxious than usual?

   No/Occasionally Sometimes Often Continues.

3. Since the outbreak of the COVID-19 pandemic, have you felt scared for no reason?

   No/Occasionally Sometimes Often Continues.

4. Since the outbreak of the COVID-19 pandemic, have you felt in a trance, as if everything around you was unreal when you were afraid?

   No/Occasionally Sometimes Often Continues.

5. Since the outbreak of the COVID-19 pandemic, have you been easily upset or panicked?

   No/Occasionally Sometimes Often Continues.

6. Since the outbreak of the COVID-19 pandemic, do you think you might be going crazy?

   No/Occasionally Sometimes Often Continues.

7. Since the outbreak of the COVID-19 pandemic, have your hands and feet ever trembled?

   No/Occasionally Sometimes Often Continues.

8. Since the outbreak of the COVID-19 pandemic, have you been distressed by headaches, neck pain and back pain?

   No/Occasionally Sometimes Often Continues.

9. Since the outbreak of the COVID-19 pandemic, have you felt easily weak and tired?

   No/Occasionally Sometimes Often Continues.

10. Since the outbreak of the COVID-19 pandemic, have you felt that your heartbeat has been fast?

    No/Occasionally Sometimes Often Continues.

11. Since the outbreak of the COVID-19 pandemic, have you been distressed by dizziness?

    No/Occasionally Sometimes Often Continues.

12. Since the outbreak of the COVID-19 pandemic, have you ever had a fainting episode or felt like you were going to faint?

    No/Occasionally Sometimes Often Continues.

13. Since the outbreak of the COVID-19 pandemic, have you ever felt numbness and tingling in your hands and feet?

    No/Occasionally Sometimes Often Continues.

14. Since the outbreak of the COVID-19 pandemic, have you ever been distressed by stomach pain and indigestion?

    No/Occasionally Sometimes Often Continues.

15. Since the outbreak of the COVID-19 pandemic, do you often feel the need to urinate?

    No/Occasionally Sometimes Often Continues.

16. Since the outbreak of the COVID-19 pandemic, have your hands often been dry and warm?

    No/Occasionally Sometimes Often Continues.

17. Since the outbreak of the COVID-19 pandemic, have you ever blushed and became hot?

    No/Occasionally Sometimes Often Continues.

18. Since the outbreak of the COVID-19 pandemic, have you ever had difficulties falling asleep and often have nightmares?

    No/Occasionally Sometimes Often Continues.

19. Since the outbreak of the COVID-19 pandemic, have you ever felt a headache while studying?

    No/Occasionally Sometimes Often Continues.

20. Since the outbreak of the COVID-19 pandemic, have you ever been unable to concentrate while studying?

    No/Occasionally Sometimes Often Continues.

21. Since the outbreak of the COVID-19 pandemic, have you ever worried that your classmates or peers no longer like you?

    No/Occasionally Sometimes Often Continues.

22. Since the outbreak of the COVID-19 pandemic, are you afraid of returning to school?

    No/Occasionally Sometimes Often Continues.

    Total score:

    *Note:

    How to Score
    Check that all statements have been answered. Add up the score for each response to get the Total Score.
    For item 1
    Almost no effect=1 Slight effect=2 Moderate effect=3 Severe effect=4
    For item 2-22
    No/Occasionally=0 Sometimes=1 Often=2 Continues=3
    Interpreting the Score
    A Total Score of 15 or above highly indicates child and adolescent anxiety as a result of the COVID-19 pandemic.

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Chapter 24

Anxiety, Coping Strategies and Resilience among Children and Adolescents during COVID-19 Pandemic: A Systematic Review

Malgorzata Dąbkowska, Anna Kobierecka-Dziamska and Monika Prusaczyk

Abstract

COVID-19 pandemic is a global challenge that affects people's mental health worldwide. Experiencing anxiety by children and adolescents, who are vulnerable to the impact of sustained stressors during developmentally sensitive periods, can lead to long-lasting effects on their health. The article brings insight into the short and long-term consequences of the COVID-19 pandemic on the children and adolescents' mental health. The particular aim of this study is to investigate the relationship between anxiety, stress, and resilience in young individuals in the context of COVID-19. A review of the psychological effects of pandemic on children and adolescents was done using electronic databases. Most reviewed studies reported risk factors of psychosocial problems among children and adolescents during pandemics, resilience and positive coping as protective factors for the occurrence of anxiety and stress symptoms, and mediating role of parents' stress impact on children's behavioral and emotional problems. Clinical implications are discussed and additional research is suggested.

Keywords: anxiety, resilience, COVID-19, children, adolescents, mental health, pandemic effects

1. Introduction

As a result of danger, the brain responds with anxiety and anxiety behavior. In an evolutionary understanding, an anxiety reaction is aimed to avoid given threat. In fact, anxiety states may lead to adaptive behaviors, as the lack of given anxiety reaction in the event of a threat, e.g. a pandemic, could have negative consequences [1, 2]. The anxiety state and its aftermath can result desirable in numerous ways. One of them is escape or avoidance of danger, which increases the distance between the organism and the harmful factor. The anxiety state may trigger aggression towards the source of danger to neutralize it, or submissive behavior, resulting in the possibility of survival in life-threatening situations. An important factor in generating an anxiety reaction is the distance to the threat, what can be distinguished into immediate threat, perception of danger from a distance, and the presence of

risk without a specific threat. Neuroimaging studies have shown activation of more archaic brain structures (such as the paraviductal gray matter) due to immediate threat, while at a greater distance to the danger, there was enhanced activation of the ventral prefrontal cortex. The variety of anxiety states occurring in humans is mainly related to the dynamic development of the prefrontal cortex [3].

2. Pandemic as a source of anxiety

The current crisis places multifaceted burden on children. The socio-ecological impact of the pandemic, which is understood to be enormous, must be also considered. The pandemic has affected children at different levels – health, social, family and individual [4]. COVID-19 worldwide crisis causes stress, worry and helplessness among children and adolescents. A role of sensitivity to anxiety in children was emphasized. However, it is still unclear whether the sensitivity to anxiety precedes or is a consequence of fear. It may be also a two-way relationship [5].

A risk factor for anxiety disorders in children is anxiety sensitivity. A meta-analysis found that anxiety sensitivity was associated with a higher level of anxiety [6]. The research results indicated so far a significant increase in the frequency of anxiety symptoms in children and adolescents due to the pandemics. Developmental mental health problems are associated with several risk factors. They affect more often children with special educational needs, those in poor general condition, whose parents have problems with mental health or who grow up in dysfunctional families.

The impact of COVID-19 pandemic and lockdown on children and youth depends on several vulnerability factors such as the developmental age, educational status, pre-existing mental health condition, being economically underprivileged or being quarantined due to infection/fear of infection [7, 8]. Children and adolescents may be more susceptible than other social groups to the psychosocial effects of pandemics, because they are in a critical period of development. Adolescence is a phase associated with increased risk for many psychiatric disorders, such as anxiety and depression [9]. Additionally, many of hormonal and neurobiological changes during adolescence correspond with heightened emotional reactivity and the ongoing process of incorporating coping strategies and stress regulation [10, 11]. Simultaneously, adolescence is marked by the increased importance of peer relationships and a greater reliance on peers for social support. The COVID-19 pandemic, especially for children and adolescents, will have a significant impact on their growth in terms of their whole life [12].

Resilience reflects processes and resources that restore equilibrium, offset challenges, and foster adaptation to harsh conditions. Research on individual adaptation to uncertain conditions during the pandemic requires longitudinal analyses, because factors connected with resilience will change dynamically over time.

As a result of COVID-19, children and adolescents have experienced unprecedented disruption of their daily lives. It is anticipated that this intermission may trigger mental illness, including anxiety. Many studies provided child and/or adolescent reports of anxiety during COVID-19 pandemic [13–15]. Chinese research found that 18.9% of children reported anxiety symptoms on the Screen for Child Anxiety Related Emotional Disorders [14]. Another study of prevalence of anxiety symptoms disclosed its frequency as 37.4% [15]. Parental reports according child and adolescents mental difficulties included anxiety symptoms as worry (28%), fear of death of a relative (22%) [16, 17].

The factors that generate anxiety include specific, characteristic personality traits of parents, especially their timidity. This applies to both parents, but more to

the mother. Parents' anxiety behavior is taken over by the child as a result of social learning through imitation, identification and replication of parental behaviors patterns. Among other factors triggering anxiety are also specific educational influences of parents and specific educational attitudes. The source of fear is the parental overprotective attitude, which can take two forms: over-indulgent care and domination-based care, or the attitude of excessive demands. A dysfunctional family has a negative impact on the development of all its members, especially children. The pandemic contributes to the exacerbation of dysfunctional family characteristics.

Anxiety is reduced by relationship with parents based on acceptance, love and care, when the child feels and knows that she/he is loved. Those children who have had too few of these situations acquire relatively permanent tendency to react with fear. Especially those, who had too little anxiety-relieving stimuli in early childhood. The emergence of anxiety is also related to temperamental traits. Children with anxiety traits are more likely to perceive the changes caused by a pandemic as a threat.

Social isolation is considered to be one of the most important psychological risk factors for the development of various diseases, including anxiety disorders. In single people, genes responsible for the production of inflammatory proteins were activated, while those related to fighting viral infection were inactive [18].

Studies in the UK, Europe, and Asia evidenced COVID-19 related anxiety and somatic symptoms in children. 20–50% children and adolescents were reported to experience worries about themselves, friends or family catching COVID-19, 8–10% children and young people had moderate to high somatic symptoms [13, 19–21]. Some research results indicated a significant increase in the level of anxiety (by 164%) in the self-assessment of health of children and young people during pandemic Covid-19 [22]. The researchers also reported that age, gender, knowledge about COVID-19, degree of worry about epidemiological infection, and confidence about overcoming the outbreak significantly influenced the children's psychological status [23]. Studies also reported that girls showed higher anxiety levels during COVID-19 than male adolescents did. Some studies also reported that the anxiety levels among the adolescent population were significantly higher than those in children. In addition, adolescents in senior high school had the greatest anxiety symptoms [24]. Levita's study showed that over 47% of girls and 60% of boys aged 13–18 had an anxiety increase above the cut-off point on the scale assessing the presence of anxiety [21]. Rates in European and Asian studies were lower, ranging between 10 and 30% [14, 15, 19]. Differences in anxiety have been established between European countries. Anxiety and depressive symptoms were more likely in children whose parents reported higher levels of stress [25]. Some studies showed that being female was a risk factor for higher rates of anxiety symptoms [15, 26], while other found that sex did not predict anxiety symptoms [14]. The financial strain predicted higher anxiety symptoms [17].

Perceived stress in parents and children was associated with negative coping strategies. Additionally, children's stress levels were influenced by prior and current parental overreactivity. These results suggested that children in families with negative coping strategies and a history of parental overreactivity might be at risk for negative consequences of the lockdown [27]. Some families assumed that they are unable to cope with the multiple new challenges. They experienced a sense of chaos, inability to take decisions while focusing on negative information that aggravates panic. Other families looked for strategies to handle the difficulties. They moved on to mobilization stage and initiated all available coping resources.

Few studies have assessed protective factors. The awareness of COVID-19, together with pursuing interests, were protective against anxiety symptoms and helped in reducing child mental distress related to pandemic [15, 16]. Deterioration

in mental state of minors caused by pandemics requires undertaking decisive protective measures- already now, during the ongoing limitations- as well as conducted in future long-term therapy. Worsening of children's mental health status due to COVID-19 pandemics illuminates that age-specific coping strategies are crucial in response to distinct needs of young population.

3. Coping

3.1 Coping - background

Coping is substantial in considerations of how stressors affect children and adolescents as it emphasizes active role in the transactional process of dealing with stressful situations in a youngster's life, but also brings reflections about one's future development [28].

The understanding of coping in children and adolescents for many years relied on conceptualization of coping in adulthood defined by Lazarus and Folkman [29]. In this traditional approach coping is "constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person" ([29], p. 141). It is understood as conscious cognitive and behavioral activity, aimed at reducing the intensity or duration of unpleasant feelings, preventing the occurrence and development of emotions or limiting the negative effects on their well-being. In the theory of psychological stress coping strategies can be categorized into problem-focused and emotion-focused [30]. Problem-focused forms of coping comprise of "aggressive interpersonal efforts to alter the situation, as well as cool, rational, deliberate efforts to problem solve, and emotion-focused forms of coping include distancing, self-controlling, seeking social support, escape-avoidance, accepting responsibility, and positive reappraisal ([30], p. 572). Folkman et al. [31] show possible ways of influencing health by the coping process: coping with stress can influence neurochemical reactions (their frequency, intensity, duration); coping with stress may be associated with engaging in anti-health behaviors; some forms of coping, such as denial or avoidance, may lead to maladaptive coping behaviors.

Slightly different approach towards coping assume that coping strategies can be considered as engaged and disengaged [32]. While engaged coping involves active confronting with stressors and reassuring thoughts, disengagement coping implicates passive reaction pattern, palliative response and avoidance. Empirical results clearly show that the first group of strategies is positively associated with more sense of control and psychological well-being [32].

When considering child and adolescent coping, the approach should be complemented by the developmental framework. Unquestionable is fact that coping strategies used by children depend on the age [28, 33]. Out of many ways of coping that have been identified in studies children and adolescents appear to favor: support seeking within the family, problem-solving (and instrumental action), escape, and, when escape is not possible, distraction. Young children use predominantly behavioral strategies to distract themselves (eg. playing with something fun), while older children use cognitive strategies (eg. thinking about something pleasant). Behavioral strategies of coping are common among children but normatively decrease in middle childhood. Preschool children mostly engage in: seeking social support (primarily from caregivers), intervening directly in stressful situations, withdrawing, avoidance, or using behavioral activities to distract attention. Due to progress of cognitive development, school children occur to rely on more varied coping strategies as they adjust cognition in problem-solving and distraction

tactics, but also turn to sources of support outside family. In adolescence independency in thinking, ability to monitor one's behavior and manage emotions by using positive self-talk and cognitive reformulation improve repertoire of coping strategies [28]. Over time anger-related emotion regulation decrease and media use as a way of managing stress increase [33]. Generally, children coping capacities develop in problem-solving strategy from instrumental action to planful problem-solving, in support-seeking from reliance on adults to more self-reliance. In distraction tactic behavior action gives way to cognition (with more organization, flexibility, integration with other coping strategies and aim specifically at problem) [34].

Not only age matters in understanding ability to cope with stress among children, but also gender. As the findings show [35] girls aged 8–13 tend to use more often maladaptive coping patterns than boys. Among young females as emotional regulating strategies (minimization and distraction/recreation) and problem-focused tactics (positive self-instructions) were decreased, while rumination, resignation and aggression were increased. Girls were also characterized by increase in engaging in the problem-focused strategy (support seeking) [35, 36]. The results of other study [37] indicated that active distraction used by girls decreased over time, while passive distraction increased. The paper referred also to boys who presented increase in self-destructive and aggressive coping behaviors increased with age.

Developmentally orientated researchers suggest that process of dealing with stress by children should comprise of such factors as emotion regulation, family functioning, temperament (and deriving from it reactivity) and the role of social interactions [28]. Researchers agree that positive coping lead to better psychological well-being and mental health [38–40].

3.2 Coping in children and adolescents in the context of COVID-19 pandemic

At this point, the literature on children' coping strategies in the context of COVID-19 pandemic and its impact on children' psychosocial well-being is still limited. The outcomes come mostly from observations, and research conducted in Europe and Asia.

Several studies have primarily examined coping strategies and factors associated according to age of children. Research conducted by Domínguez-Álvarez et al. [41] in a Spanish sample of children aged 3–12 during the acute phase of COVID-19 pandemic proved that children's coping strategies differed between age groups and that stress management relied more on strategies reflecting engagement than disengagement. Parents of preschoolers, middle-aged children and early adolescents referred to child's coping and possible observed changes on behavior related to the pre-pandemic functioning through specially developed scale. Comparing to older children, preschoolers appeared to use more strategies based on negative emotion regulation (such as yelling or getting angry). Children aged 7–9 were reported as using more engaged-oriented strategies such as problem solving, looking for understanding of such extraordinary circumstances and seeking instrumental social support. Early adolescents presented range of strategies of pandemic stress management and more complex ways of coping through positive emotion regulation (e.g., "trying to calm him/herself"), but also humor ("making jokes or trying to laugh about the current situation") and wishful thinking ("wishing it never had happened"). Typically, engagement coping was positively correlated with psychosocial adjustment across all age groups. Disengagement-orientated coping was associated to some of the COVID-19-related stressors (i.e., close death, economic impact, and particularly fear of the future) and distinctively was related with negative outcomes (i.e., higher levels of behavioral and emotional difficulties) [41].

A study of Chinese adolescents aged 13–17 [42] revealed that general positive coping was protective factor for the occurrence of depressive, anxiety and stress. Additionally, positive coping was a protective factor for trauma-related distress in older adolescents. Negative coping occurred to be a risk factor for depression, anxiety, stress symptoms and trauma-related distress in a whole sample regardless of gender.

Available literature examining children and adolescents' coping during COVID-19 pandemics focused also on the impact of adults from the environment of young people. Role of family and school in managing psychological distress among youngsters due to pandemics is being highlighted. Attention should be drawn to parents' distress, parent–child relationships, the marital relationship in the family system, teachers' distress, teacher–student relationships, and peer relationships within the school [43]. In one notable study [44] coping skills were investigated along with children's adjustment. Results showed that maternal coping skills were protective factor with prediction for children's positive emotions.

Accordingly to research findings, what helpful strategies in managing stress and anxiety can be provided by parents and specialists during the period of COVID-19 pandemics? Most studies report that attention should be paid to effective, sensitive, emotion-focused and empathetic communication concerning life-threatening illness as it assets children and other family members' long-term psychological wellbeing [45].

Kang et al. [46] drew four main tactics for caregivers: Acknowledge, Discuss, Do, and Reflect. The first one refers to caregivers' acknowledgement of the change and its possible consequences in order to ensure children that they can turn to their caregivers for support. Second strategy is based on supporting youngsters with accurate information from trustworthy sources tailored to their age and level of understanding aiming generally at better understanding of pandemics. Third tactic is associated with ensuring predictability in child's environment, maintaining routines and – what seems to be crucial - equipping children with coping strategies (through expression of their feelings via writing and drawing, breathing exercises and progressive muscle relaxation, staying with touch with friends and schoolmates over social media platforms but with caregiver supervision). Finally, the fourth suggestion indicates caregivers' affecting their psychological well-being [46].

Also De Young et al. [47] in their report described Australian parents' efforts to support their children during early stages of COVID. They noticed that nearly 43% caregivers kept their child from seeing or hearing any information about COVID-19. 25% parents appeared to be a lot more cautious or overprotective with their child during the pandemic. Although many parents were found to relieve child of stress and anxiety through empathetic response to child's emotion (94.3% of a research sample), maintenance or creating new routines (88.4%), staying in touch with family and friends (88.4%), managing emotion and thoughts by verbal communication (87.3%) and, finally, using practical coping strategies (78.5%). Positive parenting responses, including sticking to routines and showing empathy, correlated with more positive affect and emotion regulation in children and more positive parent–child relationships while taking care of daily habits was associated with less anxiety, depression and angry behaviors among youngsters.

As it was indicated, coping plays essential role for children and adolescents' adjustment to stressors associated with COVID-19 pandemics such as uncertainty, social isolation, disruption in daily life routine, parents' stress (such as working from home) [48].

When dealing with stress induced by the COVID-19 pandemic also resilience should be taken into account as it protects from future various psychiatric outcomes among young people.

4. Resilience

4.1 Resilience - background

In the last 20 years, there has been a growing interest in resilience theory. The first findings in this area were based on the long-term observation of people who suffered from schizophrenia. It was found that despite a difficult course of the disorder, some people's abilities to cope are more adequate than the others [49]. These findings had an impact on broad research among children exposed to difficult developmental conditions [50]. As a result of amble evidence confirming negative consequences of trauma to mental development and mental health [51], there were attempts to find individual risk and protective factors which could differentiate the results of risk exposure [52]. Based on the findings, there were hopes for finding prevention and treatment methods to reduce psychopathology among those who experienced trauma [53]. Mental health's researchers and practitioners are concerning not only with the effects of stressful or traumatic events but also the factors that determine the ability to restore physical equilibrium. Resilience is widely known as the ability to bounce back after facing up an extremely stressful situation or the ability to cope successfully with traumatic experiences. According to The American Psychological Association, resilience is defined as "the process of adapting well in the face of adversity, trauma, tragedy, threats or even significant sources of stress" [54]. It refers to individual processes and mechanisms. As far as such understanding of resilience is useful, it seems to be insufficient for understanding the complexity of the concept [49, 52, 53].

Considering resilience it is worth pointing out that nowadays it is not only referred to individual traits, abilities but also family and environmental factors. Despite being observed in one's behavior, resilience is bound up with external issues. In the early 80ties, resilience was treated as characters strength and flexibility. This comprehension indicates resilience as the responsibility of the individual and omits the influence of family and social support which may be stigmatizing [55]. Being resilient is connected with a biological basis but it is also under the influence of the environment and can change during lifespan [52].

The major dimensions of resilience are risk and protective factors. Risk factors involve negative life experiences and nonadoptive traits. Protective factors involve individual traits, family and social support [1]. In the practical approach, there were found plenty of protective and risk factors which may be useful in planning proper psychological interventions. The major protective factors include individual traits: high self-esteem, sense of efficiency, sociability, intelligence, cheerful disposition, faith, talents, family factors: cohesion, compatibility, close relations between family members, good financial situation, external factors: safe neighborhood, having a mentor, belonging to a pro-social organization, attending an efficient school, features of society's politics and culture - protection of the health and safety, care of the education system, prevention and protection against violence [56]. Risk factors are divided into specific and nonspecific. Nonspecific risk factors may lead to different disorders. Specific factors are strictly connected with a specific disorder. Commonly mentioned nonspecific factors include attention disorders, family conflicts, school failures, peer rejection, poverty, discrimination [55].

There are three major models of resilience: compensatory model, protective (or immunity) model and challenge model [55]. The compensatory model assumes that protective factors constrain the risk factors. The Protective (or immunity) model is based on the assumption that protective factors interact with risk factors and influence one's behavior. Whereas the challenge model indicates that a medium level of risk factors make one more resistant to stress [57].

Resilience processes are activated in the face of adversity that cannot be controlled by the subject. As a result, resilience is considered in accidental cases such as war, disaster, illness [58].

4.2 Resilience in the light of COVID 19 pandemic

COVID 19 pandemic creates an extraordinary, demanding situation worldwide. It is named as a global health crisis and one of the greatest challenge in the medical, economic and social areas of our times. Despite being a global demand, pandemic COVID 19 concerns individuals. People had to face up with adversities as uncertainty and unpredictability that may lead to an increased level of stress. According to the previously mentioned thesis that people can differ considerably in terms of coping with adversities and numerous factors may modify the ability to deal with difficulties, resilience is an issue of growing interest in the light of pandemic COVID 19. Researchers are trying to identify factors that can play a protective role for mental health in the current situation [4].

There are a plethora of findings concerning the mental health of medical workers [4]. During the pandemic period, they are found to be exposed to stress factors to the great extent. However, as was mentioned above, pandemic related problems apply to every each of us. In China, it was found that adolescences are more likely to manifest depressive symptoms than adults during pandemic COVID- 19 [15]. The situation of children and adolescents in terms of a pandemic should be taken into consideration to a great extent.

Children and adolescents during the pandemic period have had to face up: isolation, remote learning, social distancing, limited contacts with peers, loneliness [15]. Those difficulties seem to be crucial in the children's and adolescences because they are strictly connected with their basic needs and they also impairs the unspecific protective resilience factors. They are also exposed to the stress of their parents which may also influence the child's mental health and his or her abilities to cope with stress.

Major research areas concerning the pandemic period applied to specific risk and protective resilience factors among children, the role of parents mental health condition on child resilience, possible interventions that may enhance resilience will be analyzed.

To find the risk and protective factors that may promote resilience, there were examined Hong-Kong families. The study group consists of children aged 2–12. Researchers assumed that family demographics, child psychosocial wellbeing, habits, parent–child interactions and parental stress will be crucial for resilience in the pandemic period. The research was based on the online survey completed by the parents based on their child's observations. The risk factors that were found involves special educational needs of the child, chronic disease of a child, mental illness of mothers, one-parent family and low economic status of the family. Moreover, sleep difficulties, insufficient exercises, excessive use of electronic devices were connected with worse functioning of a child and higher level of parents stress. It is worth pointing out that, as it was proved, not only the child's difficulties strictly connected with pandemic are tremendous but also the family situation and mental health of a parent before the emergence of COVID 19 [59].

Similarly to the previous findings, Fegert, Vitiello, Plener, Clemens suggested that the role of environmental (including family) and intrinsic stress-related processes are vital to predict the functioning of a child in the pandemic situation [60].

Daks, Peltz and Rogge focused on the parents' traits and abilities as a resilience risk and protective factor. They found out that psychological flexibility versus inflexibility of a parent is a part of resiliency and can affluence the current

pandemic situation. The 742 parents completed the online survey which measured the level of psychological flexibility. It was proved that the more flexible the parent is the better family cohesion is achieved. The lower flexibility of a parent can lead to disagreement in the family. In general, pandemic related circumstances increase the level of stress and the possible discord in the families. It was proved that the families with greater cohesion and greater psychological flexibility can cope with pandemic stressor more successfully than the families with lower psychological flexibility and, as a result, more family discords. There was also proved that the parents attitudes towards flexibility and results of particular attitude affluence the child's level of stress. The research proved once again the role of parents traits, emotions and behavior on how resilient a child will be [57].

There are also suggestions that the younger the child is the more important role of protective resilience factors connected with a parent is. A developing child's brain is more likely to be disturbed by stress factors. Moreover, young children's executive functions and self-regulating skills are not developed to a great extent which could be also protective for them. The parents' cognitive flexibility, stress coping strategies, mental health, positive parenting and attachment, warmth and sensitivity can be protective for a child. As far as the self-regulation skills of a child are immature, a parent should take over the function of the child's emotion regulation by effective communication and emotional support. Despite the factors connected with a parent ability, the role of sport and creative activities were also pointed out as factors that can support the child in enhancing his and her abilities to cope with stress, regulate emotions and strengthen resilience [61].

On the other hand, resilience understood as the child's trait was found to play a protective role for intrusive rumination during pandemic COVID 19. There was found a connection between creativity and intrusive rumination. The more creative children seem to be, the more intrusive rumination can create. However, it was found that resilience is a moderator between creativity and intrusive rumination. Highly developed resilience contributes to cognitive flexibility, positive thinking and, as a result, better adaptation [62].

There are plenty of findings that proved the negative effects of the pandemic. In contrary, there are also suggestions that self-isolation, remote learning may have also positive consequences that we should take advantage of. Dvorsky, Breaux and Becker extracted a specific situation, in which pandemic connected circumstances can be helpful for a child or adolescents. Remote learning was found to be helpful for children with educational problems in its traditional way. Online lessons provide a child possibility to individualize the way of learning. For instance, children with attention and behavior disorders have an opportunity to engage in activities that help them to overcome difficulties more likely than in schools. Those who suffer peer victimization have an opportunity to focus on learning and enhance selected, positive relations. Some children are also supposed to discover hobbies or talents more often. Moreover, the necessity to stay at home may provide an opportunity to bond up with family members as there are more chances to spent time together [63].

According to the researcher, resilience can be enhanced by mindfulness training and cognitive-behavioral techniques [64]. What is more, it was found that such training can also influence emotional intelligence defined as the ability to identify, understand the reason and the consequence of emotions and cope adaptively with them, Based on this assumption, Yonon tried to find the impact of mindfulness training on resilience during the pandemic period among middle schools. The Connor-Davidson Resilience Scale and Emotional Intelligence Scale were used. 180 students were examined. They were divided into the experimental and the control group. The Experimental Group participated in 8-weeks long Mindfulness Training. It was found that students from the experimental group enhanced significantly

resilience as well as emotional intelligence. Mindfulness training was found to help to accept the present situation, avoid judgment and, as a result, avoid negative emotions [65].

Some practical guides devoted to resilience can be also found. Bartlett and Viverte on Childs Trends published: "Ways to Promote Children's Resilience to the COVID-19 Pandemic". The authors pointed out protective factors, presented as tips for a parent. They pointed out that sensitive, responsive caregiving, especially in the light of pandemic is an issue of paramount importance. There was suggested that not only a parent can meet this need but also adults who are not living with a child (grandparents, teachers). There is an importance of the usage of internet and electric devices to keep the contact. What is more, meeting basic needs is necessary. It is crucial for parenting to look for and benefit from the community services when it is needed. The third protective factor that was analyzed is emotional support for a child. Authors propose to take care of reassurance children about the love and support of a parent. It is worth keeping daily routines and practise with child regulation skills. In the guide, there was also indicated that support for caregivers is as important as support for a child. The mental health of a parent can be protective for the mental health of a child. The last suggestion is devoted to maintenance social contacts as far as it is possible using the internet. There were also pointed out the importance of conducting regular visits by professionals, social workers within families with violence abuse and poverty problem [66].

A parallel example of the open guide on how to enhance resilience during a pandemic was prepared by the Centre on the Developing Child, Harvard University. In this approach, researchers focus on the necessity to keep a balance between the negative and the positive outcomes related to pandemic. On the one hand, we should reduce the sources of stress, on the other – adjust supportive issues. It was indicated that the level of stress could be reduced by the social programs and organization promoting meet basic needs (food, healthcare, internet access), help in receiving financial support, encourage self-care for adults. Supportive issues that were mentioned concerns responsive relationships. Such relationships are commonly known as the relationship between a caregiver and a child but in this case, there is also a focus on a responsive relationship between an adult and adult. Responsive relationships have the potential to meet the needs of a person and relief stress. There was highlight the role of adults family and friendship relationships but also the contact with professional family workers and a parent. What is more, according to this guide, core skills such as executive function and self-regulation should be strengthened. These skills can be enhanced by basic activities such as day planning, creating checklists and prioritizing needs [67].

Centre for Childhood Resilience had also prepared tips that should be taken into consideration to promote resilience within children and their families. They also pay special attention to the role of caregivers on children during the pandemic period. Firstly, there was a focus on a safe environment for a child. As a safe environment physical and emotional support is understood. There was an assumption that the environment of a child is safe when it is explicable. Moreover, according to the tips, parents should support the child in emotional regulation. It is worth pointing out that the role of self-care of a parent is mentioned again. Additionally, the role of building relationships and connectedness with parents, siblings and remote family is highlighted [68].

Taking everything into account, resilience seems to be a crucial issue in the light of pandemic COVID-19. It was found to be vital to find factors that may affect children coping strategies. However, as far as it was concerned, parental care is an issue of paramount importance. There should be taken into consideration the supportive role of a parent on a child in detail. Moreover, a parent should also take care of his

or her mental health to be able to take proper care of a child [57, 59–61, 66–68]. Additional factors that can be improved to enhance children's and adolescents resilience during the pandemic mentioned above include: keeping relationships, reflecting optimistic approach, keeping a daily routine, practising mindfulness training and performing physical activities [59, 62, 65].

5. Conclusions and future directions

The COVID-19 pandemics seem to highlight the need for shaping effective means of coping with stress and anxiety and develop innovative strategies to improve the psychological well-being in young individuals. As review of the literature shows, caregivers "try to do their best". However, consequences of anxiety, stress and violence exposure may be leading problems to meet in psychological and psychiatric care after pandemics. Taking into account that the way children and their parents response to pandemic stressors plays fundamental role for their adjustment, there is need of combining both child and family variables in tailored-preventive interventions targeted at enhancing resilience of children and their parents, reducing negative coping strategies, practicing effective means of coping with stress in order to protect their mental health now and in the future.

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Chapter 25

Is the Pandemic a Risk Factor for Eating Disorders?

Agnieszka Dąbkowska-Mika

Abstract

COVID-19 has already established direct or indirect effect on the lives of everyone. One of its many consequences is exacerbation of eating disorders' (ED) triggers. Numerous risk factors for ED are enhanced during pandemic – anxiety, fear, depressed mood. Distance learning or working may result in loss of daily-life routine and feeling of being overwhelmed with duties. Due to forced isolation people are more exposed to social media pressure. Additionally, awareness of limitations of physical activity can develop fear of gaining the weight. These are typical symptoms of Anorexia Nervosa, a disease with the highest mortality rate among psychiatric disorders. Frustration, tedium and lack of external distractors can lead to inappropriate food-related coping style. Especially during the first wave of the pandemic, society was cautious about fresh food supplies and therefore many decided to stock up with processed, unhealthy food. Aggregation of stressors (e.g., worries about health, financial problems, loneliness) may promote binge eating.

Keywords: COVID-19, Pandemic, Eating Disorders, Anxiety, Coping

1. Introduction

Till 15. April 2021, the World Health Organization (WHO) reported 137,866,311 confirmed cases with 2,965,707 deaths due to Coronavirus disease 2019 (COVID-19) [1]. A pandemic extends to almost all countries across the globe [2].

Shockingly rapid spread and mortality of COVID-19 naturally generated mental health disturbances, increasing prevalence of anxiety and depression in population. As it was displayed by a Chinese survey conducted during the first peak of the pandemic, prevalence of anxiety and depression increased from 4% to 20% [3]. An American survey performed by National Centre for Health Statistics notified that up to 42,6% of respondents reported clinical signs of depression and anxiety [4]. Interestingly, occurrence of these symptoms was the least frequent in the oldest group (who are at the highest risk for infection, severe illness and death caused by Coronavirus [5]), and the most frequent in the young adults, as well as more common in women than in men. Women are less likely to develop severe illness or die due to COVID-19 than men [6], but actually this group- young females- is affected the most by eating disorders (ED) [7, 8]. Increasement of unhealthy behaviors concerning eating in the whole society, e.g., searching for comfort food (to regulate emotions via eating), frequent snacking and restrictions on physical activities lead to weight changes. American Psychological Association's poll (*Stress in America™*) assessed that 42% of general adult population in USA has unintentionally gained weight since the pandemic began [9].

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As it was reported, financial troubles due to job loss and quarantaine, as well as time spent on information about pandemic, were related to appearence of anxiety and depression [3]. Economic problems caused by the pandemic were pointed as the most important trigger.

Forced isolation and its inconveniences diminishes quality of life [10]. As patients with ED have already decreased quality of life [11, 12], these findings evoked questions how current pandemic will affect them.

2. Definition and criteria for AN, BN, BED

Among eating disorders, American Psychiatric Association determined pica, anorexia nervosa (AN), bulimia nervosa (BN), binge eating disorder (BED), other specified feeding and eating disorder (OSFED), rumination disorder, avoidant/restrictive food intake disorder (ARFID), unspecified feeding or eating disorder (UFED) [13].

However, current research on the COVID-19 pandemic covers only issues generally defined as eating disorders, sometimes specified to AN and BED (mainly, as these disorders are presumed to be more affected by the pandemic), with mentioned BN and OSFED.

According to the DSM-5 [13], the official diagnostic criteria for AN are introduced in the **Table 1**.

A. Restriction of energy intake relative to requirements, leading to a significantly low body weight in the context of age, sex, developmental trajectory, and physical health. Significantly low weight is defined as a weight that is less than minimally normal or, for children and adolescents, less than that minimally expected.

B. Intense fear of gaining weight or of becoming fat, or persistent behavior that interferes with weight gain, even though at a significantly low weight.

C. Disturbance in the way in which one's body weight or shape is experienced, undue influence of body weight or shape on self-evaluation, or persistent lack of recognition of the seriousness of the current low body weight.

Table 1.
DSM-5 diagnostic criteria for anorexia nervosa.

A. Recurrent episodes of binge eating -an episode of binge eating is characterized by both of the following:

1. Eating, in a discrete period of time (e.g., within any 2-hour period), an amount of food that is definitely larger than what most individuals would eat in a similar period of time under similar circumstances.
2. A sense of lack of control over eating during the episode (e.g., a feeling that one cannot stop eating or control what or how much one is eating).

B. Recurrent inappropriate compensatory behaviors in order to prevent weight gain, such as self-induced vomiting; misuse of laxatives, diuretics, or other medications; fasting; or excessive exercise.

C. The binge eating and inappropriate compensatory behaviors both occur, on average, at least once a week for 3 months.

D. Self-evaluation is unduly influenced by body shape and weight.

E. The disturbance does not occur exclusively during episodes of anorexia nervosa.

Table 2.
DSM-5 diagnostic criteria for bulimia nervosa.

A. Recurrent episodes of binge eating. An episode of binge eating is characterized by both of the following:
   1. Eating, in a discrete period of time (e.g.,within any 2-hour period), an amount of food that is definitely larger than what most people would eat in a similar period of time under similar circumstances.
   2. A sense of lack of control over eating during the episode (e.g., a feeling that one cannot stop eating or control what one is eating).

B. The binge-eating episodes are associated with three (or more) of the following:
   1. Eating much more rapidly than normal.
   2. Eating until feeling uncomfortably full.
   3. Eating large amounts of food when not feeling physically hungry.
   4. Eating alone because of feeling embarrassed by how much one is eating.
   5. Feeling disgusted with oneself, depressed, or very guilty afterward.

C. Marked distress regarding binge eating is present.

D. The binge eating occurs,on average,at least once a week for 3 months.

E. The binge eating is not associated with the recurrent use of inappropriate compensatory behavior as in bulimia nervosa and does not occur exclusively during the course of bulimia nervosa or anorexia nervosa.

Table 3.
DSM-5 diagnostic criteria for binge eating disorder.

This category applies to presentations in which symptoms characteristic of a feeding and eating disorder that cause clinically significant distress or impairment in social, occupational, or other important areas of functioning predominate but do not meet the full criteria for any of the disorders in the feeding and eating disorders diagnostic class. The other specified feeding or eating disorder category is used in situations in which the clinician chooses to communicate the specific reason that the presentation does not meet the criteria for any specific feeding and eating disorder. This is done by recording "other specified feeding or eating disorder" followed by the specific reason (e.g.,"bulimia nervosa of low frequency").

Table 4.
DSM-5 diagnostic criteria for other specified feeding and eating disorder.

One can distinguish between the types of AN, if it is restricting or binge-eating/purging subtype; as well as level of severity, determined on the basis of Body Mass Index.

The official diagnostic criteria for BN [13] are given in the **Table 2**.

Level of severity of BN is characterized due to the number of episodes of inappropriate compensatory behaviors per week.

The official diagnostic criteria for BED [13] are presented in the **Table 3**.

Level of severity of BED is characterized due to the number of binge-eating episodes per week.

The official diagnostic criteria for OSFED [13] are showed in the **Table 4**.

Other categories of OSFED could be atypical AN, binge eating disorder of low frequency, purging disorder or night eating syndrome.

3. Impact of the COVID-19 pandemic on ED

There were predictions on the pandemic's impact on ED patients- pointing lack of routine, shortage in groceries and greater exposure to social media as potential significant triggers causing deterioration [14, 15].

A report considering this issue (conducted just after first 2 weeks of lockdown) displayed not only enhancement of already existing symptoms of ED, but also adjustment of some new signs (e.g., anxiety) [16].

Study performed on 207 participants with ED revealed that overwhelming majority (83,1%) of them reported deterioration of symptoms during COVID-19 pandemic [17]. Although participants differed in pointing which trigger factor was the most significant, the most often appeared: changes in daily routine, coping with emotions and changes on physical activity. Interestingly, in another study, the same factors were chosen by patients diagnosed with binge eating disorder (BED) as helpful in maintaining symptoms [18]. According to differentiation upon diagnosis exposure to triggering messages (via social media) was more important for patients with AN or other specified feeding or eating disorders (OSFED) than for those with BED [19]. However, it was also revealed that anorectics were ambivalent to using social media in the pandemic, but some of them managed to find *golden mean* [16].

Changed access to food was slightly more important for persons with BED than for people with AN or bulimia nervosa (BN) [19]. Respondents shared their concerns about losing control over food. Especially at the beginning of the pandemic, society was uncertain, if fresh food will be regularly supplied. Many developed fear against shortages in shops. In order to follow governmental recommendations and out of fear of being infected, people tried to limit their visits in groceries. Trying to find coping strategy for that, people stored greater amount of food (usually unhealthy, highly processed snacks and doses) at home. When lockdown promoted remote work and school, there was unlimited access to the fridge due to loss of the daily routine and boredom. More flexible work schedule led to lack of distraction to obsessive thoughts according eating or body. This factor may lead to binge eating.

Lockdown forced everyone to stay within their households. Respondents declared that because of isolation from those, who could help, they have received less emotional support. On the other hand, some people felt being forced to follow the rules of other family members or fellow residents (e.g., pressure to eat meals prepared by others). It resulted also in lack of privacy, what was especially troublesome when contacting the therapist via phone or Internet. As population with ED often find social–emotional communication problematic, they may consider circumstances of lockdown as easier to cope with than healthy ones [16].

Some patients developed new adaptive strategies of coping by founding online support groups, or websites; others used harmful strategies (e.g., excessive alcohol consumption, medication's usage, self-harm). A strong therapeutic relationship was a protecting factor against such a powerful stressor as the pandemic.

People with ED described how the pandemic influenced changes on their physical activity. As a consequence of national restrictions on gatherings, they experienced loss of outdoor or organized activities. Diminishment of time spent on exacerbated sport activities can serves as a protecting factor against ED. Concurrently, there occurred new possibilities to spend more time on exercising at home. This was a maladaptive strategy to deal with enhanced anxiety triggered by the pandemic [4].

Patients with ED described their consciousness of absorbing health system, which could be better spent on pandemic issues. As a probably consequence, less people were searching for mental care, despite being affected by more stressors [19].

Surprisingly, some responders (6.8%) noticed improvement. Due to therapeutic limitations, they took an advantage on obstacles and managed to practice self-caring and helping themselves to fight symptoms [18]. Lack of privacy during lockdown turned into a benefit that prevents binge eating episodes. On the other hand, those allienated reported more time spent on worries concerning eating and weight,

what generated deterioration. In half of the responders, COVID-19 itself caused an increase in motivation for treatment [18]. Because COVID-19 is more dangerous for those with comorbidities, they have tried to get their eating disorders´ symptoms under control.

4. Impact of ED on COVID-19

Besides psychological and social consequences of ED, these patients usually carry also a burden of physical aftermath of their mental disturbances (i.e., malnutrition, obesity, changes of weight, dysregulated endocrine, reproductive and skeletal systems, micronutrients deficiencies, hemodynamic changes, cardiomyopathy, arrhythmia, hypotension, and bradycardia [20–23]). That makes them hypothetically more vulnerable to after-effects of COVID-19 [24].

In addition to comorbidities related to physical health, people with ED also experience the effects of the mental strain caused by COVID-19. Gradually there are studies that describe not only the impact of the pandemic and the threat of infection on the mental health [3, 4], but also reports on the mental consequences of suffering from COVID-19 itself [25, 26]. As it was shown, medical workers infected with COVID-19 significantly more often experienced deppresion, anxiety, intrusion, hypervigilance and avoidance than healthy medical workers [25]. Persons with other mental problems [26] (e.g., ED) are at higher risk of developing PTSD as a consequence of being sick on COVID-19. Meta-analysis of studies according psychiatric symtoms of severe Coronaviral infection described delirium and altered consciousness [27]. However, there is still a lack of thorough research into the course of COVID-19 in patients with ED.

AN influences many body processes, as well immune system. AN patients are supposed to be more resistent to viral infection [28] what can serve as specific protection against Coronavirus. On the other hand, there were AN patients who displayed distinctive reaction to infection, with reduce febrile response [29]. Considering high fever as a core symptom of COVID-19, its proper diagnosis may be delayed or even overlooked in this group of patients.

People with AN may develop specific response to vaccination against Coronavirus, as it was in case of influenza vaccine [28]. First, their reaction to the flu vaccination was comparable to healthy controls', but 2 months later they displayed higher titer of antibody. Till now, no similar study on the vaccine against Coronavirus was conducted on anorectics.

5. Tele-therapy

In given circumstances of government directives to reduce face-to-face contacts and fear of contagion, remote therapeutic interventions are the obvious solution, becoming more and more popular [17, 18]. Some patients considered it even more advantageous, pointing feeling more in control, lower anxiety due to detached connection (especially essential in case of body shame) and easier access, as it does not require any travel [17, 18]. It increased also motivation to healing [18]. These findings are in line with recommendations given already 15 years ago, that tele-therapy could be specially effective for ED patients [30], with satisfying long-term consequences [31].

The first reported attempts at tele-therapy of ED were aimed at providing professional care in distant territories [32]. However, remote therapeutic assistance for patients with ED has not been described as broadly as for other patients, e.g., with PTSD [33, 34]. This may be due to the importance of weighing patients with

ED. Notwithstanding, dramatic reality of pandemic forced mental health professionals to establish this kind of help that was possible in the given situation. Only two weeks after the pandemic was announced by WHO, an international group of specialists conducting cognitive-behavioral therapy for ED began to develop guidance for its remote type [35], covering issues like licensure regulations, technology experiences, but also practical tips to clarify doubts about the effectiveness of the tele-therapy or proposals for therapeutic intervention in the event of shifting the focus of therapy to pandemic issues. In terms of solving the problem of regular patients weighing, several proposals have been suggested: hi-tech scales sending results electronically to the therapist, making photo or video while weighing, performing it with supportive family member, etc.

Although, in conditions of lockdown and confinement it can be difficult to find some privacy from family members for open conversation. As it was confirmed in another study, traditional face-to-face therapy brought significantly greater improvement in BED symptomatology, than regular e-mail contact with therapist in a 6-month follow-up [36]. Interestingly, in a 1,5-year follow-up there was no difference between two types of therapies.

What is more, people with ED, already isolated and lonely because of their disorder, and usually with poor insight into their illness, may be reluctant to seek for professional help. In a situation of more difficult access to therapy, they may not make an effort to proactively organize it [10, 16].

6. Long-term aspects of pandemic on ED

Pandemic can be considered as a collective and individual trauma. Every additional stressor, especially so significant, may led to long-term consequences in mental health. Those caused by COVID-19 will be fully discovered in upcoming years.

Even though SARS epidemic outbreak in 2002-2003 involved smaller amount of patients (8096 confirmed cases with 774 confirmed deaths [37] comparing to 137,866,311 confirmed cases with 2,965,707 deaths due to COVID-19 till 15. April 2021), its psychological impact could be extrapolated on the predictions of longstanding aspects of actual pandemic. In 12-year-follow-up for survivors of SARS, it was revealed, that they have developed more often and earlier than control group anxiety disorders, depression, sleep disorders and suicide attempts [38]. Canadian extensive survey showed that experience of quarantine led to higher prevalence of PTSD even 5 years later [39].

Development of vaccine against COVID-19 has brought some hope in the last few months. There are worldwide national immunization schedules, which aim to build population resilience. In upcoming months it would be possible to observe impact of vaccination, also on people with ED. Among them, anorectics may present specific immune response toward COVID-19 vaccination [28], but this hypothesis requires further studies.

7. Conclusions

So far, there are only few studies concerning impact of the current pandemic on eating disorders. As it was predicted, many patients with ED reported deterioration in eating disorders´ symptoms.

Among factors of major importance, there were mentioned issues like lack of daily routine to organize time in case of intrusive thoughts, fear of gaining weight due to lockdown and restrictions on sport activities, nonadaptive coping style to

regulate emotions with binge eating episodes. Financial troubles caused by loss of job often increased stress. There were findings adding some new aspects that arose because of isolation (e.g., poorer access to institutional care).

Frequently, the same conditions were valuated differently by patients, as helpful or harmful due to varied circumstances and needs (e.g., home office or distance learning may reduce stress normally created by peers, but also creates more time to exercise at home; lockdown in case of living alone may cause loneliness, but assures privacy and independence, while being forced to spent 24 hours per day with few people may lead to conflicts, but provides support). That shows the multifaceted nature of patients' needs and eating disorders, as different factors may conduct healing or worsening.

Surprisingly, there were also described positive aspects of the pandemic on symptomatology of ED. Some respondents reported reduction of symptoms and higher motivation to engage themselves in the therapy, as they felt more in control. Remote work and school relieved persons with ED from the peer pressure and rigid inconvenient work schedule.

The undeniable positive effect of the current pandemic is the acceleration of the development of tele-therapy. Even after the end of lockdown, this form of therapy increases availability of mental health care. As it was shown in few studies, tele-therapy is suitable for eating disorders, with satisfactory long-term effectiveness and positive perception by respondents.

The COVID-19 pandemic lasts longer as it was predicted. A society bombarded with endless news of deaths, threats and limitations wonders how many more waves of the pandemic will come. Constant stress, the fear of contagion and possible death, as well as uncertainty are debilitating for everybody, but especially for those more vulnerable, already affected by mental disorders including eating disorders.

Conflict of interest

The author declares no conflict of interest.

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Chapter 26

A Year after - Could We Move beyond Psychosomatics and Dissociation

Emilija Stoimenova Canevska, Ena Canevska and Jana Petreska

"Human beings never exist ... in isolation ..."
M. Parlett, 2016 [1]

Abstract

Living in a global world that is continuously changing while creating the experience of fluidity, we are losing ground and, therefore, stability. It affects mental health across the life span. During the last 12 months from the first WHO notification of the novel coronavirus 2019-nCoV, humanity started to experience a dramatic change in the level of plans, norms, expectations. Besides fear for personal safety and health, the directed distancing increased the gap in everyday quality of possibilities for personal contacts and support. Losing the ground and experience trembling, we were inevitably facing blurred boundaries, insecurity and a direct attack on our will and who we are. Furthermore, a year after, we realize that we are in the fertile ground for the manifestation and experience of anxiety, panic, and numerous psychosomatic disorders. The whole of humanity is suffering. Hence, those coming from helping professions (psychologist, psychotherapists, social workers) dealing with mental health are experiencing the kick even harder. The research we are conducting is checking their wellbeing a year after.

Keywords: pandemics, psychosomatics, dissociation, well being, helping professions

1. Introduction

Only being in here and now, the ambush of catastrophic expectations could be avoided. As a result, we assume that we could stay grounded, aware, and dedicated to the Dialog, following the phenomenology of the field, co-creating up to our best what could be co-created, without letting ourselves down, while keeping flexibility and plasticity on the highest level.

Now, being in contact with "what is and how it is", what is obvious in front of all of us is that the Covid 19 Pandemic re-created our understanding of the world and invited us to perceive and adjust to the "new reality". The pandemic year painted our world, defined our field. Keeping in mind Parlett's five principles of the field theory: Organization, Contemporaneity, Singularity, Changing Process and Possible Relevance [2] on the one hand, while keeping on the other the general human abilities

or explorations of the Whole Intelligence we all possess: Responding to the situation, Experimenting, Embodying, Self Recognizing and Interrelating [3] we all possess, I realize that I could not find any more a song, or a joke, that will distract me from what is going on in the world around me. Even more, it seems that the desperate souls are crying these days louder than before. It brings sadness, as well as joy. Sadness due to the present suffering, while joy because of still being present with the capacity to resonate, opposite from the absence of the contact boundary [4], opening possibilities that it is still healthy in between. Besides all said, due to not experiencing the closeness and in-person exchange, hence trembling in front of the uncertainty that provokes fears and anxiety, we as humans are standing on the edge, being confronted with the loss of the most precious thing in our lives – capacity to feel and especially capacity to love.

It seems that it is the most compromised among humans today, while it is still growing from the tiny roots deeply embedded in our souls.

2. The context of here and now during COVID 19 pandemic

Already one year, we are dealing with COVID 19, and it seems that our capacities are torn apart. The context we are living in, and we have to keep in mind, is that the Republic of North Macedonia is passing through a period of transition of more than 20 years, searching for an identity that only results in renaming and constant process of never-ending negotiations. That all created a tension hard to bear among citizens. Besides that, the economic situation is day by day worsening, which creates a mind drain, which during the last five to six years gained the form of an epidemic.

From the phenomenological psychopathology point of view, it could be seen as a very troublesome period, where the state and its citizens were left without proper support after coming to the world as the new entity. The country and its citizens were left to survive, without recognition, and mainly with experience of unpleasant emotion. That is opening the door to panics activated in the separation from affective support (changing state, identity, and being faced with more than a decade lasting war period) while being overexposed to the environment, which is inevitable as a new state [4]. According to the experience from the mental health field, the epidemiological analysis is positioning panic and anxiety attacks as the leading cause for asking for psychotherapy help in the country. It seems that the citizens were living for two decades with exaggerated fear, which is having its peak during these pandemic years.

At the beginning of 2020, faced with COVID 19, all involved mental health practitioners in the Republic of North Macedonia highly dedicated themselves to support the citizens. Besides the Mental health institutions within the system, many Psychotherapy Institutes, as well as NGO's decided to share their capacities with those in need. Among those involved, European Accredited Psychotherapy Training Institute "Gestalt Institute – Skopje" (EAPTI GI-S) created the Action "Call Me # COVID 19". The Action was created to obtain psychological and psychotherapeutic support for those in need. It was offered in two languages, Macedonian and Albanian. All involved practitioners (more than 60) shared their field of expertise with the public, although they accepted all that asked for help and support, directly working with them or resending them to a more appropriate institution. The number of sessions conducted through this Action passed the number of 1000 sessions till the end of 2020. During that period, they received continuous professional education (supervision, training, and personal work).

2.1 The research context

The research context is the one that was present in terms of the COVID 19 Pandemic in the Republic of North Macedonia. The information coming from the

EAPTI GI-S practitioners from the field was that most of those asking and gaining support were concerned about their lives or the lives of their beloved, with a lot of anxiety present. Besides that, sleep disturbances, tachycardia, a variation on the level of blood pressure, sweating, dizziness were also very much present, and exacerbation of the already present psychosomatic illness like asthma, ulcer colitis, etc. eczema, and some others. In addition, the calls where the basic need is support through the process of mourning were also very often. Compared with the Diagnostic and Statistic Manual of Mental Diseases V (DSM V), all those information clearly pointed to the evitable presence of anxiety disorders and panic attacks.

The DSM V defines a Panic Attack as a discrete period of intense fear/discomfort that reaches climax rapidly. It is accompanied by strong autonomic arousal, presented by a diversity of somatic symptoms, from palpitations, to accelerated heart rate, air hunger, sweating, trembling, abdominal distress, chest pain, dizziness, etc. The psychological phenomena that could be observed are mainly those of de-realization and depersonalization and fear of death, losing control, and being crazy [5].

Being aware that long-lasting panic states influence our physical and mental health and wellbeing, we started the search for the meaning psychosomatics and dissociation are presented in DSM V.

According to DSM V, we could find that Psychosomatics, Somatization, or Somatoform disorders are missing and replacements for them, too. Namely, in DSM V, they are replaced with Somatic symptom Disorder and related disorders, which means that [5].

Somatization and Pain disorder (from DSM III and DSM IV R) could be seen under the Complex somatic symptom disorder, whilst Hypochondriasis is now Illness anxiety disorder, and Conversion disorder is a functional neurological disorder. The Body dysmorphic disorder now belongs to Obsessive–Compulsive and Related Disorders according to DSM V. Furthermore, the category called Complex somatic symptom disorder is called Complex because of the changes made in DSM-V. In the DSM-IV-TR, instead of the Complex Somatic Disorder, two diagnoses usually overlapped (pain disorder and somatization disorder), and today they are merged in the DSM-V. The pain disorder's primary symptom involves pain, and in the somatization disorder, there are multiple symptoms from various body symptoms [5]. In the DSM-V and there are three criteria to diagnose it. The first criteria are that at least one somatic symptom exists, which is distressing or results in significant disruption in daily life. The second criteria are that excessive anxiety, concern, or time and energy are devoted to the somatic concern. The third criterion is that the duration of the symptoms must be at least six months [5]. The illness anxiety disorder in the DSM-V is corresponding to the category of Hypochondriasis.

People diagnosed with this disorder are fearful since they concern about experiencing serious medical illness, although significant somatic symptoms are absent [5]. To be diagnosed, according to DSM-V, besides the previously mentioned fear, the person must show excessive illness behavior or maladaptive avoidance. In other words, the person must seek reassurance or continuously check for signs of the illness or the other polarity to avoid medical care. The third condition is that the preoccupation lasts at least six months [6]. The third category in the DSM-V is a functional neurological disorder. This disorder involves medically unexplained neurological symptoms. The person develops symptoms that suggest illness related to neurological damage, but medical/biological data show that there are no damages or abnormalities on the level of the nervous system or the level of any of the bodily organs. As it is explained above, the history of psychosomatics starts with this category. The word functional in the DSM-V was used because it is a common medical term for describing symptoms that are not explained by a medical disorder [5].

Dissociation refers to the convoluted psychophysiological process that modifies the approach and accessibility of memory, knowledge, ruins behavior (on the level of integration) and sense of self. According to DSM V, it refers to "a disruption, interruption, and/or discontinuity of the normal, subjective integration of behaviour, memory, identity, consciousness, emotion, perception, body representation, and motor control." Its core symptoms are depersonalization, derealization, amnesia, identity confusion, and identity alteration [5].

Going back to theory of emotion, inevitable is the theory of Walter B. Cannon. According to Cannon the transitory physiological response can be explained through the response of the autonomic nervous system to stress stimuli. He calls these reactions a fight or flight. Cannon and his associates observed body changes in various psychological conditions, especially in situations of danger. When perceiving a threat, instantly there is an activation of the amygdala and it activates the hypothalamus. The hypothalamus simultaneously activates two stress related responses. The first one stimulates the pituitary gland which activates the adrenal gland and causes the excretion of the ACTH hormone. The second stress related response that gets activated by the hypothalamus is the sympathetic nervous system which triggers physiological responses, such as increased heard rate, blood pressure, muscle tension, dilatation of pupils est. This physiological arousal could result further in fight or flight. If the organism stays for a long time in this activation and disturbed balance, consequences are inevitable. These consequences can start with some disturbances, light to mild diseases, disruption of health due to tissue-level damage and, ultimately, death [6, 7].

In the continuation, the theory of Hans Salye, states that the consequences of the organism's prolonged activation start in the exhaustion stage of the General Adaptation Syndrome. The general adaptation syndrome is described through three stages: alarm, resistance and exhaustion. With every stage the chances of developing psychosomatic symptoms are increasing.

In the initial Alarm phase, the activation of fight-flight response activates, and with it the physiological arousal starts. This phase is marked by an increase in adrenal activity and all the inducted / consequent physiological changes. In the following phases of Resistance and Exhaustion, the production of corticosteroids by the adrenal cortex first peaks and then diminishes. In the resistance phase the body's reactions return to normal levels, although the body uses the storage of energy. If prolonged, the body enters in the third phase of exhaustion, and weakening of the whole immune system appears [6–8].

In the research of O'Connor et. all from 2013, these consequences of the prolonged stress situations were confirmed. Namely, it has been found that the prolonged stress, in this case recalling and writing about strong stress and traumatic experiences led to increased level of cortisol and increased respiratory infection [9].

The neurobiological model stated that there are three regions in the brain that are involved when we are talking about somatic symptoms. Anterior insula, the anterior cingulate and the somatosensory cortex are connected, and these regions are activated by unpleasant bodily sensations. Some people might have hyperactivity in these brain regions which are involved in the process of evaluating the unpleasantness of body sensations and this would explain why some people are more vulnerable to experiencing and noticing somatic symptoms and pain. Except unpleasant bodily stimulus and pain, the anterior insula and the anterior cingulate could be activated by emotional pain. Also, the anterior cingulate is directly related to depression and anxiety. These connections could serve in explanation of the relationship between the emotions and the bodily sensations [10].

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The dissociation presents the umbrella concept for the following:

- depersonalization/derealization (during these experiences, the reality testing is intact and are not connected to use or abuse of any substance),
- dissociative amnesia (frequently consists of localized/selective amnesia for a specific event/s; or generalized amnesia for identity and life history, while notified is compelling impairment in social, occupational, family, and/or other areas of functioning, and it is not connected to use or abuse of any substance),
- dissociative identity disorder (characterized by two or more distinct personality states, which may be described in some cultures as an experience of possession),
- other specified and unspecified dissociation disorders [11].

O'Sullivan in her book gently touched the connection between psychosomatic illness and dissociative seizure [12].

Being in touch with this, while noticing how what is present in the field overflows toward the helpers, we have decided to check it by conducting the research.

3. The research methodology

Based on all previously said, we got intrigued to check what is going on the level of tendencies toward psychosomatics and dissociation among the helpers in the field of mental health. Based on the actual need, EAPTI Gestalt Institute –Skopje, among the others, opened the free psychotherapy service for the citizens of the Republic of North Macedonia, both in Macedonian and Albanian. This Action named "Call Me #COVID 19" created high interest among citizens. Some of the mental health workers enrolled in the Action took part in research since the google document shared with those involved and other more senior therapists was open just for 24 hours, all to avoid sample bias.

Namely, the google document that carried psychological instruments used for the research was sent via email to 70 participants, to which 48 replied. At the beginning of the document, a short explanation of the research was given, and Informed consent was presented. Only by accepting it, the participants could continue with the research, posted on the next pages.

3.1 Sample

The sample of this research was convenient and was consisted of 48 mental health care workers. Most of them were females (N = 45), while three of them were males. They are coming from different towns covering almost the whole country. Mainly, they were psychologists (N = 23) and psychotherapists (N = 19), although some of them were social workers (N = 5) and special educators (N = 3). Some of them have finished psychotherapy training, while some were still psychotherapy students in training under supervision. The age range of the participants was from 24 to 57 years, with an average age of 33.6 years. Most of them were working online, where 26 of them were working just online, while the other 22 were mainly working in person following the prescribed procedures. When the research was conducted, most of them (N = 38) were not infected by Covid 19, although 20 of them have already experienced the presence of Covid 19 within the family realm.

3.2 The research instruments

The HI- test from the KON-6 battery (Kiberneticka baterija konativnih testova) constructed by Momirovic, Wolf and Dzamonja [13], is used for measuring the tendency to psychosomatic reactions. This test has been used several times on Macedonian population. The original language of this test is Serbian, but for the needs of this research, it has been translated into Macedonian, again following the translation procedure by Hambleton [14]. This test measures the efficacy of the system for regulation and control of the organic functions. It has 30 items, and none of them is reversed item. The items are measured on a Likert scale from ++ to --. ++ is 'I completely agree' and – 'I completely disagree'. The score can be from 30 to 150 points. A high score shows a tendency to psychosomatic reactions, and low score shows a low tendency to psychosomatic reactions. To measure the internal consistency of this test for this sample, we used the Chronbach's alpha coefficient, which is very high ($\alpha = 0.933$). That supports the quality of translation too.

The DELTA - test from the KON-6 battery (Kiberneticka baterija konativnih testova) constructed by Momirovic, Wolf and Dzamonja [13], is used for measuring the tendency for dissociation. We do not have information if this test has been used before on the Macedonian population, although the Hi-test from the same battery has been used several times. The original language of this test is Serbian, but for the needs of this research, it has been translated into Macedonian, following the translation procedure by Hambleton [14]. This test measures the efficacy of the system for regulation and control of the regulatory functions. It has 30 items, and none of them is reversed item. The items are measured on a Likert scale from ++ to --. ++ is 'I completely agree' and – 'I completely disagree'. The score can be from 30 to 150 points. A high score shows a tendency for dissociation, and a low score shows a low tendency for dissociation. To measure the internal consistency of this test for this sample, we used Chronbach's alpha coefficient, which is very high ($\alpha = 0.932$). That supports the quality of translation as well.

3.3 What do we want to know?

We want to check if there overflows from clients to mental health practitioners after one year of hard work during the COVID 19 pandemics. We tried to prevent overflows from all involved in the Action to go through continuous education, supervision, and personal work. Still, it seems that during the supervision, a lot of overflows was detected. That was the signal point for us to do the research – a year after.

We assumed that due to the continuous support that the practitioners are receiving in education, supervision and personal work, there would not be overflow from those asking for help on those giving help. Our hypothesis was:

> The mental health practitioners from EAPTI GI-S, engaged in Action CALL ME # COVID 19, will not increase psychosomatics and dissociation tendencies.

Hoping that we could move beyond psychosomatics and dissociation since most of our clients are coming exactly with such tendencies, we conduct further analysis of the collected data.

3.4 What do we find out?

We find out that the tendencies toward psychosomatics and dissociation among health practitioners from EAPTI GI-S, engaged in Action CALL ME # COVID 19, are in the average, that is approaching the upper grades. Therefore, we are presenting the following findings:

Table 1 is presenting the descriptive statistics about the involved variables.

From **Table 1**, we could read the values for Min, Max, M, SD, skewness and kurtosis, gained for this sample.

From the descriptive statistics table, we read:

We have a wide range of scores for psychosomatics: from 31 to 121, where 30 and 150 are the minimum and the maximum from the test. From the mean (M = 62.19), we see that the total score on the psychosomatic scale is below the scale mean, which means that our sample consisted of mental health professional does not show high tendencies toward psychosomatic reactions.

For the dissociation, we have even lower scores. We read from the table that we even have the minimum possible, which is 30, and that the maximum score is closer to the scale Mean than to the real maximum on the test. This is presented on the mean score as M = 49.92.

The low scores might be explained by the fact that our sample is young, the mean age is 33, and the fact that they have a high education level, specific education into mental health and continuous education. The significance of these findings is of great importance since from this, we see that the mental health professionals are taking care of their mental health so that they can provide services in terms of prevention and healing of their clients/supervisees. We have to remember that we need to put our mask first in case of an aeroplane emergency. With these findings, we see that our participants have their mask on.

We see these lower scores even on the level of the skewness for the scales psychosomatics and dissociation.

The distribution of the scores for both psychosomatic tendencies and dissociation has positive skewness, which shows a higher frequency of the scores on the negative part of the scale, and both are mesokurtic, which shows normality (see **Figure 1**). It has been confirmed with the Kolmogorov- Smirnov test for psychosomatic tendencies (K-S = .130.. $p < 0.05$) and for dissociation (K-S = .003.. $p < 0.05$). From this test, we read that the statistical significance values are statistically significant, which means that the distributions of the scales are not normal.

	N	Min	Max	M	SD	Skewness	Kurtosis
Psychosomatics	48	31	121	62.19	20.922	2.09	.02
Dissociation	48	30	94	49.92	16.513	2.68	.22

Table 1.
Descriptive statistics for the variables.

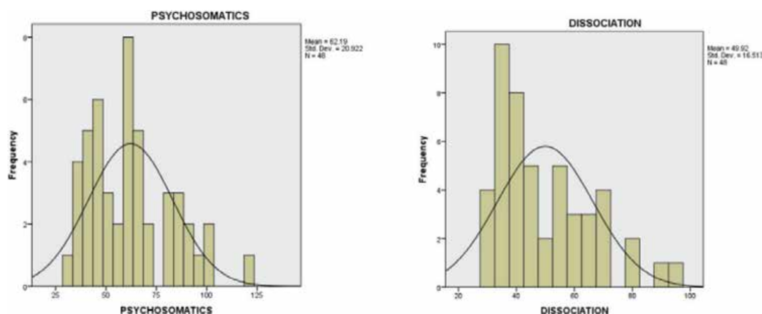

Figure 1.
Graphic representation of the distribution of the psychosomatic tendencies scale and the dissociation scale.

Tendency to psychosomatic reactions	Dissociation
Tendency to Psychosomatic reactions	.791**
Dissociation	

**p < .01.

Table 2.
Spearman correlation for the tendency to psychosomatic reactions and dissociation.

The following graphic (**Figure 1**) is representing, all the above stated.

Further analysis shows that a positive correlation between the tendency to psychosomatic reactions and dissociation is present.

From **Table 2**, we read that there is a statistically significant positive correlation between the tendency to psychosomatic reactions and the dissociation ($r(48) = -.791$; $p < 0.01$).

All previously said brought to us gratefulness for the condition our participants are experiencing. However, we believe that we could follow up and gain more in-depth results based on that.

4. Discussion

In the last period, the whole world has changed, and what we are living in today is much more than living in a fluid society where we are losing ground and therefore, stability. The COVID 19 Pandemic brought to us the experience of that dramatic change on the level of plans, norms, expectations. Besides fear for personal safety and health, the directed distancing increased the gap in everyday quality of possibilities for personal contacts and support. Losing the ground and experience trembling, we were inevitably facing blurred boundaries, insecurity [15]. It was a direct attack on our will and who we are. Almost unnoticeable, we deepen in the fertile ground for the manifestation and experience of anxiety, panic, numerous psychosomatic disorders, and severe psychological disturbances, among which dissociation is.

Faced with that, we act upon putting in action the five abilities we all possess. Namely, we respond to the situation with complete awareness about our interrelatedness, embodying the experiences we have passed through, with self-recognition of it, always experimenting with how we could improve it.

We manage to make it together, with full respect toward each and every different personal understanding. We succeeded to co-create the fully functional "Whole Intelligence" in action. To support it with statistical data, new research activities will be conducted, mainly qualitative, since what we have experienced till now during our regular supervision session, personal therapy sessions and workshops during the regular education or during the continuous education confirms the necessity to conduct qualitative research that will seed new insides. What we have conducted up till now is just the cross-section over the situation, that brought results that are positive for the wellbeing of mental health practitioners that took part in this research, and that is mainly coming as mental health practitioners from EAPTI GI-S. Without pretending to generalize the data, we want to reflect on it and put it into action for further testing. The disadvantage is that the sample is small, and it is coming from the same institute (same organizational culture, same program, trainers, therapists, supervisors) that is not showing the wider picture. Also, the necessity to conduct controlled research that will do cross-section over the situation with the general population, as well as clients that ask for help, is what is in front of us, since without it we lost the possibility to compare.

Nevertheless, from the data gathered by using specific instruments, we gained information that the participants in this research managed to resist to challenges and obstacles during very turbulent "here and now" and not to increase their tendencies toward psychosomatics and dissociation.

The questions that were asked here are:

Could we explain it with the traditional collectivistic culture we are part of?
Could we explain it with the good quality of the attachment and based on that better-developed quality for coping? or.
Could we explain it with the excellent support system developed on the level of the group/groups they belong to professionally?

Most probably, the correct answer is in between the crossing of these three.

Briefly explaining them, first, we will come to the influence the traditional collectivistic culture is having in terms of nurturing contacts and ties within families. Being forced to stay at home, isolated from the outside surrounding most probably these ties positively impacted us, and at least created stable ground, so necessary during this pandemic period.

Secondly, the connectedness between family members influence the quality of the attachment, and as Bowlby noted, secure attachment is secure support for further exploration, that is definitely positively impacting the quality of resilience [16].

And finally, the previous two supported and impacted the quality of the group work the participants have experienced during their education and work as mental health practitioners (psychologists, psychotherapists and so on) during these turbulent times.

Let us go back to the five abilities we all possess, although not all of us are using them properly.

Parlett used to say that all of these explorations/ abilities could be seen as gates of a fortress, so if the aim is to enter in, then depending on the contact and context, the choosing will happen.

We started with what was and still is present in here and now, and we respond to the situation. Being fully present and open in front of all challenges and possibilities of the actual moment and situation, we encounter it (COVID 19 pandemic) and start ACTION CALL ME #COVID 19, instead of thinking, expecting or even worst creating catastrophic expectations. We want to accomplish.

We start to Interrelate among ourselves more frequently and more profound. Moreover, it reflects in relation with our clients. Standing and waiting on the contact boundary for what will emerge, we exchange the message that the uniqueness of co-creation is our strength, that makes bonds and relations more substantial and natural pure communication possible. Human to Human, creating the relations of trust, friendship and genuine love.

Embodying the experience of what it is and how it is, we did not withdraw and escape in the here and now. Contrary to that, the rise of awareness about symmetry between the mind and the body and vice versa (through our training and personal work) support us not to cry that we have to stay isolated because it is not true, and of being isolated, we could re-connect to nature. Acknowledging life as a precious gift as well as all gifts nature is offering, we are gaining wisdom through such connection,

Self-recognizing ourselves for that, we manage to affect others, influence other people, and wider context.

Being active through experimenting, learning through doing and reflecting on doing (actual work of psychologists and psychotherapists in the field and their regular supervisions) created space and time to explore, experience, create, and grow authentically. To bring the power of spontaneity and playfulness in the situation of highest risk is a sort of invitation to live without guilt and

shame that are overwhelming, pushing us to believe that we have to pretend not to be the best we are could be.

We activated our abilities, and it seems that using them within the concept of the whole intelligence, we managed to stay up to our best capacities and not develop tendencies toward psychosomatics and further dissociation. The mean scores of those two variables are proofing that. Further it suggests that when using it and activating support systems (body, breathing, thinking, interpersonal support, and intrapersonal support [17], we could stay grounded while open for new experiences.

Activating the whole intelligence, we are activating our resilience and further our immune system [16] as a response to the virus that attacks us all on the global level. It is the best prevention to developing psychosomatic reactions, symptoms, or illness. Also, if we are present and supported, and there is a human being to whom we could contact and avoid the possibility to leave the contact and enter into numbness, we are preventing dissociation.

It is important to stress the connectedness between the tendency toward psychosomatics and dissociation, as presented through this research data. The red flag will have to wave if any of them start to rise.

Sharing the results with colleagues and deepening our understanding through qualitative exchange with them, we are strongly supported to keep the concept of the Whole Intelligence as a frame of education. Experiential Learning is what we declare and what we do. It is based on experimenting, learning through doing, and reflecting on doing, personal involvement and a lot of personal work – individual and group, as well as relational supervision. All of it holistically based and with recognition and acknowledgement.

Gestalt Therapy is exactly about that, and as our common ground, it supports us significantly. Nevertheless, we are open toward comparing and further improving, taking in consideration work of Hasler on well being [18] and Fava on Well being Therapy [19]. The last one could serve as a path for further improvement and new insights.

Hasler pointed on: "...Asian wisdom in combination with modern neuroscience ...." (18:259). That supports our work, since Gestalt therapy, although very open for further improvement, has already accepted holistic approach, integrating the winds of east and west for better sailing. What is needed more is continuity toward integrative and comparative approach, where inclusion of neuroscience is must.

For us now, being in the gestalt training as well as practising gestalt therapy create a solid ground for moving beyond psychosomatics and dissociation.

5. Conclusion

All previously said, was a summary of the last year passed, much personal reminiscing, professional exchanges, psychotherapy work in the field, as well as personal psychotherapy, and supervision on different levels from personal one on one to the group, as a participant, and as a lead supervisor. I will point just on one quote from a supervision session where the colleague psychotherapist said: .... "and we (psychotherapists) have souls that need to be nourished". This quote provoked many exchanges, and the idea to research helping professionals was born.

Now, concluding the results and being very grateful that besides arduous work, our participants managed to move beyond psychosomatics and dissociation, although most clients were bringing such issues for their work.

There is no inevitable conclusion. A lot of question marks are still pending. Also, the generalization of the results could not be accepted, due to:

- the number of the participants in the sample,
- the distribution between males and females (although females are predominant in helping professions), and
- the average age of the sample, that just to remind is 33 years.

It seems more like a recommendation that could be sentenced as:

There is no client wellbeing without the wellbeing of the therapist, and Carrying about myself, I am carrying for others.

And, it reminded me that our first workshop on the topic "I care for myself, I care for You" was conducted seven years ago. So, all these years, we are carrying for ourselves and each other. Furthermore, the continuity of that exchange gives us the possibility to continue further.

Certainly, when we conduct the research, less than half of the participants have been infected with COVID 19 or have experienced it within the closest family. Unfortunately, the situation was dramatically changing during the finalization of the article, although there are not death cases among them. However, numerous of them experienced loss within the family circle or friend circles. Till now, most of them gained that experience.

It will be interesting to check the impact of that experience.

Till now, based on the support that was exchanged, we believe the results will be similar.

We all have learned a lot.

To trust ourselves, care about ourselves, care about others, protect others, and deeply value the other human being.

To value the contact.

To value the pain.

The process of suffering could become process of growing if there is trust, support and possibility for exchange.

These last few sentences could be our recommendations to others. How we achieve it? We discussed it previously. Not easy, but with a lot of benefit and support to continue further.

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Chapter 27

Uncertainty, Sex and Sexuality during the Pandemic: Impact on Psychosocial Resilience

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Abstract

The Coronavirus disease 2019 (COVID-19) pandemic has been a global unprecedented health threat. Besides the myriad of effects on public health, the psychosocial implications of the outbreak have been far-fetched. Though the increased prevalence of psychiatric disorders, reduced access to care and social vulnerabilities have been highlighted in literature, the immense impact on sexuality and psychosexual health tends to be silent. The World Health Organization (WHO) defines sexual health as "a state of physical, emotional, mental and social well-being in relation to sexuality; it is not merely the absence of disease, dysfunction or infirmity." Sexual practices and intimacy have been influenced by more ways than one, namely fear of infection, ambiguity about viral spread, misinformation, physical distancing, travel restrictions, intimate partner violence and deprivation of 'social touch'. The frontline workers, socio-economically impoverished groups, age and sexual minorities are especially affected. Sexual and reproductive rights are compromised due to reduced help-seeking, panic and stigma related to the outbreak. Psychological resilience helps one navigate through stressful situations and assumes a special importance during the ongoing crisis. This chapter reviews the multi-faceted intersections between sexual health and resilience, highlights the possible roles of pandemic-related uncertainty and advocates for certain guidelines to promote and preserve healthy expressions of sexuality for coping during COVID-19.

Keywords: sex, sexuality, sexual health, COVID-19, pandemic, coping, resilience

1. Introduction

Very few global catastrophes have been as unprecedented as the Coronavirus 2019 (COVID-19) crisis. The pandemic caused by the severe acute respiratory syndrome coronavirus – 2 (SARS-CoV-2) started with its epicenter in Hubei (Wuhan province), China in December 2019. As of today, the virus has affected 137 million people across the world claiming the lives of 2.94 million, the numbers rising as we speak [1]. More than a year has passed since COVID-19 was declared as a pandemic by the World Health Organization (WHO), and presently many nations are threatened by the second waves of infection, though several vaccine rollouts have begun globally. Besides the public health burden that has received primary importance, the emotional and social effects of such a large-scale crisis are

far-fetched. Long-term uncertainty, lockdowns, travel restrictions, fear of infection, social chaos, stigma towards those infected, apprehension and grief have been the psychosocial offshoots of the pandemic which are discussed several times in literature [2, 3]. The morbidity of psychiatric disorders such as depression, anxiety, post-traumatic stress, insomnia and adjustment disorders has increased based on various studies from both developing and developed nations [4–6]. Especially the vulnerable populations such as frontline workers, age and gender minorities, socio-economically disadvantaged groups, homeless individuals, migrants and those suffering from the infection have disproportionately shared the brunt of the pandemic [2, 7, 8]. Though several of these issues have been discussed in academic, social and policy discourse, one of the basic facets of human existence has largely been silent in research. This is the need for 'social touch', physical proximity and intimacy which comprise sexuality and sexual health. An infectious disease pandemic is bound to affect sexual and reproductive rights as well as health in multiple ways due to the fear and risks of infection [9]. Further, partners have been separated due to lockdowns, travel has been restricted, and the 'assuring' nature of intimate touch is now feared and tabooed. Lifestyles and work patterns have changed with prolonged entrapment within families on one hand and long-term physical distancing on the other, all of which have the potential to influence relationship dynamics [10]. Sexuality has also increasingly shared the virtual platforms with rise in pornography use [11]. The rigorous measures of using face masks, social distancing and respiratory hygiene advocated by all global agencies to curb the viral spread have 'masked' emotions, distanced loved ones and caused global exhaustion and frustration [12]. Nevertheless, these precautions need to be followed and continued as crucial strategies to fight the pandemic. As expected, a highly contagious infection like COVID-19 has generated fear of couple intimacy, guilt of transmitting the infection to partners/spouses (especially in the high-risk workers), impacted relationships and increased intimate partner violence (IPV) [12–14]. Psychosexual health forms a vital component of emotional wellbeing and coping during such crisis and can be markedly affected by this prolonged uncertainty during the pandemic period. With this background, this chapter looks at the various dimensions of sex and sexuality during the COVID-19 pandemic, the intersections with psychosocial resilience and anxiety management, and finally highlights strategies for safe sexual practices to navigate through these adversities.

2. COVID-19 and psychosexual health: multi-dimensional intersections

2.1 Glancing back at the "Plagues"

> *"A loveless world is a dead world. The plague makes us long for the warmth of our loved ones."*
>
> *Albert Camus, The Plague (La Peste), 1947 [15].*

Pandemics have a history of social disruption. Since the bubonic plague of the 13th Century, the Spanish Flu, Human Immunodeficiency Virus (HIV), Severe Acute Respiratory Syndrome (SARS), Middle East Respiratory Syndrome (MERS), to the modern-day Ebola and Zika virus outbreaks, linking infectious disease outbreaks to promiscuity, low socio-economic status and lack of hygienic standards were common [16, 17]. Moral standards were imposed by the society and these illnesses were historically viewed with religious and political overtones [18]. Even without a pandemic, sexuality has historically been influenced by social, political, and religious beliefs, with stringency regarding its practice suggested across most

of the communities [19, 20]. Legal and religious ascendancy over sexual expressions have been modified over time, leading to a more permissive attitude, however, sexual expression still remains a taboo and is governed by the socio-legal norms significantly [20]. Delamater in his article [21] pointed out that family and religion are the two most important influencers of sexual expression. The controls exerted may result from the societal perspective of the purpose of the sexual activity, thereby putting down rules for appropriate sexual behaviour. The normative control, comprising of codes of conduct, is seen to have an enormous impact in shaping sexual attitude and behaviour. The codes include social, personal, and peer codes, variably influencing the permissiveness towards sexual expression [21]. Similar regulations surround infectious disease outbreaks. Hence sexual expressions have often been considered 'unsanitary' and associated with 'spread of germs' [19, 20, 22]. Sexuality and sexual expressions have been discussed several times in literature with relation to pandemics. "Poetic description of the plague" highlights newly married couples being segregated in rooms, not allowed to communicate during the classical "black death". "Fear of infection" was seen to "disrupt love and lives" more so in affluent social classes who feared hospitalization and death [22]. Cantor mentions about illicit sexual relationships and immorality being perceived as social reasons for the plague and physicians advising complete sexual abstinence as a solution [23]. In the medieval Europe, coercive sexual relationships, incest and prostitution were seen to rise during the plague and religious blames were allegedly put forth against homosexual individuals for disobeying the "Divine Will" and "sanitary legislation" that supposedly led to the propagation of the illness [24].

In Land, Kinship and Life-Cycle [25], Smith highlights the increase in punishment for fornication during the periods of plague (1349–1350), and sexuality was perceived as a driving force for the spread of infectious illness. However, there is also mention of a spurt in sex-parlors and prostitution as the plague waned off, due to the "need for being connected and expressing their sex drive" in the population which served as coping factors. Social distancing measures were looked down upon by the public during the Spanish Flu of 1918, where innuendos like "you are your safest sexual partner" and "I want to be quarantined with you" gained popularity [26]. It can be concluded from these texts that though there was a social 'aversion and ban' blaming unrestricted sexuality for the spread of infections, traditionally it has been considered to be healthy coping factor for the general public, irrespective of the restrictions.

With changing understanding of pandemics and epidemics, social thoughts have also been modified with time. Sexual dysfunctions, impaired perceived sexual satisfaction, reduced sexual interest, heightened performance anxiety and marital problems were noticed in longitudinal studies done during SARS and MERS [27, 28]. Adverse reproductive outcomes and compromised reproductive rights were seen in vulnerable populations during Ebola and Zika virus outbreaks, especially in the migrants and Lesbian Gay Bisexual Transgender Queer Intersex (LGBTQI) groups [29, 30]. The psychosocial models of care adopted for Nipah infection in India and Zika virus in Brazil involved sex education, healthy and safe expressions of sexuality during the crisis, prevention of viral spread and coping through social connectedness [31, 32]. This assumes enhanced importance during crises such as COVID-19 as sexual wellbeing is linked to better physical health, hope, personal growth, optimism and positivity.

2.2 How has COVID-19 impacted sexuality?

Systematic literature on how COVID-19 has impacted psychosexual health is lacking. Few predominant dimensions have been conceptualized [33]:

- Fear of sexual intimacy, lack of perceived satisfaction and ambiguity about safe sexual practices

- Worsening of symptoms, treatment and distress of those already suffering from sexual disorders and dysfunctions

- Cyber-sexuality and consumption of pornography

The various possible factors impacting sexuality and sexual health during COVID-19 are depicted in **Figure 1** and we propose that each of them adds to the uncertainty and anxiety related to this global outbreak. Impaired psychosexual health in turn can impact psychological resilience and coping with this persistent multi-faceted stress.

Panzeri et al. [11] conducted an online survey between April–May, 2020 to explore relationship quality between cohabiting couples. Out of 124 participants, more than two-thirds were women and most couples did not report differences in sexuality. However, women reported reduction in satisfaction, pleasure, arousal and desire primarily due to concerns of worry, stress and lack of privacy. Qualitative data in this regard is more informative and is yet to be analyzed from this study. Another study with similar design conducted by Arafat et al. [34] in three South-Asian countries of India, Nepal and Bangladesh had male predominance in participation. 45% of the respondents mentioned that COVID-19 had affected their sexual life and though the frequency of sexual interactions changed little after lockdown, the quality of sex and perceived sexual satisfaction were affected more. Half of the sample however reported improvement in emotional bonding and coping during lockdown and this was related to more time spent together, better 'family time', less work burden and reduced social commitments. A cross-sectional study from Turkey [35] assessed sexual dysfunction and sexual behaviour in 245 volunteers and reported that sexual intercourse had decreased in men post-pandemic. Sexual avoidance and solitary sexual behaviours (pornography use, masturbation) increased more in the males but the couples who

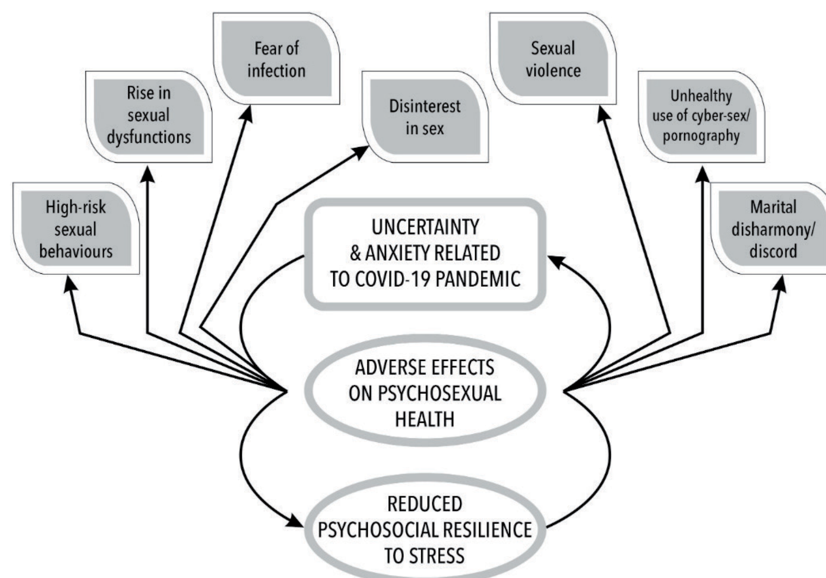

Figure 1.
Multi-faceted intersections between COVID-19 related uncertainty/anxiety, sexual health & psychological resilience.

spent more time together had better sexual interactions and healthier coping strategies with lower depression/anxiety scores. In another larger but preliminary study from Italy on 1,515 individuals through Facebook and Instagram, 40% respondents revealed enhanced sexual desire during the lockdown [36]. However, both frequency and quality of sexual behaviours decreased in couples over time with increase in autoerotic interactions. Sexual satisfaction decreased significantly throughout the lockdown and was associated with increased pornography use, male sex, depression scores and unhealthy ways of coping (such as binge-eating, harmful use of technology, etc.)

In the absence of larger longitudinal studies, it has been hypothesized that psychiatric comorbidities (especially depression and anxiety disorders), a consistent fear of contracting the infection and uncertainty related to the global crisis alter sexual desire and interest [12, 33, 37]. These discrepancies have varied socio-cultural connotations as manifestations of sexuality itself can be quite heterogenous. While for some individuals, need for 'social touch' and intimacy are vital to cope, in others the moral underpinnings about mortality, grief and death anxiety can lead to sexual aversion [38]. Discrepancies in these perceptions within a couple can lead to impaired relationships and discord. Besides, body dissatisfaction, body image perceptions, 'fat talk' and weight gain have also increased during this pandemic due to lack of physical activity, altered sleep–wake cycle and change in dietary patterns, all of which can influence sexual intimacy [39, 40]. The "Dual Control Model of Sexual Response" can be used to explain the differential impact of uncertainty/anxiety on sexual reactions of individuals. Individual variations in sexual arousal and inhibition patterns may decide what effect stressful situations would have on their sexual cycle [41]. Due to these differences, there can also be increased sexual violence and coercive sexual practices. Global data already shows a significant rise of intimate partner violence (IPV) across the world [42]. Sexual frustration and dysfunctional coping strategies can be further compounded by increased substance abuse during the pandemic that can perpetuate the cycle of violence and discord in relationships [42].

SARS-CoV-2 is more infectious than its earlier congeners with new mutant strains being more pathogenic [43]. Aerosol and fomite spreads are rapid and survival of the virus on various inanimate objects can last up to three weeks [44]. Besides, since the advent of the pandemic, there has been a plethora of misinformation and rumor mongering all across media about its pathogenesis, origin and treatment. This adds to the fear, uncertainty and ambiguity in safe sexual practices [45]. Various global agencies have already issued guidelines in this regard [46, 47]. The readers are encouraged to go through Banerjee and Rao [37] as well as Pennanen-lire et al. [33] for comprehensive reviews of COVID-19's sexual impact and summary of safe sex guidelines during this crisis. Sex education and risk reduction counselling are considered to be most important with permissible sexual contact within equal-risk and quarantined partners. Informed decision making, emotional support, mutual consent and respect between couples are called for. Ultimately healthy sexuality is much more than mere intercourse and is based on a biopsychosocial understanding of desires, needs and consequences.

2.3 Changing approaches and needs

Few considerations are vital. For newly married couples or partners who have never been separated before for such prolonged periods, the challenges are much more. The same applies to frontline workers and their partners as the fear, apprehension and stress will understandably be more for them. Complete sexual abstinence (including lack of any form of foreplay) though ideal cannot be considered to be a pragmatic and feasible solution in all [48]. Chronic sexual repression can also

impact self-confidence, sexual performance, increasing the prevalence of anorgasmia, arousal complaints, erectile dysfunction (ED) and premature ejaculation (PME) [49]. Impaired sexual dynamics in the couple can in turn cause loneliness, anxiety, sleep problems and poor coping that further impact resilience and add to the vicious cycle of uncertainty during the pandemic crisis [33]. Besides continued sexual abstinence has shown to impair couple communication and pre-existing psychiatric conditions. It also carries a risk of high-risk sexual behaviours, gambling disorders, alcohol abuse and compulsive masturbatory practices [49, 50]. Cybersex has been the 'new normal' of sexuality with various pornography platforms delivering free premium content during the lockdown. While it helps with safe and anonymous expression of intimacy and deals with uncertainty to some extent, it carries the obvious concerns of socio-cultural acceptance, ease of technology use, risks of data theft, cyber-security threats, risks of sexual extortion, cyber-harassment and cyber-bullying (especially for the minors) (discussed later).

The Lesbian Gay Bisexual Transgender Queer Intersex (LGBTQI+) population is disproportionately affected during this pandemic and their sexual rights compromised. Besides the usual brunt of social stigma, prejudice and financial stressors during the outbreak, social cohesion within their groups is adversely affected by lack of cultural gatherings, PRIDE festivals and travel restrictions which lead to a double-edged 'minority stress' [51]. The various dimensions of this 'othering' during COVID-19 have been highlighted by Banerjee and Nair [52] as social inequality, sexual stigma, stereotyping, gender-based discrimination, marginalization and misinformation about their 'gender roles'. This can lead to multi-faceted effects during the pandemic impairing their psychosocial resilience. In the Love and Sex in the Time of COVID-19 survey, Stephenson et al. [53] explored changes in sexual behaviour and HIV prevention approaches in gay, bisexual and other men who have sex with men (GBMSM). Among 518 participants, the awareness about HIV prevention was high but there was no decrease in the number of sexual partners during the lockdown. High sexual activity was associated with binge drinking and substance abuse. The authors called upon for comprehensive HIV prevention plan for this group utilizing tele-health services. In another qualitative exploration of the lived experiences of older transgender adults from India, social disconnection, stigma, ageism, sexual difficulties and "survival threats" emerged as the main themes [54]. Social rituals, spirituality and acceptance of "gender dissonance" were the predominant coping factors during the pandemic whereas mental healthcare and social inclusion were the perceived unmet needs. In today's world of human-rights based approach to mental health, it is necessary to consider safe, appropriate and free sexual expressions to be integral to psychosexual health and intervention strategies need to socio-culturally sensitive rather than being moralistic or paternalistic in their approach. The next section deals with various facets of emotional resilience during the COVID-19 pandemic and their crossed paths with psychosexual health.

3. Psychosocial resilience during the pandemics: living through the adversities

Spencer defines resilience as the ability to adapt to stress and adversity adequately [55, 56]. Psychological resilience or simply resilience basically refers to individual psychological, social, environmental, cultural, and physical resources associated with this adaptation [57]. Essentially, it is a dynamic process that protects a person by modifying his/her responses to the stressful life events [58]. Thus, its importance during crisis situations is indubitable. Pandemics comprise of one such situation. Resilience enables a person to stride through the crisis, by maintaining

health and functionality, or by "bouncing back" to the premorbid functioning after the crisis, or by even growing at an individual level afterwards [59]. The complications with pandemics are manifold. They affect the population at large, usually last long as exemplified in the past by Spanish Flu and now by Covid-19, and interspersed with acute exacerbations, thereby limiting the resources in general [60]. There needs to be a constant dynamic interaction between one's individual resources, environmental resources and stressors for the resilience to develop [61]. There exists literature showing an inverse relationship between psychological resilience and psychological distress in natural catastrophes like earthquake, hurricane, etc. [59]. A number of factors in this current pandemic can be outlined, that are linked to poorer health, social and psychological outcomes. The factors include constant need for safety measures like masks, sanitization, emergence of novel viral strains with uncertainty and fear regarding the future, lack of a rock-solid preventive or curative measure, physical distancing and separation from social contacts and loved ones, home confinement, and financial insecurity including loss of job, to name a few. Hence, the role of developing resilience is all the more important in this context to fight and sail through this situation.

This brings us to the question of how is resilience developed. The answer is simply by enhancing the psychosocial resources, strengthening them, and using them in the process [62]. Certain individual traits like hope, motivation, humour, personal skills are shown to improve resilience [63]. A recent qualitative study on the frontline healthcare workers during Covid-19 found out that "resilience framework" comprised of "resilient identity" formation by social network, sense of purpose, gratitude, hope, "resilience management" by professional collectivism, problem negotiation, assumption of vulnerable role, and "working through distress" via self-care, risk minimization, peer and social support, lifestyle changes and relationships [64]. Across literature, the role of social and interpersonal relationships has been emphasized in strengthening resilience. Perceived family support, organized family dynamics, peer support, support from a significant other are found in two studies as predictors of greater resilience during Covid-19 [65, 66]. Social support encompasses not only the size but also the quality of social network, social connectedness being an integral component. Social connectedness is shown to be associated with lower perceived stress in a study on the Austrian citizens [67]. Sexuality, as a concept, embraces intimacy, pleasure along with physical sexual interactions [68]. Positive sexual health as highlighted by Pennanen-Iire et al. (2020) confers emotional and psychological benefits [33]. While regular sexual interaction with partner improves both physical and mental health, the intimacy aspects also enhance sense of belonging, security, hope, mood, well-being, and ultimately resilience.

4. Sexual health and emotional resilience

In this section, we elaborate the link between psychosexual health and resilience. The World Health Organization (WHO) defines sexual health as "a state of physical, emotional, mental and social well-being in relation to sexuality; it is not merely the absence of disease, dysfunction or infirmity. Sexual health requires a positive and respectful approach towards sexuality and sexual relationships, as well as the possibility of having pleasurable and safe sexual experiences, free of coercion, discrimination and violence" [68, 69]. Expression of sexuality impacts people's day-to-day lives and improves general well-being [70]. To begin with the components of sexuality, that includes both physical and emotional aspects of sexual interactions and interpersonal bonding, let us discuss the role of touch.

"Touch" is a fundamental facet of interpersonal connectedness and sexual encounter. It is known to give rise to positivity and bonding [71]. Social touch can include expressions of intimacy, expectations, care, well-being, and mood [72]. Social touch is closely related to affective modulation via release of oxytocin, vasopressin, mu-opioid receptor stimulation, stimulation of coupling between ventromedial prefrontal cortex (vmPFC) and periaqueductal gray (PAG). Sexual touch implicates other areas as well, like anterior cingulate cortex (ACC), limbic system, nucleus accumbens (NA), and PFC [72]. There is also a role of serotonin on the positive affect of affiliative touch, discriminative affective touch, social dependency [73–75]. Biological studies have found significant role of NA, medial PFC, ventral tegmental area and serotonin on resilience [76]. Thus, it can be said that social and sexual touch improves resilience via biological and psychological mechanisms.

During the Covid-19 pandemic, separation of partners, physical distancing practices, fear of illness have given birth to "touch starvation" or "touch hunger", which is all the more relevant for frontline workers, infected individuals and alike [72]. This deprivation is seen to be associated with disruption of resilience, and increase in stress and trauma [77]. Chronic touch deprivation is also seen to impede immunity by expediting autonomic activation in response to stress and the adverse effect of covid-19 on the physical system is likely to be enhanced by the pre-existing immune deficit. Poor physical health and sexuality affect each other in a bidirectional way [33, 73]. Sexual activity is seen to have positive impact on the autonomic nervous system, cardiovascular system, cognitive faculty, and immunity [78–81]. Sexually active people, in one study, have been shown to have high salivary IgA antibody levels [78]. Regarding the mechanism of sexual activity in improving mental health, studies postulate a role of hypothalamo-pituitary–adrenal (HPA) axis, endorphins, endogenous sex hormones, oxytocin and prolactin [82]. Role of HPA axis in stress modulation and thus resilience is well-documented in the literature. Behavioral effects of sexual activity encompass improvement in stress, anxiety, negative self-image, poor self-esteem and low confidence [82]. Sex is shown to have positive influence on trust, intimacy, emotion expression and use of mature defence mechanisms [83], and ultimately global well-being. Covid-19 has affected sexual function of individuals at multiple levels, including desire, arousal, orgasm, satisfaction, genitopelvic pain symptoms [11, 33]. Details of the possible aetiology of the different sexual dysfunctions during the current pandemic is beyond the scope of this chapter.

There is an increase in virtual sexual activities and masturbation because of the possibility of disease transmission or lack of cohabiting partner [84]. There are certain other aspects of sexuality that must be reviewed. Relationship dynamics is naturally one of them. Expression of intimacy and relationship dynamics have been affected in this situation due to various reasons. Getting housebound, loss of outside recreational activities, alteration of routine, breach of personal space and lack of private time due to constant presence of other family members, anxiety and stress due to social and economic uncertainty are to name a few [11, 66]. There is evidence of worsening of previously strained relationships due to forced cohabitation and poor social network support, further taking a toll on mental health and resilience of the individuals [85, 86]. A recent study among 789 participants in the U.K. showed that many of them used sex more often to cope during the lockdown as compared to before [87]. However, that was associated with less adherence to social distancing regulations and better emotional comfort. Younger age, living with partners/spouses, and male gender were associated with coping through sexual practices. Thus, it has been emphasized

that maintaining sexual health is important to avoid the secondary health hazards arising out of Covid-19 [33]. More at risk of negative health effects are the minorities like LGBTQ community. Stigma, discrimination, higher risk of immunocompromise and infection, economic constraints, decreased access to healthcare, loss of opportunities of community bonding and connectedness put them at a higher risk of stress and its unfavourable outcomes, hampering resilience [52, 88].

Connectedness is as significant as all other components of sexual health, as mentioned in the previous section. Though individual sexual health encompasses more personal connectedness and bonding with the partner, it does not function as a stand-alone and here social connectedness comes in. Social connectedness leads to social cohesion, strengthening of the "social capital", positive effects on the mental health and development of resilience [89, 90]. Community-based exercises are now being evaluated to develop community resilience [89], and the significance of community resilience in fighting a global pandemic cannot be overemphasized [91]. The discussion on sexual health is incomplete without talking about sexual rights. Fulfilment of sexual rights is duly acknowledged in by the WHO while defining sexual health [68]. Both inaccessibility and violation of sexual and reproductive health rights have been noticed across many countries during this pandemic, in terms of access to contraception and abortion, cessation of sexual education, sexual violence, etc. [92]. This may lead to increased vulnerability of the individual [93], shackling resilience and health. **Figure 2** depicts the multiple facets of sexual health and their association with psychological resilience.

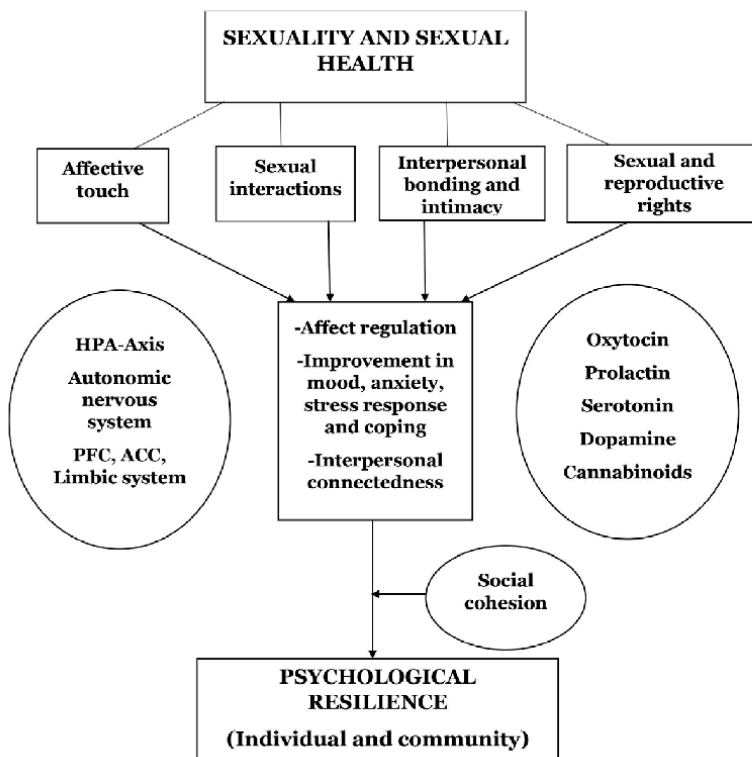

Figure 2.
Associations (neurostructural, physiological and neurochemical) between sexuality, sexual health and resilience.

5. Dealing with uncertainty during crisis: strategies to improve psychosexual wellbeing

Healthy expression and practices of sexuality along with preserved sexual rights help in emotional bonding and resilience. This has been discussed in the previous sections. Nearly after a year of the pandemic, many nations are being threatened at present with the second wave with resurgence of cases and repetition of precautionary measures such as lockdown. The risks of separation, fear of intimacy and re-living trauma of the recent past can further contribute to the uncertainty and worsen psychosexual health. Deprivation of sexual pleasure has been associated with depressive and anxiety symptoms, loneliness, grief, domestic abuse, substance misuse and poor coping with stress, though direct causal relations are poor [94]. Various public health agencies such as the International Society for the Study of Women's Sexual Health (ISSWSH) and Centre for Disease Control and Prevention (CDC) have advocated guidelines for safe sexual practices [95, 96]. Based on the risks involved with COVID-19, relationship dynamics, dating, sexual activities and expressions of intimacy have been modified. Sexuality has increasingly borrowed virtual forums as digital intimacy has emerged as the "new normal". There has been ambiguity related to presence of SARS-CoV-2 in body fluids. Recent studies have detected it in semen [97] but not in vaginal secretions [98]. However, the study samples were small which question the reliability of the findings. Further, the transmission through non-vaginal modes of sexual intercourse is unknown. As mentioned before, complete or partial abstinence is a possible solution, but pragmatically not always feasible. Masturbation and other self-stimulatory practices using sex toys are safe but needs hygienic measures. Few words of caution deserve mention. In the absence of original data, early pregnancy needs to be considered as an at-risk period for possible teratogenicity of the COVID-19 virus [99]. Also, people with medical comorbidities, without vaccination and immunocompromised states need to better avoid sexual intercourse as a preventive measure, especially if the partner has high risk of exposure.

Digitally mediated sexual interactions through the use of technology include cybersex, electronic sex, chat/cam sex, virtual sex, sexting, etc. With time, the broad rubric of cybersex includes digital sex (online sexting, nudes, mutual virtual masturbation) as well as pornography [100]. Expressing love through digital platforms has been termed as "sexual renaissance of the Gen Z" during the COVID-19 pandemic. Long-distance relationships and travel restrictions have further encouraged sexual experimentation (thirst traps of Instagram, sharing nudes, recording the same, digitally sharing pornography, sexting, etc.) [101]. The consumption and free availability of 'premium' pornographic content have been steadily rising during the pandemic-related lockdown [102]. Various NGOs and human-rights agencies have vouched for the safety and rehabilitation of the commercial sex workers which has further led to them adapting the virtual platform, thus bolstering cybersex. Virtual intimacy is a 'two-way path'. It is fraught with various ethical, moral, cultural and legal dilemmas and social acceptability. Besides, it also needs adequate bandwidth and technology mindedness. Nevertheless, it is a safe and anonymous way of exploring sexuality without the risk of STDs, risk of unplanned pregnancies and fear of infections [103]. Besides, cybersex allows for "an appreciable amount of uncertainty and surprise" that allows for sexual experimentation and eroticism [104]. Online fetish concerts, queer sex parties and LGBTQI+ Pride festivals have been arranged over digital media. However, besides the virtual exploration being devoid of "up close and personal touch" that is restricted during pandemics, it also runs the risk of online extortion, cyber-bullying, cyber-fraud, cyber-security threats, revenge pornography, online sexual harassment, dating scams, and online stalking. This is of

special concern in children and adolescents and has various ramifications based on the legal systems of different countries [105]. Digital sexuality cannot be discussed without talking about the changing 'faces' of digital intimacy. Watson et al. [106] has shown that digital modes of contact are being used more frequently now to overcome the problem of physical distance. Video-chat, and phone-call are seen to be most commonly employed method to stay connected. As a midway between the physical closeness and physical distancing imposed during the COVID-19 pandemic, digital intimacy can play an important role, thereby giving expression to the emotional and sexual needs of the people [107]. Doubtlessly, there are many caveats while implementing safe and healthy digital intimacy, including digital theft, inaccessibility of the medium, or lack of knowledge regarding the use [103]. Yet it can be considered as the need of the hour for bonding between partners. Though digital expression of love is unconventional and has not been encouraged socio-culturally [103], the pandemic may pave the path towards a paradigm shift in the concept of intimacy and sexuality all across the world.

The CDC recommends a minimum distance of 6 feet to prevent viral transmission, which precludes any form of personal intimacy [96]. However, the risk assessment needs to be personalized with mutual consent of the partners/couples. Informed decision making about the frequency, mode and duration of sexual activity should be an informed decision rather than based on misinformation (see the guidelines in **Table 1**). For example, kissing, hugging, fondling, touching and intercourse can be allowed in couples who are asymptomatic, have been practicing precautions and do not have a recent-history of high-risk contact [46, 95, 107]. However, it is important to bear in mind, that nations with a high case-load and rapid rise of cases may have significant number of asymptomatic carriers, the risk of which cannot be neglected. If any of the partners is symptomatic, CDC clearly

Aspects of sexuality	Specifics	Attributes/recommendations
Couples/partners	Solitary activity	• Abstinence • Masturbation • Pornography use
	Living together	• *Sex recommended*: with asymptomatic or equally high-risk partners, • For partners with comorbidities: sex only recommended if both of them reside at home • Contraceptive practices for recreational sex • *Sex to be avoided:* Symptomatic partner and those in quarantine after exposure
	Not living together	• Cybersex • Digital intimacy • Pornography
	New partners	• In-person sex need to be avoided • Cybersex
	Pregnancy	• Possible risk of teratogenicity • More adverse effects of infection
	Individuals with HIV and other STDs	• Added protective measures • Sex recommended: only if quarantined together and asymptomatic (with required precautions) • Prioritize PEP

Aspects of sexuality	Specifics	Attributes/recommendations
Sexual interactions	Kissing	• Only in healthy and unexposed couples
	Oral sex	• Only in healthy and unexposed couples
	Vagina intercourse	• Can be allowed
	Anal intercourse	• Allowed, provided faeco-oral transmission can be avoided
	Masturbation	• Safest
	Digital sexual practices	• Safe alternatives: Erotic conversations, mutual masturbation, chat rooms, sexting, cybersex, video dates, nudes, etc.
Sexual disorders and dysfunctions	Basic principles	• Stress, uncertainty and panic will increase the disorders • Mental health problems (depression, anxiety, PTSD, etc.) will increase the disorders • Contributed by domestic violence • Treatment need to be prioritized • Tele-counselling • Public awareness about safe sexual practices guidelines during the pandemic • Increase safe home confinement in couples, foster emotional bonding and quality time
	Discrepancies in sexual pleasure/desire	• Fear and death anxiety can contribute to differences in sexual interest and perceived pleasure • Chronic stress • Physical distancing
	Erectile dysfunction	• Highest risk in older men, frontliners and those with comorbidities • Sensitive to socio-economic stressors • Poverty and stigma • Substance abuse
	Orgasmic disorders	• Increased performance anxiety • Reduced perceived sexual pleasure • Anxiety, low mood, irritability, sleep problems, panic due to the pandemic
	Penetration disorders	• PTSD, fear of illness and prolonged home confinement due to lockdown • Lifestyle and dietary changes (obesity) • Lack of privacy • Interpersonal discord in couples
Miscellaneous		• Mutual respect and consent in couples • Informed decision making • Fighting misinformation and sexual myths • Emotional support • Enjoying quality time • Open and direct communication • Facilitate "COVID-free" time • Seek professional help (couple therapy, sex therapy, IPT, etc.) when needed

PTSD: Post Traumatic Stress Disorder; IPT: Interpersonal Therapy; HIV: Human Immunodeficiency Virus; STD: Sexually Transmitted Diseases; PEP: Post-exposure prophylaxis.

Table 1.
Suggested recommendations for safe sexual practices in various groups during the COVID-19 pandemic.

recommends self-quarantine without any form of intimacy or bedroom sharing for at least 7–14 days after the symptoms have started, or till full resolution of symptoms, or at least being fever-free up to 72 hours without any medicines [96]. A safe approach is to self-quarantine with partners if exposure has already occurred. This involves an acceptable amount of risk with the benefit of physical proximity and support. Adequate testing and treatment are necessary in all cases after proper professional guidance. This is especially vital in couples who have newly entered relationships, are exploring sexuality, have been physically distanced soon after marriage or any/both of them are frontline workers [107]. Adequate precautionary measures, hygiene and risk assessment are necessary in the latter. Adequate contraceptive measures and understanding of the reproductive risks are essential in the sexually active population [95, 107]. Indiscriminate sexual activity and in-person sexual experimentation are better avoided as it involves HIV and other STDs, that can further compound the risk and course of COVID-19. Frequent digital contact between distanced couples has been shown to improve emotional bonding and perceived sense of support. **Table 1** provides a summary of various attributes and recommendations for safe sexual practices during the ongoing pandemic. This is based on all the available guidelines discussed above.

Eventually, resilience is not just about physical proximity and sexuality is not merely about intercourse. Closeness is a process that helps navigate through adversities building up emotional support. As per Banerjee and Rao [37], "communication is the key and informed mutual decision-making" help relationships. The authors also highlight the brighter side of the lockdown when the long-due time of closeness with partners and families has eventually come to reality [107]. This quality time can be spent to "generate love and intimacy, to mend strained relations, and fostering new avenues of trust and hope." [107] There can be perceived differences in sexual satisfaction between the couples with change of lifestyle and working patterns during the pandemic, and these discrepancies need to be sorted out mutually, and if needed, with professional help. Eventually social cohesion within family calls for understanding differences, respecting gender rights, open and direct communication and informed decision making. The process of sexuality is no different [108]. Besides, there can be socio-cultural adaptations of the guidelines related to sexual practices during the pandemic.

Sexual activity has a positive effect on mental state, cognitive abilities and immunological responses, and needs to be advocated for cohabiting couples during the outbreak [33, 107]. The authors propose that considering the well-researched benefits of sexuality on physical health and psychological resilience, safe sexual interactions need to be facilitated rather than discouraged by all health agencies and professionals to tide over the uncertainty and crisis of these troubled times. Sound sexual health between couples is indeed one of the ways to foster bonding, improve relationships and strengthen support, all of which help positivism and coping during stress [10]. Relationship conflicts and discord are common during these times, and impaired sexual relationships often form a responsible link. Of special mention are people with pre-existing sexual dysfunctions which can get exacerbated due to the fear, change in arousal patterns, altered frequency of sexual encounters, behaviour of their partners and physical distancing [109, 110]. Performance anxiety can be heightened thereby triggering premature ejaculation and erectile problems. On the other hand, increased prevalence of psychiatric disorders like depression, anxiety, PTSD, insomnia, etc. can in turn worsen sexual dysfunctions especially erectile dysfunctions and anorgasmia [110]. The central tenet remains: with social distancing and home confinement, couples need to discuss, decide and agree upon safe and practical ways to foster healthy sexual practices among them to stay connected, resilient and tide through the adversities.

6. Conclusion

The ongoing COVID-19 pandemic and consequent precautionary measures have several long-term implications on sexuality, sexual practices, relationships dynamics, and emotional interactions between couples. The frontline workers, socio-economically vulnerable groups, individuals with psychiatric disorders and sexual dysfunctions, age and sexual minorities are at more risk. Uncertainty and fear of infection are the two persistent factors during this pandemic which has impacted sexuality besides other psychosocial outcomes. Research into the sexual effects of COVID-19 is however still in its infancy. It is known that preserved psychosexual health leads to better coping and resilience but the processes underneath need to be explored during the outbreak. Both population-based longitudinal studies and qualitative methods to understand the lived sexual experiences of cohabiting and long-distance couples are necessary to develop tailored interventions. Safe sexual practices have been recommended in the guidelines including digital intimacy, but their real-life implementation remains challenging. Couple therapies, family therapies, sex therapies, interpersonal therapies and supportive work can help bolstering healthy sexual relationships during these uncertain times of COVID-19 to build resilience both during and after the post-pandemic aftermath.

Conflict of interest

None.

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Chapter 28

COVID-19 Pandemic; Anxiety and Depression among Frontline Healthcare Workers: Rising from the Ashes

Salman Sharif and Faridah Amin

Abstract

This chapter gives an insight into the psychological journey of the essential healthcare workers (HCWs) during the COVID-19 pandemic. The catastrophe which started off with uncertainty, provoked fear-related behaviors among the frontline doctors, nurses and paramedical staff. With meager resources and lack of a disaster plan, fire-fighting was a reflex response of healthcare institutions. Though the whole world seemed to be unprepared for the calamity, developing countries with fragile healthcare systems were more vulnerable to collapse. The negative aura was complicated by mistrust among the general population, regarding healthcare workers, institutions and government. Furthermore, with economic downfall; balancing work and protecting the family was a challenge for HCWs, especially during the pandemic peak. The psychological distress translated to rising incidence of depression and anxiety among them. As institutions gained insight into psychosocial issues of HCWs; support and therapies were offered to them. Positive messages labelling HCWs as "Heroes of the Pandemic" were circulated and structured programs developed to address their needs. With the advent of COVID-19 vaccine, a ray of hope emerged, although there are still apprehensions about its efficacy and side-effects. The whole world now eagerly awaits the calamity to perish while normality can rise from ashes.

Keywords: Health care worker, Covid 19 Pandemic, Anxiety, Depression, Phycological distress

1. Introduction

"2020" has been a revolutionary year especially in terms of exploring new healthcare horizons. The voyage of the pandemic which started off with crises, disbelief, qualms and fears; with the advent of the vaccine, seems to be ending with revival, hope, insights and new acumens.

In its true sense, within a couple of months the world transformed into a global village attacked by a common enemy "The SARS COVID-19 virus" with healthcare workers (HCW) stepping into the battlefield, leading from front; few losing their lives while the others still struggling to get through the catastrophe. Although the unsung heroes are working nonstop under tremendous pressure, surely the effects

of this struggle may take a long time to fade. Especially the psychological pressure, stress and burnout may leave long lasting effects such as post-traumatic stress disorder, anxiety and depression which may continue to shape their lives in the long term.

This chapter gives an insight into the psychological journey of the essential healthcare workers; doctors, nurses and paramedical staff who are selflessly working at the frontlines, caring for their patients while striving to protect themselves, their families and loved ones from the outbreak. The chapter discusses the psychological distress caused, its associated factors and the coping strategies developed. As the pandemic is still not over, with the long term efficacy of vaccine unknown and as the third wave is approaching, recommendations can be made for preventive measures to limit the damage.

2. The beginning - Fear of unknown

The infection was first reported as a case series of patients with pneumonia in Wuhan, China in December 2019. Tracing back exposure, all the cases were found to have visited a seafood market in Wuhan. The virus identified as a new strain of Corona virus, was later named as COVID-19 [1]. More than 200 countries and around 500,000 population worldwide were affected within a short span on 3–4 months, while death attributable to COVID-19 globally was reaching more than 20,000 by the end of March 2020 [2]. Though the whole world seemed to be unprepared for the calamity, developing countries with fragile healthcare systems were more vulnerable to collapse [3]. With a mortality rate as high as 12% reported in industrialized countries, the general speculations were devastating [4, 5].

2.1 Fear of disease and shortage of Personal Protective equipment

Soon, the xenophobia spread to communities, institutions, regional and international governance while all the hopes to address, control and prevent widespread damage from the infection were laid on scientists, public health and medical professionals. High expectations from healthcare workers (HCWs) who were themselves vulnerable and exposed, further complicated the situation especially in an overwhelming situation with resource constraints. Healthcare workers including front line physicians, nurses and paramedical staff combating at forefront were especially susceptible to get infected, taking the disease back home and infecting their family members. As the association of higher mortality with older age became evident, the senior health professionals and their families were even more concerned for the health of their loved ones [6, 7].

Due to unpreparedness, availability of personal protective equipment (PPE) was limited even for the healthcare professionals, let alone for the general population. Dearth of knowledge about nature of disease and its spread, further created mental pressure and psychological distress [3]. Institutions which were already overburdened and functioning beyond their limits, were unable to provide adequate support to the petrified HCWs.

2.2 Psychological distress and associated factors

The beginning of the pandemic was therefore taxing for the mental wellbeing especially of healthcare professionals. Various studies among frontline physicians, nurses, para medical and administrative staff, revealed a high prevalence of stress, anxiety and depression [8] as depicted in **Table 1**. Although most of the studies did not compare the prevalence of mental distress during COVID than the

Healthcare worker	Subjects	Country	Frequency	Associated factors/ predictors of depression/anxiety
Developing countries				
[3] Physicians	389	Pakistan	43% physicians had depression	• assessing more than five COVID suspects/day • working 20 h/week or less • having children among household members • moderate to low knowledge of the infection
[6] HCW (Majority nurses)	365	Jordan	High fear score 40% extremely severe depression, 60% extremely severe anxiety 35% severely distressed	• male • married • aged 40 years and older • more clinical experience
[9] Doctors, nurses and paramedics	476	South Asian countries	25.7% prevalence of depression	• Female gender • Fear of unprotection • confirmed COVID-19 cases at workplace and in family
[10] HCW	908	China	16.63% moderate/severe anxiety 18.29%moderate/severe depression 24.50% concomitant moderate/ severe anxiety and depression	• increased workload • respiratory symptoms & digestive symptoms • testing for COVID-19 • family member at home • negative coping style • job burnout.
[11] HCWs (doctors, health assistants, auxiliary nurse-midwifery, nursing students posted in the wards, laboratory assistants, paramedics, staff nurses, sanitization workers, ward attendants, security guards and ambulance drivers)	150	Nepal	Prevalence of anxiety disorder was 37.3 %, 8% of the participants had depression Overall, 38 % of the participants, had at least one psychiatric illness	-

Healthcare worker	Subjects	Country	Frequency	Associated factors/ predictors of depression/anxiety
Developing countries				
[12] Frontline medical imaging staff	5331	China	Frequency of anxiety disorders were 6.5% and higher than those of anxiety and depression in Chinese residents before the epidemic.	-
[13] Healthcare workers	331	Cameroon	Anxiety (41.8%) and depression (42.8%)	• young age (30-39 years) • fear of contamination • fear of death
HCWs [14]	433	India	High-level stress in 3.7% Depressive symptoms requiring treatment and anxiety symptoms requiring further evaluation were 11.4% and 17.7% respectively	• women • women staying in a hostel/temporary accommodation
[15] HCWs	1146	India, Indonesia, Singapore, Malaysia and Vietnam	4.5% screened positive for depression, 5.2% for anxiety India had the lowest prevalence of depression 0.8%, Indonesia 2.4% Singapore 4.7%, Vietnam 6.7% and Malaysia (14.3%).	• non-medically trained personnel, • presence of physical symptoms • presence of prior medical conditions
[7] HCWs	745	Libya	56.3% participants had depressive symptoms 46.7% had anxiety symptoms	• Age • residency status • department • stigmatization • living in a conflict zone • years of experience, • working hours per week, • internal displacement, • stigmatization, • verbal abuse

Healthcare worker	Subjects	Country	Frequency	Associated factors/ predictors of depression/anxiety
Developing countries				
[16] Nurses	2,014	Wuhan, China	14.3%, 10.7% and 91.2% nurses reported moderate to high levels of anxiety, depression, and fear	Mental health outcomes negatively correlated with • self-efficacy • resilience
[17] Frontline nurses	325	Philippines	37.8% were found to have dysfunctional levels of anxiety	• social support • personal resilience • organizational support had negative correlation
[18] Frontline nurses	176	Wuhan China	Mild, moderate and severe anxiety symptoms were found in 27.3%, 25%, and 25%	• sex • age • length of service • clinical working hours
[19] Nurses	441	Iran	40% had moderate to severe anxiety.	• Female, • working in COVID-19 designated hospital, • being suspected with COVID-19 infection, and • insufficient personal protective equipment
[20] Frontline nurses	643	Wuhan China	One-third (33.4%) reported anxiety	perceived stress and insomnia
[21] Nurses	3,228	Sichuan Province and Wuhan City	47.1% depression	• relationship quality with family • demographic characteristics were associated with depression, anxiety
[22] Nurses	586	Eastern China	Frequency of anxiety and depression was 27.6% and 32.8%, respectively	• Lower self-blame, • rumination and catastrophizing, • greater acceptance and positive refocusing, were related to fewer symptoms of anxiety or depression

Healthcare worker	Subjects	Country	Frequency	Associated factors/ predictors of depression/anxiety
Developing countries				
[9] HCWs (majority Physicians)	939	Turkey	77.6% reported depression 60.2% anxiety 50.4% had insomnia 76.4% distress symptoms	• female gender • being a nurse • working on the front line • history of psychiatric illness • being tested for COVID-19
[10] healthcare workers	218	Italy	Prevalence of moderate to extremely severe symptoms in 8% for depression, 9.8% for anxiety, and 8.9% for stress.	Contributions of enhancement and suppression abilities and sensitivity to stressor context cues in predicting depression, anxiety determined.
[11] HCWs (hospital, midwifery and administrative staff)	600	Dublin, Ireland	20.3% of HCWs had moderate to severe depression and 21.0% had moderate to severe anxiety. 37% felt limitation of activity contributed to psychological deterioration. Household tensions were reported by 14% with partners and 20% with other household members including children	• younger HCWs • female HCWs .
[23] Neurosurgeons	375	52 countries	34% felt tense, 32.5 % unhappy and 14% had depression	• feeling unsafe with the provided personal protective equipment • exposure to a COVID-19–positive colleague more concerns for their families
[12] Nurses	255	UK	21% moderate to severe or severe anxiety depression (17.2%,) 18.9% had a low or very low resilience score.	Younger nurses with less experience have higher levels of anxiety and depression and had lower resilience.

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Healthcare worker	Subjects	Country	Frequency	Associated factors/ predictors of depression/anxiety
Developing countries				
[13] Nurses	1,005	Italy	Prevalence of sleep disturbances, moderate anxiety and low self-efficacy was 71.4%, 33.23% and 50.65%, respectively	Females were more prone to sleep disturbances, anxiety and had lower levels of self-efficacy than male
[24] Nurses	270	Turkey	85.6% had high anxiety levels	Area of work in COVID ICU and perception of insufficient income was associated with anxiety

Table 1
Frequency and associated factors of mental health disorders among healthcare workers in developing and developed countries.

pre-COVID era, but generally there was an alarming frequency of stress, anxiety and depression during the pandemic [25]. A study found a higher likelihood of anxiety, depression and lower quality of life scores among HCWs involved in COVID response than those who worked in other areas [26]. Another study in Italy revealed that healthcare professionals who were working with COVID patients were twice as likely to seek psychological help during the pandemic, than those working in other areas [27].

2.3 Stigmatization

As the infection built up its momentum and an epidemic transformed into a pandemic; there was an uneasiness among the medical professionals and other stakeholders. Fear of infection; especially spreading it to family members, long shifts in sub-optimal condition, lack of training and confidence created a vicious cycle of mistrust and negative professional attitude among physicians and nurses [28]. For example a study from china showed that mental health problems were more likely among nurses who regretted being in the field during the pandemic [29]. Another systematic review and meta-analysis showed high prevalence of anxiety and depression especially among female nurses [25].

Use of personal protective equipment (PPEs) by general population lead to an acute shortage and unavailability of masks and other PPEs for healthcare professionals, further complicating the situation. A lot of myths and false information were spread not only among the lay people but also the HCWs who were relying on news and social media for updates due to paucity of scientific data on the disease [3]. Stigmatization was therefore another factor associated with psychological distress and anxiety among HCWs [7]. In a nutshell, during the upsurge of the calamity, vulnerability to psychological distress was multifactorial and inevitable.

3. The Pandemic unfolding

3.1 Disaster plans

As the infection rapidly spread, the governments and health authorities experimented on various ways to contain and minimize spread of infection. Strict lock-downs were imposed and travel restricted, while standard operating procedures (SOPs) were formulated and implemented for essential services. Healthcare institutions and hospitals had to quickly devise a disaster plan, which included introducing secluded COVID clinics, emergency services, wards, high dependency units and intensive care units. Medical education came to a halt and post-graduate training was interrupted by special duties of medical and nursing trainees in COVID areas [30]. Other specialty doctors, nurses and paramedics were also trained to cover duties in COVID designated areas, as priorities shifted from non-emergency services to urgent care [23]. Elective surgeries and procedures were postponed and regular patient follow ups were deferred. On one hand this reduced the work load of healthcare workers offering services which were down the priority list; but physicians, nurses and paramedics on daily wages and incentives suffered financially. Private primary healthcare set-ups were closed to avoid unnecessary exposure of healthcare staff to infection while secondary and tertiary care hospitals dealt more with COVID and its associated emergencies. Follow up of patients with non-communicable diseases and elective surgeries were either deferred or the patients themselves opted to delay, due to fear of catching the virus. All procedures, laboratory work-up and diagnostic tests were also postponed, if risk of infection

outweighed the benefits. Therefore, all the healthcare professionals offering non-essential services during the pandemic suffered financially.

This was indeed further taxing for HCWs working in private organization especially in developing countries, where insurance coverage and assistance from the government is minimal and often absent. Private institutions on the other hand were unable to cope up with the dipping revenue, which resulted in employers reducing salaries and forcing HCWs to take unpaid leaves [31].

3.2 Dealing with economic impact

The economic impact was generic for all other professions, in fact the intensity was even more for other professionals, with complete lock-downs, social isolation and closure of non-essential services. Therefore, the healthcare heroes had to fight back and make both ends meet with minimal support from other family members, especially during the initial surge of the pandemic. A study in Spain showed that frequency of suicidal ideation and behavior was high among COVID HCWs and the found to be associated with financial stress [32].

Moreover, in developing countries, unsatisfactory healthcare services even before the pandemic, provoked mistrust and apprehension among HCWs when they listened to horror stories from the media. The same was true for the best healthcare systems falling short to handle this overwhelming situation even in the developed world [33].

3.3 Rise of rate of infection among HCWs

With mistrust and economical pressure building up, the gravity of situation was further worsened by an exponential increased risk of infection among the

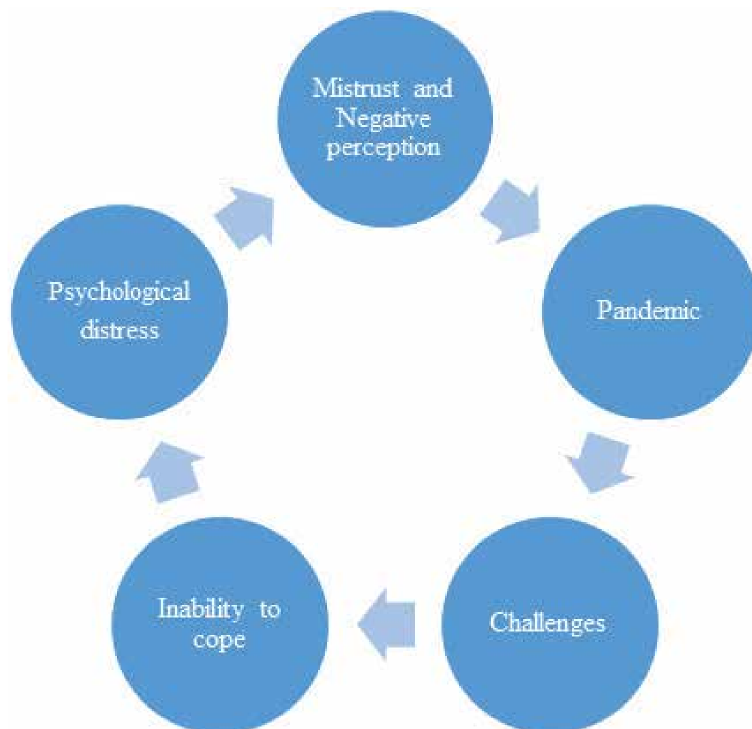

Figure 1.
Vicious cycle of psychological distress.

healthcare workers. Physicians, nurses and para medics suffered with worst infections. By the mid of 2020, more than 1.5 million infections and 1400 deaths were reported among HCWs. Infections were more common among women and nurses while majority males and doctors died of it. General practitioners and mental health nurses were the highest risk specialties for deaths. For HCWs over 70 years of age the death rate was 37 deaths per 100 infections. The Eastern Mediterranean region had the highest number of reported deaths per 100 infections [34]. Besides risk of infection, the news of colleagues and acquaintances succumbing to it worked as a double edged sword, increasing psychological distress leading to stress, anxiety and depression among HCWs [23]. Furthermore, a feeling of helplessness and hopelessness prevailed when skilled medical experts were not able to help their patients to recover due to absence of available literature or clear scientific evidence on effective treatments; the phenomena of "moral injury", as mentioned elsewhere in the chapter; The clinical guidelines issued by various regulatory bodies in a crises situation were weak and incomplete. Also there were a lot of discrepancies, making decision making further difficult for physicians, hence creating chaos and distress. The factors leading to mental disorders among HCWs during the pandemic therefore, were dynamic; creating a vicious cycle of increasing challenges, stress, inability to cope and more misery (**Figure 1**).

4. Reaching the peak of the curve

4.1 Impact on healthcare institutions

With the spread of infection, apprehension and fear was widespread among the general population. With an exponential increase in number of people getting infected, the panic was inevitable. This was especially evident in the developed countries, as the health systems though stable were not able to deal with the sudden surge of infected patients. While in the developing countries, an already fragile system with the overwhelming numbers reached to the verge of collapsing. As smaller scale healthcare set-ups were closed, tertiary care had to bear the brunt of all sorts of cases, from asymptomatic patients with anxiety to mild symptoms and severe symptoms, all reported in emergencies. This lead to overcrowding and hence compromising the quality of care. So much so that, a few private hospitals had to stop accepting new patients, due to unavailability of space in high dependency and intensive care units. This translated to a panic state among the general public. Hundreds of incidences of harassment and violence against healthcare workers were reported. Angry mobs went on to vandalize public and private properties on hospitals refusing to accept patients [35].

4.2 Misinformation and rumors

Misinformation and rumors spread all the wrong messages across non-medical people, further aggravating disbelief and mistrust. The "bad news" of the Pandemic was followed by a natural course of events. Initially, the public denied the presence of a new virus and labeled it as a "hoax perpetrated by a global cabal" and "a bio-weapon" [36]. Their illusions and imaginations went further wild when the healthcare authorities and professionals were unable to clarify their doubts with the little evidence and knowledge they themselves had about the disease. For example, initially it wasn't clear if infected corpses were able to spread infection, so the staff were directed against handing over COVID infected corpses to relatives. This created doubts among the family already facing an emotional turmoil and rumors

of political conspiracies spread, regarding hospitals tagging patients as "COVID infected" and retaining their dead bodies. Stigmatization against healthcare workers, COVID infected patients and medical infrastructure, therefore resulted in a high prevalence of violence, majority of which was directed against HCWs. Incidents of threats, physical and verbal assaults to the extent of HCW being shot were reported, especially in South-Asian and other developing countries [37]. The outcome was even worse with an already high frequency of burn out and psychosocial distress among HCWs [38]. With the healthcare system overburdened already at the peak of the pandemic, there was no time to for the government or healthcare authorities to respond to the hue and cries of HCWs.

4.3 Young and experienced HCWs affected

When little was known about complications of infection among elderly age group, the retired doctors were asked to help with managing the crisis, especially in UK [36]. As researches were conducted and it became evident that older age group was more likely to have grave complications and high mortality, a lot of senior and experienced physicians either chose to stay away or asked by their organizations to minimize exposure. Those who continued to work, felt even more distress with the risk of being exposed. On the other hand, younger HCWs feared taking the infection home to their elderly family members, hence a few studies also showed an association of young age with anxiety and depression among HCWs. This was especially prevalent in countries where a joint family system still prevails [21, 24]. The gravity of dissatisfaction among healthcare workers, especially nurses can be gauged by studies which revealed that not only nurses wanted to change their profession after the pandemic, but in Turkey, nursing students were found to be suffering from anxiety associated with a negative perception of their profession and an unwillingness to practice their profession in future [39].

4.4 Ethical dilemmas and distress

"Moral injury" is yet another form of psychological distress as a sequelae of actions, or the lack of them, which is against someone's ethical code. This phenomena has been recently described in UK which is imposing a risk of psychological distress among HCWs, facing intense feelings of guilt due to the sub-optimal human resource and facilities available to deal with the suffering patients [40].

The overall situation was of resentment, hopelessness and dismay complicated by physical illness and rapid spread of infection among HCWs and their families, lead to an alarming frequency of mental health disorders like anxiety and depression among them.

5. From unknown to known- developing insight

Healthcare professionals are the main force on which foundation of healthcare system rests; hence eventually the government authorities and institutions realized the utmost importance of addressing their mental and physical wellbeing so that they can perform their duties in the most efficient manner. As the governments and healthcare authorities were able to consolidate their efforts, the need to address the psychological health of HCWs was felt. It was sensed that mental health of frontline healthcare workers required consideration, targeted prevention and intervention.

5.1 Interventions to support HCWs

Positive messages were spread across by regulatory bodies, local governments, national and multinational organizations at all platforms, labelling healthcare workers as "heroes of the pandemic". Encouraging slogans like "Not all heroes wear capes, some wear scrubs" [41] were circulated in media, thanking HCWs for their efforts and for facing the predicaments from the front. Measures were taken to stop misinformation by circulating the correct information through visual, print and social from authentic sources like government, societies, NGOs and regulatory bodies (**Figures 2** and **3**).

Figure 2.
A message circulated by Centre of Disease Control (CDC).

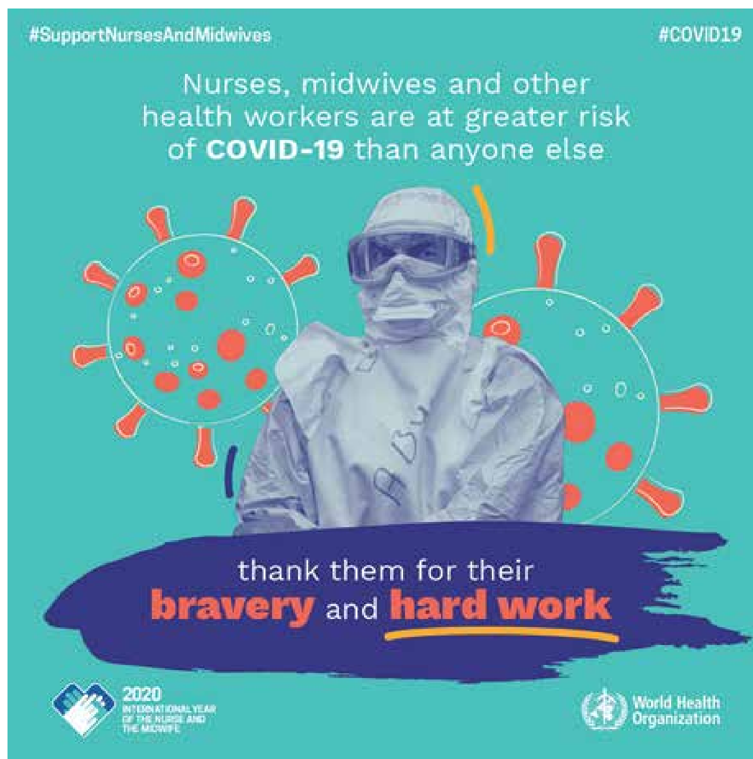

Figure 3.
A message circulated by World Health Organization (WHO).

Protocols were made and zero tolerance policy was implemented by local governments to protect the HCWs from violence. For example India made violence against HCWs, a non-bail able offence with an imprisonment for 7 years, while Sudan created a special police task force to protect them. In June, the International Committee of Red cross in collaboration with World health organization (WHO) published a checklist for HCWs including managers, practitioners and policy makers for addressing the issue of violence against HCWs, which included procedures for risk assessment, response and accountability towards those receiving care [37].

Religious scholars also played a role in giving out the right information and convincing people for compliance with protocols. Moreover positive religious coping among HCWs was shown to be a negative predictor of anxiety and depression, so opening up of religious centers like mosques and churches after the peak subsided, may have promoted better mental health and psychological tranquility [42].

5.2 Psychological interventions

Similarly, regulatory bodies, health authorities, local and international governance and organizations are providing mental health support is through organized efforts to promote psychological wellbeing of physicians and nurses, and the outcomes have been shown to be encouraging. In Italy for example guidelines were implemented for providing frontline HCWs with psychological support and providing strategies for coping stress. Also surveillance programs to screen and follow HCWs for mental health were devised [40].

Work stress was shown to be a positive predictor of poor mental health [43]. Therefore, strategies to promote mental wellbeing, such as balanced diet and physical activity, stress relaxation and recreational activities, frequent breaks between work shifts, socializing and expressing emotions were promoted and shown to be effective in reducing anxiety and depressive symptoms among nurses [44]. A considerate and mindful leadership who is able to communicate, educate and support nurses to practice competently and safely (physically and mentally) in the context of COVID-19 was also shown to reduce anxiety and encourage resilience hence positively impacting their mental health [45]. Even online learning sessions on emotional freedom techniques sessions was shown to help improve mental health outcomes among nurses [46].

In Italy, a multidisciplinary team of psychologists and occupational therapists teamed up to provide frontline healthcare workers with psychological care based on coping strategies for managing stress [40].

The covid −19 pandemic started off with uncertainties and fear of unknown. With the excessive physical, social and psychological burden, especially on the lives of healthcare professionals, the fear gradually evolved to chronic anxiety. The focus in the current state should be to direct efforts to break this cycle as anxiety is just at the verge of transforming to hopelessness, anguish and depression. This is evident from the fact that while initially HCWs hoped the pandemic to end in a couple of months, after a year majority are uncertain as to how long the calamity would continue.

It is therefore imperative to intervene at this stage when the mental health of communities at large, especially HCWs is evolving from qualms to fear, anxiety and anguish which can be detrimental and challenging to reverse at a later stage, leaving them with post-traumatic stress disorder and hence low productivity.

5.3 Efforts generating better outcomes

As it is said, “For everything that divides, the human spirit unites”. As a result of these efforts, as compared to the general public while the frequency of anxiety and

depression was high among HCWs before the peak, it descended after the peak [47]. A better insight into the disease its prevention and treatment could also have helped alleviate the anxiety among the physicians.

In a span of a year the situation came in a recovery phase with better insight, while just as SOPs were eased off and things seemed to be normalized, we were approached by the 2nd and 3rd surge of infection. Therefore, the hopes are now based on being able to target prevention through vaccines. It is speculated that with the advent of the vaccine, the social distancing protocols could be eased off. Moreover, a herd immunity as in the case of other deadly infections like small pox and polio, could eliminate the infection from the globe. This would normalize life as in the pre-COVID era and hence the distress would come back to baseline. From another perspective, if the vaccine is ineffective or if the innate ability of the virus to mutate quickly translates to a futile vaccine, the consequences may be unwarranted. Therefore, it's too early to relax, as putting guards down can still lead to another deadly wave of infection, further causing more stress and trauma to the HCWs.

6. Rising from the ashes- A ray of hope

Nearly every accomplishment in this world is a result of a goal identified in a moment of crises or to fill a need. As the scientists worked tirelessly to gather more knowledge about the disease and its prevention, effective management and treatment guidelines were published. Physicians were able to work out prognosis and probabilities of complications, hence were able to offer better treatment modalities and patient care. The knowledge and confidence translated into a positive outlook and less distress among physicians. Finally, the news of near availability of effective vaccine was a sigh of relief for most HCWs.

6.1 Acceptability of vaccines and predictors

The uncertainty and qualms HCWs went through for more than a year was bound to inculcate doubts. Only 36% of the HCWs were sure to get the vaccine as soon as it was available, as shown by a survey in November 2020, with safety, efficacy and speed of development, "too good to be true" being major concerns [48] Other studies done to explore the readiness of HCWs to get vaccinated showed similar results, with senior HCWs more likely to take the vaccine immediately [49].

As education has been shown to be a predictor of vaccine uptake, it is more likely that in developing countries, the acceptability of vaccination would be lower than in developed nations. Yet, hopefully an insight into reduction in number of infected cases, hospital admissions and mortality will increase acceptability of the vaccine.

6.2 Way forward

Currently, the available vaccines have shown to be effective with minimal adverse effects [50] and HCWs all around the world have been given the first priority for vaccination followed by the most vulnerable; the geriatric age group. There is still some apprehension and doubts, even among HCWs about efficacy of different available vaccines, yet the overall impression is reassuring, especially, when one can anticipate the situation to gradually revert to normal. Moreover, with immunity to the infection, socialization without worrying for contacting an infection and traveling for the sake of leisure, professional and academic development can be made possible, with just an evidence of vaccination. Certainly the inflated incidence of mental health issues among the healthcare workers can be taken care of with the magic, a simple vaccine can create.

Although the year was tough especially on the HCWs adversity provokes fear related behaviors and affects the mental health negatively. Yet, it brings out the best in oneself, raising the probability of rising beyond the situation, promoting self-actualization, self-realization and resilience.

7. Conclusion

Healthcare workers quickly became the frontline force to help the world deal with the pandemic. The epidemic which quickly transformed into a pandemic, started off with widespread uncertainties and xenophobia, with HCWs the most affected. The uncertainties within months became overwhelming at the peak of pandemic, when they were not only physically at risk but widespread infection brought much more psychological distress, because of expectations the world had from them. Quite a few lost their lives while others struggled to get through. Yet, as the chapters turned, the champions transformed themselves into more resilient and sturdy beings, with mindful leadership and other professionals helping them stay lucid. Governments need to help healthcare organizations, HCWs and their families to overcome financial set-backs, which would take time to stabilize post pandemic. With more insight into the dynamics of the interplay between physical, social, psychological and spiritual factors, we recommend that the efforts and interventions to promote well-being of healthcare workers should continue at local and international level. This will to prevent and limit the long term consequences of the trauma and helping them break the vicious cycle. More researches need to be focused on providing evidence to intervene and promote better mental health outcomes among HCWs as the vaccination produces herd immunity. The frequency and factors associated by anxiety and depression need to be assessed post-pandemic, so that the lessons learnt can be useful for the generations and pandemics to follow.

Although, at present, the battle continues with the 2nd, 3rd and now the 4th wave, but so does optimism, as we continue to believe that, "There was never a night or a problem that could defeat sunrise or hope".

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Chapter 29

Anxiety of Dental Professionals during Covid-19 Pandemic

Pinar Kiymet Karataban

Abstract

Coronavirus (COVID-19) is an enveloped RNA virus with a size of ~350 kilobase-pair and COVID-19 is commonly transmitted via aerosols, saliva, nasal droplets, and surface contact which causes severe acute respiratory tract infection among infected humans, and recently many cases declared with severe blood clotting. The average incubation period ranges from 4 to 14 days. The infected person usually presents fever accompanying an upper respiratory tract infection (RTI) and complaints of dry cough, and dyspnea. It is highly recommended to keep any suspected individuals in quarantine (isolation). After its first emergence in Wuhan, China in 2019 and then intercontinental spread it was declared as a pandemic by the World Health Organization in March 2020. The pandemic of COVID-19 deeply affected the whole world and healthcare workers as front liners are most at risk among professional groups. Dentistry is among the riskiest occupational groups that include all direct and indirect ways of COVID-19 spread. In this process, the dentists who experienced the effects of COVID-19 in the working conditions, economy, and social fields were psychologically negatively affected, and their anxiety, fear, and stress levels increased. In this review, we discuss the increased risk of the spread of coronavirus during dental operative procedures and the effects of the COVID-19 pandemic on the anxiety level, depression, and mental health of dental professionals.

Keywords: Covid-19 pandemic, uncertainty, anxiety, dentistry, dental professional

1. Introduction

A pandemic is defined as a worldwide epidemic occurring over a very wide area, crossing international boundaries and usually affecting a large number of people. The classical definition includes nothing about population immunity, virology, or disease severity. By this definition, pandemics can be said to occur annually in each of the temperate southern and northern hemispheres, [1] given those seasonal epidemics affecting a large number of people and there are certain criteria for a disease to cause a pandemic as declared by World Health Organization (WHO); It must be an epidemic disease that infected no one before, it must have dangerous consequences, and the disease must spread easily and quickly. COVID-19 disease was declared as a pandemic by WHO on March 11, 2020 [2, 3].

People who are in close contact with COVID-19 patients, especially healthcare professionals, are at high risk of contamination. Since routine health services are carried out in addition to the services related to the prevention of pandemic in the countries, filiation teams, physicians and nurses in charge of the treatment and

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post-treatment care of patients, and dental professionals who perform aerosol-generating procedures and treatments are among high-risk occupational groups during the pandemic period. According to WHO's December 2020 data, 14% of people infected with COVID-19 around the world are healthcare workers, and in some countries, this rate can reach up to 35%.

The risks healthcare professşonals face include physical, chemical, biological factors and psychosocial structure arising from the working environment. In the most general sense, stress is considered as an environmental factor and the resultant of this environmental factor perceived by the individual. The expected service from healthcare professionals and the ability meet the expected service determines their stress or tension levels. Healthcare professionals are directly related to human health due to their work. Since they have major responsibilities, they may experience the stress arising from the working environment more intensely [4]. This responsibility and stress increased during the pandemic as an undeniable fact. In addition, in the literature there are studies that working in shifts negatively affect the physiological and psychological health of the healthcare workers. Also regarding the definition of their profession, healthcare professionals have life-threatening duties and responsibilities, plus stress and time pressure as the professional difficulties which are the factors that increase their level of anxiety [5, 6].

Because of the risk of eye contamination, inhalation, and swallowing of very intense aerosols produced during the procedures and the fact that dental professionals work very close to the patient, dentistry is one f the riskiest professions all over the world. The risk of dental operative procedures is not only limited to the risk of COVID-19 but also poses a risk of other viral and bacterial diseases; such as herpes and hepatitis. For this reason, during the pandemic, dental professionals face the risk of being infected with COVID-19 by their patients or their colleagues as well as carrying the infection to their families, relatives, or infecting their patients during dental practices [7, 8].

During the pandemic period, the stress and psychological pressure on them increased, and situations such as anxiety, fear, and high stress levels could adversely affect their mental health. At the same time, the daily worrying news through social media, news, and the increasing number of cases and deaths both in the countries and the world, difficult working conditions, difficulties in the provision of protective equipment, combined with the concerns of dentists in ensuring the well-being of themselves and the family causes increased fear, anxiety, and high-stress levels [9, 10].

The purpose of this review is to analyze the effects of the COVID-19 pandemic process on the mental health and psychology of dentists, who are among the riskiest occupational groups.

2. COVID 19 and mental health

COVID-19 pandemic is still in charge with the second and third waves of the new strains of the virus creating a massive public health crisis worldwide and caused health systems to collapse [11–13]. With the spread of COVID-19, challenges have arisen in both the medical and the dentistry fields in all countries. Mental health has been adversely affected due to factors such as working hours of healthcare professionals that take longer than normal, the risk of disease transmission and transmission to families, uncertainties regarding the pandemic, and working with additional personal protective equipment for a long time [4, 14, 15].

Besides, with the spread of COVID-19, mandatory measures have been taken for everyone in the world. In general, new rules such as social distance, the

obligation to wear a mask, lockdowns have started to come into effect in society. The imperatives in such social life have made the pandemic process even more difficult for healthcare professionals such as dentists and doctors, who already have difficulties during working hours, and have negatively affected their mental health and reduced their motivation to work. When asked about the factors necessary for healthcare to continue working with motivation in such periods, healthcare professionals listed their primary motivation sources as providing personal safety, obtaining sufficient information about the disease, and providing compensation support [16–21].

Dentistry is also among the riskiest professions in terms of cross-infection and includes all the ways COVID-19 spreads. It is an occupational group where the dentist may be at risk of being infected with COVID-19 through direct and indirect ways such as aerosols, sneezing, cough, saliva, working close to the patient, contamination from eyes, mouth, and nasal mucous membranes [22]. For this reason, it is natural for dentists to develop a fear of being infected during the pandemic, as there is a risk of not only getting infected from patients but also spreading COVID-19 to their families, peers, and patients [23].

Besides, fear and anxiety are strong emotions that can be associated with factors such as individuals' social lives, working conditions, economic impact, and insufficient personal protective equipment during the COVID-19 pandemic process. Therefore, before effective approaches can be developed for dentists and healthcare professionals, it is essential to recognize their specific sources of anxiety and fear. Knowing the source of these concerns and focusing on relieving them, rather than teaching general approaches to stress reduction, should be the focus [11, 24].

3. Economical effects

With the COVID-19 outbreak, one of the groups that have been heavily affected among healthcare professionals is dentists. Because of the aerosols released during dental procedures, oral mucosa, and the working distance close to the patient, the risk of cross-infection increases significantly. For this reason, routine treatments have been suspended in most places, except for emergency procedures. Some dental companies even had to lay off their employees [16]. For this reason, concerns have started to arise in dentists due to this economic lockdown. Providing only emergency treatments has had a profound effect, especially on dental professionals who have their own clinics [25, 26].

The decrease in income together with the supply chain difficulties of personal protective equipment and materials put dental professionals in a difficult situation.

In the study conducted by Schwendike et al., in Germany during the pandemic outbreak, when they analyzed the 90-day balance of income and expense in dental clinics, it was deduced that clinics made low profits and that the income-expense balance would deteriorate even more with the continuation of the pandemic, and even reversed. It has been concluded that some clinics will also come up against the possibility of closure [27].

Meanwhile, dental professionals need to consider the treatment needs of their patients in this compelling period, the economic conditions of their staff along with many parameters such as income, expenditure, and the risk of being infected with COVID or infecting others, and should decide to not working at all, perform emergency procedures or routine operations.

The fact that the dental professionals who closed their clinics even temporarily have a great concern about how they will be economically affected not only for themselves but also for the staff working with them.

In the results of an online survey study conducted by Faccini et al. in Brazil, it was concluded that 64.6% of the dentists who answered the questionnaire only did emergency patients' treatment and 58.5% of dentists continued their routine dental treatments. According to the survey, it was stated that in the states less affected from the pandemic, routine dental treatments continued more than the most affected states, and the majority of those who continue routine treatment are young individuals, and the elderly are the majority of dentists who temporarily closed clinics or performed emergency procedures only. Lower anxiety levels have been reported in the pandemic among young dentists, which is thought to be since older people experience more family and job anxiety and financial worries [28, 29].

4. Working conditions

During the COVID-19 pandemic, as in all healthcare professionals, dentists also have psychological challenges such as anxiety, stress, fear that can negatively affect their mental health.

Dentists are at risk in this process due to exposure to high amounts of aerosols, working close distance to the patient, direct contact with the patient's oral mucosa, and for COVID-19 having all transmission routes. Studies have also found that infected people have 91.7% viral load in their saliva. Due to these risks, fear of being infected with COVID-19 and transmitting the virus to both their patients and their families cause increased anxiety in dentists [11, 30, 31].

Ahmed et al. evaluated the fear and anxiety levels of dentists in a survey study involved 30 countries in which 657 dentists participated in March 2020. According to the results, 87% of the participants were afraid of COVID-19 contamination from their patients or colleagues, 90% were worried while treating patients suspected of being infected, and 92% feared infecting their families with the virus [32]. As a result of the survey conducted by Ammar et al. between March and May 2020, dentistry academics from many different countries were the participants, it was understood that COVID 19 triggered stress and 10% of the academicians had COVID-19-related traumatic stress. It was concluded that fear of infection is the primary cause of stress [33].

Healthcare professionals have great importance in controlling all diseases such as the COVID-19 pandemic, managing and monitoring the epidemic within the community. Dentistry, which has all direct and indirect transmission routes of COVID-19, is one of the risky occupational groups that dentists should take the highest level of precautions to protect both themselves and their patients from contamination during the pandemic process.

The adequacy of personal protective equipment in clinics, infection control, taking various precautions and trusting the working areas have a place in terms of decreasing the level of anxiety of dentists. Because not using personal protective equipment, thinking of other employees in the same working environment as an agent of contamination, and having close contact with patients are among the reasons that increase anxiety. Besides, the rate of emotional exhaustion, which is one of the symptoms of burnout, has increased with the raising the number of protective equipment used to minimize the risk of contamination and the duration of using the equipment. The use of N-95 masks is recommended during the patients' treatment and at least the surgical masks must be worn in occupational groups such as dentistry where the distance between the patient and the physician is less than 1 meter. The risk of trauma increases with the continuous use of these thick masks during the working period, wearing two-layer surgical gowns, being isolated in the work area, high risk of the work area, and the possibility of being

in contact with infected people. The fact that dentists do not eat, drink or go to the toilet during working hours in order not to get infected makes this process even more difficult [17, 34].

Subjective overload relates to staff perceptions of their circumstances, which, together with their coping strategies, determine their job stress level. As dentists experience stress due to work, their physical, behavioral, emotional, and psychological problems increase as a result of being exposed to high stress, especially during this period. Lack of adequate and correct equipment, the feeling that dentists are not able to perform the treatments in the most ideal and best way during the pandemic process, being have to make simpler treatments, and the demands for treatment that are not suitable for the pandemic process increase the personal burden. In a study analyzing the effect of COVID-19 and psychological factors on the increased psychological stress level in dentists working in Israel in 2020, it was understood that subjective overload led to increased psychological stress levels during the pandemic period [35, 36].

For all these reasons, dentistry is one of the riskiest occupational groups in terms of working conditions during the pandemic process, and it is among the professions in which the use of protective equipment is difficult during the working period and the working environment is psychologically challenging in terms of work stress.

5. Social effects

In the fight against COVID-19, one of the rules that everyone must follow to prevent the spreading of the disease has been the quarantine process. Quarantine is not just a process in which the individual is physically isolated. The individual is also in isolation socio-psychologically. During the quarantine process, fear of infection, quarantine period, internal distress, insufficient information about the disease, insufficient protective equipment and immediate access to food sources are among the stress-increasing factors [37].

Healthcare professionals, including dentists, are in risky groups. They fear not only being infected but also fear family members being infected because of them. For this reason, most healthcare professionals have had to live separately from their homes and families to avoid physical contact. Therefore, while psychological support is especially important in such periods, the emotional and social support provided by the families of healthcare professionals living separately is minimized [30, 31, 38]. In a study conducted in 2004, after the end of the quarantine period during the SARS pandemic period, more fatigue, irritability, insomnia, poor concentration, worsening job performance were observed in healthcare workers. Also, dentists and other healthcare professionals were stigmatized by the public, socially rejected, and faced discrimination since they provided healthcare services during the pandemic period and interacted with patients, so their mental health was adversely affected [39, 40].

Social interactions of dentists decrease because they stay in isolation for a long time not only at their homes but also within the clinics they work for. Normally, being confined to a limited area is a situation that creates mental pressure in the human being, as the daily working routines of dentists have changed greatly, the decrease in both social and physical contact with other dentists, the decrease in teamwork, and the disappearance of interaction between other employees has become a situation that further increases psychological distress [17].

Social support has been shown to reduce stress and anxiety levels and improve the sleep quality of healthcare professionals caring for patients with COVID-19. For this reason, it is important for dentists and other healthcare professionals to be

in constant communication with their families, loved ones, friends by phone and social media during such challenging times [41].

6. Conclusion and recommendations

It is understood that it is inevitable that dentists, who are healthcare workers, will also be affected by a pandemic such as COVID-19 that creates a public health crisis in the world and negatively affects people's lives. Working conditions, economic difficulties, social isolation, the risk of infection, and transmission negatively affected the mental health of dentists and increased fear and anxiety. Dentists, who are the riskiest group in terms of working conditions and environments, have psychologically challenging working conditions due to reasons such as the difficulty of working with protective equipment for a long time, the presence of insufficient protective equipment in the work environment, work stress, social isolation among their colleagues. In this process, the balance of income and expenditure has deteriorated economically, and the fact that the dentists who own the clinics, whose income decreased only with emergency dental treatments, closed their clinics, even temporarily, caused concern among dentists not only for themselves but also about how the staff working with them would be affected economically. Besides, dentists have been deprived of family support, as they have to live in isolation and separately to minimize the risk of contamination to the family and their relatives, not only in the working environment but also in their normal lives. They have experienced stigma and discrimination by the public in social life due to their working with patients closely. All these reasons have caused negative mental disorders such as fear, anxiety, and depression in dentists.

The main protective factors of psychosocial health in epidemics are protective-preventive regulations related to the working environment and the pandemic. To prevent this situation, it is necessary to take precautions to protect dentists in the working environment. Providing detailed information about the disease, providing adequate protective equipment, and the hygiene of the working environment make the dentist feel more confident in the working environment. Therefore, the dentist's fear of being infected with COVID-19 reduces the risk of infecting his family and patients.

Continuing social communication with the family, even if remotely, through phone, social media, and video calls is an important factor in maintaining family support. Studies have shown that social support from colleagues and family and positive responses from hospital management and supports are effective in coping with stress during the pandemic process of healthcare workers.

As a result, dentists and all healthcare professionals play a key role in reducing and preventing the spread of COVID-19 during the pandemic process and maintaining healthcare services with minimum disruptions. It is an undeniable fact that dentists are among the professional groups that are most deeply affected psychologically within the framework of these responsibilities.

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Chapter 30

Children Living a Global Pandemic: Anxiety Repercussions

Salvador I. Garcia-Adasme and Alejandro López-Escobar

Abstract

A global pandemic caused by SARS-CoV-2 is still beaten our world. The disease, termed COVID-19 by the WHO, has a wide range of clinical manifestations, ranging from a mild, self-limiting form of the disease to multiple organ failure and death, forcing governments to take measures to mitigate the transmission and reduce the economic impact. However, the paediatric manifestation appears to take a milder form of the disease but they are not oblivious to the consequences of the disease. They suffered personal and parental lost, broke their social relationships, forced to home confinement, school closures, all of them with secondary implications. As a result, children's anxiety levels and manifestations have increased during pandemic. To prevent and counteract this situation, measures were implemented like increase physical activity, a balanced diet, and regular sleep pattern; and in relationship sphere use social media to stay in touch with school mates and relatives.

Keywords: COVID-19, Anxiety, Children, Mental Health, Nursing, Confinement, Pandemic

1. Introduction

The COVID-19 disease, produced by SARS-CoV-2 and it's variants [1, 2], has had the most impact on human health globally in recent times; infecting a large number of people; causing severe disease and associated long-term health sequelae; resulting in death and excess mortality; in many counties exceeding the healthcare services capacity, even mortuary capability; interruption of business, travel, education and many other societal functions.

Children population have lived this pandemic from the background because have a milder course with better prognosis than adults [3, 4], being deaths extremely rare, although there have been inflammatory impact in children, in the form of Multisystem Inflammatory Syndrome [5–7] and Kawasaki disease [8, 9], both with severity impact.

Despite of moderated physical impact, COVID-19 directly or indirectly may have had a probable impact on children's mental health.

2. Anxiety in children: day-a-day

Mental health problems in children could became these children in a dysfunctional adults, creating a social, economics and health concerning [10].

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Anxiety is the most common mental disorder in children between 9% and 32%, being a 14% in Europe population [11, 12]. Traditionally girls usually show more anxiety symptoms than boys [13, 14], but this paradigm are finding news research with opposite outcomes. Examples of that are Costa et al., and Iranian study, studies which find boys with more anxious manifestations than girls [15, 16]. These findings may be modulated by sociocultural or educational factors.

The symptoms depend on children' developmental stage [17]. Younger children are less able to symbolise subjective states and verbalise them, somatising with neurovegetative symptoms such as psychomotor restlessness, tachycardia, tachypnea or sweating; or somatic manifestations such as insomnia, somniloquy, hyperactivity-excitation, abdominal pain, hyperphagia/anorexia, nausea or headache [18]. On the other hand, elder children somatising trough restlessness, tiring easily, impaired concentration or feeling as thought the min goes black, irritability, muscle aches or difficulty sleeping [17]. Moreover, evidence suggests that stressful situations can trigger psychological distress [19, 20].

Anxiety and depression share comorbidities, which is why sometimes anxiety is addressed like as risk factor of depression [21] and both are related to Post Traumatic Disorder (PTSD). Marshall et al. found a direct relation between anxiety sensitivity and PTSD [17], being anxiety sensitivity a predictor of future PTSD symptoms [22].

Risk factor to develop anxiety include genetic heritage, parental mental disorders, inhibition behavioural patterns and environmental factors such as socioeconomically disadvantaged status, poor familiar functioning, parental separation in early children' ages, among others [23–25].

3. Anxiety and pandemic

Most of world's children routines were disrupted during COVID-19 pandemic.

The lockdown was a measurement to avoid the spread implemented by most of countries with a few exceptions like as South Korea [26], Taiwan [27], Sweden [28], some territories of Brazil [29, 30] and some states of United States [31], which enforcing different measures. Additionally, most of the countries which had applied lockdown added curfew to limit the population movements. Due to recurrent COVID-19 waves, several governments had reimposed these or partially measurements [32]. As a result of this measurements school classes were moved to their own homes due to school closures, as well as parks and playgrounds. These facts, added to home confinement imposed in some countries, provided a large feel of isolation. The duration of loneliness was more associated with anxiety than the intensity of loneliness [33].

During quarantine period, the main routines have been affected. Children reduced their physical activity, had irregular sleep patterns and changes diet habits, added to eventually familiar disputes and even domestic maltreatment [34]. These routines disruptions could develop some problems [34]. Nevertheless, pandemic seems to have had a little impact in the younger children' sleep [35] and in some studies the sleep time increased [36–38].

Restrictive measurements decreased physical activities among children and adolescents, being girls less active than boys and youth than children [36], changing physical activities' time for screen time [38, 39]. The prevalence of this reduction increased from 21.3% up to 65.6% according to a 2426 children and adolescent surveyed in Shanghai [40]. Outdoors activities during quarantine depend on the living environment and whether it was rural or metropolitan and exercises could be practised at home instead [41]. Adolescents specially missed their peers during quarantine and their extra-curricular activities [42].

Physical activity and diet are closely linked. Sedentary behaviours are associated with more caloric meals, and energy intake was higher when sedentary time enhanced [43]. Changes in diet were found during quarantine period. Lopez-Bueno et al. observed a reduction of fruit and vegetal consumption in young children, might be influenced for misbalanced familiar activities [38], similarly to Pietrobelli et al. who detected red meat, potato chip and sugary drink consumption increased [37].

Screen time has been increased due to children spent more time to accomplish school duties and stay in contact with their peers [38]. Videogames had been a reasonable tool to cape the pandemic stress, however, children with previous anxiety or depressive symptoms history positively predicted Internet Gaming Disorder (IGD) severity and videogame use during COVID-19 pandemic, but not inversely [44]. Nevertheless, spend more time in videogames activities coping pandemic-related stress could potentially became them more vulnerable to IGD.

In COVID-19 outbreak, Zhou et al. have studied the frequency of mild, moderate and mild-to-severe anxiety symptoms and they found 27%, 7.4% and 37.4% respectively among 8079 students [45]. Chen et al. have found by an online survey 18.92% and 11.78% answers related to anxiety and depression respectively [46]. Alike figures have found Duan et al., 29.27% of adolescent have shown levels of anxiety increased regarding to previous situation [47]. Magson et al. have studied a group of 248 Australian adolescents before and after pandemic and gathered girls with more anxiety and depression symptoms and boys reported more familiar conflict [42]. Depression was found in 3498 (36.6%) of 9744 Chinese adolescents surveyed, and of them, 45.15% had anxiety symptoms [48]. To a greater or lesser extent, the anxiety and depression emerged during COVID-19 pandemic.

During home confinement, a few researches have reported anxiety symptoms among children. Xie et al. have reported 22.6% and 18.9% depressive and anxiety symptoms respectively out of a total 2330 students in Hubei [49]. In southern Europe, Francisco et al. through online survey gathered a 1480 children and adolescents parents responses, have found 30.1% their children more anxious, with greater impact in Spanish children [39]. We have investigated anxiety levels in 2292 children during Spanish lockdown with home confinement through online survey. We divided our research in two parts, children under seven year's parents reported behavioural symptoms and children over seven years answered revised Children's Manifest Anxiety Scale's (RCMAS). In the elder group, 23.3% of those above seven years old scored above the 75th percentile in the RCMAS, with 47.7 ± 27.9 of mean of Total Anxiety percentile. Curiously, in this group, males reported higher anxiety levels than girls. However, considering the factors impacting a child, 53.6% described problems concentrating on homework and 92% of participants were reported high scores in all anxiety facets regarding to missing being in contact with their peers. We gathered higher scores on the Total Anxiety in children who have parents which are health workers or which has suffered COVID-19 at home [50].

Families have had to cape with several mishaps. During confinement many family members had to work from their homes, added to their children's classes. Other families had their work interrupted or directly were fired, with the consequently financial problem. In case of health care workers children' had more complications than their peers to adapt the confinement routines [51, 52], partly due to prolonged absence for work-related reasons in the first stages of pandemic; and developmental children' stages, breastfeeding-dependence in early ages, following by difficulty in understanding situation and fear to view their parents involved in potentially lethal disease in the eldest.

Duan et al. have highlighted as factors associated with increased levels of anxiety several characteristics, including female gender, denizen in urban regions,

emotion-focused coping style [47]. In contrast, de Miranda have found lower levels of anxiety and depression in metropolitan-regions [53]. Vulnerable socioeconomic status is a recognisable anxiety' risk factor and in this pandemic has had special impact in young people [47].

Family relationship wellbeing were not affected by living in risk-zone contagion, environment or the living space characteristics, but when parents had less own space or time, or when they had to take care children' learning, they were more stressed. This stress have affected significantly on children' mental health [54]. When familiar roles are dysfunctional, extreme patterns could raise such as domestic violence, directly inflicted on the child or between relatives, generating stressful situations, with impossibility of scape from assailant resulting from confinement with his [55]. COVID-19 and the implemented measurements such as home confinement and limitation to social contacts could raise the figures [56, 57]. In this way, even though the school could provide a secure place where children can report home abuse [47], but the school is not always safe. Children who have been bullied may benefit from a quarantine period to be separated from their abusers. The problem during stay-at-home indication is where the children's abuser is.

Regarding to children with special educational needs and disabilities, a study in UK reported increased impact both parents and children [58]. In case of children with Autism Spectrum Disorder (ASD), after an initial deterioration in the first phases of confinement, symptoms were subsequently reduced with an average impact on behaviour, partly mediated by pharmacological changes [59]. Other study conducted in Italy by Colizzi et al. have shown more intense (35.5%) and more frequent (41.5%) behaviour problems, added to changes routines with difficult to manage free time (78.1%) and structured activities (75.7%) [60].

3.1 Anxiety in the youngest in pandemic

Anxiety in youngest children, under eight years of age, has not been commonly studied. However, a recent study conducted by Mira Vasileva et al. estimated in 8.5 the any anxiety disorders' prevalence in children between one and seven years [24]. In similar direction Duan et al., have shown that 23.87% children had significant anxiety level in a population of 3613 children, who 9.94% of were between seven to twelve years [47]. A Turkish study conducted by Zengin et al., found anxiety scores in children from nine to twelve years answering The State–trait Anxiety Inventory for Children (STAIC), as the children are elder, the state anxiety levels decreased and the trait anxiety levels increased. While they did not found difference between the genders in terms of the trait anxiety score, boys' state anxiety level was significantly higher than girls [61]. In our investigation, divided in two parts, children under seven year's parents reported behavioural symptoms in an online self-designed research team survey. 50.9% of the children aged below 7 reported four or more symptoms and 88.7% at least one. The most common paediatric symptoms included tantrums (56.4%), emotional changes (34.1%), restlessness (33.6%), and fear of being alone (33.2%) [50].

4. Long-term impact: Still unknown?

Undoubtedly, pandemic crisis can leverage a weak point in the most vulnerable and may induce to suicidal acts, as persons with previous attempts, history of mental disorders and emotional distress [62]. In children, despite this situation and increased pressure, suicidal attempts due to the first pandemic wave were not increased [63, 64].

Previous epidemics with quarantine measurements such as H1N1 and SARS-CoV, Sprang and Silman have reported 30% of PTSD in children exposed to this [65], likely in stressful events such as natural disasters or other catastrophes [19].

Domestic violence increased during pandemic could have increase the risk of develop further complications such as PTSD, drug abuse, anxiety and depression problems, among others [66].

Under Foucauldian sight, this pandemic could be generate some changes, or accelerate this, in occidental and capitalism paradigms. Starting from power and knowledge pairing as discipline, the evolution from disciplined societies to new forms of fast adaptability has had in pandemic, a global disease, a strong ally. This pandemic has enhanced new dispositives or dispositifs, understanding dispositive as anything that has, in one way or another, the capacity to capture, orient, determine, intercept, shape, control and secure the gestures, behaviours, opinions and discourses of living beings, with the aim to manage an emergency. It has a dominant strategic role [67, 68].

The Confinement measures, keeping social distance, disinfections in public places during early stages, military in streets, the curfew, new laws adapting to changeable circumstances, and much more, could be examples of dispositives implemented in COVID-19 pandemic. Some of them may remain for some time or permanently while others will be phased out as the pandemic could be keep under control, but the final impact remains to be seen. Special mention need the extensive deployment of technology capable of keeping us all permanently connected, which have reinforced the role of social media as sources of contact between people, just as videoconferencing has become a meeting room where parents work and children attend classes with their peers. But at the same time this technology is becoming step by step in an externalised panopticon, applying disciplinary power, generate a state of constant monitoring and surveillance, causing a self-governing and self-censorship in each member of society, where privacy is constantly challenged [67].

5. Prevention: politics and facts

However, uncorroborated, false information and rumours have had in media an influential ally due to easy spread them. These misleading reports may have intensified anxiety symptoms in children [69] but also in general population [70], despite of the efforts of media companies to curb the propagation [71]. Therefore, the government and health authorities should provide accurate information on the epidemic situation, refute rumours in time, and reduce the impact of rumours on the public emotional state [71].

Some reviews point to preserve physical health and activity [53] and promote home-based activities [72]. Many governments implemented different programs to stimulate physical exercise among population, using TV programs or other strategies.

Ensuring continuity of psychiatric support, both children under treatment and debut or stressful situations, countries such as France or Germany had improved teleconsultations of mental health professionals [73].

Related to vulnerable situations, governments have to reinforce help resources and tighten surveillance over most frail, encouraging tele-consultations, developing routines, promoting technical support to children without online connection [74].

Schools are turning to creative and diversity model abandon the disciplinary model, in line with previous words. They are acting as one of the main pillar of the socialisation and formation of the young child, and without doubt may and must develop an active role to promote healthy practices [67, 75].

6. Conclusion

COVID-19 pandemic has had a strong impact on the world's youth population. This consequences, now-a-day, still are unknown and hidden. Previous stressful situations such as natural disaster o violence situations have shown that children are be able to adapt and go ahead thus resilience. However, always there are consequences and children that derived from specials and vulnerable circumstances could develop mental problems. That is why we shall to reinforce our mental health resources and carry out a detailed screening of the most vulnerable people and deploy strategies and multidisciplinary interventions in early steps of problem development. Mental health professionals, paediatricians, nurses in many areas such as school or primary care, social workers and teachers may implied in surveillance of children' mental health status. This reinforcement should include a special surveillance of suicide figures. Maybe it is too early to assess the real impact on suicide and suicidal attempts and we should be updating and tracking figures to quickly observe a change in trend.

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Conflict of interest

Salvador I. Garcia-Adasme has received private founds by HM Hospitales to course his doctoral studies in CEU International Doctoral School – CEINDO, CEU-San Pablo University.

Alejandro Lopez-Escobar declares no conflict of interest.

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Chapter 31

The Psychological Aspects of Home-Makers and Women during Pandemic

Samina Firoz Wagla Wala

Abstract

Depression and anxiety are two faces of a coin and we unfortunately fail to understand the plight of a person suffering from any one of these mental conditions. However, nowadays people have started considering mental health as a serious and complex issue, but still, those suffering from it tend to shy away and hide in arrears their own dark curtains. Sometimes, a very normal looking person may also be a victim of mental breakdown and anxiety. He may be working out fine, laughing, smiling, talking and all, but somewhere deep inside and within, he may be crying his heart out. It just does not visibly appear so on the outside. Moreover, in the phase of COVID, this situation has aggravated a lot because of various reasons like loss of jobs, work from home, salary reductions and cost cuttings etc. The effect of these problems fell on the families overall, but the most suffered category was – THE HOMEMAKERS, or in other words, THE HOUSEWIVES. Housewives have usually higher resilience when it comes to handling problems and family issues as they have an inbuilt capacity and trait to handle and adjust themselves in any atmosphere and ambience after marriage, but this COVID period was equally tough to handle for them as well. Specifically, if we talk about housewives, the entire COVID period was difficult for them to handle because of multiple reasons which will be mentioned point by point.

Keywords: pandemic, housewives, anxiety, psychological, homemakers, women, depression, resilience, COVID

1. Introduction

The title chosen for the chapter is deliberately explained in a very simple yet effective manner because as a part of the global community, now we all are aware of what the word PANDEMIC means. So, let us first try to understand the term "Pandemic" and then see the effects of the COVID pandemic on the society in general and then the housewives in particular.

Pandemic. Pandemic defined by the dictionary as a disease that spreads over the whole world or a whole country. In the remarkable year 2019, the whole world found itself waking up to this brand-new pandemic – COVID.

COVID-19 has been one of the most widespread diseases the world has ever witnessed in the past century. This pandemic stretched its arms wide across the world, people died in every corner, some even very untimely, but in addition to all

the visible destructions due to COVID, there were numerous invisible effects of this pandemic as well.

Usually, when we talk about the negative or destructive impact of such an event, we consider only economic losses, decline in GDP of the country, poverty etc. Although, these impacts are also heart-breaking and pathetic, but what we often forget to pay heed to is the mental breakdown people have who suffer from such problems.

People commit suicides, relationships fail miserably, families break down and depressed minds and increased struggles snatch the mental peace bit by bit with each passing day. Now when we consider all these impacts which relate to the psychology of a person, we do not usually see it as a visible difference to the society overall, but if people who institute any society are not fit mentally, then what good can be extracted from such a societal sect?

This is a question which is vital for all of us to understand but unfortunately, many of us fail to even comprehend this as a serious matter and people do not consider mental or psychological impacts as harmful as any other visible impact.

What people usually fail to understand is that if a person is mentally unfit or mentally in a bad state, then he or she will not be able to perform any task assigned to him efficiently. But generally, people do not promote mental health and fitness as much as they appreciate physical fitness.

Physical fitness is required to perform any task physically, but mental health and fitness is equally necessary to ignite motivation to do any task – waking up after a nap, taking off shoes after coming home, cleaning dishes, washing and ironing clothes and even the toughest of jobs like reading a book, talking to a friend or playing with a child.

The latter are also not very difficult to perform, but just when someone is mentally depressed or anxious, when the person cannot breathe or when it feels like the heart is somewhere breaking into pieces inside, these easy jobs also appear very difficult and complicated. People forget how to talk to others, how to read a good book or watch a good movie. People are unable to cherish the smile of a toothless milk-dipped lips of a child. Depression does not have anything to do with a gender in particular, but when it exists in someone, then it makes people wonder and question their existence. People often suffer from existential crisis and this indeed makes them neurotic.

2. The stature of housewives in the society

The concept of housewives is quite twisted in our society. Any woman who nurtures a family is a home-maker and not a housewife. Whether or not the woman is working professionally somewhere or handling her household entirely, the psychological impact of these things is equal on both. But if we critically examine the psychology of both the categories, then we can clearly gather that both of them have their own battles to fight.

Majority housewives suffer from this kind of abuse on daily basis and become a victim of their husband's anger and frustrations. All these episodes, even if they occur just once, leave a dark and negative imprint on the mind of a woman.

3. Impetus behind the problem

The emphasis by this study is on the shifting psychological stability of a woman. Many working women who were tied up at home during the COVID phase were

also facing the same issues as those women who were not working and were totally dedicated to their households. In addition, the newly married women also faced the many issues because of which their relationships suffered from crisis. We cannot consider using the phrase 'the main problems were …' because there were so many issues and all of them were equally complicated.

3.1 Shortage/decrement in the total family income

The difference between the ratios of the income of the household and the expenses of the household increased to such an extent that it became very difficult to supplement the basic needs of the family. All this led to an additional burden on the housewives as they had to adjust with the scarcity of money, look after the basic needs of the family members like food and medicines, and most importantly, handle the educational expenses of children and to handle their tantrums. Obviously, the prime responsibility of handling the financial matters mostly lies in the hands of the husband, but handling and managing the children, especially the young ones who are not established enough to take care of themselves and rely entirely on parents is a rather more difficult job. Women who are totally soaked up in house chores are relatively more vulnerable to depression and anxiety because of the fact that their life revolves around just this one aspect – family and family members.

In most traditional families, who are deeply rooted into the quagmire of cliché societal rules mostly see housewives as the thread which binds the family members together. And for this one reason, whatever happens within a family becomes the prime responsibility of a housewife. If the man of the family loses his job or earns inadequately, it becomes the responsibility of the housewife to manage the expense and feed everyone according to that [1].

In fact, housewives are burdened with so many responsibilities that they hardly get any time to look after themselves or pay attention to their mental wellness even in normal conditions. Topping that, the lockdown period during the pandemic was like a cherry on the top of a cake.

The loss of jobs and massive fall in the economy during the pandemic resulted in the shortage of money due to which many families started quarreling within themselves.

The basic expenses of the household like groceries, medical expenses and various other incidentals like electricity, water and rent were also too much and the restricted income of the family was a big concern for the housewives during the pandemic.

3.2 Housewives: victims of domestic violence

In various households, the housewives also fell prey to the frustrations and aggression of their male counterparts. The frustration and foiling mindset of husbands, especially those who were out of jobs were incited to behave violently and become aggressive and misbehave with their female counterparts [2].

Many cases were reported where husbands beat their wives ruthlessly and even many children became witness to this at a very young and tender age. Usually, this behavior arises from the ruined psychological process of the various men who believe that feeding their families is their primary job and somewhere deep within they knew they are lacking in it. But, keeping in mind the egoistic characteristic of the male mindset, they reciprocated this frustration on their wives and blamed them for spending too much and not being able to survive in tough conditions [3].

3.3 Burden of nurturing the entire family

During this pandemic, the world witnessed exponential deaths and fatalities, families were infected and as a measure for safety, people were maintaining physical distances from one another and constantly sanitizing and so much more. But distances were increasing at a rapid pace not just physically, but also mentally. Another reason why housewives suffered psychological stress during the pandemic was that all the members of the family came under one roof [4, 5].

Now, prima face if we consider, this should be a good thing. But the case was not so appealing in most families. When joint families came together, in-laws came under one roof, most of them could not adjust with each other.

In addition to this, housewives were expected to bear the responsibility to make peace with the in-laws no matter how tortured they felt from within.

This perpetual burden of keeping the family tied up together along with bearing the financial issues and still keeping the family happy together by taking care of all the members of the family – husbands as well as the in-laws was a very challenging task for housewives.

If we talk about Indian families, the psychological ill-impacts on housewives were even worse. In Indian families, it is believed that joint families stay happy and family members should stay together as much as possible and because of this notion of a "happy family", many families end up "unhappily". Many such cases prevail where if we observe, women are not happy with their in-laws and are victimized badly – both physically and mentally.

Additionally, women faced issues with in-laws in terms of dominance also. Women who were working from home needed to spare time for working as well as for doing house chores. But with families living together under the same roof, division of work was not equal and all the pressure was on the shoulders of housewives.

4. The effects of migration on housewives

In addition to all this, there was one more issue we witnessed – MASS MOVEMENT. Now when we hear the word mass movement, we picture migration. But this migration is of a different kind altogether. During the pandemic, there were thousands of people who had to move to their home towns i.e., they had to shift from the place they worked at to their home towns or villages due to work from home policy and decreased income and increased expenses [6, 7].

Those who were unmarried, were a bit safe from the household problems, but those who are married, especially married women, faced a lot of difficulties in adjusting in their home towns and villages again.

The main issue was that women belonging to a village first adapted themselves with the ambience and lifestyle of the cities due to their husbands' jobs in the cities. Now, when they were finally settled there, away from the daily hustles of in-laws and neighborhood, they were again compelled to shift to their native hometowns or villages.

Now going back there and adjusting with the same old typical conservatism and living up to the expectations of in-laws and society was one hell of a challenge for housewives during pandemic. Husbands could still comparatively adjust because they were living in their own family environment which wasn't new for them. But housewives faced difficulties because most of them were not treated as a part of the family but as a DAUGHTER-IN-LAW who will work and contribute towards the family's well-being in every way.

The husbands also did not understand their wives' conditions and the negative psychological impact on their minds as they were too much involved in other things like job and income.

All these factors led to a massive mental breakdown and negatively propagated the emotional dissatisfactions within families.

5. Sexual deprivation in housewives

Apart from all this tedious house-job, there was a perpetually rising tension of sexual dissatisfaction between husband and wife.

According to some researchers who conducted research in this area, 70% Indian women do not have orgasm during sexual intercourse. Sexual dissatisfaction leads to many mental disorders like neurosis and even Oedipus complex sometimes in worse cases. In a novel called Cry, the peacock by Anita Desai, the protagonist Maya suffers from psychosis and a grave neurotic disorder. This leads her to madness and results in heinous crime. Maya ends up murdering her husband Gautam and killing herself soon after [8].

Many women who were exhausted by their day's labour during pandemic and wanted some relief looked up to their male counterparts for sexual pleasures and satisfaction. But 7 out of 10 men do not pay heed to a woman's sexual satisfaction. During pandemic, women were mentally exhausted due to many reasons and the only mode of pleasure or relief was sexual intimacy. But housewives suffered from sexual disharmony also [2].

So, if we consider all these factors and reasons, we can easily imply that women were psychologically affected to an extremely disastrous degree. The psychological impact on housewives during the pandemic was so traumatic and serious, that it affected the overall functioning and mental makeup of women, especially housewives.

6. The cause-and-effect theory

Now, when we consider such reasons and the consequent effects of these, we can acknowledge very well how the conditions of the housewives would've been like during the pandemic. While we acknowledge and come to terms with these conditions, we realize that these were the conditions of those women who were unpregnant (**Table 1**) [3, 7].

7. Pregnant women during pandemic

Now considering the other paradigm of femineity, i.e., when we look at those women who were pregnant during the pandemic period, we will know and we will realize that how difficult it was all the more for those women who were facing pregnancy along with the other stresses of household. In fact, there were some women who did not only go through repeated pregnancy disorders and other stressful episodes but also went through many physical as well as mental disorders which we call Post-partum Stress Disorders. This disorder results in post-partum psychosis which is usually prominent among 20–25% pregnant women [9–11].

Reasons	Effects on Psychology and Physical Health
1. Lack of literacy or lack of disease management knowledge.	Increased risk of getting prone to the pandemic. Increased risk of spreading or catching infection from nearby people.
2. Burden of increased house chores like cooking, cleaning, washing etc.	Excessive body aches and lethargy.
3. Forceful/undesired/unwillingness to perform sexual activity.	Decreased libido resulting in sexual dissatisfaction with the partner.
4. Irregular sleep patterns.	Insomnia, increased risk of mental disorders, irritability and heart diseases like stroke.
5. Economic/financial problems.	Inability to fulfill the basic family and self needs and increased burden of affording the essentials.
6. Lack of mental health assessment/self-judgment methods.	Depression, anxiety, mental disorders, lack of self-confidence, guilt etc.
7. Irregular emotional episodes/fluctuations due to abundance of household chores and lack of time for self-enhancement.	Fluctuations in the menstrual cycle patterns, loss of appetite and irregular mood swings.

Table 1.
Reasons and effects of common problems faced by housewives.

8. Pre- and post-partum disorders

The most common symptoms of this disorder are rambling speeches, elated mood swings, erratic behavior and repeated episodes of crying over past guilt and much more. The summary is that, the longer it takes to treat them, the bigger the problem becomes. Sometimes, the stressful disorder also leads to having much serious effects that can harm the child as well as the mother herself and can be very aching for the family members as well. Now, when we talk about the treatment of such disorders, the first step which needs to be followed is to keep the woman happy during such times. But, pandemic and especially, the lock-down period was so stressful for everyone that it became very difficult and almost impossible for the family members to take care of the pregnant woman.

The financial and other crisis made the proper medication and psychiatric assistance also difficult to afford. The only method to keep the woman healthy was to keep the woman happy and the overall ambience of the family also happy but that was not possibly happening everywhere.

A similar research study conducted during the Ebola outbreak in West Africa in 2014–2015, reported that women were more likely to be infected because of their primary role as caregivers inside families and frontline health workers. The resources for reproductive and sexual health were diverted to emergency response. This led to an increase in the maternal mortality rates as well.

So, the pandemic had combined negative effects on housewives as well as women who were either pregnant or working from home.

9. Effects of pandemic on female domestic workers or house-maids

The image is taken from a leading Indian newspaper article, which captures the image of a young domestic worker who was deeply unhappy with the lockdown. She reported that the few hours she used to spend away from home was the only time

Figure 1.
https://bl.thgim.com/blink/cover/oxgaep/article31244743.ece/alternates/WIDE_615/BLINKWOMAN MIGRANT

she had to herself in an otherwise full day. She'd get to work early, finish the chores quickly and efficiently, and once her employer left for office, relax with a cup of tea and something to eat, and watch television (**Figure 1**) [12].

But everything changed amid lockdown in pandemic. She would stay home in a joint family all day long and the entire burden of household chores were placed on her shoulders. She had to look after, her child, husband, parents-in-law, not to mention the regular cleaning and swabbing and the ceaseless reprimand.
The husband who was not violent, but like many men, apathetic and mostly uncaring.

For women who live in violent households, and those hundreds who cooped up in cramped spaces things became much more difficult during the pandemic.

It's a fact that count and degrees of domestic violence increased during times pandemic lockdown. Men who were caught between the clutches of the State and local militia, men turn more and more to the violent abuse of their wives and children.

The knowledge of how pandemic impacted housewives is less common. The studies that exist, however, are consistent in their findings.

The signs of the negative impact of the pandemic on women are quite clear.

There are various research reports from mid-Asian countries like China, Malaysia and Indonesia show a sharp rise in domestic violence in recent months.

According to a recent case reported in China's Jingzhou district, there was a sharp rise in domestic abuse reporting in February 2020 as compared to the previous year.

For a country like India, it's difficult enough for women to report domestic violence in 'normal' times; if they wanted to do so in pandemic, how would they? Would their complaint be taken seriously? With social interaction down to nothing, there's no alternative to compassionate neighbors, NGOs or the community.

10. The lack of proper sanitation facilities for women

Across the world, at least 75 per cent — and the figure is higher in some countries — of caregivers are women. In India, we already know that nurses are at risk; they are being thrown out of their rented accommodation, targeted in the areas they live in [8, 13].

A recent piece in *The Lancet* asks a question that is seldom addressed — that of women's sanitary needs at times like this. Among the concerns for protective equipment, gloves, masks and so on, should there not be concern for menstrual supplies such as sanitary napkins?

A Chinese activist, Jiang Jing, who runs the Coronavirus Sister Support campaign, recently said, "Not many people thought that the frontline female health workers engaged in the battle against Covid-19 could need sanitary products for their health." [4].

Another tragedy which unfolded during the pandemic was the dolefully scarce compensation packages announced by the government which were limited only to registered workers, a minuscule number in a largely unregulated situation.

The chances were that there were few women among the registered, while many were working as part of families, and many were simply uncounted.

The urgency of dealing with pandemics took away attention from what were seen as 'smaller' issues at the time.

Lack of attention to women's needs and short supplies in such difficult times was one of the major casualties. It is however worth mentioning, that if it would have been done effectively, then it'd have had a long-term effect.

For example, when domestic violence went up, so did the sexual activities. In India, one sector that had been badly affected by the lockdown is the production of contraceptives. Factories have shut down as workers were unable to commute. While the contraceptive pill is manufactured in one state, for example, some of the ingredients are sourced from another. With borders closed, this too had to stop and with the global supply chain under stress, the implications were felt nationwide as well as globally.

11. Pandemic: a positive outlook

However, there were some positive aspects of the pandemic too. Many women who were physically and mentally strong enough to handle to the pressures and burden of household chores, were engaging in self-enhancement activities too like grooming themselves, exercising regularly and spending quality time with their families and friends.

Although, due to many restrictions all the clubs and other leisure-seeking places were closed down, but people still were able to host gatherings constituting limited number of people, like only family and close friends. Many women were engaging in these activities with their family members and were really bonding well with them. In fact, for those families who usually did not get enough time to spend with their families were enjoying this time period in a very well manner. For those women, who are usually always tied up at work and their husbands also busy in their offices were able to spend time with their children and bond with them well [14–17].

On the other hand, some joint families having senior citizens were also able to spend time with their sons and daughters, daughters-in-law and grand-children. The reason behind this is as the schools and colleges were closed, students were studying online. So, those students who wanted to prepare for higher studies got ample time to prepare due to the decreased burden of school activities. Additionally, school-going children who are usually so burdened with the loads of home work and assignments were also relieved for some time and got to spend quality time with their parents and family members.

12. Enhancement in relationships within the family

Usually, when husbands left for work and children for schools, housewives were left with no other option than to pass their time doing house chores all the time

or may be going hither and wither to keep themselves engaged. This resulted in a reduced level of bonding within the families. Weather we talk about joint or nuclear families, those women who were resilient and buoyant enough to handle their families and the changed environment due to pandemic and were constantly supported by financial aids were far away from any depressing or anxious episodes.

Many housewives after getting free from basic household work like cooking and cleaning engaged themselves in many recreational activities with their families like playing games, crafting with children and DIY home making items and much more [16].

Reportedly, The Hindu, an Indian editorial showed several pictures of children as well as parents engaging into various recreational activities which benefitted the environment as well like making best out of plastic and other wastes using social media and YouTube tutorials, planting trees and many other activities of the similar kind. Below are some pictures which evidently display the positive sides of the pandemic for those who were resilient enough to handle the situations in a robust manner (**Figures 2** and **3**).

Komal Narang at @myhappinesz says in the MOMS SPEAK section of The Hindu, "Earlier, my three-year-old was an outdoor kid and never had screen time. Now that I allow him to watch YouTube (mainly our family vlogs), he is taking some time to adjust to the change. Apart from his sleeping and eating schedule, which remain the same, we take each day as it comes. We've even started our own book club! It is restricted to six picture books or so a day. We used to read page after page, but now that we have the time, we have slowed down. We take time to look at the illustrations, I ask him what he sees … It is a more mindful way of reading."

This testimonial statement by Komal Narang evidently proves the argument that how working women belonging from relatively well-to-do families were enjoying their quality time with children. Many mothers who otherwise were unable to spend much time with their children and family members were keenly involved and engaged in teaching their children various art of living activities and were getting to know them better.

Figure 2.
https://www.thehindu.com/life-and-style/j71xx2/article31181375.ece/alternates/FREE_615/iStock-688400020-2

Figure 3.
https://www.thehindu.com/life-and-style/9h3jcg/article31207944.ece/alternates/FREE_320/Komal-Narang

13. Engagement of women in social activities during the pandemic

Another example of people engaging in social works is given below where we can see how women were helping the underprivileged children and families by visiting the nearby non-government organizations and donating various books and other stationary items to those children who could not afford them otherwise so that they can do something creative and can utilize the time of quarantine (**Figures 4** and **5**).

These images are a clear evidence of how housewives and other social workers were engaged in helping the less privileged children and people in educating and feeding them as well.

Figure 4.
https://humanitariansupport.wordpress.com/2019/07/29/rural-education-in-india-challenges-of-rural-area-students/

Figure 5.
http://www.governancetoday.co.in/incentives-teachers-remote-areas-khattar/

14. Research studies in support of the argument

According to a study known as 'Beck Depression Inventory (BDI)' which is a 21-item self-rated scale that evaluates the key symptoms of depression including mood, pessimism, sense of failure, self-dissatisfaction, guilt, punishment, self-dislike, self-accusation, suicidal ideas, crying, irritability, social withdrawal, indecisiveness, body image change, work difficulty, insomnia, fatigability, loss of appetite, weight loss, somatic preoccupation and loss of libido (Beck and Steer, 1993; Beck, Steer & Garbing, 1988), women, especially housewives suffered from extreme levels of depression and anxiety during the pandemic period [18, 19].

Another study conducted by the NPHEC in 2020 on the acute impacts of COVID on the mental health of women, psychological abuse is one of the most widely occurring reason behind depression in women [20]. The organization assessed the mental wellness of women by conducting an online survey using the Depression Anxiety and Stress Scales (DASS-21). After this survey, the observations were that those women who had a history of mental illness and who were

allegedly abused during lockdown were found to have more severe symptoms of depression, anxiety, and stress. Around 40% of housewives reported problematic social media use. Violence against women also reportedly increased significantly during the lockdown [1, 4].

Psychological abuse was the most frequent type of violence during the pandemic which was approximately 96%. Women who had experienced abuse before the lockdown were at an increased risk of violence during the period of lockdown. It is widely accepted that women are the most affected, given that they are known to have a more anxious temperament and a higher emotional quotient. The emotional index of a woman is highly refined as compared to men and housewives are more vulnerable to any psychological impact because their time was engaged completely in their family and house chores surrounded by these situations all the time. Working women still could divert their mind for a little while but housewives had no options at all to do so.

In the above image, it is quite clear that a woman, especially the one who is designated as a HOUSEWIFE had to perform multiple tasks.

15. Conclusions

Considering the entire argument and various causes and its effects discussed above, we can summarize the entire discussion in a nutshell saying that the pandemic had a two-way effect on people around the globe, especially working women and housewives – both negatively and positively.

For those who could withstand such an unusual time and were resilient in such harsh situations came out with a neutral psychology, but for those who were not so strong and robust psychologically were impacted in a much worse way than one could ever think of. The chapter also tries to emphasize on the fact that being psychologically strong and being able to resist and withstand in such difficult times was a boon to many. Psychological strength is more important as compared to physical strength because a physical problem can be cured by medications, but a psychological disorder or imbalance lasts longer in a person's mind than expected. This is a bit more complex in women because of their higher emotional quotient and involuntary responses towards any emotional tension. Women and especially housewives are relatively more prone to any kind of family issue because they are more inclined towards keeping the family bound together and they are usually solely responsible for nurturing the family, being given the role of the "Mother" in nature.

Hence, this chapter concludes that the effects of the pandemic were global and worldwide but had far more deeper and complex effects on women – housewives and working women. The researches or the arguments taken up for the same prove how a woman's psychology - positively and negatively, was affected during the pandemic episode and especially during the lockdown.

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Also, I would like to thank my sister, Insiya Wagla for her calm and motivating attitude towards me and my researches.

Since, I spend most of my time away from the family, but still somehow my mother, more than my father manages to keep the family together despite of her own physical ailments and weaknesses.

This one fact motivated me a lot to contribute for this chapter and that is the sole reason why I chose to write about the plights and struggles of home-makers and women during the pandemic.

I would like to thank the Almighty for giving me such a beautiful family and the intellect to be able to write on such issues.

Lastly, I extend my gratitude towards my organization for supporting me in writing for this book, especially my beloved Aaditya M, without whom, I would not have been able to understand what guidance and support truly means.

Declaration

I, Samina Firoz Wagla Wala, hereby declare that my work entitled "The Psychological Aspects of home-makers and women during Pandemic" submitted as a chapter contribution to the book entitled "Anxiety, Uncertainty, and Resilience During the Pandemic Period - Anthropological and Psychological Perspectives" for Intech Open Publication is an original work done by me under the guidance of my family and friends. The work is submitted to be published as a research/review paper and I take complete responsibility for unfollowing any compliance(s) or protocol(s) of the publishers.

Acronyms and Abbreviations

COVID-19	Coronavirus Disease-2019
GDP	Gross Domestic Product
NGO	Non-Government Organization
DIY	Do-it-yourself
BDI	Beck Depression Inventory
DASS-21	Depression, Anxiety and Stress Scales
NPHEC	Nature Public Health Emergency Collection

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Chapter 32

Anxiety, Uncertainty, and Resilience of Medical Students Worldwide during the COVID-19 Pandemic

Mohammad Abdullah Sarkar and Ahmad Ozair

Abstract

The COVID-19 pandemic significantly impacted medical education worldwide. While healthcare professionals labored to ensure proper care for COVID-19 patients, medical students suffered from high rates of anxiety, uncertainty, burnout, and depressive symptoms. Whilst students in the pre-clinical phase of education faced disruption of didactic lectures and laboratory training, senior medical students faced uncertainty regarding their clinical rotations and internships, which are vital for practical exposure to healthcare. Several studies across the world demonstrated that clinical learning was significantly affected, with students in many countries completely cut off from in-person rotations. The disruption of the clinical curriculum coupled with a sense of failure to contribute at a time of significant need often led to despair. Reforms proposed and/or implemented by governments, medical advisory boards, medical schools, and other administrative bodies were felt to be insufficient by the medical student fraternity at large. Consequently, these students continue to face high rates of anxiety, depression, and a general sense of cynicism. In this student-authored perspective, we highlight the challenges faced by and the psychological impact on medical students directly or indirectly from the pandemic.

Keywords: medical education, medical student, clinical training, pre-clinical education, COVID-19, resilience, burnout, depression, mental health

1. Introduction

The COVID-19 pandemic saw nations worldwide in a crisis. Various countries adopted different measures to confront the pandemic, and most of them focused on social distancing and quarantining. Governments, both federal and local, enacted several public health interventions, including restrictions on movement outside homes. Quarantining of exposed healthy individuals, usually for two weeks, according to the World Health Organization (WHO) guidelines, was done. These restrictions also included the prospect of self-isolation, where an infected individual would restrict their own movement.

The impact of such drastic measures was expectedly unpleasant to the human mind. Aristotle's notion of man being a social animal has been well-received by the general public and represents the rare occurrence where a philosophical idea is

accommodated into general conversation. Thus, the cessation of live social interaction was bound to have drastic consequences for the well-being of a person's mind. Even before COVID-19, pandemics have been responsible for divorces, suicides, and litigations alike [1]. Quarantining has also been linked with various problems such as the development of acute stress disorder, increased irritability, and even the development of post-traumatic stress disorder. People who were quarantined because of Severe Acute Respiratory Syndrome (SARS) reported a wide variety of emotions, predominantly fear, nervousness, and sadness. In a similar vein, social distancing may promote engagement with negative thoughts and urge people to focus on their helplessness [1].

Therefore movement restrictions related to the pandemic, despite all their benefits, did have multiple and sometimes unintended consequences, for various strata of the population. While healthcare workers worked longer hours and in circumstances that put their own lives in danger, one other notable community that in particular was impacted was of the medical students. In this chapter, we explore how physicians-in-training worldwide suffered from the damage done to their education. While lectures and laboratory training of students completing their preclinical curriculum were disrupted, those who were doing their clinical rotations suffered from a lack of practical training in patient care. In addition, those students who were supposed to graduate in 2020 faced disruption of their academic timeline. As the pandemic continues, medical students worldwide remain distressed.

2. Defining the impact of COVID-19 on medical students

As evidenced by the consequences of previous natural disasters along with the studies done in the current pandemic, the extent of the psychosocial impact of the current crisis on medical students was significant. In the following sections, we will explore the various experiences medical students underwent.

2.1 Clinical rotations and clerkships

> *"He who studies medicine without books sails an uncharted sea, but he who studies medicine without patients does not go to sea at all"*
>
> *- Sir William Osler*

The medical curricula cater to the multifaceted development of a safe and competent physician. As part of their curriculum, medical students learn clinical skills, decision-making, and hands-on patient care. These are accomplished via clinical rotations and clerkships which also help them choose their residency specialty after exploring the various specialties.

Additionally, in many countries such as the United States (US) and Canada, while applying to certain residency specialties, medical students do 'away rotations' where they perform rotations at another hospital; this also offers a way to decide whether they will pursue their residency from the 'away' institute [2].

The COVID-19 pandemic disrupted this clinical education significantly, causing much upheaval amongst the students. Many medical schools chose to halt clinical rotations entirely were halt. For some, this was primarily driven by a shortage of personal protective equipment (PPE). For others, it was driven by the rapid spread of the virus which forced staff members to solely focus on patient care. The Association of American Medical Colleges (AAMC) issued a guideline on March 17, 2020, seeking the closure of clinical rotations in medical colleges across the United States because the distribution of PPE to medical students would compromise their delivery to frontline clinicians [2]. The Coalition for Physician Accountability, a

wide-ranging group comprised of representatives from various regulatory bodies in the United States announced on April 14, 2021, the recommendation of closing all rotations till the end of the academic year [3]. The CPA's recommendation was duly adhered to, given that its members included the AAMC, the American Association of Colleges of Osteopathic Medicine (AACOM), the Federation of State Medical Boards (FSMB), the National Board of Medical Examiners (NBME), the National Board of Osteopathic Medical Examiners (NBOME), American Board of Medical Specialties (ABMS), Accreditation Council for Graduate Medical Education (ACGME) amongst others. Similar recommendations were issued in Canada by the Association of Faculties of Medicine of Canada (AFMC) [4].

Medical students were reasonably anxious about the impact of incomplete clinical rotations on their future careers. The halting of rotations meant that there was no viable implementation of the practical skills essential for the development of competent physicians [5]. Another worry besides the competence of future physicians was the students' perception of the same. Regardless of the measures undertaken by various medical colleges to alleviate competence concerns, the lack of clinical experience led to 'imposter syndrome' being fostered in medical practitioners where they did not feel ready to be a physician [6].

2.2 Self-isolation and quarantine

Medical students had to self-isolate and quarantine themselves as per their country's guidelines and were expected to maintain their composure. The students reported that serving at the frontline was their personal responsibility, though it was considered a voluntary task [5]. They had to remain within the confines of their residence without their usual support network that had been previously available in the form of educational settings and peer groups. Considering the aggravating effects of the pandemic guidelines on the mental health of medical students, it is essential to focus on their quarantine experience.

While self-isolation and quarantine themselves had a significant toll on the well-being of medical graduates, the students were also affected by the sudden burst of information through social media [6]. Social media influenced medical students, similar to other populations, about the origins of COVID-19 and the effectiveness of subsequently developed vaccines [6].

Medical students across the UK leveraged their friends and family to counter the adverse effects of the ongoing situation. However, they were a vulnerable group during the pandemic, and failure to take cognizance of the same is expected to result in fewer doctors taking up clinical practice in the future. Furthermore, with increased baseline levels of anxiety and burnout, adverse situations are expected to have aggravated students' mental distress, as evidenced by past spreads of infectious [1].

Medical students were at an increased risk of developing eating disorders during the pandemic as they turned to food for reducing their academic and emotional stressors [6]. In addition, food disorders may have indirectly put them at a higher risk of contracting COVID-19 by leading to a weakened immune system, either through starvation periods or through the associated . obesity [6].

The situation appeared to be milder for those pursuing their pre-clinical studies, but they faced different challenges, which we shall discuss in an upcoming section.

2.3 Financial difficulties of medical students

The COVID-19 pandemic proved to be a financial burden on people worldwide as they dealt with budget cuts, mass-employment cuts, and suspension of

welfare services. Financial problems have been linked to mental problems in the general population [6].

Graduation generally entails various job opportunities for medical graduates along with subsequent financial security. The students look forward to securing a position in residency programs or other academic avenues to pay off their student loans, establish or maintain their family, prepare for upcoming ventures, etcetera. However, in many countries, COVID-19 disrupted such plans. Even the welfare plans initiated by governments to ensure the well-being of physicians did not extend themselves to medical students, leaving them in an unaddressed position altogether [6]. Such students did not receive the same compensations as those who had lost their jobs or suffered losses in their businesses; they remained unrepresented in various welfare schemes developed for physicians.

The medical students could have handled financial difficulties by undertaking odd jobs, but the pandemic led to many small-scale businesses closing their operations. In addition, the uncertainty regarding admission tests such as USMLE and MCAT posited a threat to tutoring services, which were financially lucrative for medical students, as medical aspirants remained unsure about their future [7].

2.4 Exam rescheduling and cancelation

In light of the pandemic, standardized exams had to be either rescheduled or canceled in many countries worldwide. While theoretical examinations could be rescheduled with restrictions at exam centers in place, clinical skills examinations suffered greatly.

The US Medical Licensing Examination, which consists of Step 1, Step 2 Clinical Knowledge (CK), Step 2 Clinical Skills (CS), and Step 3, faced major scheduling challenges during the pandemic, which significantly impacted students. The exam-conducting authority Prometric faced difficulties ensuring that the tens of thousands of students who sit for the exams each year find suitable exam centers. This led to immense anxiety in medical graduates as they scrambled to find spots close to them. Many medical students across the world traveled to different cities and some even to different countries in order to find open test centers.

Amongst the USMLE exams, the clinical skills assessment of Step 2 CS suffered the greatest. It had to be canceled by the National Board of Medical Examiners (NBME) in light of the pandemic. This especially impacted international medical graduates (IMGs) who needed to clear these USMLE examinations to become ECFMG certified. Alternatives to Step 2 CS passing were created late by the ECFMG in the form of 'pathways', for which not all IMGs were eligible. Many of them had spent a considerable portion of their time, effort, and money in preparing for this exam [7]. This affected the plans of thousands of students worldwide aiming to apply to postgraduate clinical training in the US.

Such an impact was also felt in Canada, albeit at a smaller scale due to the fewer number of medical schools compared to the US. The Medical Council of Canada Qualifying Examination (MCCQE) part 1 and part 2 faced numerous rescheduling decisions.

2.5 Multidimensional impact on medical students worldwide

The pandemic impacted multiple strata of the population worldwide; thus, it is only fair to discuss the conditions of medical students from all over the world. The problems faced by medical students in low-and-middle-income countries (LMICs) were even greater than those in high-income countries (HICs). Doctors who were not from high-income countries perceived that the pandemic had a severe impact on

their career specialty, as contrasted with their counterparts from developed nations [8]. As for undertaking surgery, doctors from low and middle-income countries reported feeling inadequately supervised [8].

The situation in war-torn countries, such as Iraq and Libya, was concerning. The ongoing conflicts had already shaken up the sociopolitical stability of the nation, and the subsequent deaths had taken a toll on the medical infrastructure [9]. As the medical infrastructure of war-torn countries "had taken" heavy losses, medical education had proven difficult even before the pandemic. There had been proposals for relying on virtual clinical internships in the developed world, but in poorer countries undergoing warlike situations and civil unrest, such an arrangement was challenging due to weak internet availability [6]. The mere presence of telecommunication and media devices without an internet connection was not enough in such countries [9]. Thus, the question of well-being became confounded for such students as it was hard to determine how much of their distress stemmed from the pandemic and how much from the strife that affected their nation [9]. Previous systematic reviews have highlighted the negative impact of financial restraints and heavy workloads on the medical services being provided in LMICs; the surgical supervision in such states was already lacking before the pandemic [10].

Furthermore, the experienced faculty required to develop online modules for medical classes was busy with the pandemic too. In such dire circumstances, the purpose of online education would have been to provide essential information from the medical curriculum. However, the extraction of essential lessons from the existing medical curricula, its distillation into modules, and the dispersal of the same required a consistent effort from the educators' end. These educators were busy confronting the ongoing pandemic and alleviating the stress on their country's medical sector [6]. Educators were also unwilling to switch to online learning platforms because of the learning curve associated with the uptake of new technological means [11].

Lastly, financial difficulties were experienced by students of LMICs and the impact was more noticeable than their western counterparts since the internships and jobs associated with the completion of medical school generally provided a financial safety net to these students [7].

2.6 International students in a foreign country amidst the pandemic

The US, along with other developed nations of the world, enjoys a regular influx of international students each year who move to pursue training from premier institutes. International students are typically willing to learn and adapt to a new lifestyle, alter their beliefs, and spend considerably to accommodate themselves in these countries.

Unfortunately, the impact of COVID-19 on international medical students was notably harsher because of their background, objectives, and expectations. As discussed earlier, medical students generally remain eager to graduate from medical colleges to secure a place within a residency specialty; they enjoy the subsequent financial security associated with the same. However, with the pandemic, such plans were thwarted for all medical students, many of whom had to rely on odd jobs amidst business closures to support their studies. Many international students could not partake in such odd jobs because of their visa restrictions or language restrictions. The grievances of international medical students were further aggravated by the fact that their tuition fees and living expenses were significantly more than that of residential students.

The case of international students presented a unique scenario where they remained stressed about not returning to their home country [6]. The students who

managed to return to their country felt as if their money had been wasted because they practically learned everything online. They also had to synchronize their schedules with the schedule of the class, putting them at a significant disadvantage compared to the local population [6]. The international students who were about to graduate presented another challenge as the effect of the pandemic was felt in the prolongation of their program, thus costing them more in the long run; such financial strains were linked to poor performance on anxiety scales. International students generally look forward to clinical rotations with significant excitement since it is their opportunity to learn more about the culture of their host country, and it gives them an avenue to refine their skills the pandemic rendered that opportunity void [6].

3. Changes in the system and the associated challenges

The problems faced by medical students, as exhibited above, were not exhaustive or comprehensive by any means. Students worldwide continue to suffer general consequences of the pandemic alongside those that are specific to their home country. There have been multiple policy changes and improvements made in the curricula to alleviate some of the stress that is associated with the pandemic; however, the alternatives remain a weak replacement for what the pandemic has taken away. This section will examine a few models that the medical fraternity has proposed to adopt to facilitate pre-clinical and clinical education, as well as the challenges associated with it.

3.1 Technology-Enhanced Learning & Flipped model of education

Even though asynchronous learning was being promoted for more than a decade, students still had been gathering pre-pandemic to have interactive sessions in developed nations. These gatherings and lectures were more marked in developing countries that did not necessarily rely on technology [2]. But technology enhanced learning helped both high and low-middle income nations.

As for improving the educational approaches to ease the impact of COVID-19, a flipped education model proved to be of primary importance whereby the students went over the material before attending an online class to clarify any doubts [6, 7].

In a study done in the UK, clinical students were found to prefer live tutorials, the pre-clinical students preferred video tutorials (pre-recorded) because they were well-structured, and the students could specifically learn what they wanted to learn [12]. In addition, a benefit of online learning was that there were built-in chat mechanisms on various platforms that allowed the participants to ask questions anonymously and directly to the instructor, something that was hard to implement in a physical classroom [12].

In the future, this approach will likely be a key method for medical schools worldwide in delivering didactic education. Virtual recorded lectures allow students to learn at their own time and pace and prevent students' time from being spent up commuting to and from the classroom. However, some disadvantages do exist such as those of decreased interpersonal interaction and lower levels of student motivation.

3.2 Virtual simulations

The impetus of breaking down complex clinical protocols in a systematic manner lay on the educator during virtual learning, and the students had the opportunity to revisit these pre-recorded and live lectures; however, it was a technique that could only supplement in-person training [13]. In other outbreaks, such as SARS, techniques were used to replace in-person clinical rotations with mannequin-based

training and digital games. The expanding horizon of virtual reality presented itself as a potential pathway of the future. The application of wearable gadgets to provide a first-person view of clinical examinations was also explored, which was previously confined to ethnography alone. This was studied in Britain with a physician wearing a point-of-view (POV) camera and carrying out ward-handover and ward-round entry duties [13]. The integration of virtual teaching methods has long been investigated and promoted as being vital to continuing medical education [14].

Similarly, the NHS used Google Glasses to broadcast the UK's first point of view (POV) clinical rotation. England has supplemented its healthcare system and medical education with virtual reality ever since 2019 [15, 16]. These feats remained exciting in themselves but failed to match the essence of in-person training [13]. In some cases, virtual-based medical education has been preferred over real-life clinical practice [15, 16]. Some studies have already testified to the improvement in core competency facilitated by virtual interactions during undergraduate medical education [17, 18] Clinical demonstrations in the past have been confined to a selected number of students at a time; often, a batch would be split into sub-groups to facilitate equal learning opportunities. The process was even more time-consuming in LMICs where a lack of resources acted as a hindrance towards timely clinical education. However, integrating Virtual Reality Simulation (VRS) into the medical curriculum has allowed educationists to cover a wider student population in a shorter time [19].

The onset of virtual reality in surgical fields has been well documented even before the pandemic [8]; similar technology was applied in the pandemic to facilitate discussion and learning in a risk-free environment. Moreover, a shift towards virtual simulation can have a catalytic effect on the benefits of having virtual meetings, conferences, and mentorships. Virtual conferences provide medical researchers to showcase their research to a wider audience at a reduced registration fee. Similarly, virtual meetings and mentorships provide medical researchers with the opportunity to bridge an equity gap that has existed between students from LMICs and HICs [20]. The onset of VRS has led to medical institutions considering these emerging technologies as a way of administering objective structured clinical examinations (OSCES) to make the process more objective and time-efficient [21].

Virtual simulations can further be digitally saved to facilitate asynchronous learning, whereby students can refer to the material taught at their own pace with due interactive features. Asynchronous learning has been previously shown to improve the retention of knowledge in specific groups [22–24]. Using VRS in medical education allows easy access of clinical scenarios by students on their electronic devices regardless of the geographical location or time zone; each clinical presentation can be modified for any particular group of medical students to adjudge a certain set of clinical skills in isolation [19].

3.3 Increased student participation during COVID-19

With the help of telemedicine, medical students helped those who were chronically ill and required regular check-ins [25]. Such a set-up reduced the chances of transmission and ensured that understaffed clinics would function better as their outpatient volume was mitigated. Besides, patients who did not have COVID-19 were managed by subinterns, thus freeing up the duties of house officers. Medical students could also remotely monitor the conditions of COVID-19 patients with mild symptoms [25]. This was historically in line with how the university of Pennsylvania allowed its medical graduates to treat patients as physicians during the Spanish Flu of 1918. This idea was further propelled by many countries worldwide such as Italy and the United Kingdom, where students graduated early at the promise of serving as frontline workers against COVID-19 [25].

3.4 Future measures after the pandemic

Finally, the medical students who were repositioned to fight the pandemic effectively, need to be supported so that they can develop their core clinical skills. Students who wish to experience overseas placement can take telemedicine opportunities as substitutes. It may help them expand their view about another country's healthcare system.

Additionally, the current pandemic has opened a lucrative and plausible opportunity for medical students to get involved with research and learn more about ethical considerations, public health policy, and how global politics affects the distribution of vaccines [6].

While the classes were made engaging for the students through webcam interface, polls, and chat functions, it remains essential to hold workshops to address the students' concerns about their clinical performance. Such in-person training can tackle the imposter syndrome about clinical experience and its potential effect on medical graduates of the current era [6]. In addition, mockup exercises to effectively deal with epidemic and pandemic situations can be retained in the curricula once the pandemic ends to ensure that physicians remain better equipped for a pandemic in the future.

Teaching basic active relaxation techniques to medical students can prove helpful at such points [6]. Such techniques need to be communicated to the faculty teaching at various medical colleges through respective mental health professionals; furthermore, these techniques need to be passed on to the graduating and incoming students alike. This again presents a challenge for countries where mental health is not considered a proper aspect of medical science and continues to be disregarded [6]. Employing students' help with triage and hotlines in the future can make them feel more valuable and competent; this can tackle their growing sense of imposter syndrome. The success of such skill development programs means that they can be included in typical curricula beyond the pandemic and can help battle pandemic-like situations in the future.

Finally, another key measure to implement after the pandemic is over would be the continuation of mental health support groups. The benefit of curating such support groups would be that they can make students feel inclusive about their imposter syndrome. Moreover, the inclusion of minorities and international students in such groups can lead to better empathetic development of the involved medical students [6]. Remodeling Cognitive Behavioral Therapy will promote effective telemedicinal services [6]. As seen in New Zealand, the idea of support bubbles can be implemented in conjunction with these techniques [26].

4. Conclusions

The COVID-19 pandemic drastically affected the healthcare and educational sectors worldwide; the population discussed within this chapter was placed at the intersection of both. Unfortunately, medical students continue to perform a balancing act between the image of average citizens who can afford to quarantine themselves and the image of physicians in the making with their moral duties lying at the frontline. If this population continues to be neglected during the pandemic, the world risks setting a wrong precedence for the future generations of physicians.

Similarly, there must be consistent effort to bridge the divide between the safety measures available for physicians and those available to medical students. Each medical student deserves to be valued as a future physician: a prized individual beaming with potential. Conversely, failure to safeguard the mental health of future

physicians can act as a deterrent for them to continue within the field and raises concerns about empathetic values within the medical fraternity itself.

Above everything, it has already been demonstrated that medical students were at a higher risk of developing mental problems even before the pandemic began. Questions about the lack of preparedness of countries worldwide have already been raised; questions about the lack of existing mental health resources should also be raised within the medical community. If these resources continue to be limited to senior doctors, who may not access them due to the corresponding stigma [6], then the policies and programs claiming to promote well-being amongst medical students should be called into question.

As recommendations of advisory boards and healthcare bodies continue to evolve, medical students are taking a leap of faith by entrusting their educators with the development of adequate resources and curricula. Such expectations and hopes may not be satisfactory, but they are still more than what a medical student of an LMIC can expect. The advent of virtual reality and the pandemic has provided enough incentive to develop curricula that medical students can access remotely, pre-clinical and clinical alike. Further research within the area will highlight other challenges that medical students faced during the COVID-19 pandemic, especially once it ends.

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Conflict of interest

The authors declare no conflict of interest.

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Chapter 33

Cyberchondria and Its Effects on Anxiety during Covid-19 Pandemic

Suman Shekar and Avinash Aravantagi

Abstract

Cyberchondria is a blend of the words cyber and hypochondriac. Social isolation with easily available information on the Internet for little or no cost created a havoc. It is an abnormal behavioral pattern in the emotional state. There were hundreds of social media groups created during the pandemic. Many people including the healthcare workers started sharing their experiences, positive and negative. It created a lot of anxiety and depression among the general population. As we already know people with anxiety and depression react and respond more to information available online without verifying the facts. Though the social media groups helped the readers with innumerable information but it had its flaws. Patients with cyberchondria increased and also the burden on healthcare systems.

Keywords: anxiety, cyberchondria, social media, covid-19

1. Introduction

The name cyberchondria was coined in 2000's and is a blend of the words cyber and hypochondriac. As per merriam-webster's Dictionary the definition states,'excessive concern about once health especially when accompanied by imagined physical ailments'. During the covid-19 pandemic the way in which health-related information was available to a common man changed. The general public is interested in news and wants to know the latest updates.

While information can be knowledgeable and can make people empowered it is also an easy access and can cause serious spread of mis- information. Cyberchondria encompasses a multidimensional construct that involves both anxiety and an element of compulsiveness. Cyberchondria results in time consuming online for reassurance seeking, negative emotional state interference with functioning and also interruption or neglect of other activities.

Social isolation with easily available information on the Internet for little or no cost created a havoc. It is an abnormal behavioral pattern in the emotional state. It is now a normal with everyone to get health-related information on the Internet. The tendency of a person with cyberchondria secondary to online information is health-related anxiety. People without hypochondriasis may also become excessively anxious secondary to the online information. They automatically spend more time on the Internet and try to search more information.

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2. Underlying anxiety disorders

Our brains are built in for sensitivity to negative news. A recently published article in march 2020 online German survey reported a significantly increasing virus anxiety, especially among individuals with heightened health anxiety trait or also known as hypochondriac's. There were around 1615 individuals who answered the questions and out of which 79.8% were females with a mean age of 33.36 years and the standard deviation of 13.18 [1].

This study during the pandemic showed heightened anxiety (r = .09–.48) levels in individuals with underlying stress or anxiousness about their health.

Negative and misinformation online and in social media has an impact on individuals coping perceptions. This was seen especially during the self-isolation as there was a lockdown in many countries. Cross-sectional study done during this time with the perceived severity of P = 0.002 and self efficacy of 0.003 had a positive impact on the self-isolation intention. At the same time the response cost P < 0.001 affected with self-isolation interventions negatively. As per this study cyberchondria and information overload indirectly affected the self isolation intentions and anxiety levels [2].

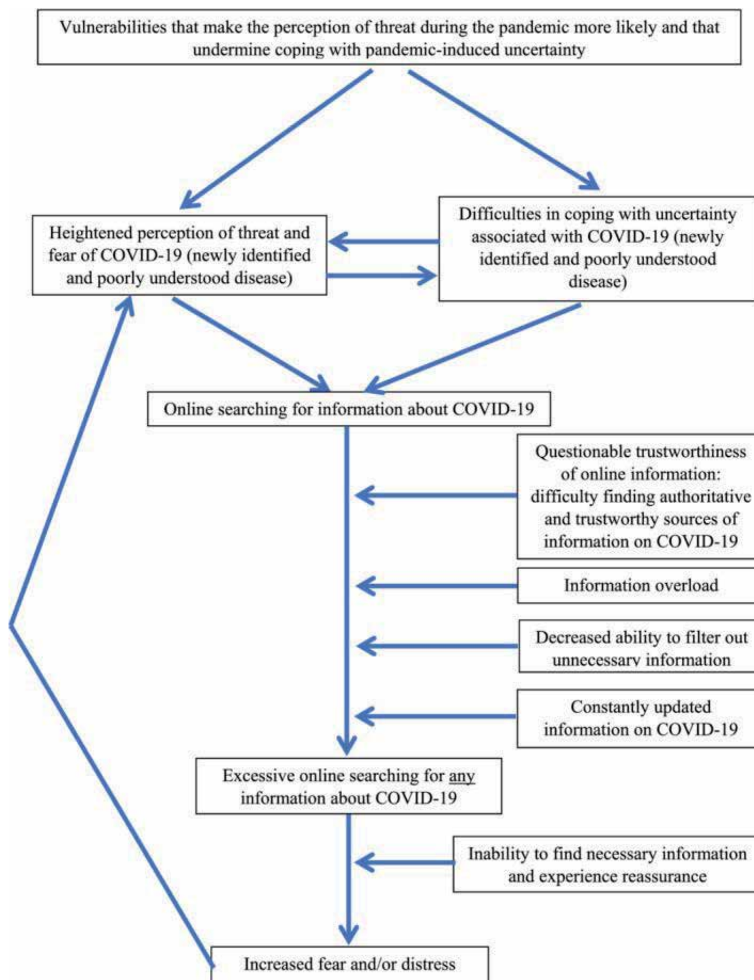

Figure 1.
Illustrated by the dynamic relationships between its components which was well described by Alexandra Maftei et al.

There was another survey with a sample participants of 818 number with the age range of 15–67, and the survey concentrated on demographic factors such as age, gender and education. Out of the 818 individuals selected, 65% of them were females and the participated in an online survey. The results as per the survey reported that your, age and being a female are positively associated with cyberchondria. This particular research also investigated the effect of optimism and as well as neurotisim which are two common opposing traits [3].

Optimism also varied as per the age, elderly individuals were more optimistic and were not affected by the information on the social media and Internet compared to younger age individuals. Encouraging a positive outlook on the social media helped quite a few people face their current health crisis with resilience, this was especially seen in the elderly age group.

Also of note is the compulsive health-related online data usage behavior persists despite the distress caused. Hence concluding patients with compulsion disorders are also affected by this. Some authors claim that health anxiety from cyberchondria and obsessive–compulsive symptoms arise from the shared pattern of intrusive thoughts and repetitive, purposeful behaviors and leads to one broad spectrum of obsessive–compulsive disorders [4].

As noted in the **Figure 1** [5] Vulnerabilities that make the perception of threat during this pandemic more likely and that undermine coping are

- Heightened perception of threat
- Difficulty in coping with uncertainty
- Questionable trustworthiness of online information
- Information overload
- Decreased ability to filter out unnecessary information
- Frequent update of information on covid-19

2.1 Heightened perception of threat

The reasons for unexpectedly high levels of anxiety of COVID-19 are diverse and it includes biological factors (e.g., genetic predisposition), financial factors (loss of jobs, increased number of clinic visits), psychological factors (e.g., personality traits such as neuroticism, perceived susceptibility to disease) and emotional vulnerabilities and environmental factors (e.g., panic like societal attitude toward the disease). The experience of fear in the background of a pandemic is multifaceted.

It includes fear of infecting others, fear of unknown treatment plan and fear of the economic repercussions of the pandemic (Taylor et al., 2020) may also drive excessive fear and anxiety.

2.2 Difficulties in coping with uncertainty

As covid19 is a newly identified and poorly understood virus and its pathology and our healthcare systems around the world have not been prepared. Uncertainity and lack of knowledge forms the foundation to fear and anxiety. The term “uncertainty distress” was coined and defined as “the subjective negative emotions experienced in response to the as yet unknown aspects of a given situation” (Freeston, Tiplady, Mawn, Bottesi, & Thwaites, 2020) [6].

Studies such as "Fergus, 2013, 2015; Fergus & Spada, 2017, 2018; Norr et al., 2015; Zangoulechi, Yousefi, & Keshavarz, 2018" have found intolerance to uncertainity is associated with cyberchondria.

2.3 Questionable trustworthiness of online information

Distinguishing between trustworthy and misleading information is not always easy and difficulties in making this distinction have been associated with cyberchondria (e.g., Starcevic & Berle, 2013). A large portion of the information found online, or on social media is unreliable and misleading (e.g., Cuan?Baltazar, Muñoz?Perez, Robledo?Vega, Pérez?Zepeda, & Soto?Vega, 2020, Laato, Najmul Islam, Nazrul Islam, & Whelan, 2020). Hence the term "pandemic of misinformation" (Li, Bailey, Huynh, & Chan, 2020).

2.4 Difficulties in coping with information overload

Abundance of information makes it a challenge to process all the available information. According to Bawden and Robinson (2009), information becomes "a hindrance rather than a help" in excess amounts. The World Health Organization introduced the term "infodemic" to refer to an "overabundance of information" (World Health Organization, 2020).

The reverse mediation model depicted that cyberchondria is associated with self-esteem both directly and through health anxiety and obsessive–compulsive symptoms [4].

2.5 Cause and effect

2.5.1 Masking and vaccine acceptance

There was also a study about conspiracy believes regarding the COVID-19 pandemic in United States. Patterns of media use but associated with reduction in mask wearing and acceptance of the vaccine.

The time period chosen was from March to July 2020. The questions included about conservative and social media usage which negatively related to belief in pandemic related conspiracies. There were 840 people chosen in March 2020 and a survey was conducted and the same people were used to conduct the survey in July. The survey reported the belief during pandemic related conspiracies. There was an increase in conspiracy beliefs (beta = 17, 99% CI .10–.25) compared to the mainstream print with conservative area and social media [7].

2.5.2 Relationship with the primary care physician

As the people believe more in social media and conservative area more than their primary care doctors or general practitioners, there is unnecessary stress in the relationship between their primary care doctors and then. There is a causal relationship with patient-physician trust.

2.5.3 Burden on the healthcare

It also does cause burden on the healthcare system financially. There are multiple visits to the primary care clinic, urgent care and emergency facilities. Telehealth emerged as the main resource to help combat the burden on healthcare. Healthcare expenses secondary to the uncertainty and fear increased.

2.5.4 Print media and conventional media

The print and the conservational media like television and radio framed the understanding and created powerful forces at an individual and societal levels. They play a proactive role in shaping the actions of the mass population and thereby influencing policy actions.

The print media was considered a key avenue for transmission of information previously. With advancement in technologies and social media, the information and opinions available through online platforms have a significant impact.

In January 2020, there were around 41,000 English-language articles with the word "coronavirus," of which 19,000 used the word in the headline. Recode which is a technology news website reported that on March 17th 2020, that around 1% of published articles on 3,000 high-traffic news sites were related to the coronavirus. Since then on there was an explosion of the information.

There was a survey in Pew research in April 2020 which reported how Americans perceived print media and its effects, see **Figure 2.**

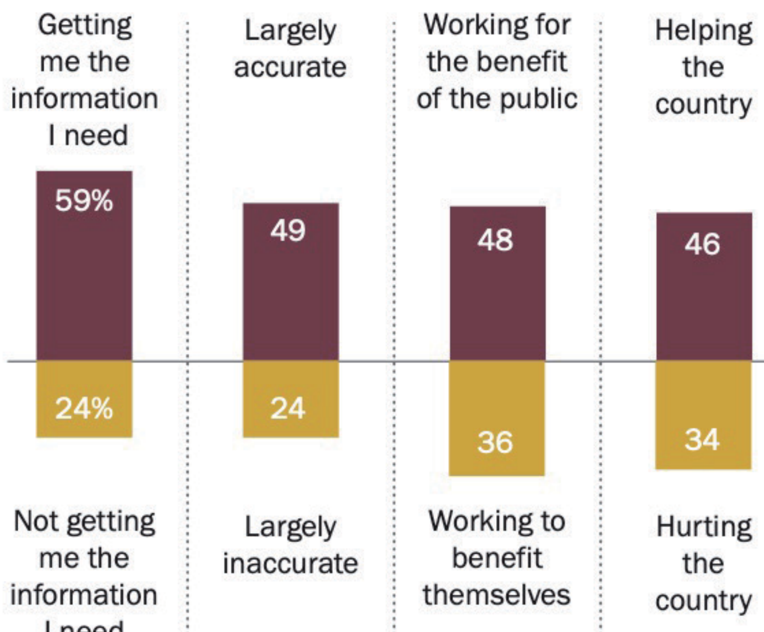

Figure 2.
Data from pew research center.

59% of the general population felt they were getting the right information, while 24% felt they did not get the information they required. 49% felt they were largely accurate.

2.6 Social media

Social media emerged as the major media platforms in the recent times. The information was transferred more easily in the conservative media, emails and the word "infodemic" came into existence and practice. Never before in the history of mankind was there a time where in the information was transferred from one end to the other end of the globe so quickly. However there were multiple advantages and disadvantages with information being transmitted so quickly.

A few examples of different types of social media like Facebook, Twitter, Instagram, Snapchat, linkedin. There are also video hosting sites like You Tube, vimeo and tiktok. There are also a lot of community blogs like medium and tumblr. There are also discussions sites like Reddit and quora. These platforms involve large diverse communities. They engage their followers through hashtags and groups.

Twitter: Hashtags such as #covid19anxiety, #coronavirusanxiety #isolation-anxiety #crisistalk Media also has support groups which help to bring a community together to help each other. There were many support groups founded during the pandemic to share their experiences and help each other out.

Instagram: #covidanxiety, #lockdowndepression.

Social Media also has support groups which help to bring a community together to help each other. There were many support groups founded during the pandemic to share their experiences and help each other out.

2.7 Social media and healthcare workers

Hundreds of Facebook groups were created by physicians for physicians to interact and provide expertise. They included both public and private groups. A few examples as per the **Table 1** are COVID-19 USA physician Facebook group with more than 148,000 members on a single platform inclusive of physicians from all over the world. Coronavirus covid-19 and long covid UK group with more than 7500 physicians.

Physician Groups	Total Members
COVID-19 USA Physician /APP Group	>148000
Coronavirus covid-19 and long covid UK group	>7500
Physician Mom COVID-19 group	> 39,000
COVID-19 physician group	> 29,000
COVID-19 USA healthcare workers PPE subgroup group	> 7000
Community outbreaks COVID-19 group for physicians	> 3000
COVID-19: Real talk from healthcare workers around the globe	> 107,280
COVID-19 physicians memorial	> 1700
COVID-19 mental health support group	> 3000

Table 1.
Names of physician groups in Facebook platform with approximate members.

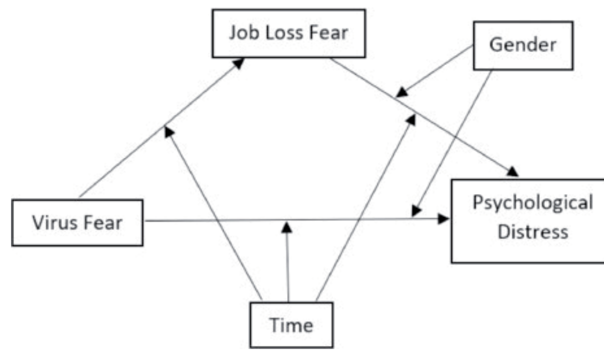

Figure 3.
Conceptual model tested by Andrew R.Timming et al.

The discussions in these groups ranged from clinical manifestations of covid-19, testing, plasma donation, mental health resources, critical care management, and personal protection equipment [PPE], hydroxychloroquine and now the new mutant strain of covid-19 [B1617]. In earlier months of 2020, multiple videos were made by physicians about safe donning and doffing of the PPE and circulated. From January 2020 to May 2020 saw the formation and coming together of physician communities to help each other. Social media acted like the physician lounges and also a platform for discussion during the pandemic. At the time once there were no guidelines and physicians were unaware of treatment modalities, these platforms helped them to cope [8].

2.8 Economic instability and the news surrounding it

Economic anxiety associated with COVID-19 focused primarily on personality traits correlates with economic anxiety. The study found that low levels of self-esteem, conscientiousness, and high levels of neuroticism and perceived vulnerability to disease were associated with increased economic anxiety and mood disorders during the pandemic (**Figure 3**) [9].

Unemployment rates have increased across major economies causing a major threat to job seekers. International Monetary fund (IMF) estimated the global economy shrunk by 4.4% in 2020. To stop the spread of the virus, many countries ordered non-essential businesses to shut down or lock down. This resulted in supply chains being disrupted, workers were furloughed and laid off. Fear of losing the job caused severe stress and anxiety all across the world.

Direct positive relationship between fear of the virus and psychological distress, but also an indirect relationship between these two variables flowing through fear of losing one's job.

2.9 Preprint versions of the scholarly articles

During the initial phase of the pandemic a preprint version of the scholarly of scientific paper which preceded the peer-reviewed journal were available. A preprint is a full draft of a research paper that is shared publicly without peer review. Just like social media and social media groups they provided fast way to disseminate information. They were made immediately available to the public and also the physicians. Just like social media, the potential problem included that they were not peer reviewed, hence probability of misinformation.

3. Conclusion

Amidst the pandemic which will shape you and the world around you be mindful and compassionate toward self. Eat well. Remain open and empathetic.

Communicate with your family and loved ones. At the same time unplug from social media and news occasionally. Be honest and set boundaries. In the evening hours: decrease stimulation as much as possible. Regulate your breathing is to do deep breathing exercises. Try to get enough rest, do not force yourself to sleep. You need to restore your energy, once you rest for 7–8 hours, your body is rejuvenated. Sometimes change is the push you need, sit back and reflect.

During the initial phase of the pandemic a preprint version of the scholarly of scientific paper which preceded the peer-reviewed journal were available. A preprint is a full draft of a research paper that is shared publicly without peer review. Just like social media and social media groups they provided fast way to disseminate information. They were made immediately available to the public and also the physicians. Just like social media, the potential problem included that they were not peer reviewed, hence probability of misinformation.

There is a need for reporters and commentators on media to report verifiable information about the pandemic. Also there is a need for social media platforms to be more proactive in counteracting claims about covid-19 vaccines, claims about mask wearing and conspiracy beliefs. Advanced technologies like natural language processing or determining should be utilized to remove biased and misinformation from social media. Controlling these with regulatory and law enforcement measures would be difficult, but person who is posting unrelevant data should be held responsible.

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Section 3

Social Perspective

Chapter 34

Indigenous Peoples, Uncertainty and Exclusion in the Global South in Periods of the Pandemic

Javier Lastra-Bravo

Abstract

The indigenous peoples are distributed in all regions of the world, representing more than 6% of the world's population. According to UN data, the pandemic has disproportionately affected indigenous groups, aggravating the structural inequalities and processes of widespread historical discrimination and exclusion present in the Global South, for example, high rates of extreme poverty, social exclusion, high prevalence of the disease, and limited and in some cases non-existent access to health care. Also, indigenous peoples have a great wealth of knowledge, traditional practices, cultural forms, and access to natural resources, as well as forms of collective social organization and community life that result in resilience factors in response to adversity and uncertainty. In this way, the chapter focuses from a descriptive-analytical approach on the situation of indigenous peoples and the pandemic, analyzing the forms of responses, their resilient action in the face of uncertainties and structural exclusions in the Global South.

Keywords: Indigenous peoples, Global South, Postcolonialism, Social exclusion, Resilience, Autonomy

1. Introduction

Indigenous peoples represent 6% of the world's population, and there are currently more than 476 million different indigenous groups spread across all regions of the world. In the context of the COVID-19 pandemic, indigenous peoples have been more affected than the rest of the population, due to historical and structural inequalities present in the post-colonial Global South. These problems are especially linked to exclusion from democratic processes, structural discrimination by the State, social exclusion, extreme poverty, socioeconomic problems, and deficient access to health care. Elements that threaten the lives of indigenous groups, generating a greater risk of dying from the virus, generating a disproportionate impact on the rest of society.

In this context, the pandemic caused by the coronavirus has had different repercussions on the individual and collective rights of indigenous groups, increasing the risk of contagion due to structural conditions and exclusion, but also generating their mechanisms of resilience from the communities themselves, positioning themselves in the adverse and disproportionate effects of the pandemic.

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Thus, for indigenous peoples, in the context of exclusion and inequality, COVID-19 is positioned as a high-risk factor, since the indigenous population often has a lower quality of life, due to factors such as poverty, isolation, or lack of adequate infrastructure.

Concerning exclusion, it should be noted that indigenous peoples are one of the most forgotten and excluded social groups when faced with the actions of the States [1], because public policies linked to dealing with the pandemic many times leave aside the specific social and cultural factors of indigenous peoples.

From the perspective of International Organizations, it has been pointed out that indigenous peoples are those who are most at risk due to their economic, social, and developmental marginalization by the States, being even affected their Human Rights, the reason why the United Nations Organization recommends to implement special measures for the protection of indigenous populations [1]. In this sense, different organizations have focused on generating proposals that facilitate assistance and allow dealing with the pandemic from the perspective of indigenous groups. For example, UN Women has developed proposals focused on making visible the situation of indigenous women in the context of social isolation, focusing on gender policies and prevention of violence in the communities. On the side, we can find the recommendations of the Office of the Commissioner for Human Rights, which has focused on promoting the defense of human rights in indigenous groups as well as respect for their collective rights. The International Labor Organization has also concentrated on publishing notes that allow the creation of public policies focused on the situation of poverty in which indigenous peoples live. Finally, the International Food and Agriculture Organization (FAO) has focused on generating recommendations to combat hunger and malnutrition in the context of pandemics, emphasizing food security programs.

We can point out that the problem of COVID-19 and indigenous groups have attracted the attention of international organizations, which have taken great care to make recommendations to the States to improve the condition of indigenous peoples, focusing on improving their current state of vulnerability to the pandemic, promoting measures to ensure a differentiated response for these groups [2].

This chapter presents an analysis of the effects of the pandemic and the global health crisis, especially concerning the disproportionate impact of this crisis on indigenous peoples. Focusing on an analysis of the structural elements that generate greater vulnerability for these groups.

2. Discrimination and historical exclusion of indigenous peoples. The disproportionate impact of the pandemic on indigenous groups

As previously mentioned, the global health crisis has affected indigenous communities in a particular way, because elements like structural inequality, exclusion, and high poverty rates have aggravated the situation in which indigenous peoples confront the pandemic, increasing their vulnerability to the effects of the virus concerning the general population. This is because they experience a high level of socioeconomic marginalization, requiring specific attention and response focused on their cultural contexts.

In this context, globalization, neocolonialism, and neo-extractivism have contributed to generate processes of exclusion and marginalization of indigenous groups, especially with the loss of their lands, generating forced displacements, high poverty rates, and the violation of their collective and individual rights. This is in addition to the generation of constant processes of structural inequality [3] and systemic discrimination [4] in which they find themselves, which has increased in

the context of the pandemic, generating an increase in racism and stigmatization of indigenous groups, for example, in some localities such as Chiapas, Mexico, they have been discriminated against by considering them as focal points of infection due to their high rates of contagion [1].

In this sense, it is necessary to point out that the indigenous groups of the Global South are found in post-colonial contexts, where elements of coloniality are still evident [5], which are configured as factors of exclusion and discrimination for these groups. In this situation, their political, economic, cultural, and social rights have been historically and systematically violated by the dominant societies, which is demonstrated by statistics and surveys that show that indigenous groups are the world's populations with the least access to basic services such as water, health, education, and adequate housing.

2.1 Employment and working conditions

Recent studies by the International Labor Organization [6, 7] show that indigenous groups also experience inequalities and exclusion in the work market, even when specific rights have been recognized to protect them from this situation [8]. In this sense, we can point out that indigenous populations are one of the most precarious groups in terms of work insertion, accounting for 86.3% of the world's informal economies [6].

This situation does not improve when focusing on indigenous women, who experience triple discrimination: gender, class, and ethnicity, as they are women, poor and indigenous [9, 10]. In this sense, indigenous women have specific difficulties entering the labor market, according to data from the International Labor Organization, only 49.3% of indigenous women have a job, in which most of the cases correspond to informal employment [6, 8].

These statistics undoubtedly reflect a worrying state of indigenous groups, demonstrating their vulnerability and exclusion from formal jobs and the labor market in general, which in the context of the pandemic becomes extremely worrisome, because, due to the various sanitary restrictions, it is expected that the informal economy will be reduced by 80% as a result of the crisis [11], especially when, in many cases, the restrictions on mobility and access also mean not being able to generate income [12].

These studies also point out that indigenous peoples represent 19% of the world's population living in extreme poverty, in other words, they are people who live on less than US$1.90 a day, categorizing indigenous peoples as one of the poorest populations in the world. This is also reflected in their acquisition of pensions and retirement benefits that are much lower than those of the rest of the population [13]. In this sense, the Special Rapporteur on Indigenous Peoples has pointed out that this situation has been exacerbated in the current context of the COVID-19 pandemic [1], for which reason it is necessary to generate, on the part of the national States, political measures and strategies that are linked to improving the living conditions of indigenous groups.

2.2 Access to basic services

Another risk factor is access to basic services such as potable water, in this regard we can mention the case of the indigenous people of Colombia, where more than 50% of the indigenous population does not have access to this service [11], making them especially vulnerable to contracting the virus in precarious survival conditions, limiting the possibility of hand washing and hygiene management, as well as the impossibility of obtaining medical care or medicines.

It should be mentioned that the policies and measures of the States linked to generating access of indigenous groups to social protection are insufficient and ineffective [6], which is due to the marginalization, exclusion, and discrimination of which they are victims [14]. In this sense, we can point out that there is very low coverage of social protection programs of the States about the indigenous peoples of the Global South, a situation that is reflected in diverse countries of the region, such as Peru, Nepal, Kenya, Bangladesh, Cambodia or Colombia, which are countries where the coverage of social protection programs is less than 40% of the indigenous population [8], which is also because many indigenous people live in remote areas or areas of difficult access.

This deficiency of access to basic services is determined by a lack of public policies related to improving living conditions in indigenous territories, generating inequalities, discrimination, and structural exclusion on the part of the State. This situation has developed even though the states of the Global South have generated a series of public policies related to reducing the inequality experienced by indigenous groups in recent decades. However, despite these initiatives, in many States, the situation of exclusion and the social gap has increased considerably in recent years [7, 15–17].

2.3 Education

Education has been historically presented as a social factor that has generated exclusion of indigenous groups in the Global South, which has increased in the post-colonial context, currently presenting limited access to education for indigenous groups. In this sense, statistics from UNESCO (2019) and the ILO (2020) show that indigenous people worldwide are less likely to have access to formal education, the education levels of indigenous people being lower than those of non-indigenous people. In this context, we can mention, for example, the case of the indigenous communities of Cameroon, which are presented as those with the lowest access to primary education services.

Another factor of exclusion that has been presented in the context of the pandemic is related to access to distance education or online modality. In the context of COVID-19, indigenous children and youth have not been able to have access to online education platforms, since most rural indigenous populations do not have the necessary infrastructure to access distance learning programs, since they do not have access to internet or electricity supply [18].

Inequality has increased in recent years just as the accumulation and concentration of wealth has been increasing, an inherent phenomenon of the current economic system. As a result, the wealthy have become richer and the poor continue to be excluded from the system. Although the role of education and the opportunity to generate equality has been openly discussed in previous decades, it is known according to current research [19–23] that education is also distributed unequally, as a result of the neoliberal market system operating in the Global South, where the State have been dismembered under Friedmann's postulates, losing its central capacity, leaving the market to mediate in public affairs. In this sense, education has also been transformed into a consumer good, which can be privatized and monetized, so that its access is conditioned by the market.

In addition to the unequal growth of globalized economies has constituted a factor of exclusion for marginalized groups in the Global South, amplifying, through the neoliberal market system, inequalities in basic services such as access to education. In this way, access to education has been distributed very unequally [24] as a consequence of the neoliberal system, which has caused people with little access to education to be employed in the informal labor market, generating

marginalization in the educational and productive process. This increases the economic gap [25] between the sectors with access to education and its privileges and those sectors where education becomes more complex in its access. Generating technological development and modernization for certain social groups, while others remain marginalized from the profits and benefits of global capitalism.

2.4 Land and community

Indigenous peoples have historically maintained a special relationship with the land, being present in their cosmovision as a life-generating element. However, the effects of neocolonialism, globalization, and extractivism have created serious problems in terms of land ownership, and have still generated various processes by which indigenous peoples have been dispossessed of the land they consider ancestral [1].

The loss of land and territories becomes even more complicated because the indigenous populations base their economic activities in most of the Global South on agriculture, with 55% of the indigenous population employed in agricultural activities [6]. This activity has been strongly affected in recent years due to the growing extractive activity in indigenous territories, which has produced an amplified effect of land loss, in addition to other factors such as global warming, linked to desertification, floods, soil erosion, and droughts. It should also be noted that the indigenous groups of the Global South are among the populations that suffer most of the consequences of food insecurity. Therefore, the generation of restrictive policies of the pandemic associated with displacement has generated an increase in food insecurity, often prohibiting indigenous groups from accessing the sale of their products or obtaining other necessary economic resources.

This has greatly affected the semi-nomadic indigenous peoples, who have not been able to manage their grazing tasks, making it impossible for them to move their livestock or sell their products and animals in the city's markets, making it difficult for them to obtain economic resources [26].

Another important factor is the loss of indigenous lands and territories, producing forced displacements and overcrowding in the communities. One of the main reasons for the loss of land is the arrival of neo-extractivist industries [27–29] such as mining and forestry companies, which make use of their land, forcing them to settle in other places with a low productive level or, in the worst case, forcing them to reduce their land, producing overcrowding in the communities, which has become a risk factor in the context of the pandemic, increasing the possibilities of contagion.

Undoubtedly, these forced displacements and the process of land loss, in general, are an element of uncertainty and vulnerability that affects indigenous groups in the context of the pandemic, since in many cases they are unprotected by the States. In this sense, land and the community, in particular, represent a relevant factor for indigenous groups, because in many cultures the collective is presented as the central element in their worldview and ethnicity, being a central element for their survival as groups.

On the other side, in the context of pandemic and isolation, the community plays two fundamental roles, on the one hand, it is configured as that element where the indigenous people, through autonomy and self-determination, can generate specific measures to face the health crisis, but it is also presented as a risk factor since in community life there is a greater probability of contagion, either by community work, food exchange, religious ceremonies, among others, which makes physical distancing much more complex [30].

Another problem has been generated by indigenous peoples in voluntary isolation, who are more vulnerable because they are less immune to imported diseases [31–33], and are also far from health services. At present, it is estimated that there are around 200 groups, mostly in the Amazon and Gran Chaco regions of Paraguay, which are at special risk due to the lack of State protection and lack of access to health services or social assistance from governments. In this context, we can mention indigenous groups in the Amazon, who have indicated in a report to the UN [1] that the virus has been introduced by religious missionaries and by workers in the mining and forestry industries.

2.5 The information barrier

Another factor that has generated the exclusion of indigenous peoples in the context of the pandemic has been the limited access to information and communication. This is because prevention measures against COVID-19 are not translated into indigenous languages and are not approached from a relevant cultural perspective, so there is difficult access to information, not achieving the necessary dissemination among the indigenous population, who often do not have access to traditional media such as television. This has resulted in a lack of updated and correct information regarding the virus, the development of the pandemic, or the public policies and benefits developed by governments, even some indigenous communities in Africa, have come to ignore the pandemic, perceiving it rather as an urban health crisis, so they have not adopted preventive measures [1].

Pandemics and diseases have been present in the collective memory of indigenous groups since the arrival of the European conquerors. Diseases such as measles, influenza, and smallpox devastated many indigenous communities in various territories of the global south centuries ago [34–36], so their presence is very present in their oral history, acquiring a special symbolic meaning, which is why the COVID-19 pandemic has particularly alarmed certain communities where there is little access to information.

This information barrier is a structural element of exclusion of indigenous groups, who, through language and specifically due to the limited recognition of their traditional languages, are prevented from obtaining information that would allow them to generate prevention strategies in their communities. This is in addition to a lack of trust in the State and the traditional media, as a result of the systematic forms of discrimination and exclusion to which they are subjected.

However, there are experiences where indigenous peoples have been involved and committed to the dissemination and democratization of information for their communities. In this sense, we can mention the work of the leaders of the Amazon region of Venezuela, who have developed a special working group on COVID-19 linked to the dissemination of information adapted to the specific contexts of their communities, issuing announcements in indigenous languages, and using community radio as a trusted disseminating element [37]. Another example is presented in India, where village councils and councils of elders have focused on translating and disseminating information related to COVID-19 prevention in indigenous languages [38]. Similarly, in Laos, health care mechanisms have been created in the Hmong language, guaranteeing access to information and health care from a culturally broad approach, incorporating the communities and their authorities in the generation of local community policies on the prevention of the virus.

Finally, Mexico has also included in its prevention strategy the actions of indigenous healers, who have focused on generating a network for the dissemination of information to incorporate a multicultural vision of the health problem. Although the existence of some initiatives to generate greater access to information has been

proven, it can be pointed out that these actions are insufficient, since they are specific projects that do not generate significant changes to the structures of exclusion and the constant barriers to information that affect indigenous peoples.

3. Responses from indigenous groups and implications of the crises

The aforementioned elements have shown that indigenous peoples are in a situation of previous inequality and exclusion to the rest of society [39, 40], which is evidenced in elements such as the lack of access to health services and precarious subsistence systems that have exacerbated social injustices in post-colonial states [41]. This is in addition to the fact that the health of indigenous groups in many countries is much lower than that of the rest of society due to the presence of pre-existing diseases and the presence of a low immune system [42], which is often due to socio-environmental risk factors and fragile ecosystems, which are affected, for example, by the contamination of water resources or air by extractive industries present in their territories.

However, indigenous peoples, as active agents and promoters of change, are finding their solutions to respond to the health crisis, based on their traditional knowledge and practices. Based on indigenous autonomy, they are generating diverse strategies that allow them to confront the risks of the pandemic. In this sense, although indigenous peoples are at greater risk of infection due to the structural problems to which they are affected, they also have diverse strategies and resources to cope with the pandemic, creating based on their lifestyles community-based and worldview, demonstrating a strong capacity for resilience to the global pandemic, however, it should be mentioned that this varies significantly from community to community depending on the context of each one.

In this way, the collective right to autonomy and self-determination of indigenous communities becomes very relevant, particularly since a United Nations report [1] has shown that those indigenous peoples who enjoy the right to self-determination are better positioned in the face of the pandemic, generating their control and isolation mechanisms, regardless of the actions taken by governments.

Similarly, those communities that have access to land and have generated sustainable agricultural practices linked to food security have been able to generate their food distribution mechanisms among the community. On the other hand, the community serves as a platform for economic assistance based on mutual aid and group solidarity. In this sense, examples have arisen such as the Maori groups in New Zealand who have applied the Mahi Aroha, where economic aid has been distributed among the communities, providing food, resources, and hygiene items, as a form of autonomy and self-management of the pandemic, focusing on the help of community members [43]. In Chile, the Mapuche communities of the coast have shared the food obtained from their fishing with other sectors of society that have been affected by the economic consequences of the confinement [1, 44].

Similarly, there have been several examples of other indigenous groups, which have autonomously managed aid to cope with the crisis, in many cases without government assistance.

The indigenous community plays a very important role as an element that allows generating resilience within indigenous groups, serving as an element that allows strengthening social relationships in confinement, facing stress and emotional problems related to it. In this sense, the indigenous community plays the role of emotional support for indigenous people who are in confinement or social and physical isolation. In this sense, it has been possible to identify that the support of the indigenous community, based on family relations, has generated networks that

allow them to focus on better management of the emotional stress generated by the pandemic and confinement. In this way it is possible to mention a study by Carolyn Smith-Morris who points out that the community generates benefits to the health of the members of the group, noting: "Having relationships and being involved in them, having a sense of belonging, and engaging with the community in a meaningful way are all healing activities. If we somehow manage to put more emphasis on these community activities, not at the expense of individual health measures, but in cooperation with them, we will tap into a source of ill health" [45].

In this way, traditional knowledge, culture, and specifically indigenous traditional medicine play an important role as an element of resistance and resilience of indigenous peoples to the pandemic, since the extensive knowledge of biological diversity and local pharmacopeia, allows indigenous people to generate from holistic perspective mechanisms that allow them to maintain their well-being autonomously without even having health care from the state. So, traditional medicine has been recognized by international organizations and is protected in the current international legislation, recognizing its value and usefulness for indigenous peoples.

Another of the actions undertaken by indigenous communities is self-isolation, as a measure to stop and prevent the transmission of the virus, limiting entry to the communities, allowing them to better control their prevention and contagion rates. In this sense, we can mention the experiences of the Igorot indigenous groups in the Philippines, who established the ubaya, which means a time of isolation of the community [46]. On the other side, we can mention the case of the Rapa Nui communities in the Pacific, who, not having administrative autonomous rights that would allow them to exercise a closure of the island, relied on an ancient ancestral Tapu law to exercise voluntary quarantine of the community, restrict contacts and hinder the spread of the virus. In North Africa, the Amazigh communities of Algeria also closed their territories to foreigners, generating a strict control to enter their communities and exercising from the traditional authorities recommendations to reduce social contact [1]. It should be mentioned that concerning self-isolation, the indigenous communities did not receive support from the governments in most cases, even finding themselves in conflict with the State for creating roadblocks as a measure of prevention and isolation.

4. Conclusion

As previously exposed, the COVID-19 pandemic has generated a global crisis that has aggravated the problems and living conditions of indigenous groups, increasing the multiple vulnerabilities that affect them. In the first place, this is due to the presence of structural factors of exclusion and discrimination that have their roots in the post-colonial context of the global south and that have increased even more with neo-extractivism and globalized neoliberal capitalism.

Within these problems, we have been able to identify difficult access to state assistance programs, which are conceived from a state-centric logic, without taking into consideration cultural elements of indigenous groups or the contexts in which they live. In this way, we can also consider that exclusion is presented in the form of racism and discrimination when trying to access health services, for example, women are affected by gender discrimination, racism, and xenophobia.

As we have analyzed, indigenous groups are in an unfavorable and vulnerable situation to the rest of society, which has increased during the pandemic period. However, the various indigenous groups have generated different proposals to respond to this challenge, resorting to their traditional practices, their right to

self-determination and autonomy, and the creation of community initiatives that have strengthened their capacity to face the global crisis.

Finally, it should be noted that the global COVID-19 crisis has shown that many States continue to operate from a colonialist logic, often applying public policies that are decontextualized and do not adapt to the realities of indigenous groups, not taking into consideration the systemic exclusions that indigenous people confront. In this sense, and based on the above analysis, we can mention that the responses of the States have not considered the particular lifestyles of indigenous communities, nor their culture and traditions, generating public policies that often contradict their worldview and their ways of dealing with the crisis.

The indigenous peoples, however, have elaborated various proposals and demands that are linked to the need to be able to participate in the decisions of the States related to public policies with the pandemic and the management of the crisis [1]. In this sense, it is necessary to point out that to exercise efficient management of the pandemic it is necessary to respect the right of autonomy of the indigenous communities, allowing them to manage at a local level the crisis, with the necessary information, economic and material support from the States. In this sense, the UN Special Rapporteur on Indigenous Peoples points out that for good management and adequate response to the pandemic, it is necessary the coordination of both indigenous authorities and state authorities to generate a joint work that is adequate for the special contexts of the communities [1]. Therefore, respect for indigenous collective rights and the recognition of autonomy rights means a necessary action to exercise greater inclusion of historically excluded groups such as the indigenous in the State apparatus, expanding democracy and allowing for good crisis management.

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Chapter 35

Loss of Employment and Reduction of Income during the COVID-19 Pandemic in the Maranhão State, Brazil

Bruno Luciano Carneiro Alves de Oliveira

Abstract

To estimate the prevalence and factors associated to the loss of employment and reduction of income during the covid-19 pandemic in the state of Maranhão, Brazil. A population-based household survey was performed, from October 19 to 30, 2020. The estimates considered clustering, stratification and non-response. The sample selection was carried out in three stages (stratum, census tracts and households). After systematic analysis, thirty sectors were selected in each stratum, totaling 150 sectors, with the number of households in each sector set at 34 households, totaling 5,100 households and one inhabitant per household (resident for at least six months and with 1-year-old or more) selected by simple random sample. To this research were analyzed 3,297 inhabitants among 18 and 64 years old. The Loss of employment and income from the pandemic was questioned. Descriptive analysis (weighted frequency) and Pearson's chi-square test were performed to verify univariate association between independent variables and the outcome ($p < 0.05$). The prevalence of loss of employment and income was 12.1% (95%CI 10.5–13.7%), but another 39.7% (95% CI 37.3–42.1%) were already out of the market before the pandemic. This loss was statistically greater among residents of the largest and wealthiest cities in the state (stratum with the state capital: 22.7%; 95% CI 18.8–27.2; and in cities with more than 100 thousand inhabitants: 12.4%; 95% CI 9.9–15.6), male (14.3%; 95% CI 11.9–17.3; p = 0.037), middle-aged adults between 30 and 49 years (15.3%; 95% CI 12.8–18.2; p = 0.001), medium level (15.3%; 95% CI 12.9–18.1; p = 0.003) and higher education (14.4%; 95% CI 9.4–21.5; p = 0.003) and users of public transportation (14.6%; 95% CI 12.4–17.2; p = 0.005), and among those who received this aid was much higher (50.4%; 95% CI 33.2–67.4; p = 0.001). The results showed a relevant prevalence of loss of work and income in Maranhão and its association with individual and contextual factors. They revealed the groups and contexts most affected socioeconomically by the pandemic and that should deserve special attention from public income transfer strategies.

Keywords: unemployment, social conditions, coronavirus infections, survey, Brazil

1. Introduction

The COVID-19 pandemic has forced different governments to adopt measures to restrict social mobility in order to reduce the transmission of the SARS-CoV-2 virus,

which generates an exponential volume of cases and deaths. Globally, 116,902,939 cases and 2,594,721 deaths were registered until March 8, 2021. USA, India and Brazil are among the three countries with the highest number of cases and deaths, with Brazil being the country with the highest rate of fatal cases and the second with the highest overall mortality rate [1].

On the other hand, such measures directly impacted the dynamics of the local and global economies. This pandemic represents a real challenge to the maintenance and growth of economies. One of its effects was the large volume of population that lost jobs or their sources of income, causing a reduction in their individual and family earnings [2, 3].

These same governments tried to provide alternative economic responses through an income transfer policy focused on particular groups that represented the distribution of emergency financial aid to supplement the income and consumption affected by their populations by the pandemic [4]. Brazil is one of the emerging countries that spent the most on this pandemic, only comparable to some high-income countries. Until December 2020, around 10% of GDP (Gross Domestic Product) was committed to this income policy, even with an internal fiscal scenario that has deteriorated since 2014 [2, 4].

However, within the country, in locations historically with greater socioeconomic and health deprivation, such aid did not erase all the impacts of job loss and income reduction, since the socioeconomic conditions in these places were no longer as favorable before COVID-19. Nationally, it is estimated that around 24.5 million workers with a formal contract signed wage reduction agreements or suspended employment contracts with the pandemic in 2020 [5].

Located in the most impoverished region of Brazil (northeastern region), Maranhão state presented an important volume of these workers affected by the pandemic. In 2020, this state had about 7.1 million inhabitants distributed in an area similar to the size of Italy [6]. However, little has been achieved to estimate the real size of this group of workers or their associated characteristics, given the large number of them in underemployment (without labor guarantees) that already existed before the pandemic. Therefore, the individual and contextual characteristics of these most affected groups are not yet known. However, a good opportunity to try to answer these questions can be given through a population-based survey conducted in August 2020 on the epidemiological and socioeconomic impacts of this pandemic on the population of the Maranhão state.

Therefore, this study used this available and public database to estimate the prevalence and factors associated with job loss and income reduction during the COVID-19 pandemic in the Maranhão state, Brazil. This is expected to identify the population groups most impacted by job loss and income reduction in a context of a pandemic in Maranhão state and to generate information for public interventions that meet the demands of these different social groups.

2. Methodology

2.1 Study area and population

Cross-sectional study with data from the population-based home serological survey entitled “Prevalence of infection by the SARS-CoV-2 virus in Maranhão state, Brazil”, carried out in cooperation between the Federal University of Maranhão and the Maranhão state Department of Health in the period October 19 to 30, 2020. The municipalities of Maranhão were divided into five strata, according to the 2019 IBGE municipal population size [6] Grande Ilha, less than 20,000

inhabitants, from 20,000 to 100,000 inhabitants, more than 100,000 inhabitants, and the city of Imperatriz (second largest in population and economy in the state). The Big Island included the capital São Luís and three neighboring cities.

2.2 Sample

To calculate the sample size, the prevalence of SARS-CoV-2 infected was estimated in the first survey carried out in the Maranhão state [7]. In each stratum, the sample size calculation was estimated using the following equation:

$$n = \frac{N}{N-1} * P * Q * \frac{1}{CV^2 * P^2 * \frac{P*Q}{N-1}}, \quad (1)$$

The letter N represents the population in each stratum, P the prevalence and CV the coefficient of variation of the expected prevalence estimates within the strata. A design effect of 2 was considered. The study sample was 5,001 individuals: 872 in Stratum 1 (four municipalities), 1,236 in Stratum 2 (122 municipalities), 612 in Stratum 3 (85 municipalities), 1,022 in Stratum 4 (five municipalities) and 1,021 in Stratum 5 (one municipality).

The sample selection was carried out in three stages. In the first, in each stratum, census sectors were selected. In the second, within sectors, households. In the third, within the household, only one resident individual.

In each stratum the selection of sectors was obtained from a systematic random sample, proportional to the number of permanent private households. Thirty sectors were selected, totaling 150 sectors. Sectors with less than 200 households in the 2010 census were grouped with others, respecting the continuity of these sectors, so that each grouped sector had at least 200 households. The number of sectors and households was obtained from the 2010 Demographic Census [8].

The selection of households in each of the 150 sectors or clusters was obtained by a systematic sample. The number of households in each sector or group was set at 34, totaling 5,100 households. Within each household, an individual was selected from a simple random sample, totaling 5,100 individuals. This selection was made from a list of eligible residents constructed at the time of the interview (resident for at least six months at home and with a year old or older). The final sample of the survey reached a response rate of 65.4% (n = 4,630 individuals). However, for this study, only the adult population between 18 and 64 years was considered because it is considered that this would be the population expected to have already entered the labor market. Thus, the study population was 3,297 people. The final sample weight considered the three stages of selection and the response rate.

2.3 Data collection

The data were collected through the application of a questionnaire and collection of 5 mL of blood from the randomly selected individual. Data registration was performed in an application from a mobile device, using the *EpiCollect* platform [9]. Serology data were not used in this analysis.

2.4 Study variables

In this study, the outcome variable was job loss or income reduction during the covid-19 pandemic. Job?“. The possible answers were “yes”, “no“ and “do not know” and do not apply (in cases where the person did not work before the pandemic).

A set of independent variables was used. The socioeconomic and demographic variables were: sex, age group in years (18–39, 40–59, ≥ 60), color/race (white, mixed race, black), education (up to complete elementary school II, complete high school, complete higher education)), family income (in reais, Brazilian currency) (<1,000, from 1,000 to <2,000, ≥ 2,000), possession of a health plan (yes, no), religion (Catholic, evangelical, does not have, others), number of residents in the household (1, 2, ≥ 3) and use of public transport during the pandemic (no, yes). Those related to the labor market after the emergence of the pandemic were: continues with face-to-face work (yes, no, did not work outside the home), remote work even if partial (yes, no, did not work), received *Bolsa Família aid* (social benefices) (yes, no), received emergency aid (yes, no) and received unemployment insurance benefits (yes, no, did not work). To health was the frequency of symptoms possibly related to covid-19 (no symptoms, 1 to 2, ≥ 3).

2.5 Análise Estatística

Statistical analysis was performed using the software Stata® version 14, considering the characteristics of the complex sample plan and the weighting of the sample. The prevalence of job loss or income reduction during the new coronavirus pandemic and 95% confidence intervals (95% CI) were estimated according to the independent variables, using Pearson's chi-square test to verify the univariate association between them, at the 5% significance level.

2.6 Ethical approval

Ethical approval was obtained from the Research Ethics Committee of the Carlos Macieira Hospital of the Maranhão State Health Secretariat under CAAE number 34708620.2.0000.8907. An informed consent form was provided by the participants.

3. Results

The prevalence of respondents who suffered loss of work or reduced income during the pandemic of the new coronavirus in the Maranhão state was 12.1% (95% CI: 10.5–13.7). However, the proportion of adults who were already out of the labor market even before the pandemic was also quite high (39.7%; 95% CI: 37.3–42.1) (**Figure 1**).

Table 1 shows the prevalence of job loss or reduced income according to socioeconomic and demographic characteristics of the interviewees. It was found that this loss was statistically (p = 0.001) greater among residents of Grande Ilha (stratum that has the state capital) (22.7%; 95% CI 18.8–27.2) and in cities with more of 100 thousand inhabitants (12.4%; 95% CI 9.9–15.6) than among cities with less than 20,000 inhabitants (6.3%; 95% CI 4.5–8.7). The loss of work and income was also statistically higher among males (14.3%; 95% CI 11.9–17.3; p = 0.037), middle-aged adults between 30 and 49 years old (15.3%; 95% CI 12.8–18.2; p = 0.001), with medium level (15.3%; 95% CI 12.9–18.1; p = 0.003) and higher education level (14.4%; 95% CI) % 9.4–21.5; p = 0.003) and users of public transportation (14.6%; 95% CI 12.4–17.2; p = 0.005). For the other socioeconomic and demographic characteristics, the prevalence of the study followed values close to the state estimate, but without statistical association (p > 0.05) (**Table 1**).

When considering the prevalence of job loss or income reduction according to the receipt of government financial aid due to the pandemic, it was found that there

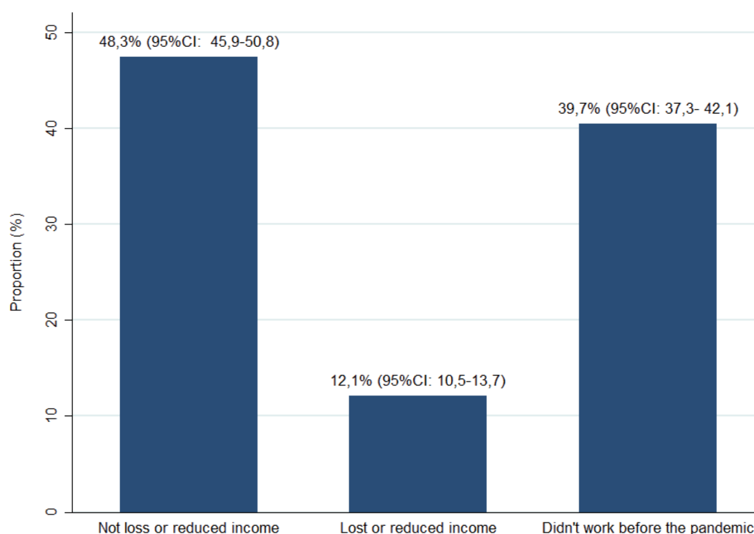

Figure 1.
Prevalence of loss of employment or income reduction during the new coronavirus pandemic in the Maranhão state, Brazil, 2020.

Variables	Loss of employment or income reduction				p^*
	Yes		No		
	%	95%IC	%	95%IC	
Total	**12.1**	**10.5–13.7**	**88.9**	**86.3–89.5**	
Groups (Regions) of municipalities					
< 20,000 inhabitants	6.3	4.5–8.7	93.7	91.3–95.5	*0.001*
20,000 to 100,000 inhabitants	8.5	6.4–11.3	91.5	88.7–93.6	
> 100,000 inhabitants	12.4	9.9–15.6	87.6	84.5–90.1	
Imperatriz	8.1	5.8–11.1	91.9	88.9–94.2	
Big Isla[1] (Including the capital São Luís)	22.7	18.8–27.2	77.3	72.8–81.2	
Sex					
Female	10.9	9.2–13.0	89.1	87.0–90.9	*0.037*
Male	14.3	11.9–17.3	85.7	82.8–88.1	
Age groups (years)					
18–29	9.4	7.1–12.4	90.6	87.6–92.9	*0.001*
30–49	15.3	12.8–18.2	84.7	81.8–87.2	
50–64	8.8	6.9–11.2	91.2	88.8–93.1	
Self-reported skin color/race[2]					
White	11.9	8.4–16.7	88.1	83.4–91.6	*0.35*
Brown	11.4	9.7–13.4	88.6	86.6–90.3	
Black	13.5	10.2–17.7	86.5	82.3–89.8	
Head of the household's schooling (years)[3]					
Primary/Lower secondary II	8.9	7.2–11.0	91.1	89.0–92.8	*0.003*
Upper secondary	15.3	12.9–18.1	84.7	81.9–87.1	
Tertiary	14.4	9.4–21.5	85.6	78.5–90.7	

Variables	Loss of employment or income reduction				p^*
	Yes		No		
	%	95%IC	%	95%IC	
Total	**12.1**	**10.5–13.7**	**88.9**	**86.3–89.5**	
Monthly family income (Brazilian Real (R$)[3]					
< 1000	10.4	7.9–13.7	89.6	86.3–92.2	*0.36*
1000 a < 2000	11.9	9.9–14.2	88.1	85.8–90.1	
>2000	13.4	10.5–16.9	86.6	83.1–89.5	
Has a health plan					
No	11.4	10.0–13.0	88.6	87.0–90.0	*0.07*
Yes	18.4	11.0–29.1	81.6	70.9–89.0	
Number of residentes in the house					
1	10.7	7.4–15.2	89.3	84.4–92.6	*0.46*
2	10.8	8.6–13.6	89.1	86.4–91.4	
≥3	12.4	10.6–14.6	87.6	85.4–89.4	
Used public transport during the pandemic					
No	10.1	8.3–12.3	89.9	87.6–91.7	*0.005*
Yes	14.6	12.4–17.2	85.4	82.8–87.6	

**Pearson's chi-square test.*
[1]Includes the Capital São Luís.
[2]Yellow and indigenous races are excluded due to low frequency.
[3]n different from 3.297.

Table 1.
Prevalence of loss of employment or income reduction during the new coronavirus pandemic according to socioeconomic and demographic characteristics of respondents in the serological survey in Maranhão state, Brazil, 2020.

Variables	Loss of employment or income reduction				p^*
	Yes		No		
	%	95%IC	%	95%IC	
Receveid bolsa família (social benefices)					
No	12.5	10.6–14.6	87.5	85.4–89.4	*0.44*
Yes	11.2	9.0–13.9	88.8	86.1–90.1	
Receveid emergency aid					
No	10.1	7.8–13.0	89.9	87.0–92.3	*0.072*
Yes	13.2	11.4–15.3	86.8	84.7–88.6	
Receveid unemployment insurance					
No	13.8	11.8–16.1	86.2	83.9–88.3	*0.001*
Yes	50.4	33.2–67.4	49.6	32.6–66.7	

**Pearson's chi-square test.*

Table 2.
Prevalence of loss of employment or income reduction during the new coronavirus pandemic according to receiving government financial aid due to the pandemic of respondents in the serological survey in Maranhão state, Brazil, 2020.

Variables	Loss of employment or income reduction				p^*
	Yes		No		
	%	95%IC	%	95%IC	
Frequency of symptoms possibly related to covid-19[1]					
No symptoms	8.6	6.9–10.6	91.4	89.4–93.1	*0.005*
One to two symptoms	15.1	9.3–23.5	84.9	76.5–90.7	
Three or more symptoms	14.6	12.4–17.2	85.4	82.8–87.6	

*Pearson's chi-square test.
[1]The following symptoms were considered: fever, chills, sore throat, cough, dyspnea, anosmia, ageusia, diarrhea, nausea/vomiting, headache, fatigue, and myalgia. They were classified into: no symptoms; one or two symptoms, provided they were not anosmia/hyposmia or ageusia/dysgeusia; three or more symptoms (including anosmia/hyposmia or ageusia/dysgeusia).

Table 3.
Prevalence of loss of employment or income reduction during the new coronavirus pandemic according to frequency of symptoms possibly related to covid-19 (no symptoms, 1 to 2, ≥ 3) due to the pandemic of respondents in the serological survey in Maranhão state, Brazil, 2020.

was only a statistically significant association with the receipt of unemployment insurance (p = 0.001). The prevalence of loss of work or income among those who received this aid was much higher (50.4%; 95% CI 33.2–67.4; p = 0.001) than those who did not receive it (13.8%; 95% CI % 11.8–16.1; p = 0.037) (**Table 2**).

The prevalence of loss of job or income was statistically higher (p = 0.005) among people who reported the presence of symptoms associated with infection with the SARS-CoV-2 virus than among asymptomatic individuals. Adults with one or two symptoms (15.1%; 95% 9.3–23.5) and three or more symptoms (14.6%; 95% CI% 12.4–117.2) reported a higher prevalence than those without symptoms (8.6%; 95% CI% 6.9–10.6) (**Table 3**).

4. Discussion

The results have since indicated an important impact of the new coronavirus pandemic on the labor market and on adult income levels in the state of Maranhão. This volume of new people with reduced income was added to the large volume of people who were already out of the job market even before the pandemic, exposing the precariousness of local income levels and the depth that the economic crisis caused by the new coronavirus may have generated in living and health conditions. There was a profile of residents more economically impacted by the pandemic, as the loss of employment and income was greater in large and more populous cities. Among male people, middle-aged, of medium and high schooling, public transport users, and adults who had more symptoms associated with the COVID-19 clinic. Yet, despite the state having instituted targeted cash transfer mechanisms during the pandemic to compensate for the loss of income from the pandemic, a relevant portion of adults did not receive such aid, which may have further aggravated the socioeconomic and health situation of these people with the pandemic.

Globally, the COVID-19 pandemic has devastated a large volume of lives, leading to job loss, income, emotional distress and worsening physical and mental health [2–4]. It also led to increased costs in several sectors, with depleted health systems, financial markets and society in general. The rapid spread of the virus has produced a dramatic risk of strangulation of health systems in the affected countries, regardless of their socio-economic development stage [10].

Brazil is a country with a very high risk of contamination and the virus has been producing a high number of cases and deaths, especially in the northeast region and its most impoverished states such as the state of Maranhão, because the pandemic tends to generate more cases among more vulnerable populations, and states and municipalities whose socioeconomic status, hygiene and sanitation are deficient [7]. In the economic field, the effects of the COVID-19 pandemic have had serious socioeconomic impacts, exposing the vulnerability of Brazilian states and municipalities [2].

In response to the transmission characteristic of the SARS-CoV-2 virus, restrictive measures of social mobility and consumption impacted, together with the pandemic itself, the labor market with more relevant negative repercussions between people and cities with insertion in the market or social structure and consume power. In this study, it was observed that the richest and most populous cities in the state and people with higher education were the ones that suffered the most from this loss of work or income. However, it was observed that in poor contexts such as Maranhão, there was already a relevant proportion of people already outside the labor market even before the pandemic [2–4].

The impact of the pandemic was not felt equally by all social groups in the state. Middle-aged adults and public transport users were also the most affected by the loss of jobs and income, suggesting that the income power of these subjects was no longer high before the pandemic, as they depended on public transport services and were in the beginning of their working life phase. Soon the effects of the pandemic may have amplified the socioeconomic difficulties between them beyond this current phase of life and reaching the family circuit.

The Brazilian government has instituted focused income transfer policies for groups that have declared themselves out of jobs or income with the pandemic. Emergency Aid, instituted by Law No. 13,982, of 2020, is one of the biggest initiatives of the Federal Government to minimize the economic effects of the coronavirus pandemic for the most vulnerable part of the population, among them the beneficiaries of the Bolsa Família Program and those enrolled in the Single Registry for Social Programs of the Federal Government, citizens who already had some type of relationship with social assistance policies. In addition to these, the benefit also covers informal, self-employed and individual small business. However, in this study it was found that a portion of about 15.0% of the adults evaluated did not receive such assistance even though they had the characteristics to receive it, indicating the failure of governments to positively reach the groups most in need of this economic support.

Epidemics such as that of COVID-19 are characterized as perverse phenomena, since they affect a series of factors involved in the health status and quality of life of an individual, including environment, living conditions, social and economic reality. For this reason, this pandemic has consequences for the functioning of the global economy, generating a world crisis that demands ample emergency strategies and very well-articulated the different local realities, so that this collective action can minimize the effects of the pandemic problem [2–5].

This study pointed out that adults who had symptoms associated with the covid-19 clinic had a higher prevalence of job and income loss. Such results may suggest that these adults were more exposed to infection due to the characteristic of the work they had, which demanded greater performance in the environment outside the home. Furthermore, it is likely that job loss has induced new job-seeking behavior among these adults, which may have exposed them to a greater risk of infection with SARS-CoV-2, and thus a higher prevalence of symptoms associated with this condition. Interviewee profile.

This finding reflects the characteristics of health prior to the pandemic in the state and that insertion in the labor market and income can have a protective effect on health. Particularly in Maranhão state, previous research indicates that social inequalities in the general situation of life and health are more adverse than in other states in the country and in the Brazilian Northeast. From the point of view of the state, there are still marked differences between its territories, with cities in the state with Human Development Index (HDI) among the worst in the country and similar to countries like Haiti, Laos, Yemen and Madagascar [11].

These results have limitations. Cross-sectional studies may have difficulties in establishing the direction of the associations. However, the variables associated in this study were, for the most part, demographic. It becomes consistent to assume that the loss of work and income depends more on them than the other way around. Income was not associated with the outcome. This finding differs from other studies [3]. Such difference may be due to the fact that in Maranhão the income levels do not differ so much in the population. The way information on the use of public transport was collected during the pandemic may incur a memory bias, as respondents had to remember about this behavior. Likewise, symptoms were investigated through recall, according to the month in which they were experienced. However, symptoms frequency was investigated based on those more associated with covid-19 diagnosis – anosmia/hyposmia or ageusia/dysgeusia [7].

The survey used in this research has already occurred with the almost complete reopening of the economy after the first wave of cases. and not at the peak of the pandemic. It is possible that these income conditions have changed over time. Despite these limitations. The results come from a representative sample from all of Maranhão, considering the diversity of the population sizes of their cities.

5. Final considerations

The results showed a relevant prevalence of loss of employment and income in Maranhão state and its association with individual, contextual and clinics factors. They revealed the groups and contexts most affected socioeconomically by the pandemic and which should deserve special attention from public income transfer strategies. The socioeconomic vulnerability prior to the pandemic in the state points to the need for continuous actions that increase the entry and permanence in the labor market, maximizing the socioeconomic benefits and the collective health of better levels of income and satisfaction with one's life when inserted in the market. of work and consumption.

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Chapter 36

The Impact of Covid-19 Pandemic on Community Psychiatric Services in Northern Italy

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Abstract

The Covid-19 pandemic, started brutally in February 2020 in Northern Italy (first European area hit by virus), has induced the most drastic and prolonged containment measures by a European government. The most affected areas of the Italian territory were Lombardy and Veneto. A severe and global lock-down was ordered for more than two months, with the closure of essential medical services among others. All health resources have been diverted to address the health crisis caused by the pandemic. During the lock-down, however, the only community medicine services that remained open were mental health services: psychiatry, the area of addictions, child neuropsychiatry. The community facilities have always provided services favoring, on the one hand, the maintenance of care and rehabilitation paths for patients in care, and on the other, allowing anyone who needs to have access to treatment. The operators were also involved at the forefront in the management of covid + patients and in the support paths for the management of the operators' stress. In this chapter, we want to describe the working conditions and the organizational responses of our services, referring to a large catchment area of the region most affected by covid-19.

Keywords: Covid-19, pandemic, mental health, psychiatric services organization, community psychiatry, post-traumatic stress, resilience, critical incident management

1. Introduction

The recent COVID-19 epidemic has created a serious and in many ways unexpected health and social emergency, imposing a drastic and immediate change in the lifestyles of the entire population. However, this emergency has had, and will have significant consequences on the psychosocial level, both direct and indirect. Among the direct consequences can be mentioned the trauma suffered by those who have fallen ill and have been hospitalized, or have been forced into prolonged isolation, and the stress and burnout of frontline health personnel (doctors and nurses of the ER services, infectious disease departments, intensive care units, sub-intensive care units, etc.). Among the indirect consequences we can mention the serious risk of unemployment and loss of personal and family income,

limitations to interpersonal contacts and work activities, complicated bereavement in the case of loved ones who have fallen ill and died, etc. This serious and complex psychosocial emergency poses new challenges to Mental Health Departments and professionals in this sector, and therefore requires the development and refinement of specific skills.

At the end of April 2020 (the so-called "first peak"), Italy entered the "phase 2" of the covid-19 pandemic [1]. Italy was one of the most affected western nations in the early phase of pandemic, in terms of number of positive cases and number of deaths. By April 30, 1354901 subjects had been tested, 205463 tested positive, with 27967 related deaths [2]. Italy was also the western country that has implemented the most aggressive and prolonged lockdown (even if internationally disputed), closing schools, workplaces, almost all the community health services being all the health resources diverted to acute hospital care services. The Lombardy region has been the hardest hit in all of Italy, with the most prolonged impact: by April 30 there were 75732 cases (out of 229880 cases tested), with 13772 deaths. Milan represents one of the Provinces most affected, with 19337 cases [3].

One of the issues that most worried health agencies in the first phases of pandemic was that of protecting weaker segments of the population, among these, those in need of psychiatric services. Although other segments of the population could have been protected by isolation, this response mode is not adequate for the specific fragile population of mental health patients. Since the lockdown in late February 2020, most hospital wards have been rapidly converted to the management of the Covid-19 epidemic, establishing intensive and sub intensive care units. ERs have also had to revolutionize their paths, becoming de facto hubs for Covid-19 case management. The specialist outpatient activities in the area have closed, both to allow the deployment of operators in emergency areas and to avoid exposure of the population. Only the mental health services continued their activity, moving most of the services remotely.

2. Mental health services under stress?

The management of psychiatry in Italy is community-based, based on homogeneous geographic districts of reference [4]. Multidisciplinary groups operate in these services (psychiatrists, psychologists, nurses, social workers, occupational therapists, rehabilitation counselors, auxiliary staff), in the complex path of taking charge (from acute emergency to long-term rehabilitation).

Within this context, ASST Melegnano and Martesana represents one of the largest Lombard territories, managing a population of more than 630000 inhabitants over a vast geographical area south of the city of Milan. The mental health services are characterized by two psychiatric wards for acute care (30 beds in total), with an average length of hospitalization in 2019 of 11.5 days, in a hospital network of 4 multispecialty units distributed throughout the territory. The offer of community services includes six psychiatric clinics and six addiction clinics, 3 residential rehabilitation facilities and 3 daytime rehabilitation facilities for the adult population. Several projects which specifically provide services for the younger population {16–24 years) are also active.

This rapid and drastic change in management style has imposed, at least until the beginning of "phase 2", to manage with home-based and non-hospital care of acute cases (mentioning work), developing a community triage in order to distinguish cases by their severity for hospital referral (compulsory admissions for suicidal risk, psychotic breakdowns). The management of access to services, as well as the recently described experience by a group of Italian colleagues working in a

mental health department geographically close to ours has involved the remodeling of a series of processes to protect and guarantee adequate services for healthcare workers and patients [5]. In agreement with the management, safeguard measures in community services have been progressively implemented which have envisaged:

1. closure of group rehabilitation services (day services),

2. blocking of access to residential structures,

3. phone calls and videoconference visits for deferred acute conditions and for monitoring and for requests for first visits and consultancy,

4. dedicated telephone counter for family members and health care workers under stress,

5. direct access to services only for situations related to the administration of therapies or for situations requiring direct evaluation.

The community teams also carried out the following activities:

1. monitoring of subjects with concomitant pathologies that can determine risk factors for covid-19 (hypertension, heart disease, diabetes, and chronic respiratory diseases),

2. education in infective risk prevention, through telephone calls, notices displayed outside the services, direct instructions to caregivers and patients.

In particular cases, services implemented home interventions aimed at supporting basic needs (nutrition, hygiene), with further and more stringent precautions (according to WHO indications). We gave a particular attention to young people (16–24 years), to whom specific lines of communication were dedicated which allowed remote operations to continue, creating virtual rehabilitative and re-socializing groups.

The two acute wards were involved both in the covid-19 screening phase (providing separate and isolated rooms for patients awaiting the outcome of the swab) and in the direct management of psychiatric patients with an infection in progress. In the two "hot" months of March through April we recorded only 2 active cases hospitalized in a dedicated psychiatric ward, and 3 psychiatric patients hospitalized in subintensive care units. At the same time, we almost halved total admissions, with a median hospitalization time of about 10 days [6]. Another group of Lombardy replicated the data [7] and a multicentric research involving a number of Mental Health Departments in northern and central Italy also replicated this finding [8]. Thus, the available data confirmed that psychiatric patients did not attend to acute psychiatric wards as usual; inference was made that they were shifted toward community services (which never closed even in the hard lockdown period). In the same period, available data did not show an increase of compulsory admissions, thus sustaining the hypothesis that community services responded well to population needs.

The management of the acute psychiatric wards involved the adoption of protective measures for psychiatric care workers and patients, who were constantly instructed in the measures of social distancing, hand hygiene, dressing of surgical masks. The hyper-social climate once characterizing the wards has been diminished, but this has allowed us to avoid the spread of any secondary infection.

The way we have been managing the crisis has allowed us to test the resilience of the community psychiatric services. Mental health community services proved capable of managing patients preliminarily reputed to be "difficult" in an innovative manner without weighing on emergency services, which, in turn, have been able to manage the covid-19 crisis with necessary equanimity required to maintain hospitalization times and quality of care at precovid levels [9]. In particular, we have noticed that innovations in the management of particular user groups (such as young people) during this time have been overwhelmingly appreciated for their effectiveness and must be further implemented. We have also the opportunity to implement a broader reflection on the adoption of protective behavior toward future pathogens without quitting our mission.

3. Health workers under stress?

The epidemic linked to the SARS-CoV-2 infection is causing an overload of commitment in the healthcare professions, not only physical (increased work shifts, reduced rest periods, increased care burden) but also emotional [10]. Emotional reactivity, typical of situations of massive and sudden stress, also has a clinical definition (and it could not be otherwise, in a world that "classifies" everything): the so-called Critical Incident Stress Syndrome (CISS), or critical incident [11, 12].

Why does this syndrome manifest itself, and how does it manifest itself?

Main point, we must remember that health workers are, also and first, human beings. Certainly, they are the bearers of technical and operational knowledge, relating to health management, significantly higher than that of the average human being. Nevertheless, this "superior" knowledge does not protect against emotional reactions, especially in extreme conditions. On the contrary, paradoxically it can also be harmful. In fact, healthcare workers do use distancing as the main defensive reaction, which can be quite ineffective: I, the technician, observe what happens from an external, neutral, "scientific" position; at the meantime, I forget that I am also directly involved as a human being in the same, if not greater, risks than the general population. This is the critical element: the awareness of being also a "normal people" suddenly and unexpectedly bursts when something breaks the delicate defensive balance of distancing. For example, the illness or death of someone who is dear and close to me, the death of too many patients on whom I have not been able to do anything, sometimes my own illness (which I had opposed in my clients) or even mine death (anticipated by the death of my colleagues). It is inevitable that my emotional world somehow resonates with what is happening around me, I am not an anaffective robot. Nevertheless, if I am not aware of this resonance and this reactivity, when these suddenly manifest themselves, I expose myself to a condition of crisis, and that is what happens in the CISS. The overload of work necessary to respond to the rapidly rising tide of requests related to my role and my profession does not allow me to reflect on myself and my emotions, in turn the rising tide of emotion is held back but only up to a critical point, then explosively emerges.

What follows is the development of pictures that range from a "banal" psychological imbalance (stress response syndrome) through the adaptation disorder to the full-blown and clinically demanding pictures of post-traumatic stress disorder. Which in turn can be structured in even more challenging situations such as a mood disorder or other. Certainly, the individual biopsychosocial characteristics (temperament and personality, vulnerability and resilience, protective factors

and risk factors) play a central role in tracing the path that the individual will take when exposed to a condition of massive stress, but the fact remains that all of us operators are exposed to an adaptation reaction which, if not managed well, can become a maladaptation reaction. A further element of risk is represented by the alteration of the usual routines, first that of sleep. We can never talk enough about the "restorative" role of sleep for the body in both physical and mental components. What is certain is that, subjected to excessive shifts, under tension, skipping rests and recoveries, even sleep is sacrificed. A non-restorative sleep, among other consequences, even in acute, involves significant alterations in cognitive functions, emotional control and immune function. And this leads to an increase in risk factors related to exposure to the new virus [13].

CISS is that reaction that occurs when the individual is exposed to an intense and acute traumatic event characterized by serious damage or risk of life for someone or events of serious accident/mass death, or, finally, for the concrete risk that the exposure to that event determines in the exposed subject serious consequences at the level of personal and professional functioning. As is objectively the case of the current CoViD-19 pandemic, especially in the areas of major outbreak. CISS is actually a practitioner's term used to reduce the stigma associated with the term PTSD [14], and most often refers to those who are employed in emergency service occupations exposed to stressful incidents. CISS is the response to the cumulative effect of stress: it occurs when people working with death, dying, or life-threatening injury on a regular basis have not had time to adequately "purge" these traumatic events in time to emotionally prepare for the next or have not properly addressed how much stress or trauma an incident has inflicted upon them. The most significant the stressful event is for the person, the greater stress reaction develops.

The most frequent indicators that we are facing a CISS are the following [15–17]:

1. activation of HPA axis (sleep disturbances, chest pains, gastrointestinal and appetite disorders, reduced sexual interest or changes in the menstrual cycle, headache, dizziness, muscle tremors, increased risk of infectious diseases);

2. emotional disturbances (development of thoughts of guilt and despair, irritability, anxiety, feelings of isolation, grief, anger, "hindsight");

3. cognitive symptoms (refusal/denial, loss of ability to concentrate, recurrent flashbacks/intrusive images of the event, short-term memory problems, difficulty making decisions)

4. behavioral manifestations (nervous breakdowns, loss of interest in work, substance or alcohol use, withdrawal from relationships, loss of interest in family life, compulsive need to always talk about what happened, increased risk of accidents) [18].

A lot of these manifestations have significant repercussions on the quality of health workers' work and therefore increase clinical risks. We have manage these issues adopting a correct stress management. Another important factor is that stress management has to be offered on site, in order to be less intrusive as possible in private life, the only moment of rest of health workers, and to be shared in the work group.

One of the first research conducted on a sample of 1500 Chinese doctors who found themselves engaged in Wuhan highlighted the progressive development of

an acute affective syndrome characterized by depression, anxiety and insomnia. The data underlines how the protection of health personnel cannot be limited only to PPE in various declinations, but must also take into consideration the protection of the psychological spheres, with adequate preventive interventions, damage reduction and functional recovery following the damage [19]. From then, a flourishing of works on the issue were published [20–22]. These researches obviously declines intervention models that can be used as a scheme for future training of the operators potentially involved.

We must not forget that there are also other elements not strictly related to the psycho(patho)logical sphere, but to the moral one: in fact, there are also moral wounds, linked to the condition of violation of one's own ethical and moral code having to make decisions in urgent conditions (**Table 1**). It is a term borrowed from the military law, where obedience to an order, for a superior strategic purpose, can be in contrast with one's own values. This induces a condition of psychological tension that can develop on two tracks: a picture of psychic suffering rather than a picture of individual growth, of maturation, of adaptive change. Which of the two paths the subject will take is certainly determined by individual differences but also by how individuals manage the moral dilemma, or by how the subject prepares before and receives support during and after the traumatic event. The sense of inadequacy arises precisely from the lack of preparation, not only technical but also moral and psychological, to face the new dramatic challenge of the pandemic. It is necessary that all health workers are prepared to face the moral and ethical dilemmas that the fight against the virus entails and will entail, and the sooner it is done, the better it will be for the subsequent psychological equilibrium. International research groups are already questioning themselves on these issues, offering interesting ideas for reflection [23].

• Organization
○ Feeling dejected because you work with insufficient resources (human or material), knowing that it is a situation that could have been avoided
○ Follow clinical decisions of others that you deem unethical, immoral or contrary to guidelines from recognized scientific societies
○ Having to choose which of two equally serious patients to treat, sacrificing one, due to the lack of sufficient treatment tools
○ Failure to report a clinical incident, a near miss, or episodes of pressure / threats on oneself, colleagues or patients
• Clinical culture
○ Intervening urgently in an emergency situation causing harm or death to patients, knowing it in advance but having no alternatives, or unintentionally
○ Changes in Ref. values with respect to the need or justification to adopt treatment plans or protocols that may threaten the integrity or life of patients
• Relationships
○ Giving clinical orders or establishing protocols of action that can result in the death of colleagues or patients
○ Endanger colleagues or patients due to their inexperience, indecision, or for tasks performed outside of their usual competences
○ Return home after a shift and learn that critical conditions for everyone's health have occurred in the facility where we have just finished working

Table 1.
Potential triggers for a "moral wound" induced by the CoViD-19 pandemic.

Critical incident stress management (CISM) techniques on site provide some specific preventive indications for those affected [24]:

- maintain physical activity
- have a frequent intake of nutritious foods, in small amounts
- use controlled humor
- adopt a positive self-statements communication style
- control breath, doing deep breathing as frequent as possible
- take breaks during work
- display controlled emotions: talk about one's own feeling with significant others

After the exposition to incident (stressful situation), in order to stop stress reaction, people should:

- engage in reasonable physical exercise (within 24 hr)
- get adequate rest
- eat good nutritious foods
- maintain normal schedule
- avoid boredom (involving in hobbies).
- talk about one's own feelings
- do not fight too hard against flashbacks and dreams
- attend mandatory defusing or debriefings if requested to do so.

CISM also suggests a specific family assistance project (psychoeducation). Actually, the effects of a traumatic critical incident vary significantly across individuals. Some people will feel little impact while others may experience significant trauma because of exposure to the same event. At times, family or others who care about the individual may have questions about what to expect and about the best ways to assist. Psychoeducative suggestions for family members include the following advice:

- individuals close to the affected person, being in the best position to detect and identify changes in behavior or demeanor of affected individual, should be trained to recognize the signs and symptoms of critical incident stress. They should also be advised that it is normal that most people may experience very few signs of CISS or none, while other do display a massive reaction
- they should be aware that support and open communication are valued tools when dealing with someone who has been involved in a traumatic critical incident. If the person wishes to discuss the incident, be empathetic and

participate in the discussion. An active listening and open communication concerning noticeable changes in demeanor or behavior following a traumatic critical incident, including any of the possible signs of critical incident stress, is encouraged. Anyhow, if the person do not wish, they should not press him to talk: if the individual chooses not to talk about the incident or his/her reaction, respect his/her decision.

- family members are trained to encourage exposed individuals to spend time with family and other individuals who can provide a source of quiet social support and a sense that life goes on.

A simplified description of the stages of the CISM are as follows [25–28]:

A. Pre-critical stage, adopting specific preventive interventions (training on traumatic reactions, Stress Inoculation Training, Psychoeducation)

B. Peri-critical stage, in two different interventions: Scene Support/Psychological First Aid (psychological first aid, immediate and direct support on the scene of the event), Defusing/Demobilization, Debriefing.

Defusing is a brief intervention - usually conducted by a psychologist - organized through group interviews, which is held on subjects exposed to a highly dramatic or traumatic event. As the word suggests, this intervention provides a brief and collective reworking of the meaning of the event. The goal is to reduce the emotional impact of a potentially traumatic event. The people who participate in the group interview have the opportunity to speak, in a non-judgmental way and in a protected relational context, about the facts concerning the incident, their thoughts and their emotional experience in relation to what occurred. Defusing is in some respects a reduced and modified version of the debriefing, allowing a more structured debriefing if it is necessary. If done correctly, defusing can help to reduce or allow remodeling the intensity of the emotional reactions inevitably generated by a difficult experience, and helps to reinforce the social support network of the people who have shared what has been experienced from contact with drama of the event. Demobilization is a particular form of critical post-intervention defusing which is carried out with groups or teams of rescuers - volunteers and/or professionals - at the end of relief operations of particular intensity, complexity or emotional importance (in the form of peer support). Debriefing is a structured and group psychological-clinical intervention, conducted by a psychologist expert in emergencies, which is held following a potentially traumatic event, in order to eliminate or alleviate the emotional consequences often generated by this type of experience.

C - Post-critical stage: multiple debriefing, individual and family support counseling, follow-ups, possible group or individual psychotraumatological care.

In some cases people exposed to traumatic events need to seek professional help: persisting (more than a month) symptoms and/or dysfunctions interfering with daily living.

The most recent model of CISM emphasize the usefulness of developing internal groups in order to face CISS as soon as possible [29], at the same time the earlier we intervene, the better is the outcome [30].

In our working reality (ASST Melegnano e della Martesana) the pandemic breakdown induced in health workers reactions of fear and distress never previously experienced in one's professional experience, both in intensity and in duration. The condition of psychological and emotional suffering has been reported

on several occasions, informally (direct communications, posts on social media, interviews in the press), and formally following institutional indications.

Specifically, the first request for help came from Intensive Care Units, hinging on three critical elements:

1. Unsustainable workloads
2. Very serious cases
3. Too many deaths.

The analysis of the demand immediately highlighted the extreme involvement of healthcare personnel (not only the ones involved in ER units) in relation to the emotional response and the need to organize immediate psychological support as a critical element. The management of the ASST has therefore given a mandate to the Clinical Psychology Unit of the Department of Mental Health and Addiction to organize a working group. Thirty-five expert psychologists were and are involved in this supportive group. They come from different social and health sectors of the hospital organization. A service was instituted to report a need/request for intervention via a dedicated email, providing the possibility of a rapid response 7 days a week through video calls (or telephone calls), to be more conveniently usable by healthcare personnel and not to give up communication without verbal of the emotions that the means of protection inevitably hide.

The intervention focused on health workers, as people in "trenches" exposed to exceptional job requests and heavy emotional stress, has the aim, first, to strengthen resilient responses to this unsettling situation and, later, to prevent a state of chronic stress that could arise in the phases following the emergency, with the onset of post-traumatic symptoms as before outlined.

The main problems identified by the analysis of requests for intervention can be summarized as follows.

Health workers found themselves having to work with a disease that does not have established protocols, each of them is being trained in the field, through continuous tests and feeling inadequate security mainly linked to the fluidity of the lines of behavior that are communicated day by day on the basis of the ever new emerging knowledge. Exposure to the inadequate availability of individual protections (especially in the early stages of the pandemic) and the risk of getting sick has certainly played a fundamental role in terms of stress; in particular, it has generated anguish with respect to being able to infect family members. The initial stages caught doctors and nurses unprepared and this condition generated feelings of inadequacy and helplessness; based on these feelings, anger reactions and acting out have often been reported.

Furthermore, Covid-19 patients require a lot of commitment and of resources in terms of energy. Only those who work on it in direct contact can perceive the real fatigue (physical but also psychic) experienced. The stressors have significantly increased compared to normal routine: put on and take off individual protective devices (hoping to have done it correctly), high number of infected and apparently always growing, never had in a normal hospital, returning home and all what this entails (including fear of infecting loved ones). Also, remaining only on the technical level, the difficulty in managing patients who ask "only" to be able to breathe well: they arrive with a frightening "hunger for air" caused by pneumonia, which does not allow them to speak ... they cannot!

The world seems to have turned upside down by the social point of view: physical contacts, denied in everyday life by isolation measures, on the contrary

were maintained in the ward, being the only human contact between operators and patients. In this situation, on the other hand, Doctors and Nurses are unrecognizable to patients, because masks covers the entire face and becoming difficult to recognize and distinguish people... they all become the same. Some operators have decided to write their name on the gowns, others have even thought of making them personalized, with particular designs. In this way, patients also know whom they are relating to, personalizing the relationship that is being lost in these conditions of substantial isolation. Finally yet importantly, once the patients have entered Intensive Care Units or in any other acute ward, they lose every contact with their relatives.

Hospitals also had to reorganize themselves, changing the usual structure of the departments, changing the teams, revolutionizing the general organization. All this has led to further stress that impacts on staff resilience, increasingly put to the test by the events that take place in a dramatic way and seem never to stop. The nights, once upon a time, had a different rhythm inside the hospital, now this is no longer the case... The ordinary work that marked everyday life was upset by dramatic events that followed one another quickly and intensely, so much to expose health workers to conditions of very high Expressed Emotions.

According to the above considerations, the stresses most often highlighted by hospital colleagues concerned both the emotional state and feelings, but also the differences from the usual work with the patient that make relational contact unstructured.

Another issue that has greatly affected the daily commitment was the anguish of death, which is practically always present and which has certainly exposed operators to pouring on themselves the stories experienced by others. In this dynamic of projection and identification, the operators become children, parents and the sick, generating and structuring important worries, fears, anguish and anxiety.

Colleagues on the front line have often told us about the management of patients in their ward, before the advent of COVID19, in which the reports were characterized by the reading and careful consideration of non-verbal aspects, proxemics and proximity.

The current condition of human detachment has certainly created idiosyncrasies. They repeatedly tell us how they can hardly transfer their closeness to the patient and convey empathy in the act of taking care of the other.

3.1 Interventions proposed

The intervention model adopted by our working group, deriving from the previous professional experiences of the participants in the group itself, is that of Psychological First Aid (PFA) as proposed by Sphere and IASC [31, 32]. PFA represents a human and supportive response to another human being who is in pain and who may need help. The PFA plans to:

- offer practical assistance and support;
- collect needs and concerns;
- help people meet basic needs;
- listen to people, but do not force them to speak;
- offer comfort to people and help them stay calm;

- help people find information, services and social support;
- protect people from further harm;
- the first psychological support is indicated for people in difficulty who have recently been exposed to a serious critical event;
- it can be applied to both children and adults;
- people should not be forced to accept help they do not wish to receive, but they should be readily available for those who would like to be helped.

The activity of the group of psychologists was set up by structuring initial interventions aimed at recognizing one's emotions, trying to put into words and above all to normalize the brooding negative thoughts and overwhelming emotions. An attempt was made to reinforce the positive emotional resources that each individual operator described in the course of the video call interviews.

Although health workers are normally more "equipped" and have a higher stress tolerance threshold, for the first time they faced with the fact that they too are exposed to the same disease, they are afraid of contagion and of infecting, of failing to keep up with the pace. They were accustomed to live in contact with extreme situations but not massive in terms of numbers and temporal concentration. The current massive exposure to them imposes having to face sudden radical changes in the work routine, as said before. The lack of a certain timeline that suggests the end of this traumatic situation sustained psychic fatigue. The operators complain of not being able to separate private and working life: the two spheres, personal and professional, are united, the operator even at home thinks about the working reality, never disconnects. Normal and relationship habits have also changed. They feel guilty for being away from children and family. All the emotional patterns used before, today no longer work. Another thing that is happening is that they see their colleagues getting sick, dying. Everyone who gets sick or dies reminds them that they could be next. A looming threat they were not emotionally prepared for. Unpublished data of a survey we conducted on the working population of our hospital (311 respondents) showed that these are the main issues to face with: perception of high risk of exposition, uncertainty of protective devices efficacy, fear to be infected, fear to infect family members, development of obsessive behaviors. The same data were found in a more formal research in a catchment area near our one [33].

Our experience in working with health professionals who express the above issues showed that the most important need is to be welcome, listened to, and not left alone. Our intervention focused on helping to cope with uncertainty and on encouraging decompression, giving them the opportunity to think in the most appropriate way possible about what is really happening, sharing and dealing with the various new and stressful aspects, as well as than with the limits present in the situations that surround us. It is also emphasized that being tired, having a little anxiety, being a little worried makes sense and must be tolerated. Furthermore, it is essential and necessary to activate all the internal and relational resources that each of us has.

In the first stages of the project, requests for support were not numerous, but they progressively increased as the situation and all its implications became effectively aware of, even precisely those of the psychic discomfort that working in certain conditions entails. There is probably also a timing problem: perhaps the time to elaborate has not yet come, "there is no time" and those who help hardly ask for help.

Also because of this, we have decided to expand the offer of support to the relatives of the patients, relieving the staff of a part of the emotional burden that is often heavier than the work itself linked to the need to communicate with third parties. We then started listening to the stories of family members.

Also in these situations, a high expressed emotionality emerges. The contents are attributable above all to death anxieties, social distancing and isolation that does not allow people to join their loved ones during hospitalization or during and after death. Stress and anxiety are mainly attributable to the spasmodic waiting to receive information and in many situations, unfortunately, to the possibility of receiving so-called bad news. Even in the case of family members, the fear of getting sick and also that of infecting others in one's family is widely expressed (as, moreover, occurs in health workers); these aspects generate powerful feelings of guilt and to develop disturbing obsessive ruminations.

In these situations, the interventions carried out in a psychological key have as a premise the intention of being able to validate even very uncomfortable emotional contents and therefore to be able to channel experiences of stress and anguish in a dimension of better tolerance, favoring the structuring of adequate resources for new strategies of coping.

4. Conclusions

In conclusion, it is quite evident that the population, which at different levels and intensity unites both health workers and families, needs readjustments in the consolidated therapeutic approaches and ad hoc interventions on the COVID 19 situation.

From the point of view of mental health services, it was clear that, despite the fatigue and the re-organizational efforts, they were somewhat able to cope with the new requests imposed bay pandemic. The community services were able to offer valuable services to population and to patients already in charge. The mental health workers were also able to volunteer in first line services to help in Civd-19 medical management. All these efforts must be the basis of an adequate reorganization in order to favor a greater resilience of mental health services.

From the point of view of health workers (and general population), it is clear that we have to cope with a high risk of developing a significant psychological distress, which can shift toward more structured psychiatric diseases.

In actuality, clinical features emerging from the psychological counseling are similar to those of a Post-Traumatic Stress Disorder (PTSD). Certainly, we cannot forget that we cannot define the actual situations of emotional suffering described definitely as a post trauma, since the traumatization is daily and repeated along a continuum of events, which are much diversified in time and from each other. In addition, the psychic fatigue is sustained by the lack of a temporal line that suggests the end of this traumatic situation. The temporal element of stabilization of the dysfunctional response to stress is also missing, a parameter necessary to formalize the diagnosis of post-traumatic stress disorder. Certainly, however, we can witness all the predisposing elements of PTSD, which if not adequately managed can lead to an increase in this disorder in the future, as some research in the same field have shown in a wide spectrum of countries [34–37].

In fact, we need to think in terms of long-term stress in the evaluation of the operators who experience chronic contact with acute suffering, even if they seem to show a rather high tolerance threshold toward traumatic events. We must consider them at risk of developing at a short or long-term psychopathological disorders caused by vicarious traumatization. In the meantime, especially in this case,

we have to remember we are not only mental health workers but also colleagues and family members, so we are exposed to the same significant stress-producing variables. We are not neutral spectators or observers who arrive on a traumatic scene from which we have not been involved; it therefore becomes essential, to implement lucid and effective interventions, to have already structured for ourselves a planning of emotional management and reinforcement of resources. This can be managed with specific techniques, but above all with the sharing in a team of moments of reflection and discussion, useful to bring back into the right dimension what is faced daily.

At the moment we cannot predict both the potential course of the psychological imbalances described and the protective and preventive effect of the intervention offered, but certainly the operators and family members who have benefited from it have shown not only gratitude but also have partially modified the emotional response to the events they are exposed to. Which gives us hope for the proactive potential of our intervention.

Another issue that needs more studies on application and effects is that of telepsychiatry. The preliminary experiences of our group have shown how patients appreciated it and at least the sample of young subjects found it very useful [38]. Supporting our work, other evidences have highlighted how in a pandemic condition characterized by the coexistence of isolation measures and the need for support people find in the electronic medium a significant way to obtain response to health needs [39].

Conflict of interest

The authors declare no conflict of interest.

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Chapter 37

Vulnerable Groups and COVID-19 Pandemic; How Appropriate Are Psychosocial Responses?

Amir Moghanibashi-Mansourieh

Abstract

Covid-19 pandemic has had adverse health, economic and social consequences on different communities, groups and individuals. Vulnerable groups are more likely to contract the infection and suffer from mental disorders particularly anxiety due to lack of access to health and social resources, lower income and less awareness etc. In this chapter, in addition to a description of the psychological and social conditions of vulnerable groups including women, children, the elderly, and minority groups during the pandemic, the factors influencing the success of psychosocial interventions provided for these groups and the weak points and upcoming challenges will be addressed. Finally, the conclusion will offer some recommendation for coping with the future circumstances.

Keywords: psychosocial interventions, vulnerable groups, COVID-19, anxiety, pandemic, mental health, social support, inequality

1. Introduction

Beyond the tragic story of human death, this crisis has left many problems on other aspects of human life. Governments now face a dual challenge: on the one hand, they have to deal with an epidemic crisis in the field of health, and at the same time, they have to respond to its economic and social effects.

Developed economies have made attempts to mitigate some of the socio-economic effects of widespread closures, including measures such as tax refund delays, increased payments, subsidies to workers, compensation, and the provision of double unemployment insurance. Less developed countries have fewer tools to manage the effects of COVID-19 pandemic, and they are not only facing an economic crisis, but also a systemic human development crisis [1].

A United Nations University study assessing the impact of Covid-19 on global poverty suggests that poverty lines will be intensified at all three levels ($ 1.9, $ 2.3 and $ 5.5 per day). According to the report, it is estimated that about 419 million people will be added to the total number of the world's poor. Given that the spread of severe poverty conveys that people do not have the minimum number of calories, it is generally associated with adverse health consequences, especially for children, and this challenges many humanitarian programs and efforts in the area of poverty alleviation [2].

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The reciprocal effects of poverty and corona virus are generally appeared in the form of the spread of poverty and increase in the number of poor people, poverty and exacerbation of COVID-19 (inability to pay for prevention costs; malnutrition and physical weakness; living in more polluted areas; presence in denser areas; dominance of manual jobs and more physical contact with customers and more exposure to the virus), exacerbating existing poverty and preventing them from getting rid of poverty (on the one hand business problems and on the other hand increasing government expenditure has hindered the possibility of vertical mobility of the poor through market and governmental subsidies) [3].

Since health seeking behaviors are corresponding to health literacy and access to health care and are affected by user costs, individuals in disadvantaged socioeconomic groups may postpone COVID-19 care, which potentially may result in more severe illness, psychological distress and death.

Evidence has identified a number of potentially vulnerable groups who may need or benefit from specific disaster-related psychosocial interventions. The issues which influence each of these groups are discussed in this chapter.

2. Psychosocial conditions of vulnerable groups due to COVID-19 pandemic

2.1 Children

Children are the silent victims of the epidemic rather than the dominant face. Infectious diseases such as Covid-19 can disrupt the growth and life of children. Disruptions in families, friendships, daily routines and larger community will have a negative impact on the well-being, growth and protection of children, and there is a risk that children will be among the biggest victims of the epidemic [4, 5].

Covid-19 is a global crisis that will have a lifelong impact on some children. The pandemic can quickly change the way children live. Quarantine measures such as school closures and restrictions on the movement of children disrupt their daily life and protection, while creating new stressors for parents and care givers who must seek new childcare facilities [6]. Covid-19 stigma and discrimination can make children more vulnerable to the violence of psychosocial pressures, and children and families who have been more vulnerable to socio-economic isolation in the past are at greater risk [7].

In addition, the harms caused by this epidemic will not be evenly distributed and is expected to have the most devastating effects on children in the poorest countries, neighborhoods, and those who were already deprived and vulnerable.

Historically, the burden of such harms on families has been disproportionately imposed on girls. Even before the COVID-19 crisis, even the poorest children lost twice as many children as their rich peers. Low income is associated with a higher risk of chronic health problems, some of which may increase the risk of COVID-19 disease. Poor households have less access to secure sources of income, less wealth, less access to health care, and less access to online tools for distance learning and even television and radio, and are more likely to prevent children from going to school [8]. At country level, low-income countries and war-torn countries have the least ability in the informal sector to withstand the effects of the global economic recession and the closure of local activities because these productive activities take mostly place in the context of a weaker social protection system. Such countries do not have the necessary infrastructure for solutions such as distance learning, have a poor health care system, have limited social services for their workforce, have less access to water, purification system, sewage and

sanitation, and in terms of food supply chain face limitations and are still a long way away from public immunization [9].

The global closure of schools is an unprecedented coincidence. Over 188 countries have closed all schools, disrupting the education of more than 1.5 billion children and adolescents, or 91 percent of the world's students. To minimize the harms caused by this issue, many schools have offered distance learning methods such as TV or radio programs and virtual tutorials for their students. But these alternatives are only available to a group of students. More than two-thirds of countries have announced and provided their national distance learning platform (including online mobile apps), but this has only occurred in 30% of poor and low-income countries. Indeed, online learning-focused education policies have highlighted long-standing inequalities. Children who live in places with the most isolated places in terms of global Internet network, even if they can be connected, access to unreliable and slow Internet, which is expensive. Children living in countries where the Internet has been cut off for political and security reasons in some parts of the country, including Bangladesh, India and Myanmar, have no hope of gaining access to online learning [9]. According to pre-crisis statistics, one-third of teens in the world are deprived of digital services; only half of households worldwide have access to the Internet; 73% of urban households and only 38% of rural households have television; girls have less access to digital technologies than boys, and only 15 countries offer distance learning services in more than one language. All of this indicates that a lack of access to digital technology has deprived many children of learning and education [9, 10].

Closing schools nationwide can also have far-reaching effects on children's physical and mental health. Many children in poor communities depend on schools for meals and health services and information. For many children, cutting off school nutrition means eliminating the nutrients needed for growth, development, and learning. For instance, in the United States, more than 6 million students are dependent on schools to receive primary health care, mental health care and other services. Additionally, school closures also lead to reduced peer social interaction and reduced psychosocial well-being [9].

Schools' closures lead to girls dropping out of school and therefore increases the likelihood of teenagers' pregnancy. A meta-analytic research on the prevalence and determinants of adolescent pregnancy in Africa shows that out-of-school adolescent girls are twice more likely to be pregnant than those in school [11].

Economic problems, school closures, and loss of parental care due to COVID-19 pandemic enhances the risk of children sexual abuse. For example, the 2014–2015 Ebola outbreak in West Africa was linked to sexual abuse and adolescent pregnancy. A conducted survey found that vulnerable girls, including those who had lost relatives due to Ebola, turned to the sex market for food and other basic necessities. Without adequate access to safe contraception and abortion, this serious form of child sexual exploitation will lead to adolescent pregnancy [9].

2.2 Women

Previous epidemics have shown the value of interacting with women when communicating about risks: a) Women are a disproportionate part of the health workforce. b) As primary caregivers of children, the elderly and the sick, we need to recognize and engage women in relation to risks and participation in the society. c) When we do not recognize gender dynamics during an outbreak, we limit the effectiveness of risk communication efforts. d) When community participation teams are male-dominated, women's access to prevalence information and available services is severely restricted. e) Adapting community participation interventions

for gender, local language and culture to interventions improves community engagement [12].

Globally, women make up 70% of individuals working in health and social sectors [13]. They are often in a lower position, are low-income workers in the initial positions, and are at higher risk of coronavirus due to working conditions, especially in the low- and middle-income countries. For instance, COVID-19 monitoring community health workers have carried on call tracking and quarantine and isolation monitoring, along with their regular duties. Their work subsidizes the public health system, but their salaries are paid irregularly and they often do not have enough personal protective equipment [14].

Approximately 40% of working women worldwide work in the sectors that have suffered the most during the epidemic, leading to the job loss or income reduction. This includes the informal sector, arts, entertainment and domestic services. The International Labor Organization estimates that by June 4, 2020, 55 million or 72.3% of household workers are at risk of losing their jobs, of which 67.3% are migrant workers and therefore at higher risk. From April 2019 to April 2020, women's employment fell by more than 16 percent, even in Canada, Colombia and the United States. It is also estimated that women account for three-quarters of unpaid care due to the closure of schools and childcare services during COVID-19 and the increase in care needs for the elderly [15–17].

2.3 Elderly

Mental health problems, especially depressive symptoms, are common in the elderly [18]. Given the fact that COVID-19 has changed the provision of mental health services to telemedicine, this age group seems to have been disproportionately affected because most older people have not only limited access or do not have access to smartphones and Internet services, but are unable to go to outpatient clinics to receive their monthly prescriptions due to ongoing quarantines and public transportation restrictions [19]. This leads to a realization of lack of treatment and exacerbation of previous psychiatric symptoms. In addition, the burden of social isolation worsens if hospitalization is required because most hospitals do not allow visits to affected areas [18]. Likewise, older people without prior psychiatric disorders appear to be highly susceptible to mental health problems, especially those with no underlying diseases become the most vulnerable age group for life-threatening complications and death from COVID-19, therefore they are very concerned about contracting the virus and not access to appropriate healthcare. Unfortunately, the public media has portrayed COVID-19 as a disease of the elderly which may cause social stigma, negative stereotypes and age-related discrimination in the elderly, with consequences ranging from increased isolation to violations of their health rights and living equally with others which creates more distress not only for them but also for their family and caregivers [20, 21].

2.4 Disabled people

In low- and middle-income countries, where 80% of people with disabilities live and have a limited response capacity to COVID-19, the infection preparedness and response programs should be included and available to these people [22]. These programs should identify and address the following three main obstacles. a) Inequality in access to health content and information: People with disabilities may encounter inequality in access to public health messages. Therefore, all messages and communications should be published in simple language and in accessible formats, through mass and digital media channels. In addition, individual differences

and various needs of people with disabilities should be considered. For instance, sign language interpreters should be hired to communicate with the disabled and transparent masks should be provided for lip-reading. b) Disruption in the provision of services to the disabled: Measures such as physical distancing or quarantine may disrupt the service provision to the disabled, which most disabled people rely on to provide food, medicine and personal care. It should be noted that COVID-19 mitigation strategies should not lead to the isolation of people with disabilities. Instead, protective measures for these people should be a priority. c) Lack of knowledge of medical staff and health care providers with special needs of people with disabilities: People with disabilities may be at higher risk for developing acute respiratory syndrome coronavirus or any other severe disease. A person may face additional barriers to health care during an outbreak. To protect the dignity and respect of these people, protection against discrimination, and to prevent inequality in the provision of health care services, health care providers must be educated on the diverse rights and needs of this group [23–25].

With regard to COVID-19 epidemic, the World Health Organization (WHO) has stated that additional considerations for governments, health systems, disability service providers, institutional settings, communities, and actors for people with disabilities are required [26]. The global epidemic has the potential to significantly increase the day-to-day challenges of people with disabilities and may have a greater impact on the general population. In fact, this group is often directly affected by deficiencies and gaps in the health care system. They may have a higher risk of contracting COVID-19 infection and an increased complication associated with additional barriers to observing social distancing measures. For example, people with disabilities may trust public and adaptable transportation, have regular health or rehabilitation appointments, need close contact from care givers or health professionals to get to their daily routine, or have the ability to reduce communications with face masks (talking and listening to others). This group was previously marginalized, and reduced access to health care and support, among other restrictions, can exacerbate their day-to-day problems.

2.5 Homeless people and refugees

COVID-19 pandemic underscores the importance of housing as a social determinant of health and raises the question of whether current methods of relieving homelessness should be reevaluated. Homeless people and refugees often reside in environments that lead to an epidemic such as COVID-19, because they remain in living areas such as shelters, half-way houses, camps, or abandoned buildings where there is a lack of regular access to sanitary materials or bath facility [27]. Additionally, many of them suffer from chronic mental and physical conditions, are engaged in substance abuse, and have less access to health care. Although there are not many prospective studies, it seems that increasing the risk of COVID-19 infection causes a lot of stress and anxiety which can worsen existing mental health conditions or induce new ones [28].

The sudden closure of service centers and social centers, resulting in disruption of social relationships and support, may lead to deteriorating mental health for many people. Similarly, reduced access to public spaces such as libraries, community centers, and shopping malls, and reduced resources such as peer counseling services, disproportionately affect the homeless [29].

Among people with homelessness and substance use disorders, the extra pressure of shutting down services may help increase alcohol or drug use and accordingly increase drug-related deaths. For people addicted to opiates, experiencing physical distancing and therefore limited supply of opiates may increase the risk

of overdose due to intermittent use and loss of drug tolerance. Decreased access to supervised consuming services may increase the risk of harms associated with unsafe drug use, including contracting blood-borne infections such as HIV and hepatitis C [30].

For many people experiencing homelessness, sources of income include activities such as panhandling or sex work. Among women, girls, and people of gender diverse, having sex or sexual intercourse to survive is often necessary to maintain shelter or prevent intimate partner violence. With physical distance in place, people may be less able to perform these activities and therefore suffer a significant loss of income. In addition, homeless women and trans and gender diverse people may be more likely to experience intimate partner violence during the pandemic [29].

People who experience homelessness are also more likely to face criminalization in their daily lives. For instance, it is difficult for homeless people to avoid violating physical distancing commands when queuing to enter a shelter or food program or while sitting on a park bench. Homeless people in Canada and the United States have reportedly been fined between $ 500 and $ 10,000 for such violations, which is very problematic [29].

2.6 How mental health care systems responded to the COVID-19 crisis

Mental health systems have faced unprecedented challenges during the pandemic. A recent survey by the WHO found that COVID-19 disrupted or halted mental health services in 93% of the world while demand for receiving mental health interventions increased. The survey conducted in 130 countries highlights the disruptions of mental health services for vulnerable people in psychotherapy, reduction of major harms, retention in drug addiction treatment and emergency services. It also reports that providing personal medicine and crisis support during COVID-19 is much more difficult in large mental health institutions than in the community, which increases the risk of inequality of care for people with psychosocial and intellectual disabilities [31, 32].

To overcome the disruptions of service provision of mental, neurological and substance use disorders (MNS), most countries (70%) initiated telemedicine for replacement in personal counseling, 67.7% hotlines for mental health and mental support, 65.4% special measures to prevent and control the infection. In mental health services, while 44.6% of health care providers trained COVID-19 within basic psychological skills, discharged 44.6% of the patients or transferred them to other health facilities, 33.1% provided in-house communication services or community and 20.8% hired counselors [32].

Internet services, smartphones, and the advent of fifth-generation cellular phone networks have enabled mental health professionals and health officials to provide online mental health services during the outbreak of Covid-19 pneumonia [33]. According to some studies, online psychological interventions, including online cognitive-behavioral therapy (CBT) have been effective for disorders such as depression, anxiety, and insomnia disorders (e.g., through WeChat) [34]. There have also been several artificial intelligence programs used as interventions in psychological crises during the pandemic, including the Three Holes Rescue program, which monitors people at risk of suicide by analyzing messages sent to them on Weibo and, when necessary, alarms to volunteer psychologists and psychiatrists to carry out necessary and urgent interventions. These interventions can improve the quality and efficacy of emergency interventions. Countries such as the United Kingdom and the United States have also conducted various studies to address methods such as reducing health anxiety for psychological interventions in times of crisis against public health emergencies [35].

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Cognitive-behavioral patterns (CBTs) show that excessive health anxiety can be alleviated by targeting maladaptive beliefs and behaviors. Controlled randomized trials have also indicated that CBT is beneficial for people suffering from excessive anxiety during a pandemic. Book therapy is another promising and sometimes useful intervention that requires further evaluation in randomized controlled trials.

The psychological distress caused by the pandemic may disappear without intervention, just as the emotional effects of other stressors may disappear over time. Instances of disorders that cause clinical attention include major depressive disorder (MDD), post-traumatic stress disorder due to the loss of loved ones or other traumatic events, and general anxiety disorder (GAD), which may cause or be caused due to a pandemic. Such people may be referred for cognitive-behavioral therapy or treatment with certain medications [36, 37].

It is also important to point out the restrictions that exist and need to be removed: first, vulnerable groups may have limited access to smartphones and the Internet. Second, online emergency interventions are effective and cost-effective, which are key for critical times, but it is emphasized that online interventions cannot be a permanent alternative to face-to-face treatment.

At the level of health care policies, it seems vital to ensure transparency of communication between authorities and the public (including service users) and to provide clear ways to protect mental health from the challenges posed by pandemics and the impact of social initiatives and isolation. As complexity paradigm indicates health is non-linear attribute but congruent with the values of social justice, participation, and empowerment [38, 39]. In addition, from a methodological and theoretical standpoint, complexity conveys a holistic, contextual and transdisciplinary approach, and health promotion tends to put emphasis on ecology and interdisciplinary action. Thus, it is recommended that healthcare system planning encompasses interventions with dynamic, contextual and community-based nature [40]. Finally, it is time for countries to respond to mental health services (under chronic capital shortages) by increasing budgets and staff capacity, especially given the predicted increasing pressure on national and international mental health services in the near future.

2.7 Social stigma

In areas related to health and hygiene, social notoriety is the negative relationship between (with) a person or group of people who have certain characteristics or diseases. At the time of an outbreak, this notoriety may mean labeling people, stereotyping and discriminating behaviors against them, or experiencing a loss of social dignity due to an association with a particular illness [38]. Anxiety caused by lockdowns, many unknowns around COVID-19 and fear of contracting the infection has risen stigma in communities. This results in more serious health problems and more difficulties in controlling the spread of Covid-19 [41].

According to the World Health Organization, the negative relation can be faced by people who may:

- be in contact with the virus (e.g., those with Covid-19 symptoms, or who tested positive, or is close to someone who has)
- be from countries where the virus originated or are considered “hot spots”
- be overlooked by public health guidance in some way [42].

COVID-19 social stigma is often corresponding to fear and willingness to protect those close to us. However, the impacts of social stigma are very harmful. It can

enhance feelings of guilt and anxiety and can worsen loneliness and mood problems for those with COVID-19 [43]. Additionally, the anxiety and fear of being stigmatized against, may cause two dangerous clinical and public health consequences: delayed referral of symptomatic patients to healthcare services and under-detection of the infected. A delayed diagnosis has been corresponding to more severe disease, mostly in the elderly and in vulnerable people, while a delayed notification of an infected person may facilitate the rapid spread of Covid-19 in the community [41].

3. Conclusion

Mental health is a development issue. There is a correlation between mental health and growth which one affects the other. Developmental areas, such as education, employment, economic resources, emergency responses, and human rights, affect mental health. At the same time, people with mental health concerns are often lost or actively excluded from developmental programs. Therefore, it is very important to improve the ground for the development of communities and also to address the issues of people with mental health concerns on development interventions. Governments, civil society, bilateral development agencies, research institutes, and others should make conscious efforts to reach out to people with psychosocial disabilities.

There is a need to create user-friendly resources that hide mental health and reduce stigma around it. Community participation in expressing their needs and designing and implementing interventions is vital. There were many cases during the epidemic, in which it was the support of the community and neighborhoods that helped people overcome the challenges they faced. Involvement in the community ensures the improvement of the whole community. Finally, there is a need to invest in building effective mental and social health infrastructure. It is time to invest in building human resources and enhancing existing capacity. These resources and services, if created consciously, can survive beyond the epidemic and continue to serve as a vital resource for societies.

Conflict of interest

The author declares no conflict of interest.

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Chapter 38

COVID-19 Pandemic and Initial Psychological Responses by Bangladeshi People

Oli Ahmed, Md Zahir Ahmed, Zhou Aibao, Sohan Mia and Md Arif Uddin Khan

Abstract

The present study was aimed to investigate the causes of COVID-19 worry and its effect on initial behaviors that observed in early stage of the COVID-19 outbreak in Bangladesh. In the online survey, participants' were asked about normative concerns, COVID-19 worry, initial behaviors, and the neuroticism personality trait. Results of the study demonstrated that (i) higher normative concerns and neurotic trait were predictors of higher COVID-19 worry; and (ii) higher normative concerns and COVID-19 worry significant predictors of buying preparatory materials, higher worry for postponing travel plan, and higher worry and neuroticism for purchasing daily commodities more than usual and difficulties in concentration.

Keywords: Pandemic, COVID-19 worry, normative concerns, neuroticism, initial behaviors

1. Introduction

Novel Coronavirus disease 2019 (COVID-19) is a rapid, human to human transmittable respiratory disease which has widespread uniformity with Severe Acute Respiratory Syndrome (SARS-CoV) as both belong to the Coronaviridae family, genus Betacoronavirus [1] believed to have originated and spread from a seafood market of Wuhan city of China [2]. The outbreak of atypical pneumonia caused unexplained first declared by the Health Commission of Hubei province on December 31, 2019. Thought COVID-19 is originated and spread from China, most of the European countries have been squandered significantly than any other countries of Asia as they exceedingly delayed in shutting down the travel facility [3]. As of October 13, 2020, globally confirmed cases of COVID-19 are 38,080,325 with 1,086,011 deaths [4]. Though the epidemic emerged in China, but the crisis went beyond the specific territory and touched almost every sector. World Health Organization declared COVID-19 as a pandemic on March 11, 2020 [5]. After the warning of WHO and skyrocketed number of the cases instigated researchers around the world to discover lifesaving innovation to overthrow COVID-19 [6] and some 35 organizations are racing to succeed [7].

Though the healthcare infrastructure of Bangladesh is extremely poor as the legacy of national resource constraints, it confirmed the first case in significantly later on March 08, 2020 [8], where first confirmed death was recorded on March 18,

2020 [9]. From the second week of April, the number of confirmed cases is increasing. Local administrations have imposed lockdown in all 64 districts across the country. As of October 13, 2020, total confirmed cases are 379,738 and 5,555 people died [8].

Usually, emotional and behavioral responses and mental health issues remain almost untouched during such pandemic as world run after inventing medicine to cure the disease. This picture is also same in the current COVID-19 pandemic, as inadequate attempts have been taken to address mental health issues and emotional and behavioral responses. In the present study, we are trying to address the concern/worry about COVID-19 infection as an emotional response after COVID-19 positive cases confirmed in the country as "an affective and emotional response to threat" [10]. COVID-19 worry may arise from several factors such as unavailability of vaccine till to date, higher rate of infection globally, lack of sufficient knowledge, etc. Besides these situational factors, some demographic factors (i.e.- gender), social context factors (i.e. group norms or group concerns about the threat), and psychological factors (i.e.- personality traits) may also affect the worry. Women were more concerned about affecting by the SARS virus than men during the SARS epidemic [11]. Authors [10] also adapted a model where they found that personal conservation beliefs and normative concerns were significant predictors of the worry related to Swine Flu virus. Studies suggested that significant others' concerns about threat are also important predictors of the worry related to that threat [12, 13]. Among personality traits, neuroticism has a strong association to depression, panic disorder, generalized anxiety disorder, etc. [14]. It is the only predictor of psychopathology, while extraversion and agreeableness for positive mental health [15]. COVID-19 worry also leads to some immediate action in everyday life as coping strategy to reduce worry. During the swine flu outbreak, authors [16] have found that people having higher anxiety related to swine flu were carried more avoidance behavior than people having lower anxiety. Moreover, worry during flu outbreak also has association with concentrating on daily activities [10, 17].

Although it would be said that the COVID-19 worry is the main underlying reason of the immediate behavioral and psychological response, the predictors of the COVID-19 worry are unknown as it has a different pattern of affecting than earlier flu viruses. Therefore, in the present study, we aimed to identify possible predictors (i.e. – demographic factors, normative concerns, neuroticism, etc.) of the COVID-19 worry and its consequences in immediate behaviors like buying preparatory materials (buying mask, hand sanitizer, disinfection chemicals, etc.), postponing travel plan, buying more daily commodities than usual, and difficulties in concentrating daily activities. In the present study, a hypothesized model (**Figure 1**) was formulated to assess the association among study variables.

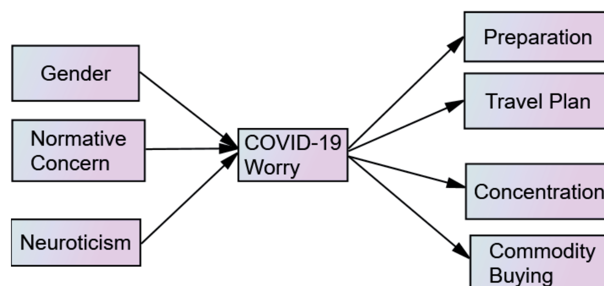

Figure 1.
The structural model about the association among study variables.

2. Methods

2.1 Participants

In the present study, an online survey was conducted using the 'Google Form' from March 23, 2020 to March 27, 2020. An online link of the survey questionnaire was shared via Facebook and email. A total of 504 respondents completed online form. Among 504 participants, 284 (56.3%) were male and 220 (43.7%) were female and their age ranged from 18 to 60 years old. Among them, 69.4% were students, 24.4% were full time employee, 2.2% were self-employed and 4% were unemployed, and 77.2% had university or equivalent degree, 20.4% had completed Grade XII, and 2.2% had other educational qualifications.

2.2 Measures

The online survey questionnaire of the present study included the neuroticism subscale of the Big Five Personality Inventory-10 [18], Bangla version [19], two questions about normative concerns about COVID-19 infection, two questions about COVID-19 worry, four questions about initial behavior and psychological responses, and questions about demographic information. Questions about normative concerns, COVID-19 worry, and three out of four questions about initial behavior and psychological responses adapted from the study of Goodwin et al. [10].

The Big Five personality inventory-10 (BFPI) contains 10 items (two items for assessing each trait). This scale had acceptable test–retest reliability (.68–.83) and high correlations (.51–.70) with the NEO-PI-R [20]. Test – retest reliability of the neuroticism subscale in Bangla version also had good test–retest reliability (.714). This subscale had acceptable infit and outfit mean squares (.93–1.02) and non-DIF between male and female. In the present study, participants responded on a five-point Likert scale (from strongly disagree to strongly agree). These two items had significant inter-item correlation ($r = .335$, $p < .001$) in this study. Author [21] have suggested assessing inter-item correlation when there're fewer than 10 items and inter-item correlation between .2 and .4 is sufficient.

To measure normative concerns, participants were asked - "How great a risk does your family (friends) think this COVID-19 pandemic is ..." on a five point scale (from very low to very high, including do not know). These items were significantly correlated ($r = .371$, $p < .001$). Regarding COVID-19 worry, participants were asked - "How concerned are you about yourself (your family members) being the victim of COVID-19 outbreak" on a four point scale (from not at all to very much) ($r = .541$, $p < .001$). For assessing outcome behavior and psychological responses following questions were asked – (i) Have you bought anything (i.e. Masks, Hand Sanitizers, Antiseptic, etc.) in preparation for COVID-19 pandemic? (Yes/No); (ii) Have you canceled or delayed your travel plans (Yes/No); (iii) Have you brought daily commodities more than usual? (Yes/No); and (iv) How difficult has it been for you to concentrate on your daily activities or job due to COVID-19 threat you feel? (a four-point scale, from not at all to very difficult).

2.3 Statistical analysis

In the present study, IBM SPSS version 26.0 and IBM AMOS version 24.0 were used to analyze the extracted data. Using SPSS, descriptive statistics (frequency and percentages), independent sample t-test, $\chi 2$ test were performed and path analysis was performed to assess the relationship among study variables using AMOS.

2.4 Ethics

The present study was carried out in accordance with the Declaration of Helsinki and its later amendments or comparable ethical standards as the data were collected from human participants. This study was approved by the university ethics committee of the Northwest Normal University, China (IRB no.- 20200018). Participants were informed about the study purposes, its nature, and required time to complete, cost and benefits, and confidentiality of information at the beginning of the survey. After reading above information, they had to express their opinion to participate in the study by clicking either 'Yes' or 'No'.

3. Results

Table 1 shows that, 50.2% participants rated that their family members and 47.4% rated that their friends judge the risk of the COVID-19 infection to be 'very high'. Regarding worry, 35.9% participants rated that they were 'very much' worried about themselves to be a victim of COVID-19 virus and 58.5% were 'very much' worried about their family members to be victims. Almost all participants (97.6%) bought or planned to buy preparatory materials (i.e. masks, hand sanitizers, soap, etc.). Among participants, 83.3% participants postponed their travel plans due to COVID-19 hit in the country and 39.5% participants brought necessary daily commodities more than usual. Twenty three percent participants rated that they felt very much difficulties to concentrate on their daily activities due to the COVID-19 worry. **Tables 2** and **3** shows non-significant gender differences in normative concerns ($t\text{-}value = -.427$, $p = .671$, effect size = .039), worry ($t\text{-}value = -1.799$, $p = .073$,

Questions	Response category	*f* (%)
How great a risk does your family think this COVID-19 pandemic is..?	High	210 (41.7%)
	Very high	253 (50.2%)
How great a risk do your friends think this COVID-19 pandemic is..?	High	222 (44.0%)
	Very high	239 (47.4%)
How concerned are you about yourself being the victim of COVID-19 outbreak?	Concerned	220 (43.7%)
	Very much concerned	181 (35.9%)
How concerned are you about your family members being the victim of COVID-19 outbreak?	Concerned	150 (29.8%)
	Very much concerned	295 (58.5%)
Have you brought anything (i.e. Masks, Hand Sanitizers, Antiseptic, etc.) in preparation for COVID-19 pandemic?	No	12 (2.4%)
	Yes	492 (97.6%)
Have you canceled or delayed your travel plans (Yes/No)	No	84 (16.7%)
	Yes	420 (83.3%)
Have you brought daily commodities more than usual?	No	305 (60.5%)
	Yes	199 (39.5%)
How difficult it has been for you to concentrate on your daily activities or job due to COVID-19 threat you feel?	Difficult	193 (38.3%)
	Very much difficult	118 (23.4%)

Table 1.
Frequency and percentages of responses in questions regarding normative concerns, COVID-119 worry, and initial behavioral responses.

Variable	Groups	M	SD	t-value	Sig.	Cohen's d
Normative concern	Male	6.70	1.27	−.427	.671	.039
	Female	6.75	1.31			
COVID-19 worry	Male	6.51	1.33	−1.78	.073	.16
	Female	6.72	1.24			
Concentration on daily activities	Male	2.85	.86	1.73	.085	.16
	Female	2.71	.88			

Table 2.
Gender differences in normative concern, COVID-19 worry, and concentration on daily activities (male = 284, female = 220).

Variable	Response categories	Gender		χ^2	Sig.	Effect size
		Male	Female			
Purchasing preparatory materials	No	10 (3.5%)	2 (.9%)	3.64	.056	.085
	Yes	274 (96.5%)	218 (99.1%)			
Postpone travel plan	No	53 (18.7%)	31 (14.1%)	1.87	.172	.061
	Yes	231 (81.3%)	189 (85.9%)			
Purchasing daily commodities more than usual	No	182 (64.1%)	123 (55.9%)	3.47	.067	.083
	Yes	102 (35.9%)	97 (44.1%)			

Table 3.
Gender differences in purchasing preparatory materials, postpone travel plan, and purchasing daily commodities after confirming COVID-19 positive cases in Bangladesh.

effect size = .16), purchasing preparatory materials (χ^2 = 3.64, p = .056, effect size = .085), postponing travel (χ^2 = 1.87, p = .172, effect size = .061), buying daily commodities more than usual (χ^2 = 3.47, p = .067,, effect size = .083), and difficulties in concentration due to COVID-19 worry (*t-value* = 1.73, p = .085, effect size = .039).

Due to non-significant gender differences among study variables, gender was excluded from the path analysis model. Model fit statistics of the path analysis suggested that the hypothesized model had good fits (χ^2 = 24.214, df = 7, χ^2/df = 3.459, p = .001, GFI = .986, CFI = .972, TLI = .917, RMSEA = .070, LO 90 = .041 and HI 90 = .101, p close = .120, SRMR = .035). The results of the path analysis (**Figure 2**) showed that both normative concerns about the COVID-19 (β = .326, p < .001) and neuroticism (β = .341, p < .001) significant predictors of COVID-19 worry. Both normative concerns and neuroticism predicted 22% variance of COVID-19 worry. Normative concerns, neuroticism, and COVID-19 worry predicted 16% variance of the buying preparatory materials, 22% of travel plan, 26% of buying daily commodities more than usual, and 20% of concentration problem due to COVID-19 threat. Among variables, normative concerns (β = .107, p = .014) and COVID-19 worry (β = .362, p < .001) significant predictors of buying preparatory materials. Postponing travel plan significantly predicted by COVID-19 worry (β = .449, p < .001), buying daily commodities more than usual significantly predicted by neuroticism (β = .281, p < .001) and COVID-19 worry (β = .321, p < .001), and difficulties in concentration was significantly predicted by neuroticism (β = .126, p = .003) and COVID-19 worry (β = .358, p < .001).

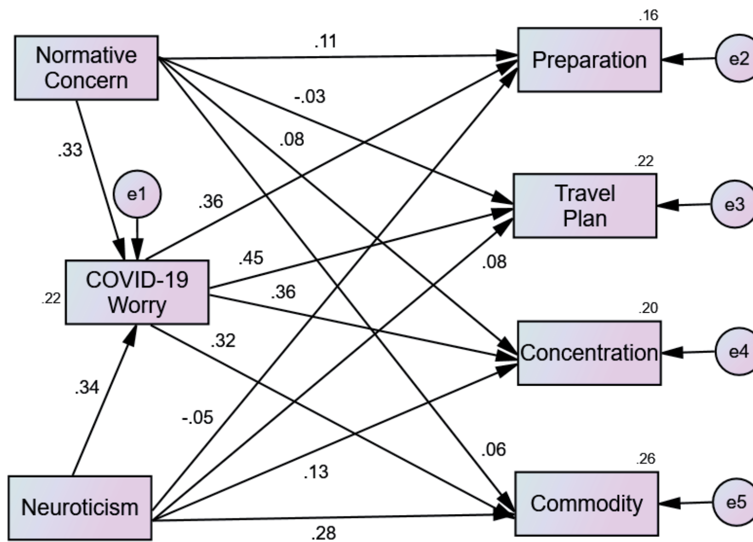

Figure 2.
Path analysis of COVID-19 worry and its causes and consequence on initial responses.

4. Discussion

Despite of the modernization in all sectors, the outbreak of infectious diseases and subsequent epidemics are propagating all over the world as the humans are spreading significantly [22]. The human-to-human transmission feature and continuous mutation into a more deadly strain worsen the contagion [23]. Due to the COVID-19 pandemic, worry has touched almost all the people across the globe. In this study, we identified the some causes of the COVID-19 worry and immediate consequence after confirming first COVID-19 positive case in Bangladesh. Results showed that almost all participants' family and friends perceive higher risk of COVID-19 infection. Almost all participants' also highly worried about being COVID-19 victim. This study has collected research data from Bangladesh at the early stage of COVID-19 outbreak with very nominal confirmed cases and reported death, though by that time the world has already been grappled. People have already come to know the severity of the COVID-19 pandemic in China, Italy, Spain, USA, etc. Moreover, a large of number of people has returned from COVID-19 affected countries and most of them did not follow authority's instruction to maintain home-quarantine for 14 days. Therefore, higher concern regarding the COVID-19 threat is usual among people. This study suggested that close others concerns about a potential threat was the predictor of the personal worry of that threat. Author [10] have also have suggested a similar association between normative concerns about swine flu outbreak and personal worry about it. Besides, this study also suggested that people higher in neuroticism trait were more worried about COVID-19 threat. Usually, people with higher neurotic traits are characterized through having low self-esteem, irrational perfectionistic beliefs, and pessimistic attitude [24] and they are more sensitive to negative affect [25]. Although neuroticism is impossible to be a product of socialization without the control of hereditary predispositions, the national levels of neuroticism can be moderated, at least to some degree, by cultural factors. Certain empirical findings associated the levels of neuroticism with the religious values [26], geography [27] of a given society. Authors [28] have present very different correlations for neuroticism and cultural aspects. Cultural variations tend to have a certain neurological impact on neurotic conditions considering the

differences in prevalence of depression, conversion response, anxiety, somatoform disorder, and obsessive–compulsive disorder among various societies [29]. As you will learn when you study social psychology, Asian cultures are more collectivist, and people in these cultures tend to be less extroverted. Authors [30] have reported, people in Central and South American cultures tend to score higher on openness to experience, whereas Europeans score higher on neuroticism, explains how Asian societies appear to be more collectivist and how individuals in these cultures tend to have lower extroversion. In European and Latin American cultures, tolerance to practice is greater, and neuroticism is greater. Significantly, neuroticism leads the poor stress management, perceive minor frustration as overwhelmed depression, and surprisingly interpreting an ordinary crisis as a great threat [31]. The quality of life of a neurotic individual is with elevated level of ill-will feeling, excessive worry and other occupational failure [32]. But the maladjustment often motivates the cognition; perform exceptionally well, especially when the situation requires caution, and discipline to act effectively to the anticipated threat [33]. These findings regarding the underlying causes of COVID-19 worry have a great practical implication for mental health practitioners and other concerned authorities for effective dealing with psychologically vulnerable persons due to COVID-19 worry. From personal observation of the authors, a large number of people are not concerned about the severity of COVID-19 pandemic due to lack of literacy, misleading information from some religious leaders and some YouTube channels and Facebook pages, groups. Government is facing difficulties to make conscious these people about the pandemic. Findings about the causes of COVID-19 worry would helpful to local administration and law enforcing agencies to analyze why these people are not concerned and what measure they can take. Study findings showed that higher personal and close others' safety concern lead to purchase protective materials. People postponed travel plans and purchasing extra daily commodities than usual due to personal anxiety about the COVID-19 threat. People do not know how many days the pandemic will be in Bangladesh. As most of the factories are closed as part of the first line protective measure during an epidemic, people are uncertain about the supplies of the daily commodities. Such uncertainty about future food supplies might also be worked beside neuroticism and worry to purchase extra commodities. Neuroticism and COVID-19 worry also has significant association to problem in concentrating on daily activities. The unremitting threat of COVID-19 is interrupting the daily activities with psychological symptoms [34]. Authors [35] have found that highly worried about the likelihood of family members to be COVID-19 infected leads to higher stress. This epidemic induced stress predicts behavioral change in different negative forms, including attention deficit and concentration difficulty [36].

5. Limitations

The present study had several limitations. This survey was conducted using online tool 'Google Form' as it was impossible to conduct face-to-face interviews for data collection. So, people who read well and having internet access were participated in this study. A large portion of Bangladeshi people is out of Internet access. Besides, the majority of the respondents were graduate level students. Therefore, representativeness of the study sample was in questions. Data in this study were self-reported which might be subjected to social desirability bias as COVID-19 pandemic has got huge attention across the world. Often educated respondents prevailed with social-desirability bias, but we consider this study's results explicit since the survey was conducted at the very outset of the COVID-19

pandemic in Bangladesh. It is apprehended that social desirability was not absolute at that time among Bangladeshi people; hence credibility of this study remains irrefutable.

6. Recommendations

As the present study suggested that, almost all respondents were worried about COVID-19 infection, it is urgent to assess the severity of psychological problems (anxiety, depression, stress etc.) and well-being of Bangladeshi people. It is important to reduce the amount of time spent on social media as it negatively affects user's mental health with rapid spread of rumors and trigger negative emotions. To render mental health support during emergency situation, Bangladeshi government should prepare comprehensive guideline where telephone and web based counseling need to integrate instantaneously. Since majority of the infected are front-line warriors i.e. doctor, police, and administrators so government should employ intensive mental health service for them.

7. Conclusions

The outbreak of CIVID-19 has been increasing the psychological problems among the Bangladeshi people significantly ever since the initial stage. Our findings suggest that the emotional aspects, worry and normative concerns, are significantly predicting the behavioral responses. This emotional concern often widely depends on the neuroticism where excessive worry and other psychological problems predict the precautionary behavior with the purchase pattern. Our study recommends to cautious and reduced use of social media, rendering telephone based mental health services, appoint psychologists and psychiatrists for front-line warriors in the war against COVID-19, and preparing a guideline for offering mental health services.

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Conflict of interest

No potential competing interest was reported by the authors.

Acronyms and abbreviations

SARS-CoV	Severe Acute Respiratory Syndrome
NEO-PI-R	NEO Personality Inventory-Revised
DIF	Differential item functioning

IBM SPSS	International Business Machines Corporation Statistical Package for the Social Sciences
IBM AMOS	International Business Machines Corporation Analysis of Moment Structures
GFI	The goodness of fit index
CFI	The comparative fit index
TLI	Tucker-Lewis index
RMSEA	the root mean square error of approximation
SRMR	Standardized Root Mean Square Residual
APA	American Psychological Association
CDC	Centers for Disease Control and Prevention

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Chapter 39

Living with Uncertainty in Times of Pandemic: The View of Working Students in Higher Education

Diana Dias

Abstract

Today we live in times of real uncertainty. All of us, young, old, adults or children, experience new ways of facing daily challenges. The education and health sectors are naturally the most affected and deserve to be assessed for the impacts of this pandemic. This chapter aims to focus its analysis on a specific group of students in higher education: working students. In fact, this population group has a distinct profile from "regular" students in higher education. Typically, the student role is not the predominant one in their lives, competing with their roles as active workers and as heads of their families. Choosing a quantitative scientific methodology, about a hundred working student were the target of a survey exploring not only their greatest anxieties and fears, but also the ways they choose to deal with it, namely their exposure to media coverage of the COVID-19. It is expected that the results will contribute to a critical reflection on the challenges that this pandemic poses to us, identifying clues to better manage and overcome them.

Keywords: working students, coping styles, pandemic, fear, media exposure, covid-19

1. Introduction

We are living in an exceptionally challenging historical moment. We learned that no matter how much we control our lives, our environment and our relationships, everything can be transformed instantly, depending on the will of a virus that does not respect ages, nationalities, lineage, intelligence or skills. We learned that the unlimited power that science and technology had given us was just a huge illusion, owing to the absolute and overwhelming power of a nature that we had almost forgotten.

After all, the balance of forces we knew was inevitably stunned and the beliefs with which we built our lives were totally challenged by an unpredictable and constantly changing reality.

In fact, uncertainty is probably one of the biggest challenges we face today. Never, as much as today, the way we manage emotions can make a difference in our future, both personal and professional. Uncertainty about a potential future threat upsets our ability to avoid it or to mitigate its negative impact, and thus results in anxiety, fear and anguish. In fact, uncertainty weakens how efficiently

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and effectively we can plan the future, and thus contributes to anxiety. Anxiety is related to anticipatory representations of possible, uncertain future events. On another hand, fear and anxiety can be distinguished according to how much certainty one has concerning the probability, timing, or nature of future threat. Moreover, environmental signs denoting the unambiguous presence of close threat increase the probability of a possible "fearful" defensive behaviors, more diffuse, distal, or unpredictable threat cues produce "anxious" risk assessment behavior that is likely to persist until such uncertainty is resolved.

More than a year has passed since SARS-CoV-2 began to spread around the world. If at first its presence did not cause severe apprehension, it soon turned into thoughtful worry, as more and more people were infected with COVID-19. Anxiety and fear have increase exponentially not only because of the newness of this virus and its consequences in the short, medium and long term, but basically because of its incredibly fast spread. The prevention measures that were briefly embraced around the world strongly conditioned everyone's life; a phenomenon that had never been experienced during our lifetime. Restricted to our home, banned from traveling, forced to wear mask, obligated to strictly obey physical distancing protocols, everyone fought together to slow down the spread of COVID-19. On the other hand, the mass media did not only extensive, but also intense coverage, detailing every detail of a scenario, at the very least, scary and unpredictable.

Worldwide, there have been more than 150 million confirmed cases of COVID-19, and more than 3 million deaths ascribed to the illness. According to official predictions, throughout most of the world, the rate of new SARS-CoV-2 infections is gradually decreasing, because of herd immunity that has meaningly improved with vaccination efforts.

The preventive restrictions firstly fulfilled to block the spread of the virus are now starting to be smoothed over. However, the marks of the lockdown experiences remain and are mirrored in the way people deal with the newly re-acquired "freedoms". Actually, the remaining fear and concern are certainly related to the fact that countries, such as Portugal, have lived periods of true hope followed by moments of extreme distress when faced with the exponential increase in infected people following a slight weakening of the preventive measures during the Christmas period. The population realized, often directly in themselves and in their closest ones, that the virus was not giving a break. And even when a "new normal" begins to be experienced, many fears and anxieties persist. For some, going back and socializing with other people is a source of fear and anxiety. Moreover, fear triggers safety behaviors (hand washing) that can mitigate certain contamination threats, but it tends paradoxically also to enhance fear [1–3].

In a survey of 44,000 participants conducted in Belgium in the beginning of April 2020, the number of people reporting an anxiety (20%) or a depressive disorder (16%) had increased substantially compared to a survey conducted in 2018 (i.e., 11% and 10% prevalence, respectively) [4]. However, it is important to note that anxiety, itself, is a regular emotion, experienced by people in their daily lives, and characterized by feelings of tension, worry, insecurity, usually accompanied by physical changes such as increased blood pressure and heart rate, sweating, dry mouth, tremors and dizziness. Despite this normative character, when anxiety persists in certain contexts, interferes negatively with the ability to perform daily activities and causes significant physical and/or emotional suffering, we are facing an anxious pathology. That is, under normal conditions, anxiety can be useful, as it helps to identify dangerous situations and allows for better preparation to face them. When well controlled, it acts primarily as a stimulant. In excess, it causes unnecessary suffering.

Despite vaccines and the decrease in the prevalence of the disease, some people experience what scientists already call the COVID-19 anxiety syndrome. Its

symptoms are close to those of other mental health conditions, including anxiety, post-traumatic stress disorder (PTSD) and obsessive–compulsive disorder (OCD), but its cause lies in the pandemic and related factors appear to be the cause.

2. COVID-19 anxiety syndrome

The strength and extent of this pandemic has put people on high alert, feeling fear and concern about the impact this virus could have. As scientific development allowed for a better understanding of the virus, as well as its forms of prevention and treatment, new routines began to be established to manage the relationship with this pandemic. As a worldwide phenomenon, there were many different reactions. Some people refused to change their behavior, while others strictly followed the rules to prevent the disease. However, on a larger scale, in one way or another, most people have experienced a unexpected disruption in their lives, what can be considered a disaster situation.

The International Federation of Red Cross and Red Crescent Societies classifies a disaster as "a serious problem occurring over a short or long period of time that causes widespread human, material, economic or environmental loss which exceeds the ability of the affected community or society to cope using its own resources." A disaster can have comprehensive penalties for mental health, remarkably triggering post-traumatic stress disorder, anxiety and depression.

As a greater understanding of the pandemic-related mental health consequences evolved, an emerging group of anxiety-related symptoms and behaviors associated with the COVID-19 pandemic was identified. They classify this phenomenon as COVID-19 anxiety syndrome.

2.1 What is COVID-19 anxiety syndrome?

Nikčević and Spada [5] describe the characteristics of the COVID-19 anxiety syndrome, namely avoidance, compulsive symptom checking, worry and threat monitoring (combined). This syndrome is manifested by the impossibility of leaving the house for fear of COVID-19, frequent checking of symptoms despite not being in a high-risk scenario and avoiding social situations or people. People with this syndrome tend to have increased post-traumatic stress, general stress, anxiety, health anxiety, and suicidal ideation.

Stress can cause the following:

- Feelings of fear, anger, sadness, worry, numbness or frustration
- Changes in appetite, energy, desires and interests
- Difficulty concentrating and making decisions
- Difficulty sleeping or nightmares
- Physical reactions such as headaches, body aches, stomach problems and rashes
- Worsening of chronic health problems
- Worsening of mental health conditions
- Increased use of tobacco, alcohol and other substances

Since the pandemic is equated with its disaster situation, it is obviously natural to experience stress, anxiety, sadness and worry during the COVID-19 pandemic. The challenge lies in our ability to handle this. In fact, these could be central construct in explaining the negative individual and societal consequences of the coronavirus pandemic. Thus, it is vital to better understand what people are exactly afraid of and explore relevant predictors. A very particular public, and sometimes neglected by literature, are student workers and even more specifically, higher education student workers.

3. Working students in higher education

Higher Education enrolments have continued on an upward climb for decades, as more people recognize the value of the higher education, mainly for the tangible value of the diploma in the marketplace. The diversity in higher education is an unquestionable trend, but with that diversity it is also seen deep changes in how students are funding their academic investments. Adult degree seekers, first-generation students and students from low-income backgrounds have become a mainstay in the growing mix in higher education today.

This new diversity challenges the image of the "traditional student": direct-from-high school and financially supported by parents. Today's higher education students face a complex set of dilemmas about whether to attend higher education, where to attend, how to pay, how much to work, how many jobs to take, how to manage family and children, and how to balance these competing priorities while in higher education. Thus, working students are those students who work outside the school and having a school responsibility too.

Different research studies have highlighted the negative consequences of working while studying, namely:

- the difficulties in meeting higher education requirements [6, 7],
- the absenteeism [8],
- the distress in the engagement process at higher education [9],
- the high risk of dropping out [10];
- the tiredness, the shortage of time and the few hours for recreation [11].

In fact, full time students experienced strong demands on their time management and could be at risk of overload [12]. Lowe & Gayle [12] conducted a study with working students and found that over half of the students achieved a good or manageable work/life/study balance, whilst some experienced stress caused by conflicting priorities.

The students' success in balancing study with work and family life seems to be induced by their coping strategies and by the nature and quality of the support they get from families and employers. On another hand, Sanchez-Gelabert, Figueroa & Elias [13] advocate that regarding the impact of working while studying on academic performance, in general it seems that there is little disparity between the marks obtained when compared with full-time students. Even though this first professional socialization process has a negative impact on marks when the job is full-time, it actually has positive repercussions on future job quality. Thus, having a

related job seems to contributes most positively to the academic success. On another hand, better scores were obtained by those who had a related job while they studied for their degree. Obviously, these students developed and acquired specific skills and made contacts in the workplace which contributed to improving their labour market outcomes.

Mounsey et al. [14] conducted also a study which explored the differences between working and non-working students in terms of mental health, academic achievement, and perceptions about student employment. No significant difference in depression between working and non-working students were found; however, working students displayed more anxiety than non-working counterparts and reported more stress and fewer buffers. Unlike previous research, there was no difference in the grade point averages of working and non-working students, nor differences in perception of the problems and benefits of work.

In the pandemic context, according to the results of the survey conducted in Portugal, 90% of the respondents said that the lockdown caused by the covid-19 had a negative consequence on their mental health, namely in terms of demotivation, anxiety, 'stress' and sleep disturbances mentioned respectively by 85%, 72%, 63% and 56% of students. According to the same research study, many students still report feeling symptoms of depression, tiredness and fatigue, relating these symptoms to the increase in time spent in front of the computer. On the other hand, they also refer to the worsening of previously diagnosed psychiatric conditions, with most of them not having any follow-up on mental health issues.

As working student are a population that lives a set of tensions between their work, their academic studies and their family life, it is considered very important to explore not only their greatest anxieties and fears, but also the ways they choose to deal with it.

The main goal of our study was to assess working student's different fears and concerns regarding the coronavirus pandemic and the ways they choose to deal with it, namely their exposure to media coverage of the COVID-19.

4. Methods

4.1 Sample

The present study was developed in a higher education institution, whose programmes offer is exclusively in after-work hours. This institution offers bachelor's and master's degrees in the field of real estate management aimed at working students. It is a private institution that focused on teaching real estate management, being recognized in the specialized job market. Respondents for this study were recruited through online advertisements using a learning platform (Moodle) which is the same one they use daily to attend classes, which were take place at a distance, during the lockdown period. All working students were identified and invited to participate.

In total, 155 respondents provided consent to participate. However, 54 respondents did not fill out properly or complete the survey. Hence, the final sample involved 101 respondents (completion rate: 65.16%). The majority of our sample consisted of men (67.33%) and a large majority of the respondents lives and/or works in the same district as the higher education institution operate (94.06%). Participation was on a voluntary basis (see **Table 1** for a detailed overview of the demographic data of our sample).

	N	%
Age in years		
18–30	14	13,86%
31–40	42	41,58%
41–50	28	27,72%
51–60	15	14,85%
More than 60	2	1,98%
Gender	101	
Male	68	67,33%
Female	32	31,68%
Prefer not to say	1	0,99%
Region of residence	101	
Sample District of HEI	95	94,06%
Another District	6	5,94%
Work in healthcare		
Yes	1	1%
No	99	98%
Unsure	1	1%
Infected by the coronavirus?		
Yes	1	1%
No	97	96%
Unsure	3	3%

Table 1.
Demographic information of the respondents (total N = 101).

4.2 Materials and procedures

4.2.1 Measures

As in Mertens *et al* [15], fear of the coronavirus was measured using an 8-item questionnaire referred to as the Fear of the Coronavirus Questionnaire (FCQ). Respondents were asked to rate their level of agreement with each statement on a 5-point Likert scale (1 = "Strongly disagree", 5 = "Strongly agree"). Examples of the items are: "I am very worried about the coronavirus", "I am taking precautions to prevent infection (e.g., washing hands, avoiding contact with people, avoiding door handles)", and "I take more precautions compared to most people to not become infected". Each item corresponds to different fear factors, such as subjective experiences (worrying), attentional biases, and avoidance behaviors [16].

Intolerance of uncertainty (IU) was measured using the IUS-12 developed and validated by Carleton, Norton, and Asmundson [17], which assesses an individual's propensity to find uncertain situations unpleasant. It consists of 12 statements scored on 5-point Likert scales (1 = "Not at all characteristic of me", 5 = "Entirely characteristic of me"). Examples of the statements are: "Unforeseen events upset me greatly", "It frustrates me not having all the information I need", and "Uncertainty keeps me from living a full life".

To measure voluntary exposure to news about the coronavirus, respondents were asked to answer the following question: "Have you looked up any extra

information regarding the coronavirus outbreak?". Likewise, if they had looked up any information, they were asked to indicate what sources they accessed (options: "Regular newspapers/websites/TV news", "Social media (Facebook, Twitter, Instagram, ...)", "Professional websites (health institute, blogs posted by virologists/biologists, ...)", "Friends/family/acquaintances", "Online searches (e.g., through Google, Bing, Ecosia, etc.)", "Other (please specify)"; multiple answers were possible). Finally, they were asked to rate the extent to which they paid attention to the source of the media outlet when looking up new information using 5-point Likert scales (1 = "Strongly agree", 5 = "Strongly disagree").

As demographic predictors, respondents were asked to indicate the gender they identify with the most ("male", "female", "prefer not to say"), their age (in decade categories), whether they work in healthcare ("yes", "no", "unsure (please clarify)"), whether they already got infected by the virus ("yes", "no", "unsure"), and their place of residence.

4.2.2 Survey administration

All questionnaires described above were delivered through an online survey using the Moodle platform. The online survey could be completed with the use of a personal computer/laptop, tablets, or smartphone. The complete survey took approximately 10 min to complete.

4.3 Data analysis strategy

As this is an highly exploratory study, descriptive statistical analyses were carried out, using the analysis of relative percentages. Analyses were conducted in IBM SPSS v26.

The demographic variables analyzed were the gender and the age. The remaining demographic data were not included in the analysis because the majority of the respondents do not work in healthcare (95.95%), had never been infected with the virus and mostly lived in the same place where the higher education institution operates.

5. Results

Results point out to the large majority of the working students were very worried about the corona virus (91,8% agree or strongly agree) and are taking precautions to prevent infection namely, washing hands, avoiding contact with people, avoiding door handles (87,6% agree or strongly agree). Women tend to be more worried than men, however men seem to be taking more precautions to prevent infection. The oldest one tends to be more worried and to take more precautions to prevent infection.

It is also the older people who tend to constantly following all news updates regarding the virus and the same trend appear in women, albeit with less intensity. However, the vaster majority of the working students tend to constantly following all news updates regarding the virus (70.3% agree or strongly agree). A similar percentage is found among the same respondents when asked if they have stocked up on supplies to prepare for problems related to the coronavirus outbreak (68.32% agree or strongly agree). Nonetheless, are men and the oldest who assume to have stocked up on supplies.

The results show that working students found the virus much more dangerous than the seasonal flu (95.05% agree or strongly agree) and differences of opinion

between men and women are not noticed. However, the same does not happen when the analysis focuses on age, as older people, although most of them agree, 34% disagree or strongly disagree.

Almost all the working students (98%) agree or strongly agree with the idea of "I am worried that friends or family will be infected". All the women agree or strongly agree, such as 94.3% of the respondents with 50 years old or more. The opposite trend is noticed on the answers related to this statement: "I feel that the health authorities are not doing enough to deal with the virus". Only 31.68% of the working students consider that health authorities are not doing enough to deal with the virus. This percentage increases lightly in men and older people.

When asked to compare themselves with the rest of the population, working students consider that they take more precautions not to be infected (77.23%). Men and younger respondents tend to agree even more than the average of working student who are more cautious than the rest of the population.

When the intolerance of uncertainty was measured, which assesses an individual's propensity to find uncertain situations unpleasant, the results point to the idea that working students tend to be highly likely to consider situations of uncertainty as uncomfortable. In fact, the majority of the working students tend to agree or strongly agree with statements such as "Unforeseen events upset me greatly" (66.33%), "It frustrates me not having all the information I need" (76.24%), and "Uncertainty keeps me from living a full life" (56.44%).

To measure voluntary exposure to news about the coronavirus, the vast majority of the respondents (70.30%) seems to agree (binary answer: yes or no) to the question: "Have you looked up any extra information regarding the coronavirus outbreak? (not taking into account coincidentally seeing/reading about it in the news)". Websites and TV news were the sources more mentioned by working students to looked up any information about corona virus. The oldest tend to give more importance to regular newspapers and the newest prefer social media, such as Facebook, Twitter and Instagram. Among the websites most wanted, were "professional websites" as health institute, blogs posted by virologists/biologists, ..." and online searches (e.g., through Google).

6. Conclusions

The results of the present exploratory research study allow us to conclude that working students tend to be very worried about the corona virus and are taking actively precautions to prevent infection. They tend to constantly following all news updates regarding the virus even because found this virus much more dangerous than the seasonal flu and were very worried that friends or family will be infected. Although they consider that health authorities are competent entities to deal with the virus, most decide to make some stock of essential goods to deal with the confinement period.

When asked to compare themselves with the remaining population, working students consider that they take more precautions not to be infected.

When the individual's propensity to find uncertain situations unpleasant was measure, working students tend to be highly likely to consider situations of uncertainty as uncomfortable.

Another important conclusion is that working students not only want, but actively seek news about the coronavirus. Internet seems to be the main source of information, not only through official websites, such as through social media.

These results are not surprising if we consider that working students almost necessarily have more developed time management skills to be able to deal with

full-time work and an intense academic life. So, the fear of the unknown, the fear of uncertain situations that might get out of your control tend to be anxiogenic.

Some suggestions for the management of coronavirus fear can be made based on our findings. Particularly, if we consider the possible relationship between media exposure and fear of the coronavirus, which suggests that more exposure to media can lead to more fear. Therefore, it would be crucial to ensure that communication must be clear and unambiguous, without sensationalism or disturbing images, even because uncertainty tends to increase the fear.

On another hand, working students must be advised to somewhat restrict their exposure to media coverage of the COVID-19 crisis and avoid sensational media, which may enhance stress and decrease well-being. Clear information about the risk of threat and by taking (additional) steps to protect vulnerable groups for risk of infection could be another way to manage fear of the coronavirus could focus on the perceived risk of the virus for loved ones. There is evidence that suggest that such 'fear appeals' do not work very well to promote behavior change [18], particularly when people, like working students, have little coping strategies.

In conclusion, it was found that working students tend to report a wide range of concern regarding the coronavirus outbreak. Moreover, anxiety-related individual differences, looking up information about the coronavirus outbreak, and risks for loved ones seems to be positively related to increased fear of the coronavirus. Working students are a high-risk population group managing the fear and anxiety caused by the pandemic. Policy makers, higher education institution governance must be alert to these populations at increased risk and take measures to mitigate this risk.

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Conflict of interest

The author declare no conflict of interest.

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Chapter 40

COVID 19 and Quality of Life in Indian Context

Ganapathy Sankar Umaiorubagam, Monisha Ravikumar and Santhana Rajam Sankara Eswaran

Abstract

Battling the novel COVID-19 pandemic has caused emotional distress and many nations lost their humans at the fight against the virus. Quality of Life (QOL) has a wide range of contexts, including the fields of international development, healthcare, politics and employment. Standard indicators of the quality of life include wealth, employment, the environment, physical and mental health, education, recreation and leisure time, social belonging, religious beliefs, safety, security and freedom. Being a poor economic country like India, lockdown during COVID 19 devastated occupation, education, recreation and money from the people and the fear of the disease impacts not only on the health of the individuals but also the quality of life of individual is affected.

Keywords: Containment zone, nationwide lockdown, Poor economy, Life impact, Indian context, Burden from family members

1. Introduction

Countless nations in the world have vanished their human and economic resources while battling the novel corona virus disease. The swiftness in broadcast of the virus has positioned general public and governments on tenterhooks, recognizing that Covid-19 crash not only the corporal wellbeing of individuals but also their quality of life and, ensuing in many sufferers over the world. Negative outcomes such as depression and anxiety were the result of the viral outbreak and the research on the viral outbreak indicated psychological distress and flush disgrace and chauvinism towards citizens alleged of being tainted and exposed to the Corona Virus infection [1].

Apparently, apprehension of the ailment has in many cases enhanced and led to suicidal tendencies. The economic times of India 2020 examined and reported that there are around 300 lockdown deaths in India and suicide is reported as a leading cause. For all intents and purposes, substantiation spotlight on the unfavorable outcomes of the disease, demand a pragmatic swing towards COVID-19 outcome that are defensive as well as affirmative, such as quality of life. Few researches were on the precautionary health behavior as well [2]. It is an granted actuality that the world boast on the system to continue to exist with the novel corona virus, and consequently, sympathetic of quality of life and the mental and demographic vibrant distressing it would certainly, furry the retreat in the psychoanalysis of people.

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Consequently, there is a crucial need to glance at a lock down quality of life in the long-lasting of COVID-19 pandemic, as it restrain not only overall satisfaction in certain life areas, but also their implication, that is at prospect with livelihood and times of the virus. These researcher also illuminate that quality of life is skewed and necessitate professed contentment and significance vicinity such as occupation, self-interest, leisure, prospect to connect prolifically and inventively, potential in erudition of new things and acquaintances and friendship in one's life. Clearly, this accomplishment of quality of life is exaggerated and disrupted in the current world at present, which is puzzled with the infectious disease [3].

2. Factors influencing quality of life during COVID 19

Within the present world, people were reported with sky-scraping echelon of fretfulness, professed vulnerability and professed sternness and the empirical evidence indicates that people demonstrate anxiety to COVID-19, throughout the pandemic the situation continues and that leads to deterrent health behaviors [4]. Furthermore, an individual's delicate uniqueness through the aim of drive their bearing, certainty, goal and prospect outlook could cooperate a task in the implementation of health-related behaviors like social isolation and distancing to warfare the outburst of pandemic. Abundant research confirmation exhibit the action of buoyant prejudice and there is a report that elaborates that individuals ascertain themselves like they never experienced negative symptoms of COVID-19 and procrastinate themselves like they experience more of positive events. The role of individual bias in battling the novel corona virus crisis leads individuals to believe that they were not infected with the corona virus even when they presents with the signs and symptoms. As the fear of social stigma and isolation from the family members has not been on the cut-rate as it guide people to believe that they were not infected [5].

The assemble of alleged receptiveness and alleged sternness in amalgamation to the COVID-19 outburst, make up the Health Belief Model (HBM) with the intention of is influential context in explicating values concerning one's susceptibility to, and seriousness of the viral disease that notify change in activities, and by this means persuade quality of life. Individuals might experience noticeable warning sign of fretfulness such as appetite loss, queasiness, sleep annoyance, serenity and giddiness as demonstration of concern to COVID-19. Fascinatingly, an inspection of the relation sandwiched between sanguine bias and severity of the corona virus diseases demonstrate that persons who are confidently biased be inclined to underrate their professed vulnerability and sternness to the virus [6]. Personal recognition in the epoch of the outbreak may coerce individuals to re-examine their own execution in stipulations of their professed personal risks and susceptibility that then leads them to engage in preventive health behaviors. The maneuver of these individual-based construct including quality of life are multifaceted and necessitate a need to perhaps go further than what is prescribed in health belief Model- to inspect the responsibility of group-related variables throughout the prism of social distinctiveness loom [7].

What materializes within the sequence of events adjoining the pandemic of the novel corona virus is the stress not simply on responsibility of the human being, but auxiliary so on top of the communal or "we". To ensure the protection of others from the infection there are measures like social distancing and wearing of face-masks and that outline the need for ensuring and protecting the members of the society on or after the infection [8]. It is in this illumination, that the responsibilities of the assemblage appear to contradict the spread of COVID-19 and to cope

it. For people, communal exploit that warrants harmony may be obvious in their recognition with their family, spiritual community and also with their nation. Perceptibly, a hypothetical scaffold such as that of the Social Identity Approach (SIA) facilitate an thoughtful of how assembly dynamics engage in recreation out in the present health crisis [9].

Family cast the person all the way through their lifetime and consequently, is indispensable for self- indulgence and description. Learning demonstrate that a person's pious connection or cluster not only generates their social individuality persuade spiritual and material behavior, but also poke that person hooked on to action in social contexts. During a catastrophe such as the COVID-19 pandemic, recognition with the country as a civilian is decisive not only for self-perception, but also for communal judgment with "other" pertinent countries in terms of events to administer and gear the outbreak. Conceivably, the salience of group credit with one's family, religious brethren and one's nation may have comportment not only on enviable health behaviors, but more prominently on the qualitative characteristic of one's life [10].

It is appropriate to differentiate that in the current COVID-19 pandemic, the responsibility of human being 'me' factors, through the Health Belief Model has been imperative to cheering people to slot in preventive health behaviors. Nevertheless, what in addition needs deliberation it is the social natures of the pandemic, that quarrel in favor of a 'we' or combined approach, headed specifically to edge and take into custody or arrest the virus spread all the way through a communal distinctiveness viewpoint [11]. Agreed the significance of combined person and group factors resting on the top of the multifaceted phenomenon such as quality of life, the interaction of HBM and SIA as hypothetical prisms to distinguish the role of the former on the latter is measured relevant in the present chapter.

Particularly COVID-19 is considerably shifting the method human being are living and their source of revenue their lives, it is relevant to scrutinize authority on quality of life such as demographic factors, person and group variables. Citizens with privileged levels of instructive achievement and incomes were linked with elevated quality of life predominantly allied to health concerns [12].

There are individual echelon and capricious of COVID-19 nervousness plus individual characteristics considerably forecast quality of life and optimistically modify and alter their existence in areas of friends, erudition and inspired behavior counting their view of themselves and others [13].

Individual factors inclined quality of life negatively and the latter, positively. For all intents and purposes, this would indicate to facilitate person with discriminating anxiety over the viral infection would in addition worsen quality of life. Believably, the outlook that the disease signs 'the end of the world experience', there by leading to disquiet and agony [14]. The fear elicited by the pandemic affects relationships with negative impacts and learning endeavors were also affected. Fretfulness about the COVID-19 risk might bestow rise to hesitation and bewilderment hamper qualitative living. On the divergent side, individual distinctiveness which affords an apparent prudence of existence bearing, self-assurance of their objective and prospect occasion valor thrust individuals. In fact, countless Indians had testimony end enduring paying superfluous contemplation to their physical circumstance, reassuring, exercising and dormant ensuing to the commencement of the COVID-19 pandemic [15]. It is steadily extra noticeable with the intention of the temperament of the corona virus occurrence that demand huddle exertion to surround it's transmit and manage it.

Social gratitude in the middle of relatives and motherland significantly estimate quality of life. Basically, the vituperative illness is concerning to demolish cluster psychology to facilitate as well as necessitate society involvement and engagement.

Debatably, family detection and constancy encourage well-being and buoyancy, which possibly will have completely impacted quality of life positively. In hefty level disaster, citizens be liable to describe themselves within stipulations of their communal individuality [16]. In this pandemic too, such cluster memberships which is specifically foundation on relations and population are appreciated as a reserve that tie and connect citizens jointly changing completely aspects of spare time, novel chase, acquaintances and friendships in life. In totaling, cluster we recognize in the midst of psychological capital in philanthropic live meaning, purpose and self-worth. In the background of nationalized recognition in COVID-19 times, discriminating intergroup association is prepared about additional nations' retort and managing the outburst which place the nationalized groups in a constructive radiance as obvious in the container of the United States of America. Recognition of Indians by means of the clarion call of banging tackled by our honorable Prime Minister on 22 March 2020 to exhibit support for vanguard fitness personnel skirmish the virus is apparent and Indians knock pots and pans to hold up fight had positive crash on their philosophy of themselves, artistic pursuits, friendships and education activities [17].

Existing COVID 19 virulent disease circumstances within India exposed that quality of life is considerably biased by a person and the factors associated like personal identity and COVID-19 pandemic anxiety over and above demographics. Additionally, societal or group individuality were impact quality of life considerably over and beyond individual variables [18].

3. Associations of COVID-19 and mental health

Literature review and media report give information on community suggestion and responses. Principally, how an assortment of entrenched socio cultural factors determining the individuals' rejoinders are fetched to the forefront. In the context of SARS, researcher indicated that the trepidation resulted from the unidentified grounds of the illness and a likely fatal upshot. The novel corona virus has comparable implication because the country getting besieged in this disaster and the common people is showing immense symptom of anguish [19].

During the current circumstances of countrywide lockdown, repeated communal media reports on COVID-19 is the reason of extensive over-whelmed activities along with the common public. The information channels are filled up of negative incidents and individual sufferings especially medical personnel, clients, suspect and quarantined people who are in front of disgrace and inequity by the societies. At present, information about the virus is amplified from every resource. Throughout day, people are be reminiscent concerning the virus through reports, gossips and announcement through Television, and Instagram, Facebook updates etc. The opinion and worries could be irresistible and all-consuming. Research studies calculate approximately the occurrence of psychological ills and inspect persons involvement with social media experience demonstrated a constructive association flanked by the two [20].

There has been intelligence of an abrupt rush in familial brutality and child cruelty occurrence in during lock down in India. In COVID 19 lockdown, various places in India have been numeral stressor which covers anguish among inhabitants, for example, quarantine, cuts in daily wages, redundancy, vagueness, insecurity, uncertainty, trepidation, brutality, abuse etc. Whereas quarantine is an essential precautionary gauge to restrain the stretch of infectious disease, countless researches have reported a pessimistic psychosomatic outcome of quarantine on persons. Imprisonment at home is not a lucky thing for several, particularly persons

who boast in violent relations. The lockdown has goaded the state of affairs for fatalities of conjugal and marital brutality [21].

National Commission of women reported that 214 grievances were conventional out of which 58 are of marital violence during last week of March 2020. The swell in cases as well as complaints has been accredited to offender due to restrained in home with no rebuff to their annoyance or aggravation and the defenselessness of the wounded to split their misery or pass through to their friends or families due to quarantine. During lockdown period, Indian government 'Childline' helpline has acknowledged about 90,000 grief complaints on cruelty and brutality applying for safety, this stage was extended incarceration for children restricted with their offender at residence [22].

Repeated concerns are uttered owed to the extended lockdown circumstances which have resulted in a record financial disaster so as to have counted families. The CMIC (Center for Monitoring Indian Economy reported that redundancy pace in India may perhaps have scaled to above 20 per cent because the financial crisis due to thrashing of employment after an all over the country wide lockdown which is initiated in the last week of March 2020. There are plentiful of investigation in the journalism on pessimistic possessions of redundancy on psychological wellbeing. The unexpected impose of the lockdown noticeably affect the deprived and susceptible individuals in many ways [23]. Due to profound trepidation associated to jobless and malnourishment between refugee employees in the private sector, there has been a gathering from urban and rural for evacuation to native places. The rapid and explosive in nature of sequence of COVID-19 on universal financial system is firm to clutch, However, numerous specialist express a trepidation associated to subsequent financial downturn. Various researchers found that redundancy influence person mental health. Unemployment is inclined to craft people more psychologically unstable. There has been an enormous covenant of research on the subject since 1930 [24].

An additional budding characteristic which unfavorably affect the public is the disgrace which is emotionally involved to the ailment. The WHO accounts that COVID-19, being a novel disease, is bounce to root bewilderment, disquiet and trepidation between public. These features are capable to increase damaging stereotypes. Owing to allied disgrace populace can be obligated to conceal the ailment due to fright of bigotry, avoid populace from looking for health care at once and might dishearten them from commencing to adopt healthy behaviors [25]. Humiliation has hardnosed associated with infected persons, family and still healthcare workers were also disgraced. The newspapers reports stated that medical personal brutally assaulted due to the disgrace and impact of corona virus ailment may be deep and there are proposition that commit suicide numbers will increase [26].

There is information hammering in as of all media in relation to the concern and stressors crop up owing to COVID 19 which are foundation to psychosocial pressure between individuals, family and community which might be a fundamental reason intended for mental illness [27]. The signs and symptoms have commence to appear, it might be fleeting or permanent, at this instance it might exist tough to forecast the outcome and requires a systematic investigation to understand the corona virus.

Subsequent to a nationwide lockdown proclaimed on last week of March 2020, contained by five days Kerala have recorded with eight cases of suicide by persons, who botched to hack it with alcohol abandonment. It is indicated that consumption of alcohol termination after the periods of very serious consumption of alcohol might precipitate the alcohol withdrawal disorder. The sternness and prototype of physical and psychological disturbance were diverse from individual to individual; it can be explained as self-harm [28].

The news information which interrogates psychiatrist of foremost major hospitals in New Delhi elucidate that depressive patients have ongoing irritability of apprehension related to panic of COVID-19. Most number of patients uttered the fright of constricting the contamination, whereas some patient's uttered vagueness connected to losing the employment or household problems. The specialist uttered anxiety over increasing level of dissonance and discords in the household environment due to lockdown, deficit in social connectivity for patients and withdrawal symptoms for alcohol and substance abuse who are familiarized and reliant. The consequences of research poll depicted that almost 45 percent of the adults in India reported that because of frequent stress and sufferings over the corona virus pandemic and death rate, their mental health have been adversely affected. The circumstances are probable to get grimmer as the pandemic wears on [29, 30].

4. Indian economy during COVID 19

During the declaration of 21 days national lockdown, Prime Minister Narendra Modi stated that this lockdown will have pessimistic financial collision and we boast to disburse the penalty intended for it. The All India Association of Industries (AIAI) predictable defeat for Indian financial system schedule to be $640 million with intensification schedule to be between 5 and 5.6% till 2022. Subsequent to the first lockdown contained for 7 days the electrical energy stipulate abridged to 30%, transfer in harbor reduced 5%, Petrol and Diesel requirement tapering with 70%, and rail bustle be under 36% compare with 2019. The redundancy amplified to 19% following a month of lockdown and on the whole redundancy was 26% in India on 24th April. Therefore, the lockdown has a chaos crash on small, medium, and large venture of the nation that guide to unemployment and financial slump circumstance [31].

For food delivery there are only two alternatives at the time of home confinement and lockdown. Swiggy and Zomato, were the food delivery agents but the pandemic made them to lay off the workers. Ultimately the fewer number of workers have to deliver the food across 300 cities and they knob for a day over a million deliveries. Indian tourism division also projected 70% unemployment during pandemic. Similarly, India have an financial system wherever a hefty division of citizens depends on the everyday salary e.g. auto drivers, wood workers, delivery boys and girls, domestic manual worker, crumb or waste collector, Electrician, construct worker, fruit and vegetable vendor, and servants. Uninformed about cease of COVID-19 and constrained lockdown scenario, recurring to its pre-lockdown juncture will take time. The tourism and airlines industry are predicted to affect growth significantly in 2020 and Gross Domestic Product growth is predictable to turn down ~2.5% from 5.3% in 2022 [32].

5. Indian life style during COVID-19

Existence in India comprises rural and urban and people together acquired affected by COVID-19. The ailment during spread was formerly epicenter in every main metro as well as wealth municipality of Indian states. Nevertheless, equally inhabitants as of rural and urban sectors countenance genuine disturbed circumstances. COVID-19 has twisted a pessimistic crash on life of every individual. Primarily to broken down the speed of spread and affected cases with COVID- 19 there are broadcast on locked down measures. In India initially from last week of March, 1300 million people were under monitoring in lockdown condition [33, 34].

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Social isolation, recommended in India, is hard to chase for the metropolitan underprivileged people who continue to exist in slums or overcrowded and petite seats. Mumbai municipality also branded as the industry city of India is famous for its more number of slums. It is predictable that 0.009 billion individuals survive in Mumbai slums and their houses are moderately 10 ft. by 10 ft. and beneath such states of affairs comply with social isolation is an uncertain matter. In revisit, statistics showed that highest number of COVID positive cases in Maharashtra and maximum number in Mumbai municipality [35].

Moreover, unexpected lockdown and its implementation on last week of March 2020, enforced millions of refugee employees on the way to experience a vague opportunity devoid of relations, foodstuff, and work. Normally, 0.05 billion populace migrate from one state to another state for work. Owing to lockdown, refugee employees were compulsory to shift out of their town and return to their residence in native places. Due to lack of transportation amenities, employees with infant, old age people and pregnant women were enforced for walking [36].

Supplementary commands for workplaces similar to employment from residence were recommended in India which is nevertheless appropriate merely for city in good socioeconomic status people and is demanding for the cultivation-based people. In addition, India yet deficient in computers amenities and the internet, and hence the plans implemented by the government like work from home is a dare. The Indian IT manufacturing with mainly call-centers was not prepared for work from home circumstances. However, a routers and portable hotspot dongles demand were pragmatic in India during the COVID-19 lockdown and work from home situation causing a modest increase up to the telecommunication. Therefore, India practiced the second largest challenge in its history following the separation of India in 1947 [37].

6. Education during COVID 19

The influence of educations on the quality of life framework looked at seven broad life domains:

1. Achieving in life,
2. Standard of living,
3. Emotional well-being/resiliency,
4. Physical health,
5. Society,
6. Intimate relationships,
7. Personal safety.

The domain that enhances the quality of life is not an island; each factor exists jointly with the others [38]. Consequently, the possessions of educational accomplishment on quality of life are multidimensional and often mutual. In elucidation of this, we believe it constructive at this point to give some contemplation to the dynamic nature of the association between education and quality of life. This COVID 19 disaster has uncovered the plentiful meagerness and injustice in our

edification scheme – commencing right of entry to the broadband and computers required and used for online education, and the accommodating surroundings desired to spotlight on education, up to the misalignment between capital and requirements. Paralleling, the tutoring scheme, and the institute are also at present detained due to COVID-19 in India.

The lockdowns in answer to COVID-19 boast episodic old-fashioned education with countrywide schools shutting down in India [39]. Even though the didactic community has prepared strenuous pains to preserve education permanence throughout this epoch, students of primary schools boast had to rely further on personal assets to persist education remotely through the Internet, television, or radio. The enlightening institutions were clogged which slowed down the general teaching-learning process and the education structure confided that there are no online systems among rural school children of India. In rural India, there is a disparity of financial circumstances which leads to a lack of computer systems and android mobile amid the entire student. On the other hand, ease of access of 3G and 4G networks, Cell phones in the city areas, resulted in online classes for students, whereas in rural areas hang down of teaching and learning [40].

Teachers were forced to become accustomed to educational perception and the approach of the liberation of education, for executing the task there is no need for training. Scrupulous, beginner in the most marginalized assembly, those who have failed to have admittance to digital erudition capital or be deficient in the pliability and rendezvous to become skilled at own, are at risk of falling behind. The collision on educational veracity has been experiential around the world. A mount in agreement deceitful plus scholastic file-sharing and examination deceitful be recognized as on the whole problematic. Owing to the actuality that education is habitually distant ever since the setup of COVID-19 in March, deceitfulness has turned out to be far easier for students. There is no penitence from students because attitudes have shifted away from prioritizing edification over other stuff [41]. Loads of institutions twisted to commercial services to take over exam proctoring, but roughly immediately apprehension was shifted up concerning student solitude, inspection, and the collapse of student mental health. The deficiency in learner and educator communication has resulted in learners experiencing fewer adoring concerning the veracity of theirs exertion. These foliage students to twist in fragmentary homework obtain the response from their associates in section because education has become less important due to COVID-19.

7. Healthcare during COVID 19

Healthcare amenities face grave occasion in India. In Usual situation accessible beds ratio for rural people were 3.2 per 10,000 and 11.9 per 10,000 for urban which had to enhance to provide bed for COVID 19 clients, several disturbance and inconsistency were noted experiential for other disease intervention. Small complexity happened for children vaccination program and disturbance of renal dialysis, radiotherapy for adults. Tuberculosis (TB) acquire the uppermost level of encumber in India which commonly occur owing to undernourishment as a result of destitution. Lockdown have a huge escalating collision on the TB cases were susceptible to COVID-19 disease. Nonetheless, to supervise the COVID-19 cases, college, restaurants, coaches in the train, were transformed into quarantine amenities while sports ground were distorted into isolation wards. Segregation, dread, indecision, financial chaos is a few reason to a great extent cause mental anguish among humans due to COVID-19 [42].

In India destitution, malnourishment, appetite is yet to a subject with the intention to shoot up due to COVID-19. Group redundancy is probable to generate

annoyance and force citizens to chronic hassle, fretfulness, sadness, alcohol reliance. In the 2008 financial crisis, 10,000 "economic suicides" victims were accounted in the western and European countries owing to the economic crisis. On behalf of a nation with more number of poverty, starvation and person with depression and nervousness, India reported higher suicides. Allegedly on 12th Feb 2020, a 50 year gentle man recognized with a viral infirmity have a steady trepidation of receiving contaminated by COVID-19 and that made him to consign suicide [43, 44]. Additional, suicide victims were recorded for the motive of proscription alcohol throughout the lockdown phase. Additionally, resting at residence throughout the lockdown, create poor physical activity and harmful food practice which leads to obesity, diabetes mellitus and prone to develop cardiac disease.

8. Conclusion

In this chapter we have discussed about India preparedness to contract with an rising number of COVID positive clients, managing with the existing state of affairs such as unfavorable possessions on the financial system, humanity, and atmosphere during the COVID-19 lockdown epoch all along with a choice of approach embark on to conquer this pandemic. The pandemic of COVID-19 has complete obvious impact on the authority of age, gender, education, and income and repression sector scheduled on the quality of people's life. Individual factor, especially, apprehension about the disease and individual uniqueness furthermore crash Quality of Life. In a similarly group-based or social recognition of persons, predominantly their relations and the ignition have affected their life's quality.

Captivatingly, fretfulness, professed receptiveness and sternness of COVID-19, down by means of individual distinctiveness and optimistic bias will predict Quality of Life. Finally, the big question in Indian context is whether the COVID-19 or hunger that kill the people? As the pandemic is ongoing, it is mandatory government agencies and healthcare personal to recognize the necessity to safeguard the quality of people's life. Moreover, precaution and vaccination will help to overcome COVID 19 challenges.

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Chapter 41

COVID 19 and Myriad of Psychological Problems in Indian Context

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Abstract

Corona Virus 2019 (COVID 19) is impacting every family financially as well as emotionally. There is a panic situation existed throughout the world. Due to the presence of Novel Corona Virus, there are innumerous defects and changes existed in everybody's routine activities of daily living and other recreational tasks. As the pandemic outbreak in India was on-going, the Government of India took stringent measures to limit the cases by far in that stage only, by initiating a major lockdown pan-India and also by shifting the immigrants to the special quarantine facilities prepared by the Indian Military directly from the airports and seaports for a minimum of 14 days. The lives of people were drastically affected with lock-down and fear related to the disease's potential effects and transmission. The fear due to the contraction of COVID -19 is on the rise because of the death tolls and global spread. For low income country like India, financial crisis had troubled the lives of everybody. For older adults, there is a fear of death as well as fear of saving the lives of their loved one. Adapting to this new normal life is a real challenge for older adults in middle and low economic zone like India. Indian people are going through a myriad of psychological problems in adjusting to the current lifestyles and fear of the disease.

Keywords: Anxiety, Depression, Poor economy, Life impact, Indian context, new normal lifestyle

1. Introduction

The continuing pandemic COVID-19 (Coronavirus Disease 2019) has twist out to be a menace to mental wellbeing as preceding investigation mechanism exposed intense as well as extensive assortment of psychosocial crash on personality, community and international echelon throughout precedent eruption of contagious ailment. Throughout preceding spate, the psychosomatic crash on non-infected community exposed momentous psychiatric morbidities, pessimistic emotion, and unfortunate psychosocial and coping response in the direction of the occurrence of infectious diseases and unswerving fret concerning contracting the Virus. At present, there is a scarcity of information on the psychosomatic crash of the general public, confirmed and suspected cases, medical staff and law enforcement agents during the flare-up of COVID-19 pandemic, particularly in the background of mental health crash. This has turn out to be still more pertinently prearranged with

indecision and impulsiveness rotating roughly through the outbreak of coronavirus pandemic of such supreme extent and strength [1].

The research finding showed that in 2017, the prevalence rate of psychiatric illness is 1 in 7 individuals, the severity of illness from mild range to severe range. The relative involvement of psychiatric illness to the whole illness encumber in India approximately twice from 1990 to 2017. Amid Psychiatric illness, that obvious mainly throughout middle age, the maximum illness encumber in India was rooted in dejection and nervousness, followed by schizophrenia and Manic Depressive turmoil. Amid the psychological illness that comprises their commencement mainly throughout the early days and teenage years [2].

The high occurrence of dejection and nervousness turmoil in south India might be connected to the high echelon of refurbishment and urban sprawl in south India and to numerous causes that are not so far well unstated. Researchers identified a linear, but unassuming, association amid dejection and self-murder in south India, with self-murder number also being more in south India than in north India. This association has also been accounted for in preceding findings. It is also significant to a reminder that the higher occurrence of dejection amongst elder people has considerable insinuation since the populace in India is aged speedily [3].

Gender discrepancy was pragmatic in the sharing of psychological illness in India. The experiential high occurrence of dejection and nervousness turmoil in women than in men has also been accounted before, which might be connected to sex prejudice, brutality, sexual cruelty, antenatal and postnatal stress, and unfavorable socio-cultural norms. Distinguishing the significance of psychiatric illness in tumbling the whole illness encumber, India commenced its primary nationwide psychological wellbeing strategy in 2014 and a modified Mental Healthcare Act in 2017, amid the objectives of given that impartial, reasonably priced, and worldwide admittance to psychological wellbeing. India has a national system in which wellbeing be mainly a liability of the federation. The socio-cultural and demographic assortment crossways the parts of India requires that the strategies and interference have the encumber of psychological turmoil live healthy suitable to confined circumstance [4].

plot theory, spurious allege, propaganda plus disinformation (primarily call out corona virus as indestructible, inexorable, and invincible) are merely aggravating the mental self-possession of common public. a lot of the research works associated to the COVID-19 outbreak spotlight on recognizing the epidemiology, scientific characteristics, genomic description of the disease, systematic features, data on technique of transmit and its itinerary, reservoir, incubation epoch, warning sign and quantifiable outcomes, counting survival and death rates; neutralizing the multiplication of the virus; and supervision of universal health ascendancy [5].

The persuasive crisis is craft for the wide-ranging research work on psychosomatic health and psychological well-being of the society in the countenance of COVID-19.At present there was a pragmatic neuropsychiatric relationship connecting severe acute respiratory syndrome and psychological health tribulations by means of ruthless psychiatric co-morbidities like melancholy, dread attacks, nervousness attacks, psychomotor exhilaration, suicidal deaths, hallucination and psychotic indication [6].

Also the lives exaggerated via COVID-19 are at further stake due to the perpetuated potential adverse effects. For instance, during travel restrictions and postponement and cancelation of religious, sports, cultural and entertainment events, people in quarantine may experience anger, loneliness, boredom and anxiety, and symptoms of cough, fervor, myalgia and exhaustion may grounds emotional suffering and stance of fright of constricting COVID-19 [7].

Whereas scientists, clinicians, confined and global health organizations and establishment, epidemiologists and virologists are functioning on top of numerous

unreciprocated questions of this novel outbreak, general community, international media and opinion-makers are responding in the direction of this vagueness based on an inadequate deep-rooted/unverified knowledge. This has additionally elevated the ramification in the life of citizens in the rouse of COVID-19 and calls for the novel catalog of investigation on mental health. However, the collision of broadcast of viral infection on mental health has not been recognized within their entireties, which confront the patients and the universal inhabitants [8].

2. Mental health of general population

The ailment itself fashioned a sagacity of fright and nervousness in people's minds. Low levels of consciousness concerning the ailment, its shifting symptomatology and its novel temperament, cause additional apprehension amongst community; Particularly throughout the preliminary stages. Callers report understanding fret towards probable signs and symptoms of COVID-19 with themselves and their cherished ones. They had quite a few uncertainty associated to signs and symptoms of the virus spread, and deterrence trials to be undertaken. The media theater a momentous responsibility throughout emergencies as well as epidemics through communicating the populace connecting to the situation as well as maintaining them restructured on events in use through governments to enclose the increase of the virus spread. Investigation reports demonstrate with the intention of exposing that to a great deal of media revelation be able to turn detrimental to psychological health; with social media rising nervousness additionally than the customary media. Brawny lay down of emotion enthused up by the media, could guide populace to arbitrator jeopardy by these emotions relatively than truth along with facts. Individuals who encompass admission to audio-visual, digital and public media were bombard by capital of information, which recurrently commune ill-founded plus contrasting communication. Sturdy disclosure to astuteness of escalating numeral of thrashing of individual possessions and deaths, ostentatious people's psyches, generating an atmosphere of anxiety as well as threat. Persons were alarmed not simply relating to their personal safety, but as well of their loved ones [9].

Adequate as well as credible corporeal stipulation system be competent to slot in an momentous position in addressing as well as assuage a number of these apprehension faced by the broad-spectrum community. These comprise events such as hoisting responsiveness and given that steadfast information concerning menace in addition to possible health penalty of the disease as well as development of a pandemic, and deterrence as well as intrusion events; ensuring sufficiency of difficulty estimation as well as medical amenities; construction of obtainable health workers plus protection tools; endorsing stepladder to diminish the multiplication of the virus in the society and in health-care amenities; background of tele outreach programmes to tackle uncertainty and to present telehealth assembly; defend plus hold up health-care workers throughout a pandemic etc. nevertheless, throughout the COVID-19 deadly disease in India, the health organization did not execute satisfactorily to attend the pandemic efficiently along with instigate self-confidence in people [10].

The broad-spectrum community had throbbing, unsatisfactory and apprehension infuriating experiences of shortage of difficult amenities plus of believable physical condition services, late intelligence, as well as abandon at the hands of the physical condition scheme. They uttered their aggravation in excess be short of accessibility of beds and physical condition amenities. Some also protest concerning being taken advantage of medicinal amenities, test and hospital stay. The public

health system in India, is recognized to be riddle with quite a few inadequacies counting persons connected to deprived financing, shortage of available and inexpensive health care services, insufficient human resources and poor responsibility. The pandemic additionally loaded the stressed health system, ensuing in distraction of its capital to the conduct as well as avoidance of COVID-19, and in formation of typical health services unreachable to ordinary public. Changes such as mobility limitations and be short of haulage principal to compromise right of entry to healthcare, insufficient provisions of medicine, transfer to telemedicine and online practice, further supplementary to the dilemma of the individuals [11].

3. Standard of living

Owing to the lockdown and boundaries on mobility, citizens were enforced to hunt for support for sensible apprehension allied to provisions, medicines, haulage, health and indispensable services. They had numerous distress interrelated to source of revenue and employment. They report apprehension plus improbability concerning a real or probable job hammering, pay cut, awaiting bills, incapability to purchase food, incapability to disburse EMIs etc. The illness and consequent lockdown dislocate life plans that were in use for granted by many persons; particularly by student, employer, workers etc. [12].

The unexpected transformation inside school as well as university agenda and predominantly in examination schedule, fashioned a tremendous sagacity of indecision as well as fright amongst student. Persons who were scheduling for prospect vocation, have in the direction of revolutionization or relinquish their existence tactics. There were countless others who have intended imperative time proceedings such as wedding, job transport, exchange a new house, journey, surgeries etc.; all of which have to be considerably distorted. This fashioned an enormous intelligence of commotion and a thrashing of organize. Employees functioning in prearranged division reported encompass to fetch their office into their homes. Originally, 'employment from home' come into sight as a positive panorama, particularly to persons who survive in metro cities, as it provide the essential interval from extended travel in addition to frenzied employment hours. Workers come across at this as a break for augmented efficiency [12].

Nevertheless, as the lockdown get comprehensive, person's testimony shows conflicting understanding of low efficiency as well as lack of enthusiasm. They were on track belligerent concerning exhaustion caused by protracted television interface, be deficient in demarcation flanked by individual plus professional lives, shortage of human communications with contemporaries, long-lasting statement loops to acquire straightforward tasks done etc. individuals who well thought-out their specialized lives as vital to their distinctiveness, institute it mainly hard to recognize probable wounded, qualms and failure. Women were twice as exaggerated as they lost their own jobs and/or those of their partners who were the primary bread winners. Rival home as well as work burden expose women to additional risks of pay-cuts or lay-offs [11].

Journalism institute that citizens boast innumerable pessimistic emotions such as sensation of fretfulness, depressing, uninterested, feeling alone, a sense of loss and anguish, annoyance, aggravation etc. a lot of journals provided testimony over a feeling of numbness and a disengagement from everyday reality. a number of protest concerning the fright of trailing daily life skills during the lockdown. Regardless of the talk of the 'new normal', the realism of the usual linger lively and deceptive, parting a lot of sense of loss of control over their own lives. Citizens protest concerning their diminish internal and external cope possessions as the

lockdown got frequently comprehensive. The grown-up habits of coping with suffering, which were often associated by means of contribution in the exterior world were out-of-the-way due the lockdown. at the same time as some rapidly tailored to, and urbanized newer conduct of coping with the distorted realism, others struggled to do so. For some, this also guide to existentialist quizzical regarding the connotation of life and death [12].

4. Family dynamics

Murray Bowen's family systems theory is solitary of primary wide-ranging conjecture of family systems implementation which recommend with the intention of families endeavor to equilibrium two life forces—family togetherness plus personage autonomy- that one of the recognized basis of disagreement in cherished associations is be short of equilibrium flanked by togetherness and separateness [13]. This axis divergence reflects in the COVID 19 disaster that bounded issues of cherished associations, wicker about both ends: 'annoyance owing to obligatory togetherness' plus 'segregation owing to severance from the loved ones'. loads of persons had building the familiarity of exasperating and difficulty owing to trapped within the identical family amid their associates for months collectively devoid of an break out. a lot of them reported that the old disagreement and clash, which were allegedly obscured underneath the carpet tiles, re-emerged throughout the lockdown; a observable fact portrayed as the 'return of the repressed'. The customary domestic decisions approximately foodstuff, schedule, labor, expenses, behavior etc. become foundation designed for contestation. Citizens in addition provided testimony those newer activate for divergence contiguous to issues such as quarantine, preventive measures, testing, stepping out of the house, traveling or appealing guests at home. Individuals criticize that their former strategy of disagreement decree in intimate relationships, botched in these state of affairs, frequently parting them injure, annoyed as well as heartrending. at the same time as a few description enforced allocation and familiarity as a foundation of conflicts, others in addition reported that segregation as well as social distancing from associates and relations member, produced negative cost for their mental well-being [14].

The relationship disagreement be informed by persons crossways diverse age group in addition to numerous sort of affairs counting parent–child, cherished, conjugal, protracted, peer relationships etc. Indian families, frequently explain plus boast for collectivistic character, when enforced to hang about collectively for comprehensive periods, institute it tricky to steer from side to side this enforced togetherness. The lockdown dislocate each day beat of relations implementation, plus robbed populace of the much-needed interruption endowed by work, schools and outside life. The lockdown bring 'hierarchical and lopsided nature' of the relations systems in India, to the forefront. Adolescents and young people found it restricting and exasperating to be oversee by their parents as well as elders, in addition to be sermonized on top of issue pertaining to monitor occasion, digital reliance in addition to family responsibilities. Parents on the supplementary hand accomplish out in the direction to search for instructions used for maintenance of their offspring betrothed at dwelling, and for organization of resentment outbursts and conflict in their young people. Journalism demonstrate with the intention of the adaptable belongings of the pandemic encompass been exacerbate in favor of women and girls. Specified the customary gender role prospect of caregiving from women, and unavailability of residence help throughout the lockdown, women felt entirely unconfirmed by the relatives as they demeanor the family household tasks [15].

Women criticize concerning the exponential augment during amateur care employment by means of school shutting and sensitive concern requirements of family members on residence. They also uttered their aggravation and annoyance concerning the imbalanced and inequitable splitting up of manual labor at home. Literature also demonstrate with the intention of events such as societal hostility might encompass serious penalty for the mental health of the aged, parting numerous elderly in a circumstances of segregation and melancholy in addition it adds as a causative to a probable augment in elderly suicides throughout the pandemic in India [16].

Studies description proved that a number of older adults who were alienated on or after their kids and treasured ones need enviable sensible as well as emotional prop up. On the divergent, there were a few others, who were obligatory to survive with their family throughout the pandemic, in addition to that institute it complicated to acknowledge their amplified reliance on their younger children and the consequential demand is loss of sovereignty and modesty. Additionally, adult children of the old who play care-giving responsibility intended for their elder parents have agonized intended for the physical circumstance of the aged, and worn up in addition, fatigue due to the steady caregiving burden. a few in addition called for psychiatric referral to lecture deterioration of psychological illnesses in their elderly parents [17].

5. Susceptible segment of society and psychological impact

While COVID-19 pandemic is alleged and declared to be an equalizer in bringing out vulnerabilities during diverse stratum as well as segment of the public, it also prove to strengthen the previously obtainable structural disparity in the Indian society. The subsequent segment strongly looks at the psycho-social crash of COVID-19 pandemic on individuals who fit in to the susceptible segment of the society.

5.1 COVID patients and health workers

Journalism summit out to individual psychosomatic health vulnerabilities amongst persons who are quarantined and besides amongst the healthcare as well as frontline workers. People who be in quarantine at home and in health facilities, reported sense of dejection, disconnect, anxiety, and moreover occurrence of disgrace plus shock. Agreed their invariable experience to the health risk, countless testimony anxiety about death and anxiety about their individual health and also of their cherished ones. Disgrace is a chief communal determinant of physical condition that drive morbidity, transience, and physical condition disparities and has been portray by the World Health Organization as a 'hidden' burden of disease [18, 19].

Scandal flanking patients as well as health care donor all through COVID-19 pandemic, and its psychological wellbeing corollary are steadily being documented. The transmissible landscape of COVID-19 disease, all the length through restriction proceedings of lockdown plus subjugation, and discredit principally besieged at convinced communities, fashioned an ambiance of misgiving and qualms amongst Indian communities. Expressions like 'hotspot', 'COVID-suspects', criminalized and responsible persons who were the fatalities of the pandemic. Strategies such as get in touch with tracing and marking COVID-19 pretentious area by means of particular cipher, further supplementary to the disparity in management and disgrace was experienced by those who were contaminated with COVID-19. Relations member of patients too were objective of abhorrence and prejudice. Diminutive numeral

of call starting the healthcare provider and persons concerned in stipulation of indispensable services as well as vanguard workers, too, accounted disgrace faced by them, and the intimidation of human being dispossessed commencing from their households [20].

5.2 Migrant workers

Domestic migrants are between the majority vulnerable community in India, frequently facing numerous corporeal and psychological health challenges. Being an foreigner to the multitude metropolis plus civilization, already makes refugee a susceptible group of people. The pandemic and the succeeding lockdown lead to further escalation of vagueness and financial defenselessness amongst the migrant, as a lot of them misplaced their livelihood plus sources of revenue. The unforeseen lock down, emotionally involved through loss of earnings broken it complicated for migrant to persist to exist in the city. High commonness of COVID-19 cases, and the dread of astringent the disease itself, finely tuned their anxieties. The city became further and further unwelcoming, further growing a sagacity of fright and hostility amongst migrants; leading to worry to return to their homelands. be deficient in admission to information, shipping, revenue, accommodation, groceries, physical condition and indispensable amenities as well as protract system, worsen the dilemma of migrant in the metro cities. Male migrants statement being protected hooked on their miniature rented houses with their contemporaries, surfing on their mobiles for the complete daylight hours, plus perturbing for their esteemed ones who were back home. Conventional Masculinity script of being providers as well as bread winners frequently prohibited male migrants from sharing their vulnerabilities with the family members back home. Family member's flipside to home too were concerned concerning the protection of their migrant associations who lived in cities which were proliferation foundation of COVID-19 contagion as portrayed in the media. Some of the male migrant's employees uttered a sagacity of defenselessness and nervousness, while countless others uttered intense annoyance against the system. This also incorporated rage towards police force who demonstrate absolute indifference when were advance for help. Immigrant workers did not know what the opportunity detained for them as they felt unwelcomed by the city and cut off their families and communities back home [21].

5.3 Women survivors of violence and abuse

National charge for women in India, throughout the early phase of the lockdown itself, overtly recognized that the quantity of marital brutality gear in the nation had sustained to boost and amplified. Various pathway that augment women's jeopardy to brutality throughout the pandemic comprise augmented household stress, commotion of livelihoods, abridged admission to physical condition and indispensable services, proscribed admittance to money, disturbance of community as well as defensive networks and constrained bond by means of prescribed support services such as hotlines, catastrophe centers, shelter, permissible aid, and fortification as well as counseling services. They described exacerbation of brutality that stays alive before the pandemic. Separately from the daily violence experienced by girls and women within the family spaces, brutality throughout the pandemic implicit several newer expressions. Women's testimony document that men and other family members who be responsible for violence, assume newer 'fright tactics' that implicated mislead about the pandemic, furthermore generating a sagacity of dread for their individual lives or those of their dear ones. Brutality in addition take the outline of depriving women of possessions such as soap, sanitizers, mask that

were crucial in protecting them from the virus. Women were frequently the last ones to obtain health care and release services [22].

The financial disaster and thrashing of living unswervingly affected those women who were bread winners of the family, additionally mounting their financial reliance on the male members within the family. Women also experienced a tortuous crash of this financial disaster by fetching displaced target of the annoyance and aggravation experienced by their male members who misplaced their livelihoods. Attempts to emphasize their individual needs or to confer authority and responsibilities inside the household were often met with further brutality. Being trapped with perpetrators of brutality who had total admittance to their intelligence, labor as well as bodies, augmented women's susceptibility, furthermore provoked the broad disquiet and fright fashioned by the pandemic. Abandonment symptom practiced by their associates who could not contact substances, become excuse for the brutality fling at them. Inadequate potential of flee owing to mobility borders as well as lack of admittance to prop up structures; heightened women's sense of terror and helplessness. Given the patriarchal power over mobile and telephone devices, women had to find hushed and un-shriveled slots to call covid 19 helpline and share their stories. The police force and health systems, when contacted, were previously swamped with pandemic related responsibilities, and hence were less receptive [23].

5.4 Geriatric population

As component of a significant jeopardy group for COVID-19, the aged are presently being instructed to linger at residence and self-isolate. Nevertheless, it has been established that elder adults are at elevated jeopardy for fretfulness and hopelessness when put in situations of communal extrication. To individuals who do not encompass close relatives or acquaintances and to those only community contact is out of the home, these can be predominantly commencement times. Many persons within this assembly rely exclusively on group of people, places of adoration, charitable work and communal care, behavior which encompass been harshly reserved by the COVID-19 eruption. In addition, a lot of elderly persons encompass slighter admission and/or literacy to communal network, which prevent them from maintaining implicit association with others. Consequently, the mental and poignant collision is incredible. The social extrication causes and aggravates solitude, abandon, gloominess and apprehension, all of which can fabricate long-term fitness consequences. Furthermore, the background of this pandemic might augment suicide activities along with older adults. As an instance, subsequent to the SARS epidemic in 2003, suicide risks amongst elderly individuals were amplified by 30%. The loneliness in the aged has also been recommended to be escorted by biological modifications that construct this assemblage more susceptible to entrust suicide, which includes the altitude of inflammatory markers furthermore spreading out of peripheral blood mononuclear cells. Additionally, it has also been recommended that community disentanglement may deteriorate neurodegenerative disorders, such as Alzheimer's disease [24].

An supplementary subject of debate that additionally elucidate the poignant crash of the virulent disease amongst the aged is the experience of "ageism". In the early phase of the COVID-19 outburst, the ailment had been principally depicted as a sickness that affects approximately the older adults. At present, this stereotype has been confirmed flawed, as becoming old itself is not a dependable decisive factor to envisage the health impact of SARS-CoV-2 infection. Apart, although the systematic facts of such a declaration, the communal marginalization and separation of the aged persist throughout the population. Certainly, in

some countries, the plodding repose of the social estrangement recommendation does not seem to be relevant to the older adults, who are constantly advised to self-isolate. Additionally, there is a universal conviction that the security of this group should be forgo for the better goodness of society, chiefly in disadvantage to the economy. In this situation, the annoyance of the intergenerational nervousness can be experiential in social media content. As an illustration, the odious hash tag #boomer remover come into view in over 4,000 posts in Twitter in a 10-day epoch subsequent to the pandemic declaration of WHO in March. In this frame, there is a caustic augment in the psychological health load of senior citizens, which must be urgently addressed [25].

5.5 Children

Children, particularly the little ones, are also in a spot of susceptibility throughout the pandemic. This come to pass because, at home, they go through with inadequate communal association, vital for uniqueness and comfort at young ages, abridged physical activity, aloneness and tedium, which might upshot in long-term special effects. Certainly, the mental and physical health, as well as output in adult life, is intensely entrenched in the childhood years. Information from preceding epidemic display that brood those skilled segregation events be five times more prone to stipulate mental health services plus additionally disposed to the occurrence of PTSD [26].

It has also been established that children who are away from school be inclined to encompass longer screen times, asymmetrical slumber patterns as well as less constructive diets, which can be remarkably damaging in longer era of instance such as the yet unidentified period of this deadly disease. In addition, the financial slump, the restricting events and the general family pressure could be accompany by an boost in household brutality and child mistreatment, situation that crash the psychological health of children. Young people with preceding psychological disorders necessitate meticulous notice because disturbance of school schedule can turn down their mental health status. Furthermore, the existing events comprise additional provoked extension of remote work, while schools and daycare center have to break off their behavior. In this scenery, family and work environment enclose fused and decreased presentation can be seen in both field, as stress intensifies [27].

Subsequent to the estrangement events, social media has turn out to be a momentous reserve to uphold social communication. Although its exploit might ease a number of the psychological health impact of the isolation, it is necessary to examine its unconstructive crash in children plus adolescent. First, overwhelming haphazard information concerning the pandemic might activate pressure, nervousness, fright as well as despair. This consequence is still more powerful in younger persons with the intention of not boasting the judgment to sift information. Second, the extreme employ of the Internet might create an addiction, compromising the development of a healthier routine during the pandemic, which is also self-possessed by learning, spare time, and work out behavior. Third, digital society network be extremely based in the implicit edifice of a self-image and visibility, which, particularly for the youngest, might arbitrate self-esteem throughout the detection of community endorsement. Concurrently, social media can be an aggressive position. As an upshot, its extreme exploit might donate to self-harm proceedings throughout implicit dispute, in which the contributor has coursework associated to self-mutilation and even suicide that should be filmed as well as posted. The online chase for the term "challenges online" has amplified since the accomplishment of the restricting events. Eventually, eminent Internet use is connected by resources of behavioral dilemma such as neglecting fragile life, affiliation disorder, mood dysfunction and

slumber turmoil, as well as augmented apprehension and melancholy levels during the pandemic [28].

5.6 Mental illness patients

In psychiatric patients, the COVID-19 pandemic valor triggers an even inferior conclusion relating to mental health. As formerly discussed, the indecision, dread and community estrangement might aggravate pre-existing psychiatric diseases as well as impetuous its symptomatology. Additional to their advanced susceptibility to numerous stressors, they countenance deteriorate checkup and follow-up owing to the postponement of several discretionary schedule as well as redirection of physical condition specialized to countenance the pandemic. Additionally, they be inclined to encompass additional harsh form of COVID-19 owing to co morbidities, immunosuppressant and, perhaps, most horrible right of entry to checkup concern because of discrimination [29].

5.6.1 Depression

When carry out numerous balance to review the emotional collision of COVID-19 pandemic in China on 76 patients with major depressive disorder, anxiety disorders and mixed anxiety and depressive disorder patients and 109 healthy controls, the patients group have most horrible outcome on approximately all variables addressing gloominess, nervousness, pressure and sleeplessness. As for additional psychiatric symptom referred throughout the study, the patient's collection had additional doubts concerning their physical health, additional reasonable to harsh annoyance and impulsivity and more suicidal ideation. Nonetheless, it is significant to talk about that the control group was evaluate concurrently to the patients group. Control group was self-possessed of individuals devoid of psychiatric disorders that were evaluated before COVID-19 pandemic. For this motivation, consequences of the study can be contestable [30].

Furthermore, patients with widespread nervousness have augmented health anxiety. As a consequence, they are further prone to mystify typical outlook with COVID-19 symptoms, generate constant nervousness and anguish.

5.6.2 Agony

It is our character to employ evasion and refutation, frequently instinctively, to defend ourselves from the further stressful fraction of our life, counting indecision and possess death. Instead of tolerant the predictability of demise, and the indecision of quotidian livelihood, the majority populace is inclined to survive according to a misapprehension of conviction, persuasive himself they be able to calculate on the influx of future. We can regularly bear a shorter epoch of uncertainty for one to seven days. Commonly talking although, we do not perform good as inquired to suffer longer epoch of oblivion. During last year, Corona Virus 19 has been jabbing at the poignant security system numerous populace depend on to generate a sagacity of solidity [31].

Several of the schedule, associations, and chairs populace rely on to wait beached encompass been absent from their life. There has not been a lot of conviction to secure us, and we greatly favor sense anchored. The deadly disease has gone several populace emotions expressively unprotected, sensitively bare. Continuous coverage to frequently deprive of cruel authenticities has unlocked the gate to approach of susceptibility that is flattering fairly heavy to tolerate. Indecision with rejection clear finish insight has formed prevalent despair. A persistent sagacity of agony has resolved in.

5.6.3 Obsessive–compulsive disorder

Numerous patients with obsessive–compulsive disorder (OCD) exceptionally are anxious concerning having an ailment or contaminating others. Throughout this world fitness crisis, these feelings may strengthen. Also, a number of signs and symptoms of OCD are very comparable to significant precautionary events for COVID-19, such as obsessive hand wash and avoiding substantial contact. Consequently, this extends beyond grounds difficulty for physician to make an analysis and profligacy new possessions of OCD. At last, the stressors associated with the virus outbreak valor augment the quantity of new OCD patients, particularly amongst those "at risk" [32].

5.6.4 Schizophrenia

In psychiatric patients, extreme concentration to media or community networks might impetuous a sensitive stage of the ailment or modify its demonstration. For instance, a 43-year old German patient with schizophrenia has delusion as well as hallucination connected to the pandemic. He supposed he constricted the illness in the course of a WhatsApp video commencing from COVID-19 patients in China and on track encompass auditory hallucination, fretfulness and disheartening hilarity. Therefore, equilibrated announcement, based on systematic specifics, is important to diminish this probable damage [33].

Additionally, schizophrenic patients be less likely to immunize, hold fast to social distancing, wash down their hands as well as employ mask throughout virus pandemic. This actuality is in addition proper for patients by means of other psychiatric conditions, such as obsession. Consequently, they are a susceptible crowd for astringent COVID-19, particularly if their mental health is not as good as usual.

5.7 Hospitalized patients

Anxiety experience throughout COVID-19 pandemic is almost positively flush elevated for psychiatric patients hospitalized for illness. In India, these patients have to hang about in congested ward devoid of relations visits or electronic gear. These circumstances exacerbate their suffering plus psychological symptomatology. Furthermore, the patients in these amenities be inclined to create collection behavior, split dining and lavatory chairs, interrelate intimately plus put into practice less defensive events because of their mental state [34].

6. Conclusion

Though crash of this pandemic on universal psychosomatic health is not yet registered as well as deliberate, comparable in sequence of information as of previous research mechanism might present an clarification and imminent. Early as well as shrewd psychiatric intercession ought to be delivered by psychosomatic health practitioners to administer by the way of the eruption of high-mortality communicable diseases. The obtainable pandemic COVID-19 is the root for devastating psychosocial physical circumstance alarm such as disquiet, distress, fright, nervousness, depressive symptoms, sleep disturbances, rebuff, rage, dissatisfaction and distrust in the general public. For medical staff, these psycho-logical evils are connected to concentration as well as executive capacities which could impede the brawl against COVID-19. The incident of psychosomatic problems in the universal inhabitants has been ranging from 4–41% of posttraumatic symptoms and 7% of

depressive symptoms. Throughout any group of people crisis, citizens look for out event-related information to attain the illusion of control to give off the dread of the unidentified which escort to higher fretfulness, and in the case of deceptive propaganda as well as disinformation on social media, indistinct insight of jeopardy, tremendous fear of unidentified/indecision and community dread may lead to stigmatization, marginalization and scapegoat. And even though studies on COVID-19 are insufficient, several authors encompass envisage the probable repercussion on psychosomatic and physiological health not only on the vulnerable other than also on the general population. Psychological interference as well as psychosocial hold up would recover the communal mental health throughout the outburst of pandemic COVID-19.

Considerable substantiation as of the precedent studies of epidemics on the crash of psychosomatic wellbeing has exposed psychosocial penalty in the overstated persons and in the general population. The promising international psychological health issues relative to COVID-19 pandemic may progress into abiding health problems permeated during feelings of susceptibility, segregation/quarantine, dread, apprehension, psychosomatic distress, psychosocial stressors, posttraumatic symptoms, disgrace and xenophobia. It is fundamental to stress the psychological health and well-being of the inhabitants through upbeat psychological intervention throughout the COVID-19 pandemic.

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Chapter 42

Pleasant Activities among Young Adults and Their Lack during the COVID-19 Pandemic

Janka Peráčková and Pavol Peráček

Abstract

The pandemic COVID-19 burst in the Slovak Republic in March of the 2020 year. Subsequently, the schools were closed on the 10th of March and the everyday life in the country was for a long uncertain time questionable. The curfew slowed down the outdoor activities and has brought sudden changes also in the lives of young active people. This can be a time of uncertainty, and the stress. To do some pleasant activities can act as a stress reliever, but in the pandemic time not all pleasant activities can be realized. We were interested in lack of doing pleasant activities during the pandemic COVID-19 time. We analyzed 195 different activities in life of young mostly sporting people, whether a given activity is popular and pleasant for individuals, the occurrence and frequency of activity implementation before pandemic, during pandemic and feelings the lack of this activity during pandemic. We found out the most pleasant activity for men – non-organized, spontaneous sporting activity and for women – laughing. We recorded statistically significant decline t (14.856) = 48, p < .001 in frequency of doing pleasant activities in comparison before and during COVID-19. The most missing activity was inviting friends' visits.

Keywords: enjoyability, popularity of activities, frequency before COVID-19, frequency during COVID-19, feelings of lack

1. Introduction

1.1 The COVID-19 pandemic and the change of standard

The outbreak of COVID-19 pandemic re-organized daily schedule of being and brought new requirements on adapting to new condition's existence in a day-by-day life. COVID-19 pandemics brought changes in human lives and the impact of heavy pressure on mental perceptions of these changed conditions. Changes, to what they used to live, can bring the feelings of uncertainty, anxiety, and fear. Any change brings stress. The rapid changes without any preparation for the new circumstances influenced lifestyle, behavior at work (home office), and in common life in the family (home office and child's distance education at home).

People isolation due to the COVID-19 pandemic lockdowns is nothing exceptional in many European countries during the period of March 2020 and April 2021. But is exceptional for humans, who are the race of social life. During the pandemic COVID-19 isolation brings the symptom of being bored even if a man engages in the

things that usually used to like. COVID-19 and mental health is a link that has recently taken up many pages in scientific journals. Loss of standard life, loss of common activities, which were used to do during the day, during the month causes some problems to someone that can result in worsening mental health or mood disorders. The fear and doubt of the unknown and at the same time very dangerous does not help with mental health. When people can live with some fun and have a pleasant time it overshadows the worries, stress, fear, anxiety, inconclusiveness, and hopelessness that lie heavy on the mind. A human can feel well and satisfied when he/she makes activities, which are pleasurable for him/her. Not all activities are pleasant for all. There are activities pleasant for somebody, which are not so pleasant for any other person. A person lives his/her life with the activities that form a mosaic of wanted and also unwanted situations. If they are pleasant for a person, his/her life is peaceful and mostly satisfying. But there are unwanted situations that evoke uncomfortable feelings in a person. The COVID-19 pandemic is an unwanted situation with the unexpected prediction and till this time with 3,477,917 deaths worldwide (24th of May 2021). It brings fear, dissatisfaction with the emerging changes in everyday life, which is reflected in people's quality of life. The life at this time of COVID-19 is burdensome. Persistently and severely decreased interest or pleasure in most daily activities is defined as anhedonia [1, 2]. Authors widen the definition to knowledge that it can be decrement of pleasurable activities, or even loss of interest to action in order to get pleasure. The powerful motivational process of doing something or being captivated by an object and can feel enjoyable feelings, which are worth to stay with this activity and the object, and may have the value of further involvement in or further exploration is named interest [3]. Interest increases attention and engagement. In Levinas philosophy [4] he "enjoy thing for themselves and not for any purpose, practical or intellectual. This enjoyment is the very basis of the happiness." And Levinas continued thinking about enjoyment by [5]: "In enjoyment I am absolutely for myself. Egoist without reference to the other, I am alone without solitude". And by [6] some idea of Levinas that before any reflection, any return upon oneself enjoyment is an enjoying of enjoyment, and "enjoyment is an ineluctable moment of sensitivity".

The research of [7] examined the relationship between engaging in pleasant activities and mood as a function of age, sex, and diagnostic group. Results indicate that a substantial and significant relationship existed between mood level and the number of pleasant activities engaged in for all groups. Online survey of [8] and its results found out that burden by COVID-19 was significantly positively associated with depression symptoms, while it was significantly negatively linked to physical activity. Similar result patterns were found in all country-specific samples Germany, Italy, Russia, Spain, and the present cross-national findings emphasize the protective effect of physical activity specifically in times of Covid-19. Gender differences were found in a Canadian study of [9]. Women were significantly less physically active than men. Women who engaged in more physical activity had improved mental health scores. Less physical activity due to COVID-19 reported significantly lower mental health scores, lower social and emotional and psychological well-being, and significantly higher generalized anxiety. Physical disability was in the study of [10] associated with greater depressive symptoms and lower positive affect and meaning in life through reduced frequency of pleasant activities. The extent of performing the meaningful activities during COVID-19 lockdown in Belgium was positively related to adults' mental health [11].

Also, some kind of indication in mental health like depressive symptoms [12] in residents of the United States and Japan, depression, functionality, and sociodemographic variables [13] studied in Brazil, possible increase in mental health illnesses in the United States as a consequence of the pandemic [14], loss of meaningful

activities was strongly related to mental health [11]. The exercise as a coping strategy in the challenges of distancing during pandemic and social isolation did not bring the differences between those individuals who exercised and those who did not [4].

Pleasant activities as a part of human beings in a leisure time are the opposite activities to work, to duties. Opposite to work is a game. But [15] said that the game can be work for someone and fun for others. The game is not just a matter of leisure time, or even pastime, because from childhood, through youth to old age, the game permeates human life as a basic existential phenomenon [16]. The play is considered a human activity, but also a certain manifestation of behavior, which brings satisfaction and pleasure directly and facilitates the condition for survival [17].

When the unusual time occurs, some psychic difficulties occur too. Difficulties with sleep are either sleeping far less than is used to and in this manner being exhausted or far more, but being not enough rested, what can lead also to persistent exhaustion. Being exhausted causes negative mood, loss of pleasure and sadness. Loss of pleasure in the living own life can cause loss of sleep and can cause negative mood and loss of interest of doing any activities. The guidelines for sleep for adolescent and young people should be between eight and ten hours. Sleep is essential for recovery. Sleep is important for both, men and women, athletes, non-athletes, young and adults. The study of [18] explored the positive association of frequency of engagement in pleasant events and global sleep quality.

2. Methods

2.1 Study design and data collection

The objective of this study was to widen the knowledge about gender differences in the popularity of pleasant activities, their changes in frequency during COVID-19 compared to standard life before COVID-19, and the feelings of lack of these activities. The additional objective was to find out the general health and self-esteem of the persons from the sample.

We found out in the anamnestic data the gender, age, body height, body weight, Body Mass Index (BMI), waist circumference, hip circumference, Waist to Hip ratio (WHR), sporting activity – regularly organized, regularly recreational non-organized, non-regularly recreational, non-active in sporting activity, feelings of health, change the body weight during COVID-19 – no change or change (gain the weight in kg, lose the weight in kg).

In our study, we were interested about the enjoyability, popularity of selected pleasant activities, their frequency of doing before COVID-19, frequency of doing during COVID-19 and feelings of lack of these activities in young mostly sporting adults.

2.1.1 Participants

wAlmost all of total of 112 university students (men and women) were recruited from the Comenius University in Bratislava, the Faculty of Physical Education and Sport. There were 63 men (56.3%) and 49 women (43.8%). All students were from the Master study grade of the faculty and are being trained as future physical education teachers with the subsequential subject (e.g., Biology, English language and literature, Geography) or sport coach and physical education teacher. Mean age of the sample was 24.46 (SD = 2.63), minimum age 21 years and maximum 40 years, mean age of men was 24.97 (SD = 3.08), mean age of women was 23.82 (SD = 1.80).

All the participants men and women were involved in sporting activity. Mostly regularly, with the frequency at least twice in a week, in a weekly extent minimum

of two hours (120 minutes). Within these criteria some of them exercised or played sports organized in a kind of organization (51.79%). Their sports age (number of years doing or playing sports in the sports organizations) were 13.48 (SD = 5.0) years in men, and 11.58 (SD = 4.88) years in women. They, who were not organized in any sports organization, exercised or played sports recreationally, spontaneously individual or with someone's else (62.50%). More of them exercised or played sports organized, and recreationally too.

The abbreviations in the whole text: n = number of participants or frequencies; % = percentage.

2.1.2 Questionnaire pleasant activities and their lack during COVID-19

Other research data we found out were daily minutes or hours of workload engagement, study load in school, study preparation for school, activities with mobile phone, activities on the computer, and sleep. The sum of these activities gave the work and study engagement, sleep as the time for recovery and the remainder to 24 hours was the time for pleasant activities.

We analyzed 195 different activities in life of people if given activity is popular and pleasant for individuals, the occurrence and frequency of activity implementation before pandemic time, during pandemic time and the lack of this activity during pandemic in the lives of young people. We divided the activities in several subscales: social activities (SA; n = 25), sporting activities (SpA; n = 36), activities joined with sporting activities (SpA joined; n = 5), interests activities (IA; n = 21), passive and relaxation activities (PRA; n = 34),), cultural activities (CA; n = 16), educational and work professional activities (EPA; n = 13), household care activities (HCA; n = 5), intimate and personal activities (IPA; n = 10), miscellaneous other activities (MA; n = 12), activities joined with relocation on foot or by means of transport (MFMT; n = 6), activities joined with the provision of essential living necessities – food, etc. (PLNF; n = 12).

Respondents indicated the level of the popularity (enjoyability), frequency before COVID-19, frequency during COVID-19 and lack of activities (missing activities) during COVID-19 in such a **Table 1** with 195 determined activities inspired by and abstracted from Pleasant Events Schedule (PES) [19], Pleasant Activities list (PAL) [20, 21] and Pleasurable Activities List [22].

The respondents rated the activity for the popularity, enjoyability with the 3-point scale (0–2):

0 – this activity is not pleasant for me,
1 – this activity is pleasant for me,
2 – this activity is very pleasant for me.

Then indicated the frequency of the activity during the standard month before COVID-19 with the 3-point scale (0–2):

0 – before COVID-19 this did not happen in the 30 days,
1 – before COVID-19 this happened a few times (1 to 6) in the 30 days,
2 – before COVID-19 this happened often (7 or more times) in the 30 days,

Then the frequency of the activity during COVID-19 (December or January 2020) with the 3-point scale (0–2):

0 – during COVID-19 this has not happened in the 30 days,
1 – during COVID-19 this has happened a few times (1 to 6) in the 30 days,
2 – during COVID-19 this has happened often (7 or more times) in the 30 days,

And added scale for decision the level of missing activity during COVID-19 with the 4-point scale (0–3):

0 – I did not miss this activity at all,
1 – I missed this activity a bit,

	1. This activity (popularity, enjoyability)			**2. Before COVID-19 (frequency of doing)**			**3. During COVID-19 (frequency of doing)**			**4. During COVID-19 (missing)**			
Activity	Is not pleasant for me	Is pleasant for me	Is very pleasant for me	This did not happen in the 30 days	This happened a few times (1 to 6) in the 30 days	This happened often (7 or more) in the 30 days	This has not happened in the 30 days	This has happened a few times (1 to 6) in the 30 days	This has happened often (7 or more) in the 30 days	I did not miss this activity at all	I missed this activity a bit	I missed this activity very much	I did not miss this activity, because I did it daily
A	0	1	2	0	1	2	0	1	2	0	1	2	3

Table 1.
Selected pleasant activity list and the level of popularity, enjoyability, the level of frequency before and during COVID-19, and the level of lack of these activities during COVID-19.

2 – I missed this activity very much,
3 – I did not miss this activity, because I did it daily.

Self-reported inventory showed the activities, which young people were enjoyed with during the period of COVID-19 pandemic. The frequency focused on frequency in the month.

Questionnaire figured out the number of pleasant activities engaged in the days for 30 days [19]. It identified the popularity, enjoyability of the submitted activities. It pointed out activities which people concern as pleasurable or needed for life. Not all activities from the list were enjoyable or popular for all, but all can be realized and for someone can be the most helpful thing to do to release the stress, bad mood or overcome some personal problems.

With the data we calculated the obtained pleasure (frequency times enjoyability).

Scores from the questionnaire will be differentiated and compared between men and women.

For the statistical analysis we used the statistical program IBM SPSS Statistics (Version 17 for Windows; SPSS, Chicago, IL, USA). Significance was considered at $p < .05$. Student's t-test, Mann–Whitney U Test, and Wilcoxon Test were taken in consideration of findings of statistical differences according to test of normality. We hypothesized that the mean values of the investigated research data would differ as a function of gender (men and women).

For better differentiation and understanding of the results we set several tasks.

Tasks

1. To find out and compare the popularity of the pleasant activities between men and women.

2. To find out and compare the frequency of pleasant activities before and during COVID-19 between men and women.

3. To find out and compare the lack of pleasant activities during COVID-19 between men and women.

3. Results

3.1 Popularity and enjoyability of the activities

The engagement in the pleasant activities can derive enjoyment from this involving. Life is better when the mood is in a positive manner and then the feelings are better. We divided 195 activities in several subscales: social activities (SA; n = 25), sporting activities (SpA; n = 36), activities joined with sporting activities (SpA joined; n = 5), interests activities (IA; n = 21), passive and relaxation activities (PRA; n = 34),), cultural activities (CA; n = 16), educational and work professional activities (EPA; n = 13), household care activities (HCA; n = 5), intimate and personal activities (IPA; n = 10), miscellaneous other activities (MA; n = 12), activities joined with relocation on foot or by means of transport (MFMT; n = 6), activities joined with the provision of essential necessities – food, etc. (PLNF; n = 12). In the list there were many activities which are pleasant to someone but can be unpleasant or indifferent to others. Each can decide how to evaluate these activities and which score should be given according to the inner opinion.

Several identical rankings can be found in comparison of individual activities within the specified subscales, but this does not mean that the mean of enjoyability score is the same. Young people, according to the same place, do not like to argue with someone and criticize someone in the framework of social relationship. In the

framework of educational and work professional activities they do not like writing professional and scientific texts and articles. This is very interesting because these young people are mostly students in the final year of the study at the Comenius University in Bratislava, the Faculty of Physical Education and Sport, and at the time of completing the questionnaire, they were in the phase of focusing to fulfill their study obligations, including writing professional scientific texts because of their master thesis. They do not like shopping at the clothing market, travel in the public transport, and do not like online buying grocery and household items. Dieting is also not the question for these young sports people. On the opposite side within the subscales and the same activities placed from above of the list they like non-organized, spontaneous sporting activity, showering, being in a countryside or in nature, searching for private information on the Internet, visiting the cinema and rock and pop concert, eating a healthy food, and laughing.

Given all pleasant activities for men and women in the list according to reached scores the **Table 2** presents the rankings the first five most popular activities and the activities in the last five positions from the list.

A comparison of the reached scores from all activity scores between men and women (**Figure 1**) reveals statistical significant differences for women in SA – Social activities $t(98.505) = -2.266$, p = .026; in PRA – Passive and relaxation activities $t(108.369) = -2.218$, p = .029; in IPA – Intimate and personal activities $t(99.068) = -2.3776$, p = .019; in MA – Miscellaneous other activities $t(108.154) = -3.834$, p = .000; PLNF – Provision of living necessities $t(102.173) = -3.266$, p = .001, in IA – Interest activities U = 1205.000, p = .047; HCA – Household care activities U = 1058.000, p = .004.

The highest score of popularity reached both in men and women the subscale SpA – joined – activities joined with sporting activity (1.45 in men, and 1.4 in women). The lowest score was devoted both in men and women too to a subscale IA – interest activities (0.46 in men, and 0.54 in women).

Score	Overall rankings of pleasant activities (Men)	Rankings	Overall rankings of pleasant activities (Women)	Score
1.81	SpA joined – Non–organized, spontaneous sporting activity.	1.	PRA – Laughing.	1.90
1.73	IPA – Making love.	2.	PRA – Being in the countryside or in nature	1.88
1.71	SpA – Strengthening exercises.	3.	PRA – Walks, strolls.	1.86
1.71	PRA – Laughing.	4.	SpA joined – Non–organized, spontaneous sporting activity.	1.80
1.67	SpA. Exercising on the outdoor field for sports.	5.	MA – Holidays in homeland in Slovakia – sightseeing.	1.80
0.11	CA – Playing musical instrument – performance.	191.	PRA – Being alone and feeling lonely.	0.06
0.10	CA – Singing in a choir or a band.	192.	CA – Singing for others – performance.	0.06
0.08	SA – Arguing with someone.	193.	CA – Playing musical instrument – performance.	0.06
0.08	IA – Handmade knitting, crocheting, sewing, embroidery.	194.	SA – Arguing with someone.	0.04
0.06	IA – Composing songs, music.	195.	IA – Hobby – writing prose.	0.00

Table 2.
The first five places and the last five places in the overall rankings of the pleasant activities.

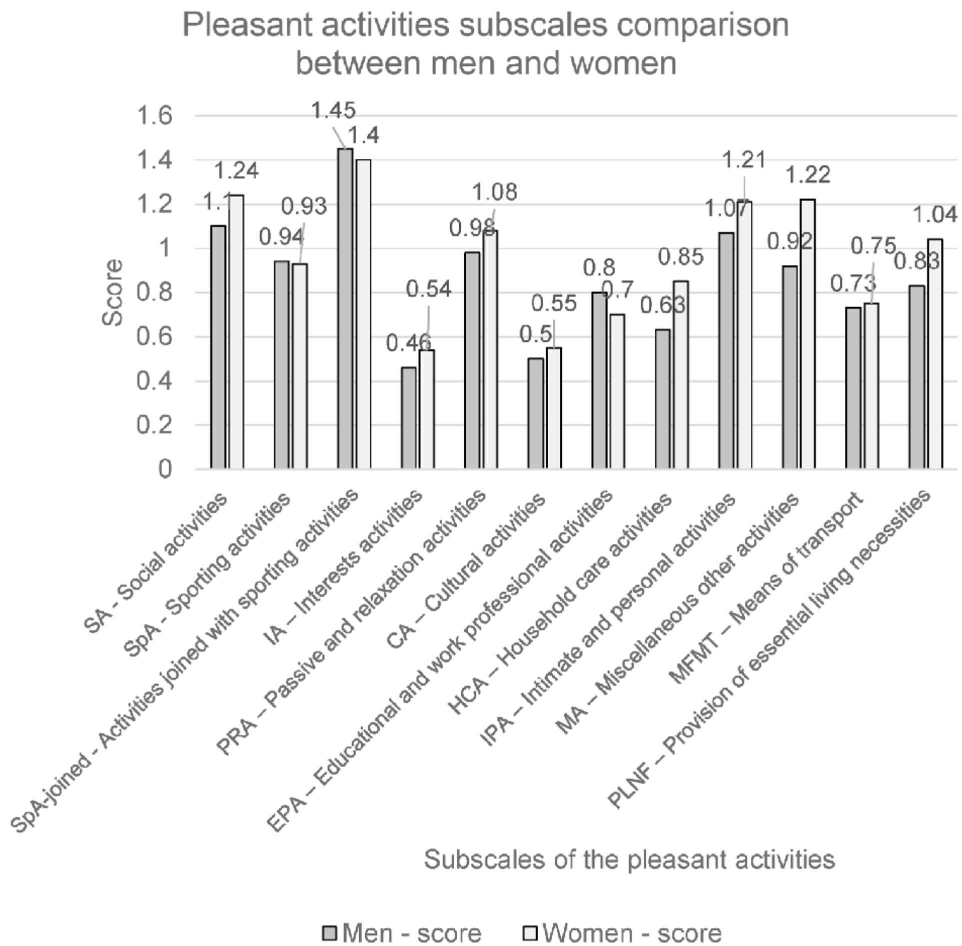

Figure 1.
Pleasant activities subscales comparison between men and women. No statistical significant differences were found in SpA, Sporting activities; SpA-joined, Activities joined with sporting activities; CA, Cultural activities; EPA, Educational and work professional activities; MFMT, activities joined with relocation on foot or by means of transport.

In nine comparison cases, women scored higher on the subscales of pleasant activities (SA – social activities, IA – interest activities, PRA – passive and relaxation activities, CA – cultural activities, HCA – household care activities, IPA – intimate and personal activities, MA – miscellaneous other activities, MFMT – Activities joined with relocation on foot or by means of transport, and PLNF – Activities joined with the provision of essential living necessities – food, etc.). Males obtained higher scores in only three subscales of pleasant activities (Spa – sporting activities, SpA – joined – activities joined with sporting activity, and EPA – Educational and work professional activities). The mean score of all pleasant activities for men is 0.87 (SD = 0.258) and for women 0.96 (SD = 0.181). The comparison of these results between men and women presents statistically significant difference t (108.914) = −2.250, p = .026, which is in favor of women.

3.2 Frequency of pleasant activities before and during COVID-19

Frequency is the number of occurrences of a repeating event per unit of time. We measured the frequency of occurrence of the repeating pleasant activities in a

month (0 – this did not happen in the 30 days, 1 – this happened a few times (1 to 6) in the 30 days, 2 – this happened often (7 or more times) in the 30 days. The mean score was calculated as the mean of the scores 0–2.

The highest frequency of doing activities before COVID-19 in men (**Figure 2**) had activities joined with sporting activity (SpA – joined), followed by the intimate and personal activities (IPA), miscellaneous other activities (MA), social activities (SA), and passive and relaxation activities (PRA). The lowest frequency of doing activities before COVID-19 in men was by the subscale of cultural activities (CA), followed by the subscale of interest activities (IA). The biggest difference between the mean score of the frequency of doing pleasant activities before COVID-19 and during COVID-19 was recorded for the following subscales: SpA – joined – activities joined with sporting activity ($\Delta = .89$); MFMT – activities joined with relocation on foot or by means of transport ($\Delta = .47$); SA – social activities ($\Delta = .43$); MA – miscellaneous other activities ($\Delta = .40$); IPA – intimate and personal activities ($\Delta = .38$); SpA – sporting activities ($\Delta = .31$).

A Wilcoxon signed-rank test showed that the mean score of frequency of doing the activities before and during pandemic COVID-19 in men refers to the statistically significant changes in all activities joined in the subscales: SA – Social activities ($Z = -6.850$, $p < .001$); SpA – Sporting activities ($Z = -6.867$, $p < .001$); SpA – joined – Activities joined with sporting activities ($Z = -6.576$, $p < .001$); PRA – Passive and relaxation activities ($Z = -6.777$, $p < .001$); CA – Cultural activities ($Z = -6.182$, $p < .001$); EPA – Educational and work professional activities ($Z = -1.865$, $p = .033$); IPA - intimate and personal activities ($Z = -6.580$, $p < .001$); MA – miscellaneous other activities ($Z = -6.637$, $p < .001$); MFMT – Activities joined with relocation on foot or by means of transport ($Z = -6.232$, $p < .001$); PLNF – Activities joined with the provision of essential living necessities – food ($Z = -4.216$, $p < .001$); except the activities from the two subscales IA – Interest activities ($Z = -.908$, $p = .193$) and HCA – Household care activities ($Z = -.531$, $p = .312$).

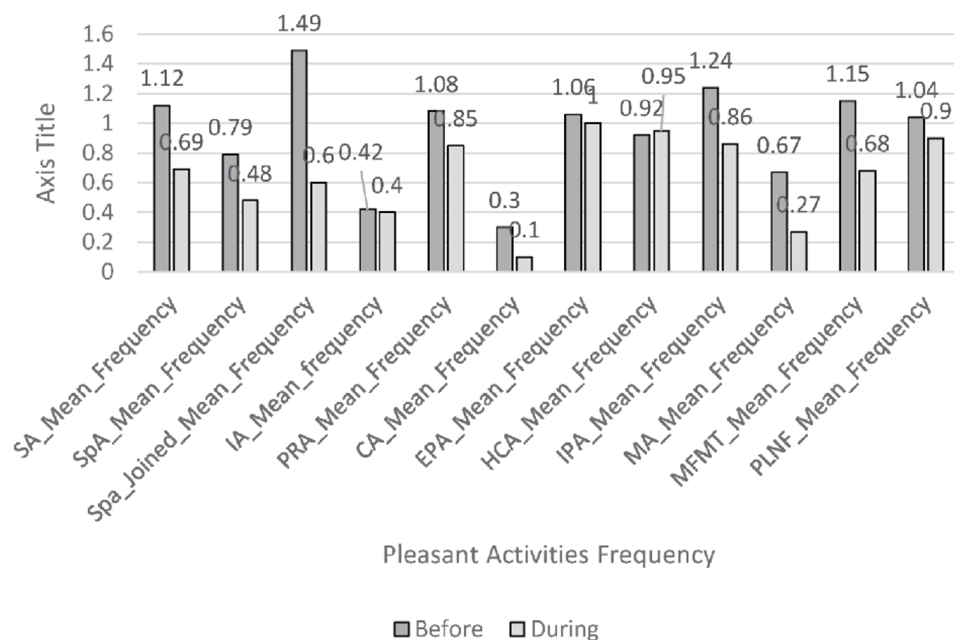

Figure 2.
Frequency of pleasant activities before and during COVID–19 in men.

We recorded decline in overall frequency of doing pleasant activities in men during pandemic COVID-19 in comparison to the standard monthly doing these activities before pandemic COVID-19 (**Figure 3**). The decline represented statistically significant difference $t(16.513) = 62$, $p < .001$.

The same data like in men we monitored in women (**Figure 4**).

The highest mean score in frequency of doing pleasant activities before COVID-19 reached women in subscales IPA – intimate and personal activities, followed with subscales SpA – joined – activities joined with sporting activity, PLNF - activities joined with the provision of essential living necessities – food, etc., and MFMT – activities joined with relocation on foot or by means of transport. The lowest

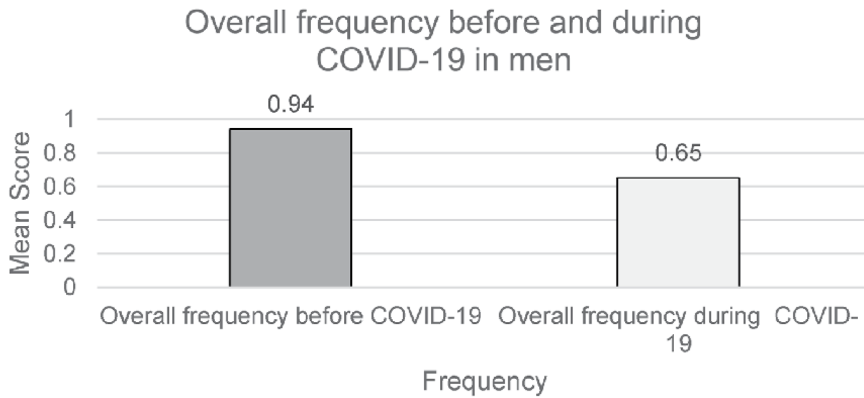

Figure 3.
The overall frequency of doing activities before COVID-19 and during COVID-19 in men.

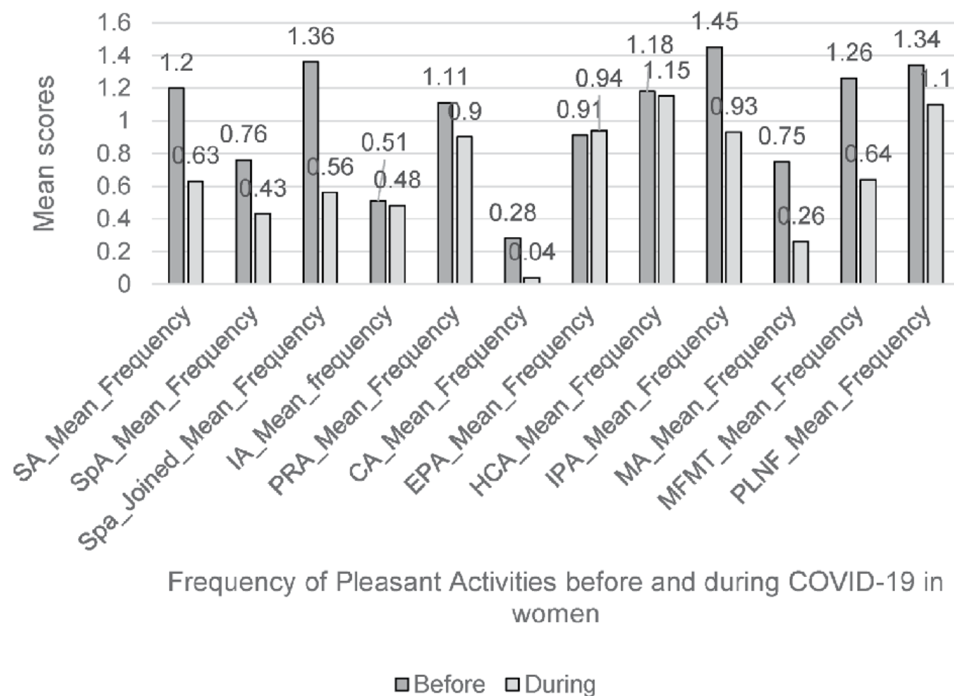

Figure 4.
Frequency of pleasant activities before and during COVID–19 in women.

frequency of doing activities before COVID-19 in women was by the subscale of cultural activities (CA), followed by the subscale of interest activities (IA).

We found the biggest differences between the mean score of frequency of doing before and during pandemic COVID-19 in following subscales: SpA – joined – activities joined with sporting activity (Δ = .80); MFMT – activities joined with relocation on foot or by means of transport (Δ = .62); SA – social activities (Δ = .57); and IPA – intimate and personal activities (Δ = .52).

A Wilcoxon signed-rank test showed that the mean score of frequency of doing the activities before and during pandemic COVID-19 in women refers to the statistically significant changes in all activities joined in the subscales: SA – Social activities ($Z = -6.101$, $p < .001$); SpA – Sporting activities ($Z = -3.646$, $p < .001$); SpA – joined – Activities joined with sporting activities ($Z = -5.790$, $p < .001$); PRA – Passive and relaxation activities ($Z = -5.790$, $p < .001$); CA – Cultural activities ($Z = -5.717$, $p < .001$); IPA - intimate and personal activities ($Z = -6.105$, $p < .001$); MA – miscellaneous other activities ($Z = -5.828$, $p < .001$); MFMT – Activities joined with relocation on foot or by means of transport ($Z = -5.850$, $p < .001$); PLNF – Activities joined with the provision of essential living necessities – food ($Z = -4.945$, $p < .001$); except the activities from the two subscales IA – Interest activities ($Z = -1.926$, $p = .054$), EPA – educational and work professional activities ($Z = -.806$ $p = .420$), and HCA – Household care activities ($Z = -.951$, $p = .342$).

We recorded decline in overall frequency of doing pleasant activities in women too during pandemic COVID-19 in comparison to the standard monthly doing these activities before pandemic COVID-19 (**Figure 5**). The decline represented statistically significant difference $t(14.856) = 48$, $p < .001$.

3.3 Obtained pleasure

An obtained pleasure score [19], in our case (**Figure 6**) is created by multiplying the overall frequency score by the overall popularity, enjoyability of all 195 pleasant activities in men and separately in women. Obtained pleasure is popularity (enjoyability) times frequency and is an approximate measure of response-contingent positive reinforcement (ibid).

Statistically significant differences were found in comparison of obtained pleasure in men and in women too. Obtained pleasure before COVID–19 in comparison to obtained pleasure during COVID–19 in men and in women shows statistical significant differences in higher obtained pleasure before COVID–19 (in men: $t(62) = 12.154$, $p < .001$; and in women: $t(48) = 12.853$, $p < .001$).

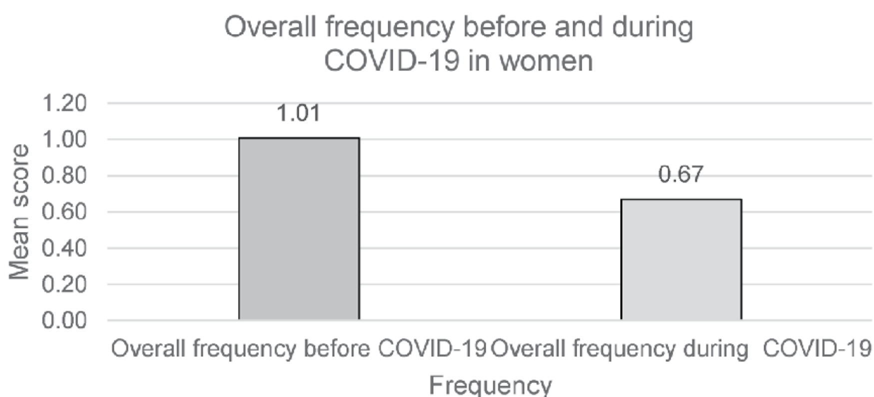

Figure 5.
The overall frequency of doing activities before COVID-19 and during COVID-19 in women.

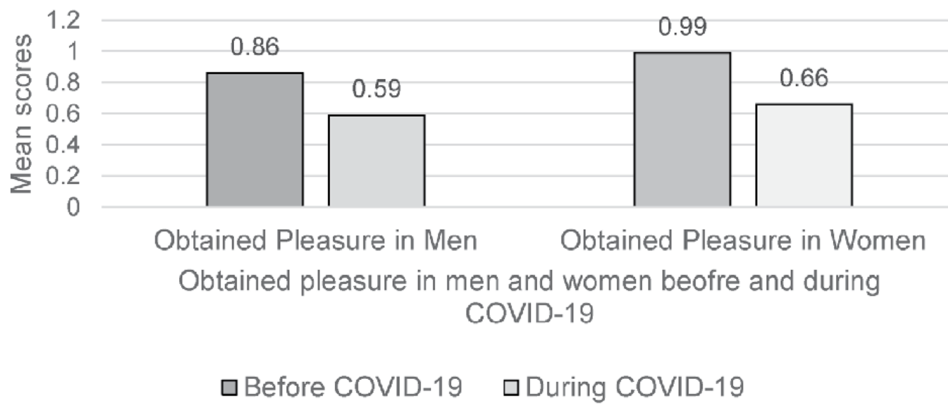

Figure 6.
Obtained pleasure in men and women before and during COVID–19.

3.4 Lack of pleasant activities during COVID-19

Pleasant activities are any kind of activities that someone find enjoyable. Lack of pleasant activities might be a cause of depression, bad mood, and some kind of emptiness too. **Figure** 7 presents the comparison of the lack of pleasant activities between men and women.

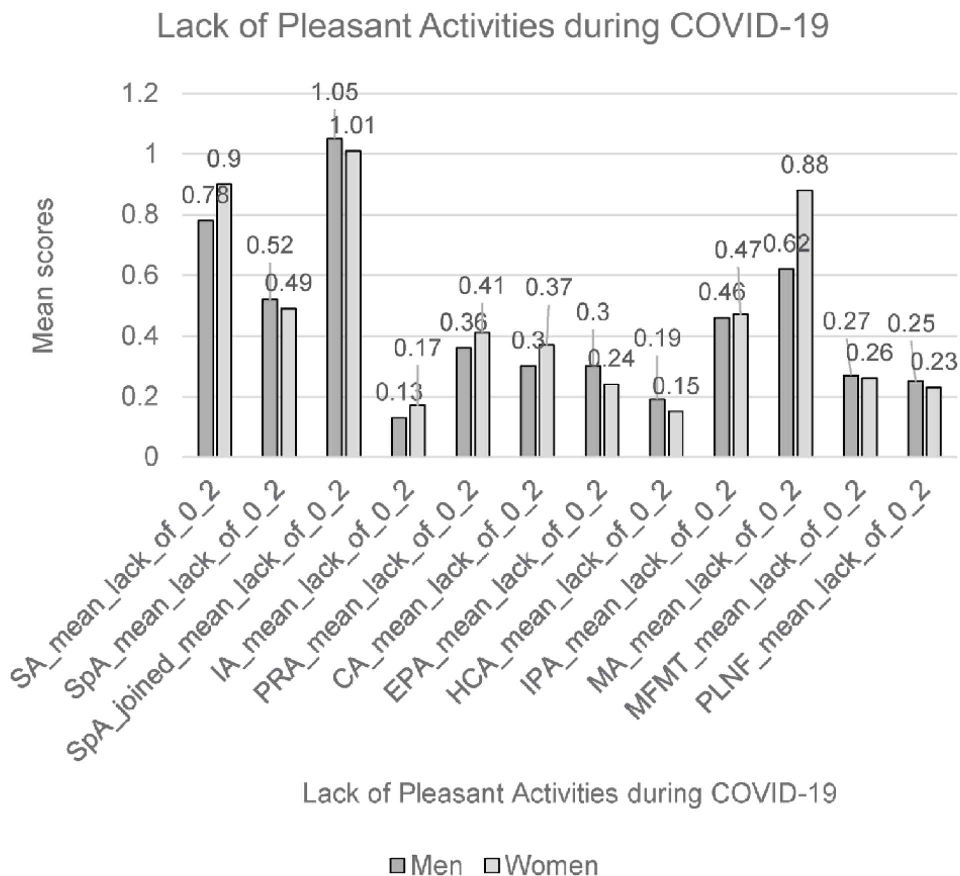

Figure 7.
Lack of pleasant activities subscales comparison between men and women.

Both gender felt a lack of pleasant activities during COVID-19, and in some subscales women felt these activities statistically significantly more (SA – social activities U = 1186.000, p = .036;, IA – interest activities U = 1174.500, p = .028; and MA – miscellaneous other activities U = 915.500, p p < .001).

Tables 3–8 present several individual rankings (as a mean score) of lack of detailed pleasant activities from selected subscales SpA – joined – Activities joined

Score	The first five rankings of Lack of Activities joined with Sport in Men	Rankings	The first five rankings of Lack of Activities joined with Sport in Women	Score
1.24	SpA joined – Organized sports at the club, sporting unit.	1.	SpA joined – Sports competition – matches, races.	1.14
1.21	SpA joined – Sports competition – matches, races.	2.	SpA joined – Training or coaching someone.	1.00
0.98	SpA joined – Training or coaching someone.	3.	SpA joined – Organized sports at the club, sporting unit.	1.00
0.92	SpA joined – Non–organized, spontaneous sporting activity.	4.	SpA joined – Being trained, coached by someone.	0.98
0.79	SpA joined – Being trained, coached by someone.	5.	SpA joined – Non–organized, spontaneous sporting activity.	0.94

Table 3.
The first five rankings of lack of sporting activities joined with sport.

Score	The first five rankings of Lack of Social activities in Men	Rankings	The first five rankings of Lack of Social activities in Women	Score
1.40	SA – Inviting friends´ visits.	1.	SA – Inviting friends´ visits.	1.69
1.22	SA – Going to friends´ visits.	2.	SA – Drinking coffee. Tea with friends.	1.69
1.21	SA – Drinking coffee. Tea with friends.	3.	SA – Going to friends´ visits.	1.57
1.18	SA – Visit to a restaurant.	4.	SA – Visit to a cafe.	1.55
1.18	SA – Dining with friends.	5.	SA – Going to a family visit.	1.51

Table 4.
The first five rankings of lack of social activities.

Score	The first five rankings of Lack of Sporting activities in Men	Rankings	The first five rankings of Lack of Sporting activities in Women	Score
1.38	SpA – Exercising on the outdoor field for sports.	1.	SpA – Swimming in the pool.	1.37
1.18	SpA – Downhill skiing.	2.	SpA – Downhill skiing.	1.29
1.08	SpA – Swimming in the pool.	3.	SpA – Fitness workout in the fitness centres.	1.25
0.98	SpA – Fitness workout in the fitness centres.	4.	SpA – Exercising on the outdoor field for sports.	1.14
0.95	SpA – Football.	5.	SpA – Volleyball.	1.06

Table 5.
The first five rankings of lack of sporting activities.

Score	The first five rankings of Lack of Interest activities in Men	Rankings	The first five rankings of Lack of Interest activities in Women	Score
.59	IA – Nature camping.	1.	IA – Nature camping.	.80
.19	IA – Book reading.	2.	IA – Photography and filming.	.37
.18	IA – Gardening.	3.	IA – Book reading.	.33
.18	IA – Computer games.	4.	IA – Care and training of pets.	.25
.18	IA – Searching for private information on the Internet that interests me.	5.	IA – Editing photos and movies.	.23

Table 6.
The first five rankings of lack of interest activities.

Score	The first five rankings of Lack of Intimate and personal activities in Men	Rankings	The first five rankings of Lack of Intimate and personal activities in women	Score
1.16	IPA – Visit to a hairdresser, barber.	1.	IPA – Visit to a hairdresser, barber.	0.98
0.84	IPA – Kissing.	2.	IPA – Visit to a beauty salon.	0.80
0.79	IPA – Making love.	3.	IPA – Making love.	0.78
0.70	IPA – Flirting.	4.	IPA – Kissing.	0.51
0.32	IPA – Use of perfumes.	5.	IPA – Use of perfumes.	0.47

Table 7.
The first five rankings of lack of intimate and personal activities.

Score	The first five rankings of Lack of Miscellaneous other activities in Men	Rankings	The first five rankings of Lack of Miscellaneous other activities in women	Score
1.35	MA – Holidays Abroad – residential stay.	1.	MA – Holidays Abroad – residential stay.	1.67
1.18	MA – Holidays Abroad – sightseeing.	2.	MA – Holidays Abroad – sightseeing.	1.59
1.10	MA – Holiday – in homeland Slovakia – residential stay.	3.	MA – Holiday – in homeland Slovakia – sightseeing.	1.53
1.08	MA – Holiday – in homeland Slovakia – sightseeing.	4.	MA – Holiday – in homeland Slovakia – residential stay.	1.47
.76	MA – Vacation planning.	5.	MA – Vacation planning.	1.16

Table 8.
The first five rankings of lack of miscellaneous other activities.

with Sport, SA – Social activities, SpA – Sporting activities, IA - Interest activities, IPA – Intimate and personal activities, MA – Miscellaneous other activities.

For the research group, the most missing activities during COVID-19 were those activities, which are joined with sport (**Table 3**), because our respondents were students in the final (fifth) year of a study at the Faculty of Physical education and Sport, of which up to 52% were still organized in some kind of sports organization. In addition to regular training, their work also included regular competitions, races or matches.

Most of them were at the time of questionnaire fulfilling, engaged as the trainers and coaches for someone. And they lacked all this, what is a good sign for their future employment, that they felt most the lack of those activities that will be the content of their work and job after completing the school study.

Social activities were in the second place of the most missing activities that these young sporting people felt as a lack of these activities.

In the research sample of men and women, the first place of the most missing activity from the social activities' subscales during COVID-19 appeared the same activity, which we named "Inviting friends´ visits" (**Table 4**).

The next two places occupied activities that are connected with friends – going to friends´ visits, and drinking coffee, tea with friends. The fourth place is dedicated to the lack of "going out", men going to restaurants and women going to cafes. In fifth place, men lacked dining with friends and women lacked family visits.

The lack of sporting activities was represented by activities related to outdoor sports (outdoor exercising, swimming in the pool, downhill skiing), to exercising in a fitness center or a sports game, which requires the presence of other players (football in men and volleyball in women) (**Table 5**).

Interest activities and their lack are presented in **Table 6**. The most missing activity was for both gender nature camping.

The most missing activity from the subscale intimate and personal activities (**Table 7**) was a visit to a hairdresser, barber. Young people felt the lack of the activities like kissing, making love and flirting (in men) too.

From the subscale of miscellaneous other activities, were the most missing activities for young people the holidays abroad, but also in the homeland.

The **Table 9** presents overall the first 10 rankings of the activities that the persons did not feel as a lack of pleasant activities during COVID–19 because they did it daily (presented in percentage from the related sample).

% from the sample	Overall, the first 10 rankings of the activities that the men did not feel as a lack of pleasant activities during COVID–19 because they did it daily (Men)	Rankings	Overall, the first 10 rankings of the activities that the women did not feel as a lack of pleasant activities during COVID–19 because they did it daily (Women)	% from the sample
80.95	IPA – Showering.	1.	IPA – Showering.	85.71
57.14	PRA – Laughing.	2.	PRA – Listening to the music from mobile phones, CDs, MP3s, etc.	75.51
53.97	PRA – Listening to the music from mobile phones, CDs, MP3s, etc.	3.	PRA – Resting while sitting.	67.35
53.97	PRA – Resting while laying.	4.	PRA – Resting while laying.	63.27
47.62	SpA – Strengthening exercises	5.	PRA – Laughing.	61.22
41.27	PRA – Watching TV.	6.	PNLF – Cooking.	53.06
38.10	PRA – Walks, strolls.	7.	SA – Enjoying time with family.	51.02
36.51	IA – Searching for private information on the Internet that interests me.	8.	PRA – Walks, strolls.	51.02
36.51	MFMT – Driving a car.	9.	PRA – Watching TV.	48.98
36.51	PNLF – Eating a healthy food.	10.	IPA – Kissing.	48.98

Table 9.
Overall, the first 10 rankings of the activities that the men and women did not feel as a lack of pleasant activities during COVID–19, because they did it daily.

Score	Overall rankings of Lack of pleasant activities during COVID–19 (Men)	Rankings	Overall rankings of Lack of pleasant activities during COVID–19 (Women)	Score
1.40	SA – Inviting friends´ visits.	1.	SA – Inviting friends´ visits.	1.69
1.38	SpA – Exercising on the outdoor field for sports.	2.	SA – Drinking coffee, tea with friends.	1.69
1.35	PRA – Sitting on the outdoor terrace of the restaurant.	3.	MA – Holidays Abroad – residential stay.	1.67
1.35	MA – Holidays Abroad – residential stay.	4.	PRA – Sitting on the outdoor terrace of the restaurant.	1.61
1.24	SpA joined – Organized sports at the club, sporting unit.	5.	MA – Holidays Abroad – sightseeing.	1.59
0.03	PRA – Meditation.	191.	IA – Hobby – writing prose.	0.00
0.03	CA – Singing in a choir or a band.	192.	PRA – Resting while sitting.	0.00
0.03	CA – Playing a musical instrument – performance.	193.	PRA – Talking to yourself – intracommunication.	0.00
0.016	IA – Painting pictures with colors.	194.	CA – Singing for others – performance.	0.00
0.016	IA – Handmade knitting, crocheting, sewing, embroidery.	195.	PNLF – Dieting.	0.00

Table 10.
The first five places and the last five places in the overall rankings of the lack of pleasant activities during COVID–19.

Table 10 presents the first five places and the last five places in the overall rankings (as a mean score) of the lack of pleasant activities during COVID–19.

The most missing activity from all 195 activities was the activity – Inviting friends´ visits – for both, men and women.

4. Discussion

The COVID-19 pandemic affected many people's lives that included lack of enjoyment, loss of pleasure and many difficult moments during these unpleasant days. People focused on preventing the spread of the virus and limiting the number of deaths, but there were not only physical health problems, there was a mental problem by all age stages category of both genders of the population. This deserves serious attention, because now we cannot predict the impact of these days on the next days. One cannot live one's life with only worries. He/she must find for himself/herself and his/her life some activities that will bring him/her joy and pleasure. The pleasant activities are the vivid ingredients in the one's life and better the mood. A significant association between mood and pleasant activities was found [23]. There were large individual differences in regard to the magnitude of the correlation between mood and activity.

For the young people remains 6–7 hours daily, which they can spend with the activities that they choose from various offers.

Men and women enjoy doing pleasant activities. The most pleasant activity for men is non–organized, spontaneous sporting activity and for women is laughing. We found several identical rankings in enjoyability and popularity of some pleasant activities from the subscales. Study of the correlation of pleasant and unpleasant

events on mood by [24] identified 49 pleasant and 35 unpleasant moods–related events. Pleasant activities are accompanied by positive mood. Pleasant Events schedule [19] presented for the age group 20–39 (the same age group as our sample) average ranges of the mean pleasantness score 0.86–1.26. The mean score of all pleasant activities for men is 0.87 and for women 0.96, what is within this range. Mean frequency score by [19] for the same age group (20–39 years) was in the average ranges 0.63–1.03. The sample of young sporting male people had the frequency score 0.94 before COVID-19 and 0.65 during COVID-19, and young sporting female people had the frequency score 1.01 before COVID-19 and 0.67 during COVID-19. All the frequency scores of our research sample are within the average ranges of the mean frequency score in the Pleasant Events Schedule [ibid]. Pleasant activities and their influence on mood presents the group comparisons in research by [21] indicated that patients with substance use disorders reported lower frequency, enjoyability, than healthy control group.

Our respondents, young sporting people, showed statistically significant decline in doing sporting activities and activities joined with sport. Exercise frequency before and during COVID–19 and its influence on mood during the pandemic tested [25]. The data from 13,696 respondents in 18 countries using online survey were processed and the results showed that those who exercised almost every day during the pandemic had the best mood, regardless of whether or not they exercised before pandemic. Those who reduced their exercise frequency during the pandemic reported worse mood compared to those who maintained or increased their prepandemic exercise frequency. 44.2% of the participants reported no change, 23.7% reported a decrease, and 31.9% reported increase in their exercise frequency during the COVID–19 pandemic. The study by [25] suggests that under similar lockdown conditions, about two thirds of those who never or rarely exercise before a lockdown might adopt an exercise behavior or increase their exercise frequency.

Sport and exercise in times of self-quarantine in Germans provided the research by [26] that showed a significant decline in leisure time sport and exercise activities. Overall, 31% of Germans reduced their leisure time sport and sport and exercise activities, while 27% maintained, 6% intensified their sports activities and 36% were not engaged in sports activities.

In our research both genders felt a lack of pleasant activities during COVID-19, and in the three subscales, women felt these activities statistically significantly more – social activities, interest activities, and miscellaneous other activities. The most feeling of lack of doing activity was the activity – inviting friends´ visits. Survey data about the effect of social isolation on well-being and life satisfaction during pandemic [27] was collected from 309 adults who ranged in age from 18 to 84. While the entire sample reported at least some perceived social isolation, young adults reported the highest levels of isolation, $\chi^2(2) = 27.36$, $p < 0.001$. Authors [28] argue that COVID-19 significantly threatens the basic human need for human connection with the mental health consequences of this disease.

5. Conclusions

Bringing diverse fields of knowledge about the effects of COVID-19 pandemic on life is the duty of the researchers. Research with health issues is important, but also research with sociological and psychological research issues. Therefore, we focused on research on pleasant activities among young adults and their lack during the pandemic COVID-19. The experience of pleasant and enjoyable activities contributed in positive mood and emotionality. Men and women had 6–7 hours of the

day that they can spend in doing pleasant activities. They slept 7–8 hours, what is enough for recovery. The most pleasant activity for men is non–organized, spontaneous sporting activity and for women is laughing. We recorded decline in frequency of doing pleasant activities in comparison before and during COVID-19. The most missing activity was inviting friends' visits. Further research should bring interesting results also.

6. Limitation of the study

Some limitations of the study have to be kept in mind. The data collection was only from the young sporting people. It is needed to widen the research and consider a wider scope of socio-demographic variables, for example, depended on a different age, age and gender, sport active and sport inactive people, people in various studies, people employed, people working at work and people working at home office.

Conflict of interests

The authors declared no conflicts of interest.

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Chapter 43

Forecasting the Long-Term Effects of the Pandemic on Children: Towards a COVID-Generation

Panagiotis Pelekasis

Abstract

This study focuses on mapping the existing effects of the pandemic and the measures taken to address it on the mental health of children in order to investigate the long-term consequences that it is expected to have. For infants, preschool, school and adolescent children it seems that intense stress develops for different reasons. As adults these children may experience an increased incidence of anxiety, depressive, obsessive–compulsive and personality disorders, while they are also expected to develop a strong External Locus of Control, low Faith in the Just World and low happiness. At the same time, an absence of distinction within the limits of the physical and digital world is expected. As for children with special educational needs, they are particularly affected due to the pandemic, as early diagnosis and the development of interventions to improve their educational and psychosocial progress are hampered and this might have negative long-term effects on their development. In overall, these negative effects and related experiences seem to be homogeneous across humanity for those who are currently minors and are expected to lead to the view of an autonomous generation, the COVID-generation.

Keywords: children, generation, mental health, pandemic, stress

1. Introduction

The theory of the critical period is based on the assumption that there is a certain time period for the development of specific skills, which can not be sufficiently and fully developed after this period [1, 2].

In the development of the theory of the critical period two factors may be considered to have contributed catalytic. The first factor was the finding that certain biological capacities, such as conception and pregnancy, are available only at certain periods of time, and that then must be utilized within that time period. Consequently, there may be a related period for the non-biological parameters of development as well [1]. Another factor that contributed to the development of the theory of the critical period is the observations of a few incidents of people who for some reason were cut off from human civilization. The wild boy of Avignon who was found living in the forests and never developed its language skills to effectively communicate with the others despite related interventions applied to him is possible the most widely known related case [3]. In modern times, children deprived from sufficient exposure to others communications and language stimuli due to living in orphanages have also been studied as for the negative effects of missing the critical period [4].

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As Scovel [2] reports, the theory of the critical period is based on the plasticity of the human brain. As he points out, during the period of puberty, a reduction in the synapses of the brain takes place, thereby leading to less plasticity. For this reason, he considers that the development of language and communication skills should take place as early as possible, since the greater plasticity of the brain is essential to sufficiently develop communication skills impossible to be developed later on in life.

Although it was initially thought that the critical period is the whole period before adolescence, it was soon found that this is not absolute and that there are many different stages of the period until puberty, thus appearing that there is no "one" critical period [2]. Despite such further skepticism on the specific sub-stages of critical period, it is widely accepted that it has a profound influence on human lifespan [2, 3]. Based on the above, the role of the environment is to provide the necessary conditions for cognitive and linguistic development during the critical period. Thus, the abundance of information and opportunities for children leads to positive effects on the development of children, while the limitation of opportunities to negative effects, due to the non-utilization of the critical period [3].

From a methodological point of view, the effects of the critical period have been studied, as mentioned above, in two different ways, namely first with case studies and then with studies focusing on specific populations that had been cut off from the environmental stimuli necessary for the development of children. In any case, although these studies have led to a sufficient amount of knowledge, the case of a milder but massive deprivation of environmental stimuli in the wider population of children, that is to say, the children of a society as a whole, has not yet been studied. The COVID-19 pandemic undoubtedly provides the opportunity to explore the theory of the critical period at a mass social level, something that will have to be studied by scientists and researchers of the future. However, social scientists not only have to explain, but also to predict related phenomena [5]. In this context, it is imperative to investigate the potential effects of mass deprivation of environmental stimuli due to measures to limit the spread of SARS-CoV-2 on children's development. This review summarizes the possible effects on typical and non-typical children, by investigating specifically students with ADHD and autism, and leads to the suggestion of a COVID-generation for children and adolescents significantly affected by the pandemic.

2. Main text

2.1 The effect on students with typical development

2.1.1 The effect on infants

Elevated stress levels of the mother during the prenatal period, as well as child stress at the stage of infancy, childhood and adolescence entails pronounced negative effects. The human body is particularly vulnerable to stress at these developmental stages, with chronic stress resulting in a multitude of negative effects on mental and physical health throughout life [6]. The first related effect already concerns the perinatal age and the stress to which the mother is subjected. Particularly illuminating is a relative position of Bogin and Varea [7] on the possible effects of severe stress on mothers in the period of gestation due to the pandemic. As they state, intense maternal stress is probably associated with the birth of children with lower body weight, which is a predisposing factor for low school performance, increased incidence of mental health problems and a plethora of physical disorders

throughout life. Thus, based on the model, the severe stress of the pandemic may have a significant negative effect on the development of children born during that period due to the stress experienced by the mother during pregnancy and their birth with a lower body weight than would be expected. These effects are estimated to entail long-term negative consequences for infants born during the pandemic.

In the period of infancy, the mother's interactions with the infant are crucial because of its emotional, linguistic and cognitive development [3]. However, these interactions may be significantly restricted during the pandemic. During the pandemic, an important issue was the transmission of the virus from the mother to the infant. Public health policies were even focusing on to separate the mother from the infant in cases where there was an increased risk of transmission of the virus [8, 9]. This is clearly contrary to the necessity of increased interactions between the mother and the child during infancy, thus ignoring the benefits of breastfeeding not only for the physical, but also for the early psychosocial development of the infant [8]. It is even argued that in all cases the benefits of continuing breastfeeding outweigh the risks and that a policy of zero separation of the mother from the infant should be implemented [8]. Therefore, in infancy, the separation of the mother from the infant seeking to limit the risk of transmission of the virus to it may entail a multitude of negative effects for its subsequent linguistic, psychosocial and cognitive development. Indeed, it is possible that these consequences are even more pronounced for infants of mothers who, due to their professional status, have an increased risk of contracting the virus and may develop further distance from the infant in order to protect it, such as nurses, security workers, public transport workers, cleaners, etc.

Finally, it is of most importance for infants to observe the facial expressions of the others, as this fosters their emotional development and interaction skills [3]. Since massive face mask use is mandatory during the pandemic, the limited interactions of children with the mother and other significant people without wearing masks might lead to emotional and communicative deficits.

2.1.2 The effect on preschool children

Facial expressions are also important for preschool emotional and social development [3]. Thus, the related negative effects of massive face mask use could also apply to preschool children.

Apart from the aforementioned effects, in recent decades, the disengagement from the Piazetian theory on children's cognitive development has led to a review as to whether they can actually perceive complex and complex issues that in the past were thought to be impossible to perceive [3]. Therefore, the main question in this case concerns whether preschoolers can actually perceive the threat of the pandemic and develop stress for this reason. This question can be considered to have been answered as early as the early phase of the pandemic, where a sample of 320 children and adolescents aged 3 to 18 years was examined in China. As found in this study, children aged 3 to 6 years old were significantly more likely than older children to fear that some of their family members will be infected with the virus. Therefore, in this case not only preschoolers perceive the risk of contracting their loved ones with the virus, but also develop a strong fear because of it [10].

Another key effect may be fear about the family's deteriorating financial situation. As insecurity, uncertainty and unemployment increase due to the current pandemic, it is likely that preschoolers are experiencing severe stress, perceiving the broader situation and climate of the family they live in [11].

Another important reason why in families there may be increased stress in this period and adversely affect the development of children is the loss of work and

family life balance on the part of the parents. Particularly illuminating is a relevant study of 254 families in Canada, which found that there was a significant effect on family stress due to the inability to find a balance on the part of parents between family and working life [12]. It could therefore be seen how the perception of family stress and the imbalance of family and work life of parents on the part of preschool children also leads to intense stress on their part.

Based on the above, it appears that the factors that affect the development of stress during preschool age due to the pandemic are multidimensional and do not concern exclusively the fear of contracting the virus.

2.1.3 The effect on school children

At school age, there is a significant increase in children's stress due to the sharp change in their previous routine. Indeed, unlike preschoolers, school-age children may have been accustomed for many years to go to school and interact in the natural environment with others. As most activities now take place within the home, this also leads to increased stress levels for school-age children. In fact, these levels are higher for boys, children who have separated parents and children whose parents have psychiatric illnesses [13].

Tele-education was considered as a must-use solution during the pandemic. Yet, this transition is considered as a source of significant stress for students [14]. Although so far there have been no relevant research comparing stress levels before and during tele-education, it could be considered that this is associated with greater stress for students due to the limitation of interpersonal interactions with their peers, the need to adapt to a new and quite difficult reality for them and the technical barriers and difficulties of responding to the project of tele-education. Such problems might be even more intense for students belonging to minority groups, which might face more difficulties and barriers [15].

Another reason why the pandemic leads to increased stress for children is prolonged screen use, irrespective of the needs of tele-education. Particularly enlightening about this phenomenon are Imran, Zeshan, & Pervaiz [16]. As they state, the prolonged contact of children with screens is a basic problem that is generally observed after important socio-political events. As they note, something similar was observed after the attack on the Twin Towers, where the children had a fairly prolonged contact with the screens. As they support, this may lead to increased levels of stress, as prolonged contact with the screens of electronic devices leads to intense stress. Indeed, this may be attributed to the disturbance of the circadian rhythm due to prolonged contact with the screens, which leads to intense stress [17].

Finally, another reason why the pandemic may lead to increased stress for children concerns the strong stigma that the virus infection may entail for them [16]. In addition, children might experience severe stress due to cyberbullying, which has significantly increased during the pandemic [18].

2.1.4 The effect on adolescents

During adolescence, various studies lead to the finding that experience high levels of stress due to the pandemic. For example, in a relevant study in Italy between April 1 and 5, 2020, a sample of 5,295 adolescents was studied in terms of their stress levels. As found by this study, 28.9% of adolescents had moderate or high levels of stress, a percentage that should be considered as quite high [19].

Apart from a general reference to stress at this period, it is imperative to understand what a teenager is called upon to do during that stage. In order to cope with stress and develop psychosocially a teenager is required, according to Erikson's

theory, to develop his identity and cope with the problem of role confusion. Erikson considered that adolescence is an identity crisis, in which the teenager is called upon to respond against a hostile world until then. To achieve this it must have the best possible support from the systems and environments to which it belongs. As there is therefore a wider hostile social environment in which adolescents cannot interact, experiment and develop their identity, they are expected to experience high levels of stress, but also a risk of not being able to achieve this developmental conquest [3].

Negative effects on the mental health of adolescents due to severe stress are already reported. In a relevant study on a sample of 1,054 adolescents in Canada stress and depressive symptomatology during the pandemic were studied. As the results of the analysis indicates, there was a positive and statistically significant correlation between stress and depressive symptomatology [20].

2.1.5 Erikson's theory in the COVID-19 era

More broadly, Erikson's theory may provide an explanatory framework on how stress-related problems develop in adulthood, possibly illustrating developmental conquests that are not achieved and helping to predict the subsequent negative effects of the pandemic on mental health. **Table 1** presents the main pillars of Erikson's theory and explains why the pandemic hinders the achievement of the relevant developmental conquests [21].

Based on the following, it can be assumed that at each developmental stage, as described this year, the conditions and dynamics of the pandemic do not help children in the necessary developmental conquests. In the period of infancy the distance between mother and child undoubtedly leads to problems in psychosocial development. As the child wonders whether he can trust the world, it is initially necessary to develop on the part of the mother a climate of trust towards the child, which is carried out to a considerable extent through breastfeeding. As breastfeeding is hampered in order to limit the possibility of contracting the virus, this may result in the impossibility of achieving the developmental conquests of this stage.

In the period of two to three years of age, the child is called upon to develop his autonomy and overcome doubt and shame. This is realized through relationships with parents. The parent, however, has not only a causal effect on psychosocial development at this stage, but also an indirect effect that involves providing the necessary framework to the child in order for it to develop adequately. This, in normal conditions, takes place through the motivation of the child to team play and enrollment in nurseries. However, as this does not take place in a normal way during the pandemic, infants may not be able to develop their autonomy at this developmental stage.

At the age of three to six years, the family has a particularly decisive role in the psychosocial development of the child. However, as mentioned above, children at this developmental stage may not be able during the pandemic to perceive the intense stress of the family. This stress may be associated with the fear of contracting the virus, but also with other threats of the pandemic period, such as the change in the family's economic dynamics. This clearly also leads to the impossibility of healthy psychosocial development at this stage. In addition, at this developmental stage, children may develop limited interaction with others and not develop team play to the extent to which they should. During middle and late childhood, Erikson considered the neighborhood and the school environment to be central to the development of children. In fact, based on this theory, sport has a catalytic role in the psychosocial development of the child. Limited group sports activities and generally limited contacts and interactions at this age and developmental stage, especially in the age of tele-education, clearly imply inability of children to develop psychosocially.

Age	Virtues	Psychosocial crisis	Significant relationship	Existential question	Events	Potential problems caused by the pandemic
Infancy under 2 years	Hope	Trust vs. mistrust	Mother	Can I trust the world?	Breastfeeding, abandonment	Distancing between mother and infant to reduce risk of infection, face masks
Toddlerhood 2–3 years	Will	Autonomy vs. shame/ doubt	Parents	Is it ok to be me?	Toilet training, clothing themselves	Reduced nursery attendance, low social interactions, lack of group play, face masks
Early childhood 3–6 years	Purpose	Intiative vs. guilt	Family	Is it ok for me to do, move, and act?	Exploring, using tools or creating art	Stressful family environment, fear of infection, low social interactions, lack of group play
Middle & latter childhood 7–12 years	Competence	Industry vs. inferiority	Neighbors, School	Can I make it in the world of people and things?	Sports and school	Reduced sports participation, underdeveloped social skills due to tele-education
Adolescence 13–19 years	Fidelity	Identity vs. role confusion	Peers, Role model	Who am I? Who can I be?	Social interactions and relationships	Low autonomy, external locus of control, inability to develop identity

Table 1.
The developmental stages of Erikson in the era of COVID-19.

At the stage of puberty, adolescents may not be able to develop their role identity in a healthy way, as Erikson felt it was imperative to do. Due to the pandemic, it can be considered that it strengthens the view of adolescents, but also people in general that the control of things is not in their hands. This may not, of course, have such strong negative effects for adults. However, in the period of puberty it is possible that the identity of adolescents is not sufficiently developed, as they realize that they can not influence the external reality to the extent that they would like.

2.1.6 Long-term effects on typically developing students

Based on a systematic review of the literature that summarized knowledge from previous crises of transmitted diseases, such as H1N1 and Ebola, high stress levels are experienced by children during these periods. It appears that these crises, as well as the COVID-19 crisis, may lead to an increased risk for anxiety disorders, post-traumatic stress disorder, depression and acute stress disorder. This is therefore an aggravating effect on a wide range of different mental illnesses [22].

Based on the above, it can be assumed that the negative effects found in the period of infancy, preschool, childhood and adolescence will also have corresponding negative effects in the psychopathology of adulthood. It may be quite difficult to establish this, and to date it should be regarded as a hypothesis to be investigated. However, it is quite possible that an increase in psychiatric morbidity in the cohort of children and adolescents of the pandemic should be expected, even if it is unclear which disorders will be concerned and to what extent it will be carried out.

A first category of disorders that may increase over the coming decades is that of anxiety and depressive disorders. Childhood stress often leads to severe problems in the later developmental stages [23]. Specifically in the case of the current pandemic, this may be attributed to an increased vulnerability of children to stress during. Therefore, children become particularly vulnerable to stress and cannot develop the relevant resilience mechanisms as adults, they are expected to be particularly vulnerable against the development of depressive and anxiety disorders. The development of obsessive–compulsive disorders is also possible, since frequent hand washing might contribute to the onset of these disorders [24].

A second category of disorders that may increase in the coming decades concerns personality disorders. Early experiences have a decisive role in the development of these disorders in adulthood, and the acquisition of healthy and adaptive mechanisms of regulation of emotions in childhood is a factor predisposing children to the development of non-pathological forms of personality in adulthood [25]. In a world of limited interactions where children cannot trust others because they do not come into physical contact with them to prevent infection, it is quite possible to observe a frequency in disorders such as schizotypal personality disorder, since it develops due to the unhealthy development of social interaction skills in juvenile life [26].

The negative effects of the pandemic on adulthood may not only be related to the existence of mental illnesses, but also to the inability to develop positive traits that help humans cope with challenges. Internal Locus of Control is considered highly adaptive, as it is associated with goal setting, feeling of happiness and creativity [27, 28]. As a pandemic therefore entails a loss of the sense that one controls his/her external environment, there may be a shift in the next generation from the internal to the external locus. Moreover, the formation of locus of control can be considered to be influenced by the fact that the very development of identity during adolescence is significantly affected by the pandemic [29]. If, therefore, Locus of Control constitutes a characteristic inherent to the person’s identity, then the change of this during the pandemic towards the external locus will lead to adults being

less happy and less creative. Even a further negative impact on mental health is not excluded due to the development of an external locus, as already since the period of the pandemic it is claimed that mental health is worse for those who score higher in External Locus of Control [30]. To sum up, the shift from the internal to the external locus may take place due to the pandemic and lead to negative effects on mental health, not necessarily related to the existence of specific disorders.

Another negative impact on the mental well-being of today's children and adolescents when they become adults may be the consideration of whether the world in which we live is fair. Faith in the Just World constitutes a functional and adaptive response of the individual to his/her external environment, as the child sets goals considering that those who adhere to them and work systematically to achieve them actually achieve them. As therefore the individual feels that he will be rewarded, he/she tries accordingly [31, 32]. At the time of the pandemic it can be considered that people might stop believing in the Just World. Indeed, the basic principle of the Just Word Theory is that those who have poor health are themselves to blame for what happens to them and therefore it can be assumed that they themselves contributed to the situation in which they are, creating the expectation that if an individual behaves in a different way he/she will have good health [31]. But it can be seen that the pandemic itself as a fact leads to the view that even those who are not responsible become infected, thus leading to a review as to whether the world in which we live is fair. As adolescents, but also children, seem to be able to perceive issues related to morality and justice [3], it is possible that the generation of people who live as children and adolescents in this pandemic may think that the world we live in is not fair.

Another threat potential threat concerns the shift to individualism. Regardless of the pandemic, it has been investigated whether the major crises a community is dealing with lead to an increased collective feeling or, on the contrary, promote individualism. This may, however, be related to pre-existing social structures and relationships of the societies being studied. For example, in Greece during the debt crisis era, it was found that, paradoxically, the psychopathological manifestations of the vulnerable, in particular patients with chronic diseases, were lower during the acute phase of the crisis compared to its other periods, which can be attributed to the increase of social support to these individuals during the economic crisis [33]. It is doubtful, however, whether this can be observed in societies which do not have such strong collective identities. Indeed, Greece is a typical case of a country where there are still strong collective identities and low individualism [34]. However, it is doubtful whether similar trends are followed in societies that may not be formed on the basis of strong collective identities. In this case, perhaps especially during the period of adolescence, where the development of meaningful relationships with others should be enhanced, this should not take place and a strong individualism might be developed. In this way, more individualistic societies could occur, with less strong links between individuals. Indeed, the development of interactions and social links with the use of the internet is doubtful whether it can lead to close relationships between adolescents and subsequently between adults. It is therefore possible for the generation of people who experience the pandemic as children and those who are teenagers to become more individualistic as adults.

Finally, there may be a lower IQ for the general population in the future than the IQ observed today. Early experiences have a central and highly formative role in the development of human intelligence [3, 25]. Based on the theory of the critical period, this presupposes the existence of these experiences at the appropriate developmental and evolutionary stage [3]. The pandemic is a situation in which it could be assumed that humanity has literally been dormant for more than a year. Clearly, this does not mean that when the pandemic is over there will be the

possibility of exploiting the critical period of development for those students who were deprived of the necessary environmental stimuli during the pandemic period. It is therefore expected that not only will their social and communication skills be reduced, but also their overall IQ, as they will be deprived of the necessary stimuli required for its development. It is therefore a generation which, by depriving itself of the necessary environmental stimuli, will be affected by the phenomenon which Itard first described in his study of the boy of Avignon. Even if it can be considered an exaggeration that there will be similar effects, which certainly will not be the case, the negative effects of the pandemic on mental health and the overall development of children are based precisely on this mechanism described thanks to Itard's observations.

2.2 The effect on non-typical students

2.2.1 The effect on students with ADHD

As confirmed cases of Covid-19 began to rise globally in March 2020, there was a corresponding decline in appointments to health services. In many countries pediatric outpatient departments were closed and the majority of doctors stopped seeing patients in person. Children's mental health services necessarily began to be provided by phone support or via video. Initially, it was very difficult to provide adequate support for children with ADHD through these services as there was no relevant preparation and experience [35]. The publication of guidelines for the evaluation and management of ADHD during the Covid-19 pandemic by the European ADHD Guidelines Group (EAGG) [36] and also by the Canadian ADHD Resource Alliance [37] was useful for adapting to the conditions of remote provision of mental health services to students with ADHD, although until health professionals familiarize themselves with the relevant services, valuable time was lost [35]. Globally, in the first weeks after the restrictions implemented due to Covid-19, new patient evaluations were carried out by phone, as there were no video conferencing facilities available. As it was not possible to carry out adequate observation of the children, it was not possible to complete these assessments and therefore diagnosis and interventions were delayed. So internationally all new assessments of children who may have had ADHD were temporarily postponed [35]. Based on the guidelines of EAGG [36] all procedures for providing mental health services to children with ADHD, including initial assessments, should continue throughout the pandemic, but should be carried out remotely, using a phone or video conference. Videoconferencing facilities were however not available during the first stage of the pandemic, leading to a significant delay in the new evaluations, although the related problem appeared to be addressed during the second wave of the pandemic [35].

Also significant were the problems with the lack of feedback on the change in symptomatology. The closure of schools led to significant difficulties for the assessment process of students with ADHD. Quantitative scoring scales are usually administered prior to the start of pharmacotherapeutic treatment of students with ADHD and are re-administered at regular intervals to control the change in the symptomatology of students and to re-evaluate the appropriateness of existing treatments. Most of these assessments include, due to the content of the relevant scales, items related to behavior and adaptation in the school environment. Thus, the closure of schools created significant problems in the reassessment of the symptomatology of students with ADHD [35].

Another major problem concerns delays in starting medication. Before the outbreak of Covid-19, newly diagnosed students with ADHD were waiting to start medication. Based on international standards, the protocol for pre-medication

preparation includes scales of the basic score of the severity of ADHD, scales of evaluation of possible drug side effects, cardiovascular control and physical cardiovascular examination, carried out by General Practitioners. As the outbreak of the Covid-19 pandemic led to a need for physical detachment, the ability to complete the relevant medical checks carried out prior to initiation and administration of medication was also limited. Therefore, for those who did not have adequate cardiological assessment by that time, the start of medication was delayed [35].

Subsequently, the EAGG developed relevant guidelines to circumvent the need for such controls. The bypass of cardiological checks was considered possible when three individual conditions were met. First, there should be no family history of early (<40 years) sudden cardiac death in a first-degree relative. Secondly, the possibility of home monitoring of heart rate and blood pressure, for example by parents. Third, to be able to administer and supplement specific and age-adjusted cardiovascular risk scales [38]. If possible, initial monitoring was considered useful to be carried out by remote assistance and monitoring of the physician [36]. Overall, based on these guidelines, it was up to the clinician to weigh the risks and make the necessary decisions for the therapeutic support of students with ADHD [38].

Contrary to this trend, The Canadian ADHD Resource Alliance [37] differed from EAGG's view of the possibility of remote evaluation during the pandemic. Thus, the Canadian ADHD Resource Alliance considered that physical examination by the general practitioner should be carried out using appropriate personal protective equipment prior to initiation of medication. In addition, it was suggested that that clinicians could examine whether there is a history of recent (<6 months) physical examination, including blood pressure, heart rate, weight and height, and rely on this pre-administration of medication [37].

Another negative effect of the pandemic is that requests for new diagnoses of ADHD have been reduced. For example, McGrath [35] reports an 80% reduction in applications for new diagnoses in Ireland. This trend should not be considered to be specific to students with ADHD, as it appears to be a broader trend towards a decrease in visits related to the diagnosis of specific learning and developmental disorders during the pandemic [39]. In any case, delay in diagnosis may lead to a worsening of the symptomatology for these students and a loss of an early period where relevant interventions could be applied to treat ADHD symptomatology [35].

Another relevant support need for students with ADHD during the pandemic concerns participation in distance learning. In a related survey conducted between April and June 2020 in the United States, a sample of 134 year-old adolescents was examined as to the difficulties they faced during the pandemic. As found by this survey, 20.3% of participants reported it as particularly difficult to participate in distance education [40]. Another survey in Israel studied a sample of 529 typical students and 119 students with ADHD during the pandemic. This survey compared the perceptions of these two groups on distance learning. As the results analysis found, the valuation of students with ADHD was significantly worse for the distance learning project compared to typical students [41]. Similarly, a survey of parents of students with ADHD in Canada found that 41% of a sample of 587 parents stated that their child was unable to successfully meet the needs of tele-education, a figure that should be considered particularly high [42]. Therefore, it seems that independent research leads to the identification of significant obstacles to the participation of students with ADHD in the project of distance learning during the pandemic. A noisy environment and a room in which there are enough stimuli to attract the student's attention could explain the inability of ADHD students to adapt in tele-education [35].

Based on the above, it appears that especially during the early phase of the pandemic there were significant problems in the diagnosis and support of students with ADHD. In any case, early diagnosis and intervention entails significant benefits for students with ADHD and is considered important because it does not focus on the very consequences of ADHD on the development path of students, but on the etiopathogenetic mechanisms themselves, thus leading to particularly beneficial effects for children and a long-term improvement of its developmental path thanks to early intervention [43]. Thus, it is possible that several students with ADHD missed or are missing this critical period for related interventions due to the measures taken to slow the spread of the pandemic and that they might experience negative long-term effects in the future in their psychosocial, academic and overall development.

2.2.2 The effect on students with autism

Several studies have been carried out to investigate the experience of students with autism during the COVID-19 era. In a related study in the Philippines, five parents of children with autism were interviewed about the perceived effects of the pandemic on the teaching and development of their children. This study found that it was particularly difficult for children with autism to adapt to training conditions from home and more generally to a new routine model due to the restrictions imposed. In addition, parents in the survey were significantly concerned that home education leads to significant limitations in the social interactions of children with autism, thus impeding their progress [44]. For children with autism, family routines may be a way to structure and enable participation, with consistency in routines employed by families helping them to adapt, participate, and know what to expect [45]. Therefore, the disruption of routine for students with autism due to pandemic response measures may have negative effects on their developmental course.

In overall, it can be assumed that changes imposed due to the pandemic and measures to limit the spread of SARS-CoV-2 led to significant stress for children with autism, as there was a rapid and significant change in their daily lives [46]. Children with autism are more susceptible to stress compared to typical children [47]. The negative effects of prolonged stress exposure due to the pandemic are yet unknown, but it could be supported that these children might develop specific phobia and social anxiety, since they are quite prone to these stress-related disorders [48, 49].

Another important issue has to do with the use of masks. In general, children with autism have a significant phobia about medical procedures, which also applies to the use of a protective mask, as they have a reduced tolerance to the use of it by themselves, but also by others [50]. In addition to investigating what this may entail for the risk of spreading the virus or the reasons why children with autism resist the use of masks, it is necessary to investigate the negative effects that the use of masks may entail on the development of children with autism. In students with autism there is an insufficient ability to recognize emotions, which is attributed to a significant degree that they are unable to perceive and interpret facial expressions [51, 52]. As children with autism have a wider difficulty in recognizing each other's emotions, interventions towards them focus significantly on enhancing how children with autism recognize the expression of emotions on the face of others, which is considered an important developmental achievement [53, 54]. As the use of masks therefore prevents the already difficult, but also necessary for children with autism, recognition of facial emotions, it is possible that the mass use of masks by the general population also leads to negative effects on their emotional understanding of children with autism.

Another particularly important problem concerns the gaps in therapeutic interventions to address the disorder. Particularly illuminating is a relevant case study in Indonesia, where a boy with autism aged 3 years and 2 months was examined. The intervention to this student was discontinued due to the dynamics of the pandemic and subsequently it was investigated whether this led to negative effects on the course of therapeutic intervention. As it was found, just one and a half months of interruption was enough for the previous treatment conquests to have been lost [55]. Attempts to implement online interventions have been carried out [56], although it is doubtful if such interventions can have an equal impact with face-to-face interventions, especially in autism, where interventions based on technology are integrated to a child's physical environment. For example, interventions with the assistance of robots developed for children with autism aim to enhance the child with autism to interact not only with the robot, but also with parents and other children being at the same environment while playing with the robot [57]. In general, the integration of interventions based on modern technology in the physical environment and the need for close contact between the therapist and the child debars internet-delivered interventions for children with autism during the pandemic, leading to uncovered supportive care needs. Since omissions in early and effective interventions are related to long-term under-development of communicative and social skills for children with autism [58], it could be supported that this is a serious hazard of the COVID-19 pandemic regarding their development.

In overall, the COVID-19 pandemic lead to important strains for children with autism due to distance learning and need for home-based activities and interactions. The use of face masks might also be an important parameters for this group of students, further obstructing their ability to recognize facial expressions and emotions. Barriers in treatment and early intervention might also be of most importance and lead to irreversible long-term negative consequences.

2.3 Studying an independent generation?

The number of these negative effects must certainly lead to the following question: Does the significantly different experiences of today's children and today's adolescents lead to a completely different generation? Each cohort of people who have been exposed to common high-impact stimuli can be considered as belonging to an autonomous generation [59]. In recent decades, it can even be assumed that common technological development around the world and globalization are leading to the possibility of considering the existence of common generations across humanity. For example, while the so-called Greatest Generation concerns those who belonged to countries that fought in the Second World War and were born between 1901 and 1927 [60], younger generations such as Millennials [61] are certainly studied almost globally, as the common stimuli also lead to the consideration of a common generation of people across humanity. It can therefore be assumed that the significant power of stimuli modulators for those who are currently minors will also lead to the consideration of an autonomous generation of people, namely a COVID-generation. This generation must clearly be defined in terms of the years of birth of those who can join it and their central characteristics. These two parameters, however, are not unrelated to each other, as it is expected that the degree of intensity of the effects should be reflected, in order to categorize within this generation only those who have actually been affected to a very significant degree by the current pandemic. For example, future research may lead to the finding that those born during the pandemic have no significant differences in their subsequent development due to this experience, which may be attributed to the plasticity of the human brain early in life, which allows recovery after experiencing unpleasant experiences [3]. It is therefore necessary to delineate

those age groups in which there are such strong effects, so that the conclusion can be drawn about an autonomous generation of people. In any case, as elements of this generation and as central studied parameters can be considered the following:

1. The increased frequency of anxiety and depressive disorders: vulnerability to stress will lead to an increased likelihood of developing anxiety and depressive disorders for individuals of this generation.

2. An increased frequency of personality disorders: the deprivation of necessary interpersonal interactions during childhood and adolescence will predictably lead to an increased frequency of personality disorders for these people.

3. Absence of distinction between the physical and the digital world: this generation is expected to see an absence of distinction between the physical and the digital world. This will certainly concern the environment of education and work. However, this may also extend to the conclusion of friendly and romantic relationships.

4. A powerful external locus of control center: individuals of this generation will feel that the control of their lives is in the hands of "experts" and fate.

5. Low Belief in the Just World: individuals of this generation will be expected to think that the world is in general unjust, with whatever this may entail for setting goals and adhering to them.

6. Limited interpersonal interactions and social ties: people of this generation are expected to enjoy fewer and not so close social relationships with the rest.

7. Incomplete communication and social skills, as well as a lower IQ: the loss of the critical period will lead to significant relative deficits.

8. Increased interest in environmental issues: it is expected that addressing this crisis will lead to an increased desire to prevent the development of related crises in the future. As the environmental issue is one of the most important problems for humanity in the decades to come, it is estimated that individuals of this generation will develop increased environmental sensitivities in order to avoid such a crisis.

9. Reduced trust in local governments and increased loyalty to international organizations: during the pandemic it became clear that the management of the crisis goes beyond the narrow limits of nation-states. A significant role in the management of the pandemic was played by the non-profit organizations that financed the development of vaccines and the World Health Organization. It is therefore estimated that this generation of people will be distinguished by increased confidence in international institutions and low confidence in local governments and local organizations.

10. Continued need to provide supportive services to people with specific learning and developmental disorders: as described above, the pandemic leads to a delayed diagnosis for people with specific learning and developmental disorders and to a lower quality of supportive services. This will clearly lead to deficits which will require overstretched interventions to be filled in the future. People with special learning and developmental disorders that will be part of this generally expected will need continuous interventions.

3. Conclusions

The current pandemic raises important ethical issues, which were expected to concern the people of post-industrial societies. In the information age, important ethical questions emerged by studying the dipole between compulsion and consent to important collective and societal issues, seeking a balance between social functionalism and individualism [62]. As we move from post-industrial societies to the Fourth Industrial Revolution, the former as well as additional ethical issues are expected to concern humanity [63], with the way the current pandemic is managed certainly reflecting some of them.

Irrespective of the COVID-19 pandemic, each generation of people must be assessed by the next as to whether their own well-being has been sacrificed to protect the well-being of subsequent generations. In an opposite view, for example, it could be assumed that the soldiers of the Second World War did not have to fight, as they would risk losing their lives and should prefer living in a Nazi occupied world. Of the 300 Spartans of Leonidas until today, humanity always evaluates the previous generation of people based on what contributed to the welfare of the next generation. Therefore, the evaluation of response policies against the pandemic must be carried out not only on the basis of today's conditions, but also by predicting the effects that the way it is managed will have on the next generation of people. Even in a scenario where pandemic response policies would be completely effective and lead to zero deaths, this could be considered unacceptable in the event that individual freedom, mental health and economic well-being would be disproportionately affected. Consequently, the development of relevant pandemic response policies by governments and international organizations seems to have disproportionately combined the need to protect public health with the protection of individual freedom, mental health and economic well-being, although the latter is not the subject of this chapter. The balance between all this is clearly a difficult equation. It is not, however, a failure of health policy makers to solve this equation, but a total disregard for the parameters that should be taken into account.

Reverting to the ancient Greek view of things, various philosophers, perhaps most notably Socrates, highlighted not only the dimension of physical well-being, but also mental, considering as a state of imbalance to give further weight than that which should be given to one of these two pillars of human health. It can therefore be considered that the excessive emphasis placed on the protection of physical health through measures such as the universal use of mask, delays in special education diagnosis and interventions, the wide application tele-education for very long periods and the restrictions in sport activities of children are disproportionately as to the good he had to protect, as they pose the risk of very significant threats to the mental welfare of children, bearing not only today, but also tomorrow.

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Chapter 44

COVID-19 and Psychological Distress among Older Adults in Ghana

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Abstract

COVID-19, the novel of all respiratory pandemics, has since its global invasion remained a significant threat in all spheres of human endeavour. This phenomenon has led to short-term and long-term psychosocial and mental health implications for many populations, particularly vulnerable groups, of which older people form part. This paper fills the lacuna in research on how the pandemic is breeding psychological distress among older people. Cross-sectional data were obtained from an Ageing, Health, Lifestyle and Health Services (AHLHS) study conducted between June 2020 and August 2020 (N = 400) in the Ashanti and Greater Accra regions of Ghana. Sequential logistic regression models were performed to estimate the variables that predict psychological distress, whereas descriptive statistics were used to determine the extent of psychological distress among the study population. This study revealed that psychological distress was somehow prevalent, necessitating early intervention to minimise the risks of the said health risk. Additionally, gender, employment status, chronic NCDs, perceived health status and receipt of COVID-19 information were significantly associated with psychological distress among the respondents. It is necessary to employ strategies to minimise the psychological distress in Ghana during this pandemic.

Keywords: ageing, COVID-19, Ghana, older adults, psychological distress

1. Introduction

Psychological distress has been identified as one phenomenon that is common to all humans irrespective of age and gender differentiations. In children, Roma et al. [1] identified that the inability of parents to sometimes meet the most pressing needs of children in their adolescence pose some level of psychological turmoil to them. Nania et al. [2] also posited that adolescents' quest to understand the reasons behind social stratifications in their societies induce the feeling of anxiety and worry in them especially when they belong to the disadvantaged end of the spectrum. Psychological distresses are more prevalent among the young adult category (18–30) and the older adult group (above 60 years) [3]. Vahedian-Azimi and others further explained that access to diversified information on social media incubates

anxiety and some sense of worry among young adults whereas depression, which is induced by loneliness and regret, is common among people within the older age group.

COVID-19, the novel of all respiratory diseases has since its global invasion remained a major threat in all spheres of human endeavour. According to the Oregon Health Authority [4], COVID-19 has posed the greatest of economic depressions the world has ever experienced. In the same vein, the World Health Organisation [5] also identified COVID-19 as a key threat to human relationships. Inasmuch as COVID-19 has in recent times increased the threshold of people developing psychological distresses, Gorenko et al. [6] noted that the case with older adults is remarkable in that, prior to the pandemic most older people had astounding psychological issues. This, coupled with the socioeconomic depressions fueled by the pandemic have led to several workers been laid off thereby posing no small threat to the dependent aged population especially in developing nations [7]. According to Rutayisire et al. [8], anything that threatens livelihood sustaining activities always creates multiplier indices for depression and anxiety. Extending the argument, Stiegler and Bouchard [9] further identified that some measures put in place by global leaders and national governments in their bid to manage and curtail the pandemic have in recent times worsened the dilemma of psychological distress among older people. In that regard, Gorenko et al. [6] revealed that social distancing and some lockdown measures across the world have worsened the plight of older people who already fell neglected and left out in most societal engagements.

According to Cinelli et al. [10] the inability of older adults to effectively use social media platforms such as Facebook and Twitter to engage with cohorts and relatives has contributed to their psychological distresses during the pandemic. The concept of mass media communication was further expounded by Roy et al. [11] when they noted that, during the COVID-19 pandemic, most young people spend much time interacting on social media than they do in-person. This form of social engagement has been identified by Twenge & Joiner [12] as vital for relieving psychological stresses.

Contrarily, the gradual shift from an in-person form of commerce to the digital has inadvertently increased households' population [13]. According to them, households which hitherto the COVID-19 used to be partially or entirely empty, now have their full occupancy almost always intact. This has been adjudged by Bhatti et al. (2020) as a vital means to managing feelings of isolation and depression among the aged. Tran [14] also noted that the presence of people around the aged creates social security and emotional empowerment to them. This is supported by Twenge & Joiner [12] when they indicated that depression and feeling of isolation among younger and older people are stimulated by the absence of close relatives or friends. In this regard, Qiu et al. [15] identified that psychological distresses such as depression and feeling of isolation have in recent times, partially reduced among older people in China by virtue of the relatively longer stay of other householders at home. Hence, as a way of helping the aged overcome psychological distresses during the pandemic, Amzat et al. [16] indicated that friends and relatives should make deliberate efforts to spend quality time with their older folks. Similarly, Alsheikh Ali [17] also intimated that adult education needs to be intensified to equip the aged with basic skillsets and knowledge relevant for keeping abreast with contemporary advancement in technology.

Evidence from earlier epidemics suggest that such occurrences are associated with higher psychological distress. For illustration, the Ebola epidemic which affected some West African countries in 2014 and 2015 resulted in massive psychological problems for victims, healthcare workers and the entire population of the

affected countries [18, 19]. While there exist a plethora of studies which examined psychological distress and its associated factors among different population cohorts like healthcare workers, students and the general population [20–26], evidence on older adults is limited or non-existent in some African countries. Additionally, the few available studies were conducted in other jurisdictions outside of Ghana. The only known research on COVID-19 and psychological distress in Ghana was conducted by Ofori et al. [27] to highlight the psychological impact of COVID-19 on Ghanaian health workers and indirectly serve as a needs assessment survey for input to support affected staff and the broader health system. Against this background, this study seeks to examine psychological distress among adults in Ghana in light of the pandemic.

2. Methodology

This section of the study presents a review of the methodology adopted in the conduct of the research. The first part focuses on the research philosophy underpinning the study. The second section deals with the research design adopted in the study. The third part takes into consideration the study variables comprising dependent and independent variables. The fourth part is devoted to sources of data. Unit of analyses, sample size determination data collection instrument, sampling techniques and data collection procedure in addition to the methods of data analysis were captured in the remaining sections of the methodology.

2.1 Research philosophy

Research philosophy is considered as a central and a fundamental component of every research, as it spells out how the author(s) or researcher(s) perceive the functioning of the world and, centres primarily on reality, knowledge, and existence [28–31]. This suggests that when choosing a research paradigm, attention must be accorded to its semblance with the fundamental assumptions, as it defines the methodological choice, research strategy and means of data collection and the analytical frameworks that must be employed [32]. The research is underpinned by the positivist approach to knowing or studying the world. This approach helps in establishing relationship among variables [33, 34], by the application of rigorous statistical analysis [35, 36].

2.2 Research design

Research design demonstrates the procedure for data collection and analysis in a manner that integrates the importance of the study [36]. The cross-sectional research design was employed to ensure that data was collected in a one-of fashion to make inferences about the population of interest (older persons within the Accra and Kumasi Metropolitan areas of Ghana's Greater Accra and Ashanti Regions respectively). Cross-sectional surveys are useful in proving or disproving assumptions and capture multiple variables at the time (Bethlehem, 1999). It is further argued that cross-sectional research provides a picture of the results and the traits associated with it and at a particular period in time [37–39]. Adoption of the research design also helped in establishing the prevalence rate of psychological distress among older adults in Ghana during a pandemic such as COVID-19 in addition to the odds ratios, to study the association between exposure and the outcome variables [39]. The exposure variables in this study were, therefore,

demographic, socio-economic, health status variables and COVID-19 associated variables, whereas that of the outcome variable was psychological distress from COVID-19.

2.3 Sources of data

Within the scope of research, sources of data comprise both primary and secondary sources [40]. The primary data constitute any data gathered by the researcher(s) or investigator(s) directly from the unit of analysis or the respondents of the study. These data are often obtained by way of questionnaire administration, interviews, focus group discussions (FGDs) and sometimes through participant observation. The secondary data, nevertheless, refers to data provided to the researcher(s) or investigator(s) by another entity. In other words, secondary data is collected by someone else other than the researcher(s) or investigator(s). The data for this study was obtained from primary sources. Specifically, the primary data was obtained from older adults who were 50 years and above, living in Accra and Kumasi Metropolitan areas.

2.4 Unit of analyses

Unit of analyses in research denotes the particular entity or group that makes up what is being investigated or studied within the research. Older people (50 years and above) constituted the unit of analyses for the study. As such, persons below 50 years of age were excluded from the potential participants of the study.

2.5 Sample size determination

Samples are essential in social surveys as it is nearly impossible to reach or cover the entire population of interest due to myriad reasons. Estimating an appropriate sample size that has the characteristics of the population from which the sample will be drawn is of concern in the research process. The required sample size was estimated using Lwanga and Lemeshow's [41] formula for estimating sample sizes since no sampling frame exists for older people in the Accra and Kumasi Metropolitan areas.

$$n = \left(Z^2 * P * (1 - P)\right)/d^2 \quad (1)$$

Where n = sample size, Z = Z statistic for a level of confidence (1.96 for 95% confidence level), P = expected prevalence or proportion (the proportion or prevalence rate of 50%, P = 0.5%), and d = precision (in proportion of one; if 5%, d = 0.05). These parameters were factored into the equation.

$$n = \left(Z^2 * P * (1 - P)\right)/d^2 \quad (2)$$

$$n = \left(1.96^2 * 0.5 * (1–0.5)\right)/0.05^2; n = 384.16. \quad (3)$$

The results indicated a sample size of 385 respondents. To cater for non-response rate, 10% (39) sample size was added to the sample, thus totalling 424 respondents. In all, 400 online questionnaires and researcher administered questionnaires were fit for purpose (fully completed). By this, responses from 400 older adults were included in the final analysis.

2.6 Data collection instruments

A single close-ended questionnaire was used to gather information from the online survey and the face-to-face interaction with a section of the older people. The questionnaires were drafted in a close-ended format to ensure easy reading by the participants to save time and to increase response rate [42]. The questionnaire was structured in four sections. The first section captured information on the demographic features of the respondents such as age, gender, marital status among others. The second aspect comprised information on socio-economic features like educational level, income or livelihood strategy, among others. The third section captured information on health status variables such as being diagnosed with a non-communicable disease, disability, past illness and self-rated health. Information on COVID-19 associated variables (such as increasing number of cases and deaths) constitute the focus of the fourth aspect of the questionnaire, whereas psychological distress from COVID-19 (such as feeling calm, feeling rushed, not seeming to have enough time and having physical aches and pains among others) was the focus of the fifth section of the questionnaire.

2.7 Sampling techniques and data collection procedure

The purposive sampling technique was used to sample the respondents. By this, the online survey forms were forwarded to people who have attained the minimum age of 50 years. This was to reduce the likelihood of individuals below the age of 50 years participating in the study. Additionally, the face-to-face researcher administered questionnaire was only administered to persons who were 50 years or above. This sampling method (purposive sampling technique) requires researchers to have prior knowledge about the purpose of their studies so that they can properly choose and approach eligible participants. The study's purpose is to explore the impact of COVID-19 on psychological distress among older adults (50 years or above), eligible participants comprised only older adults (50 years or above). Researchers use purposive sampling when they want to access a particular subset of people, as all participants of a study are selected because they fit a particular profile. By this, the homogenous purposive sampling was used because members of the sample have a shared characteristic or a shared set of characteristics. The homogeneous purposive sampling was used because the research question being addressed is specific to the characteristics of the particular group of interest, which was subsequently examined in detail.

The data collection spanned a period of three months, between June 2020 and August 2020. The data collection was in two forms. First, an online survey was used to obtain results from older adults on the psychological stress of COVID-19 in Ghana. Google forms were used to disseminate the questionnaires on various media platforms including Facebook, WhatsApp and Emails. Over the three months, a total of 310 older adults filled and submitted the online survey forms. Acknowledging that there is a higher likelihood of excluding older adults who cannot read nor write from the sampled population, face-to-face interviews were conducted for older adults who fell within this category. Although the face-to-face researcher administered questionnaire was supposed to capture information from respondents who could neither read nor write about 10% of the respondents could read or write but did not fill the online survey forms and intimated their willingness to be interviewed. Before the interview with the older adults, verbal informed consent was taken from the respondents. Following the recommendation of Kumekpor [42], the purpose of the research was explained to the study participants. By using the convenient sampling approach, the respondents who agreed were interviewed, and their responses were ticked or noted on the questionnaire. In all, responses from

400 older adults were obtained (comprising of 310 responses through the online survey and 90 responses from face-to-face questionnaire administration).

2.8 Data analysis

The data obtained were verified, carefully checked for consistency by cross-referencing it to the original questionnaires for corrections and modifications. The data was imputed into the database and was analysed using descriptive and inferential statistical tools within the SPSS software (Version 20.0). Descriptive statistical tools were used to summarise the data and presented in tables. Additionally, a multivariate logistic regression model was developed to estimate the variables that were associated with psychological stress among the study participants. Four different sets of models were developed to estimate psychological stress among the participants. Model 1 consists of demographic variables. Model 2 comprised socio-economic variables in addition to all variables in Model 1. Model 3 consist of all variables in Model 2 in addition to health-related variables. Model 4 (full Model) comprise all variables in Model 3 as well as COVID-19 related variables. The test results were considered significant at 0.05 or less.

2.9 Ethical consideration

The study conformed to all ethical standards. Firstly, the notion of voluntary consent [43] as pertains to social science research was adhered to during the data collection process. The respondents were briefed about the purpose of the study and how the data collected was to be used. Secondly, anonymity and privacy was guaranteed when reporting the findings from the respondents.

3. Results

The results from of the data collected from the field survey with older adults on COVID-19 and psychological health are presented in this section. The results are presented under three themes. The first section covers the socio-demographic characteristics of the respondents. The prevalence of self-reported psychological distress from COVID-19 was presented in the second section, whereas the determinants of psychological stress among older adults was captured under the third and final section.

3.1 Socio-demographic characteristics of the participants

A total of 400 older adults were involved in this study. Of this participants, 218 (54.5%) reside within the Kumasi Metropolis, and 151 (37.8%) of them were males, and 249 (62.3%) were females. Up to 211 (52.8%) of the participants were aged between 50 and 60 years, 149 (37.2%) were aged between 61 and 70 years, and 40 (10%) were above 70 years. Among the participants, 331 (82.8%) were Christians, 229 (57.3%) were married, 121 (31%) had primary or basic education, 250 (62.5%) were employed (either by an entity-state or private institutions or are

Variable	Categories	Count (400)	Percentage (%)
Location	Greater Accra Metropolis	182	45.5
	Kumasi Metropolis	218	54.5
Gender	Males	151	37.8
	Females	249	62.3

Variable	Categories	Count (400)	Percentage (%)
Age *(years)*	50–60 years	211	52.8
	61–70 years	149	37.2
	Above 70 years	40	10.0
Religion	Christian	331	82.8
	Non-Christian	69	17.3
Marital Status	Married	229	57.3
	Divorced	79	19.8
	Widowed	92	23.0
Level of Education	No formal education	70	17.5
	Basic education	124	31.0
	High school education	99	24.8
	Tertiary education	107	26.8
Employment	Employed	250	62.5
	Retired	150	37.5
Socio-economic status	Extremely poor	68	17.0
	Quite poor	121	30.3
	Not very well off	157	39.3
	Quite well off	54	13.5

Table 1.
Socio-demographic characteristics of the participants.

self-employed), 157 (39.3%) were quite well off (based on self-reported social status ranking) among others (see **Table 1** for further details).

3.2 Prevalence of self-reported psychological distress from COVID-19

The psychological distress from COVID-19 was measured by the Psychological stress measure PSM-9, a measure was developed by Lemyre and Tessier [44]. The participants were asked to rank their experience of psychological distress from COVID-19 on an 8-point Likert scale; ranging from 1 = Not at All; 2 = Not Really; 3 = Very Little; 4 = A Bit; 5 Somewhat; 6 = Quite A Bit; 7 = Very Much; and 8 = Extremely. Descriptive statistical tools like the mean and standard deviation as well as frequencies and percentages were used to summarise the results. Additionally, the Relative Importance Index (RII) was used to rank the forms of bullying within the school using the formula RII = $\sum$PiUi/N (n), where w is the weighting as assigned by each respondent on a scale of one to five with one implying the least and five the highest. A is the highest weight and N is the total number of the sample. **Table 2** presents the results on the Psychological stress measure PSM-9.

With a mean score of 3.9 (and a standard deviation of 2.2), 3.9 (2.0) and 4.5 (2.0), the respondents feel calm, feel rushed; do not seem to have enough time and have physical aches and pains: sore back, headache, stiff neck, stomach ache a bit of the time. Also, a bit of the time the older adults feel preoccupied, tormented, or worried (mean = 4.5 and standard deviation = 2.0) and feel stressed mean = 4.3 and standard deviation = 1.9) while somewhat most of them feel a great weight on their shoulders (mean = 4.74 and standard deviation = 1.9). Most of them also somewhat feel confused; with muddled thoughts; lacking concentration and focus. However, quite a bit of the time, they are full of energy. Ranking the variables on the RII scale, feeling full of energy and keen ranks first with an index of 0.78, feel a great weight on their shoulders ranks second with an index of 0.66, whereas feeling confused with muddled thoughts; lack concentration and focus as well as feeling preoccupied, tormented, or worried ranked third and fourth respectively. The study thus reports a moderate incidence of psychological distress from COVID-19 among the respondents.

Statements	Not At All		Not Really		Very Little		A bit		Somewhat		Quite a Bit		Very Much		Extremely		Mean	Std. Dev	RII	RII Level	Rank
	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%					
I feel calm	75	18.8	63	15.8	52	13	54	13.5	52	13	47	11.8	31	7.8	26	6.5	3.9	2.2	0.55	High-Low	9
I feel rushed; I do not seem to have enough time.	49	12.3	48	12	97	24.3	49	12.3	77	19.3	28	7	27	6.8	25	6.3	3.9	2.0	0.55	High-Low	8
I have physical aches and pains: sore back, headache, stiff neck, stomach ache.	25	6.3	25	6.3	75	18.8	125	31.3	28	7	48	12	25	6.3	49	12.3	4.5	2.0	0.63	High	5
I feel preoccupied, tormented, or worried.	22	5.5	48	12	76	19	54	13.5	76	19	49	12.3	26	6.5	49	12.3	4.5	2.0	0.63	High	4
I feel confused; my thoughts are muddled; I lack concentration; I cannot focus.	25	6.3	49	12.3	24	6	101	25.3	49	12.3	76	19	51	12.8	25	6.3	4.6	2.0	0.64	High	3
I feel full of energy and keen.	25	6.3	1	0.3	27	6.8	29	7.3	76	19	115	28.8	76	19	51	12.8	5.6	1.8	0.78	Higher	1
I feel a great weight on my shoulders.	25	6.3	25	6.3	24	6	126	31.5	77	19.3	50	12.5	24	6	49	12.3	4.74	1.9	0.66	High	2
I have difficulty controlling my reactions, emotions, moods, or gestures.	72	18	25	6.3	51	12.8	75	18.8	75	18.8	26	6.5	26	6.5	50	12.5	4.2	2.2	0.59	High-Low	7
I feel stressed.	23	5.8	46	11.5	98	24.5	55	13.8	74	18.5	52	13	26	6.5	26	6.5	4.3	1.9	0.60	High-Low	6
Overall psychological distress	18	4.5	7	1.8	12	3	140	35	172	43	51	12.8	—	—	—	—	4.5	1.1	—	—	—

Table 2.
Prevalence of self-reported psychological distress from COVID-19.

	Model 1		Model 2		Model 3		Full Model	
Variable	**AOR**	**95% C.I**	**AOR**	**95% C.I**	**AOR**	**95% C.I**	**AOR**	**95% C.I**
Demographic								
Gender[a]								
Female	**1.898***	**(0.614–1.543)**	**1.015***	**(0.632-1.630)**	**1.009***	**(0.625-1.628)**	**1.004***	**(0.609-1.595)**
Age (years)[b]								
61–70	0.838	(0.519–1.352)	0.907	(0.554–1.485)	0.850	(0.513–1.410)	0.867	(0.521–1.444)
Above 70	**1.482***	**(0.729–3.013)**	1.668	(0.776–3.584)	1.662	(0.766–3.607)	1.715	(0.781–3.764)
Marital Status[c]								
Divorced	0.966	(0.548–1.702)	1.266	(0.620–2.587)	1.313	(0.640–2.695)	1.409	(0.679–2.921)
Widowed	0.756	(0.428–1.338)	1.101	(0.413–2.936)	1.023	(0.379–2.759)	1.129	(0.414–3.083)
Religious group[d]								
Non-Christian	1.236	(0.688–2.222)	1.273	(0.694–2.337)	1.331	(0.715–2.475)	1.310	(0.702–2.445)
Socio-Economic								
Education[e]								
Basic			1.107	(0.531–2.308)	1.092	(0.518–2.299)	1.059	(0.500–2.243)
Secondary or high school			1.592	(0.735–3.448)	1.561	(0.711–3.423)	1.529	(0.692–3.379)
Tertiary			1.978	(0.956–4.094)	2.014	(0.961–4.219)	2.026	(0.961–4.273)
Employment Status[f]								
Retired			**0.972***	**(0.601–1.570)**	0.414	(0.146–1.177)	**0.396***	**(0.138-1.140)**
Socio-economic status[g]								
Quite poor			0.516	(0.246–1.083)	0.516	(0.244–1.089)	0.504	(0.238–1.070)
Not very well off			0.440	(0.159–1.221)	0.489	(0.174–1.375)	0.475	(0.168–1.340)

	Model 1		Model 2		Model 3		Full Model	
Variable	**AOR**	**95% C.I**	**AOR**	**95% C.I**	**AOR**	**95% C.I**	**AOR**	**95% C.I**
Quite well off			0.805	(0.365–1.776)	0.855	(0.380–1.923)	0.863	(0.383–1.945)
Health-Related Variables								
No diagnosis with NCD[h]					**0.759***	**(0.428-1.345)**	**0.694***	**(0.308-1.561)**
No past illness[i]					2.763	(0.994-7.677)	3.011	(1.065–8.509)
Poor health status[j]					**1.906***	**(0.548-1.497)**	**1.927***	**(0.558-1.541)**
COVID-19 Related Variables								
Accurate information[k]							**1.669***	**(0.378-1.182)**
Increasing cases and deaths[l]							1.323	(0.733–2.388)
Comprehensive measures[m]							1.262	(0.699–2.282)
Model fitting information -2Log Likelihood		470.635		461.176		456.592		453.064
Hosmer-Lemeshow χ^2 (significance)		2.356(0.968)		12.433(0.133)		5.387(0.716)		3.901(0.866)
Nagelkerke R^2		0.013		0.047		0.063		0.075

*$p < 0.05$.

[a]*Male is the reference category for gender variable.*

[b]*50–60 years is the reference category for the age variable.*

[c]*Married is the reference category for marital status variable.*

[d]*Christian is the reference category for religious variables.*

[e]*No formal education is the reference category for education variable.*

[f]*Employed is the reference group for the employment variable.*

[g]*Extremely poor is the reference category for socio-economic status.*

[h]*Have been diagnosed with NCDs is the reference category for NCDs variable.*

[i]*Recorded past illness is the reference category for past illness variable.*

[j]*Good health status is the reference category for the health status variable.*

[k] Yes is the reference category for accurate information on COVID-19.

[l] Yes is the reference increasing cases and deaths from COVID-19.

[m] Yes is the reference category for the existence of comprehensive measures.
Model 1 = Socio-demographic variable; Model 2 = All variables in Model 1 plus self-rated health variables; Model 3 = All variables in Model 2 plus COVID-19 related variables.
CI = Confidence Interval; OR = Odd Ratio; AOR = Adjusted Odd Ratio.

Table 3.
A multivariate logistic regression on the determinants of psychological stress among older adults.

3.3 Determinants of psychological stress among older adults

A sequential logistic regression analysis was performed to find the factors associated with psychological stress among older adults (see **Table 3**). In Model 1, the study revealed that female older adults were significantly more likely to experience psychological distress as compared to their male counterparts (AOR = 1.898; CI = 0.614–1.543). Again, the study found that respondents who were above 70 years were significantly more likely to experience psychological distress as compared to respondents who were between 50 and 60 years old AOR = 1.898; CI = 0.729–3.013). In Model 2, female respondents were significantly more likely to experience psychological distress as compared to their male counterparts (AOR = 1.015; CI = 0.632–1.630). It was also established that respondents who have retired were significantly less likely to experience psychological distress as compared to respondents who were employed (AOR = 0.972; CI = 0.601–1.570). The introduction of socio-economic variables in Model 2 particularly, employment status rendered the association between the age of the respondents and psychological distress insignificant. This outcome suggests that employment status as a socio-economic variable is a good predictor of psychological distress from COVID-19 than the age. On the contrary, the introduction of the socio-economic variables was unable to dissipate the association between gender and psychological distress from COVID-19.

In Model 3, it was also established that female respondents were significantly more likely to experience psychological distress as compared to their male counterparts (AOR = 1.009; CI = 0.625–1.628). It was also established that respondents who have never been diagnosed with non-communicable diseases were significantly less likely to experience psychological distress as compared to older adults who have been diagnosed with non-communicable diseases (AOR = 0.759; CI = 0.428–1.345). Older adults who have poor self-rated health were significantly more likely to experience psychological distress than older adults who perceived their self-rated health as good (AOR = 1.906; CI = 0.548–1.497). The introduction of health-related variables in Model 3 particularly, diagnosis with non-communicable diseases and self-rated health rendered the association between employment status and psychological distress from COVID-19 insignificant. This outcome suggests that family diagnosis with non-communicable diseases and self-rated health are good predictors of psychological distress among older adults than their employment status. On the contrary, the introduction of the health-related variables was unable to dissipate the association between gender and psychological distress.

In the Full Model, females (AOR = 1.004; CI = 0.609–1.595), older adults who perceived their self-rated health as good (AOR = 1.927; CI = 0.558–1.541) and older adults who received inaccurate information on the COVID-19 (AOR = 1.669; CI = 0.378–1.182) were significantly more likely to experience psychological distress than their respective counterparts. Additionally, respondents who have retired (AOR = 0.396; CI = 0.138–1.140) and respondents who have never been diagnosed with non-communicable diseases (AOR = 0.694; CI = 0.308–1.1561) were significantly less likely to experience psychological distress than their respective counterparts. The introduction of the COVID-19 related variables did not dissipate the association between gender, non-communicable diseases and self-rated health and psychological distress from COVID-19. Even though there was no association between employment status and psychological distress from COVID-19 in Model 3, the Final Model observed an association between employment status and psychological distress from COVID-19, with retired older adults significantly less likely to experience psychological distress from COVID-19 (AOR = 0.396; CI = 0.138–1.140).

4. Discussion

This study examined COVID-19 and psychological distress and its associated factors among older adults in Ghana. Being the first study to report on COVID-19 and psychological distress and its associated factors among older adults in Ghana, the research largely contributes to literature, methodology and policy and practise on mental health; particularly during a pandemic like COVID-19. As found in the study, 43% of the participants (translating into 172 in 400 older adults) have somewhat suffered psychological distress from COVID-19. This finding showed a higher incidence of psychological distress among the respondents compared to the findings from earlier studies on psychological distress due to COVID-19 [21, 23–26]. The moderate level of stress reported in our study lends credence to the similar finding discovered by Grover et al. (2020). That said, the findings of this study represent a lower prevalence rate of psychological stress than the 71% stress level reported by Son et al. [45] when they examined the effects of COVID-19 on college students' mental health in the United States.

The discrepancies in the prevalence rates could be attributed to the differences in the study designs, variations in populations studied and the conceptualization of psychological stress. For instance, while some of the studies adopted only online surveys, some adopted face-to-face interaction. Additionally, some of the works that reported low prevalence were conducted among the general population of 18 years above in some case, and 14 years and above in other instances. However, our study was conducted among a population cohort that is known to suffer a wide array of psychological distresses, chronic conditions and multimorbidities [46–49]. The COVID-19 pandemic appears to have had a minor psychological impact on the older adults in the Greater Accra Metropolitan Area and the Kumasi Metropolitan Area. However, psychological health promotion in the general public is still required, with much emphasis on older adults to avert the situation.

In our study, gender, employment status, chronic NCDs, perceived health status and receipt of the information on COVID-19 were significantly associated with psychological distress among the respondents. Gender was a predictor of psychological distress among older adults. The findings confirm earlier studies in which the female gender was associated with a higher risk for developing depression and anxiety symptoms [23, 50–56]. The nearly unanimous view of literature on the higher risk of psychological distress among females has been somehow attributed to their increased care burden. "While women were already doing most of the world's unpaid care work before the onset of the COVID-19 pandemic, emerging research suggests that the crisis and its subsequent shutdown response have resulted in a dramatic increase in this burden" [57]. The increased care burden could be the reason for the association between the female gender and psychological distress.

Furthermore, the study found a statistically significant association between employment status and psychological distress among the respondents, with retired older adults having a lower odd of experiencing psychological distress. The coronavirus outbreak is, first and foremost, a public health threat, but it is also, and increasingly, becoming an economic threat [49]. In addition to its significant social impacts and human dimension, the outbreak is a major economic shock, calling for a decisive and coordinated political response [58]. Job losses and pay cuts that have occasioned the response to the economic fallouts of the pandemic has led to significant financial constraints to the affected people. As such, older people who were employed and have experienced job losses or pay cuts will suffer much more psychological distress. By this, Crayne [59] noted that more and more people will

suffer devastating effects of job losses and pay cuts, an occurrence that will have deleterious impacts on mental wellbeing. Policies and interventions that make living conditions a bit better are highly advocated.

Older adults without chronic NCDs were less likely to experience psychological distress compared to those with chronic NCDs. Again, this study found that self-rated health (ones perceived health status) influences psychological distress from COVID-19 among the respondents. Thus, the older adults who have poor self-rated health were significantly more likely to experience psychological distress from COVID-19 than older adults who perceive their self-rated health as good. According to De Ridder et al. [60], persons diagnosed with NCDs often suffer psychological distress. A similar argument was made by Turner and Kelly [61] when they observed being diagnosed with NCDs increases stress among the patients. With comorbidities high touted as a risk factor as far as mortality from COVID-19 is concerned, people with poor health status and those diagnosed with NCDs have seen their stress levels increased [62]. However, evidence abounds that receiving accurate information about COVID-19 reduces apprehension and its attendant psychological stress. It is by this that older adults who do receive accurate information about the virus had a higher likelihood of experiencing psychological distress. This implies that appropriate information must be disseminated about the virus to reduce the excessive fear and frightening message that is often churned out into the public domain. This will go a long way to reduce the psychological distress among older adults in Ghana.

The study offers valuable insights into psychological distress among older adults in a developing country like Ghana – during a pandemic (COVID-19). To the best of our knowledge, this research represents the icebreaker, as no known study has examined the prevalence and the determinants of psychological distress among older adults in Ghana. This study provides information to health policymakers to have a better understanding of demographic, socioeconomic, health-related and COVID-19 related associates of psychological distress among older adults in Ghana. Notwithstanding the contributions of this study, some notable limitations must be highlighted. Our findings may be prone to a possible selective survival bias which may somewhat be ascribed to the selection procedure of the sample and criteria for defining or conceptualising older adults within the study. Similarly, given the cross-sectional nature of the study, the causal relationship between psychological stress and its associated factors among older adults cannot be determined. The results largely demonstrate a significant association between these variables. An investigation into the causality of the associations is recommended in future studies.

5. Conclusion

This study examined the prevalence and factors associated with psychological distress among older adults in Ghana. The study was birthed out of the necessity in understanding the associations between various factors predicting psychological distress among older adults during the COVID-19 pandemic, as this can be supportive in devising strategies aimed at reducing the impact of the health problem among the target population. Besides, this will help in creating awareness among the participants about how to cope with the virus and the importance of seeking accurate information about the COVID-19. The results revealed that a significant fraction of the older adults had suffered some form of psychological distress. Nonetheless, gender, employment status, chronic NCDs, perceived health status and accurate information on COVID-19 were significantly associated with psychological distress. This study revealed that psychological distress was somehow prevalent,

necessitating early intervention to minimise the risks of the said health risk. It is necessary to employ strategies to minimise the psychological distress in Ghana during this pandemic. To achieve this, there is the need to provide adequate psychosocial support for older adults. The initiatives for improving psychological health among the general public could focus on delivering COVID-19 knowledge and alleviating avoidant coping styles. Establishing a targeted mental health support program during the time of public emergencies, such as the disease outbreak, is advised. The government and its partners must implement strategies and policies to shore up the economic and financial consequences of the pandemic, to reduce job losses and their attendant psychological challenges. Overall, our findings could provide important insight for the development of psychological support strategies in Ghana, as well as in other places affected by the epidemic.

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Conflict of interest

"The authors declare that there is no conflict of interest as far as the study is concerned."

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Chapter 45

Main Concerns in Times of COVID-19 in Three Groups of People: Italians, Romanian Immigrants in Italy, and Romanians in Romania

Ankica Kosic and Tamara Dzamonja Ignjatovic

Abstract

This chapter is a description of results of a study conducted in Italy involving Italians (N = 491), Romanian immigrants (N = 275), and Romanians in Romania (N = 312) with aim to explore the principal sources of anxiety and uncertainty during COVID-19 pandemic, and the differences between the groups. In addition, the study analysed the role of resilience as a potential moderator between perception of sources of anxiety during COVID-19 and distress. A questionnaire was administered containing several scales. Results showed that Italians and immigrants have similar concerns and that the perception of resilience play significant role in determining emotional distress.

Keywords: concerns, fear of COVID-19, distress, resilience, social support

1. Introduction

Following the epidemic in Wuhan, Italy was one of the first countries in Europe to have faced an exponential growth in number of people infected by the Coronavirus. The first positive patients were diagnosed on 31st January 2020 when two Chinese tourists in Rome tested positive, and then among Italians in northern Italy. The pandemic spread rapidly in the rest of the country with the high rate of morbidity/mortality and the government introduced the first lockdown on 9th March 2020 in the whole country, which lasted until 11th May, 2020. During the mandatory lockdown, all non-essential businesses, industries, and commercial activities were closed, and only supermarkets and pharmacies remained open. Travelling was only permitted for work (where work from home was not possible), health care, or other necessities (e.g., obtaining groceries). Schools and universities organized didactic on distance and remained close until September 2020. Italy in that period registered over 28,884 deaths due to COVID-19, and the number of positive cases was one of the highest in the world [1]. The increase of pandemic has created dramatic challenges in the public health system [2], and have had an immediate negative impact on people's health, not only physical but also psychological [3, 4].

Since then, the Italian government has introduced several other lockdowns in various Italian regions, and the last one from 15th March to 6 April 2021 was extended again to the whole country. Until April 2021, Italy had more than 3.4 million confirmed cases and more than 100 thousand deaths [5].

A review of the growing literature about the effects of the pandemic all around the world suggests that people experience significant levels of distress, anxiety, and depression [6]. The pandemic meant for everybody several changes in the life in terms of health, social relations, and in school or job aspects. All these changes have been accompanied by fear and a sense of uncertainty about the future. People have the impression of losing the possibility to foreseen and to plan their future, and about the possibility to return to the same style of life as before the pandemic.

Although the consequences of the pandemic have affected the entire population, these have particularly increased the fragility of socially isolated and vulnerable categories of people such as those with chronic medical diseases and mental health disorders, the elderly living alone or in institutional accommodation, women and children exposed to domestic violence, and migrants [7–9]. Among other vulnerable categories are those who lost somebody, and the medical staff working in emergencies where they have to cope with patients in critical conditions [10].

Immigrants and refugees are underrepresented in research during COVID-19 times. This chapter describes the principal sources of uncertainty, anxiety, and distress during and immediately after first COVID-19 lockdown among Italians and immigrants. More specifically, the study is focused on Romanian migrants living in Italy, comparing them with the mainstream group (Italians) and with the conational in the country of origin (Romania).

Romanian immigrants made up the largest group of foreign nationals in Italy at the end of 2019, with 1.2 million Romanian citizens in the country [11]. The migration of Romanians towards other European countries has been mainly motivated by economic reasons and aspirations to improve the conditions of life. Almost 2/3 of the Romanian male immigrants work in the construction sector, trade, and industry. In general, they have been represented in the last years in public opinion in negative terms and as principal actors in criminal activities. Many middle-aged women have emigrated because they were made redundant in their previous employment and could not find another job. Most of them emigrated alone, leaving children with father or grandparents. Usually, they work in the housekeeping and private care sectors. Some of them live in their employers' homes what allows them to save big portions of their salaries to send back home. Others have independent accommodation and held part-time jobs with several employers, and are paid for their work by the hour. Female migrants in the domestic sector are among the most exploited groups, and often lack fundamental workers' rights [12–14].

1.1 Distress in the times of the pandemic COVID-19

Studies published all around the world have shown that mental health has been negatively impacted because of worry, stress, and anxiety caused by the COVID-19 [15–23]. However, the research has shown that the effects of the pandemic on mental health have substantial variation across people, contexts, and time [24–28]. Whereas some people have experienced severe mental health consequences, a high percentage of people have experienced relatively few mental health symptoms and a stable pattern of adaptive functioning or resilience [25–32]. Thus, although no one could be immune from potential negative psychological effects, it is also clear that the portion of adverse outcomes has not been equally shared.

Migrants, especially refugees and asylum seekers are facing great vulnerabilities or challenges, in particular those living in camps and other overcrowded contexts without adequate access to water and hygiene products, where respecting social

distancing and other basic prevention practices, such as self-isolating in case of illness, is difficult [9, 33]. The pandemic may cause emotive suffering and exacerbate traumatic experiences encountered before, during, and after their journey to the host country [34–41]. Many migrants experience uncertainty about their future because of concerns about loved ones, about their job and economic situations, and about several other aspects [17, 21, 33, 42–46]. Different concerns during COVID-19 time can provoke heightened stress levels, worry, distress, anxiety, and other negative psychological consequences [47]. Our study has investigated some of the main concerns during the post lockdown period in 2020 and about possible mitigating factors, such as individual resilience and perceived social support.

1.2 Social relations during the pandemic

Physical distancing requirements during the pandemic and various lockdowns have placed severe limitations on our social interactions. People have missed all kinds of networking opportunities in the real contexts and these have been confined to household members and digital interactions with the outside world [17, 21, 48].

A sense of belonging and of social connection is fundamental to human well-being. Consequently, social isolations may create a myriad of consequences for health and well-being globally. Several studies revealed a strong link between social distancing, depression, and anxiety [49–53], and it was confirmed in the context of COVID-19, especially for those living alone or in problematic and violent families [54]. However, the assumed relationship between self-isolation and the onset of depression, anxiety, and stress disorders in the context of COVID-19 is not as straightforward as suggested. Although the negative psychological impact of the COVID-19 pandemic and social distancing is has been confirmed in several studies, some people are doing surprisingly well [55–57]. In several studies in the United Kingdom [55–57], it has been found that self-isolation per se does not necessarily lead to the onset of depression but that being exposed to news reporting about the pandemic and perceive any COVID-19 like symptoms (e.g., dry cough, fever) do.

Some of the factors are protective, such as having supporting relationships [58–60].

During an epidemic in Hong Kong in 2003, people reported increased feelings of embeddedness in the community and caring for friends and family members [61]. Although this pandemic is unlike any prior disaster, these findings suggest that critical situations may have favourable effects on social support. Distressful situations stimulate cooperative, and trusting behaviour [62, 63], potentially improving social environments on a broad scale [64]. Lots of people have adapted to the limitations imposed, taking advantage of existing technologies that enable virtual communication.

1.3 Resilience

Resilience is defined as the ability to cope with adversity and with stressful life events [65]. While some researchers suggest resilience is “trait-like” – that is, hard-wired into one’s personality – others say it can be learned and acquired during the life. In an addition, some scholars view resilience as personal quality to adapt and to resist stressful events [66]. When we talk about resilience it’s about being able to handle multiple adverse events, which is what is happening to people now balancing problems of the family, work, economy, and health. As a reaction to the current pandemic, people may feel anxious and worried, but they also have to be able to overcome these negative emotions, and to search for resilience in order to be able to cope with difficulties. Several risk and protective factors have been identified. Usually, resilience depends on the interaction between individual, family,

social, cultural, political, and contextual factors [67–69]. In order to be resilient, people may draw on available resources such as personal courage, commitment, determination, capacity to regulate emotion so we don't allow ourselves to get carried away with fear, and having social support.

2. Methods

This study aims to explore what are the main sources of concern and anxiety during the COVID-19 pandemic, and if there are differences between the groups involved in this research and along with some socio-demographic characteristics (e.g., gender, age). In addition, the study analysed the role of resilience and perceived social support as moderators in the relationship between the sources of concerns and distress.

2.1 Participants

This study involves three groups of participants from the two European countries: Italians and Romanian immigrants in Italy, and people in Romania (N = 1078).

The study conducted in Italy included 491 participants of Italian nationality (of which 355 female, 72.7%). From the power analysis we have done (Gpower 3; 21), considering 0.05 as a threshold probability to reject the null hypothesis, and the expected correlations (r = 0.15), this sample size overcame 95% of power which would require a sample size of 166. The age range was 18–68 (*M* = 29.44, *SD* = 14.07). The majority of the participants 70.9% completed high school, 9.8% have undergraduate degrees, 9.2% graduate degrees, 3.9% post-graduate degree, and 6.3% primary school. The majority (71.1%) of the sample were single, the 24.8% were either married or having a relationship, while the remaining were widowed or divorced. A high portion of the participants (56.4%) are students.

In addition, this research included Romanian immigrants (275 subjects, residing in various parts of Italy): 215 female and 60 male. Mean age was 41.29 (SD = 23.67). The majority (58.2%) have a high school, 28% have a Bachelor's degree, 10.2% have specialization, and 0.4% have a primary school. Concerning the civil status, the majority are married (54.2%), followed by those who are single, 5.6% (26.2%), separated/divorced (10.2%), and widowers (3.3%).

The study conducted in Romania involved N = 312 participants (N = 255 female, age range from 18 to 69 (M = 31.74; SD = 10.71). About 20.2% of the participants Completed a high school, 44.2% have a graduate degree, and 35.6% a post-graduate degree. The majority (58%) of the sample were single, 32.7% were either married or having a relationship,while the remaining were widowed or divorced. Most of the participants (62.8%) are employed, and about 25% are students.

2.2 Procedure

Data were collected between May 20 and June 20, 2020. This was immediately after the end of the first lockdown in Italy (May 18, 2020). Recruitment was done through some social media (Facebook) and through students who invited their friends and relatives to participate in the study. The survey was presented as research designed to investigate the psychological impacts of the COVID-19 pandemic. The survey took approximately 15–20 min to complete and it was uploaded on Google Forms (https://forms.gle/oZJzQtMPCaf6gd837 in Italy; https://forms.gle/K9S5Ak9xS66995hKA among Romanian immigrants in Italy; and https://forms.gle/K9S5Ak9xS66995hKA in Romania). The response rate was 98%. The study was

approved by the Ethics Committee in the Departments of the corresponding author (*Prot*. 468–04/05/2020).

2.3 Measures

In the questionnaire the following groups of measures have been used:

Demographics: the participants indicated their age, gender, level of education, marital status, employment status, and city/region of living.

Estimation of level of widespread of COVID-19 in the district: the participants were asked to estimate how many people got the Coronavirus in their district on a 5-point scale (1 = neither one; 5 = a large number of people). The psychological impact of COVID-19 is nourished by information about numbers of infected cases, overcrowded hospitals, deaths, and other information about the pandemic [70, 71].

We also asked the participants to indicate the approximate numbers of people in their country of the living who have the Coronavirus until that moment, and the number of people who were positive at that moment in the country and the place of living. Most of the participants have not had a precise knowledge about the statistics, and have made very distorted estimations which were not considered in the analyses.

Participants also indicated *whether they had the Coronavirus infection* (no– not sure/yes), *whether any family member had the Coronavirus* (no – not sure/yes), and *whether any friends/acquaintances got the Coronavirus* (no – not sure/yes). At the time of data collection, a relatively small number of the participants responded affirmatively to these items and therefore we did not include these variables in the statistical analyses.

Sources of concern and anxiety. The participants were asked to indicate on a 5-point scale (1 = *not at all* to 5 = *extremely*) the level of their concern about the following situations: the likelihood to get the Coronavirus; their economic situation, commitments at work/school; distance and isolation from loved ones; and how to take care about children when busy).

COVID-19 fear scale. We designed a scale composed of 6 items: I am afraid that I might get the Coronavirus; I am afraid that I may end up in intensive care because of COVID-19; I am afraid that I might die if I get the Coronavirus infection; I am afraid that a loved one might get the Coronavirus infection; I am afraid that someone in my family might end up in hospital because of COVID-19; I am afraid that the Coronavirus may continue to spread in our country). The participants are asked to rate their level of concern about the Coronavirus on a 5-point scale (1 = not at all; 5 = very much). We run Principal Component Analysis to evaluate the factorial structure of the scale. Kaiser's criterion of 1 and a scree plot was used to select the number of factors. The analysis revealed a mono-factorial structure that explained 71.46% of the variance. An index was created, with higher scores reflecting higher levels of COVID-19 fear. Cronbach's α is.90 in Italy, .89 in Romania, and .94 for Romanian immigrants. More recently, several scales measuring fear of the Coronavirus have been proposed in the literature [63, 72, 73], but were not yet available at the time of this study.

Resilience measure: we used two items from the Conor Davidson Resilience Scale (*CD-RISC*; 2003) (I think of myself as a strong person when dealing with life's challenges and difficulties; I am not easily discouraged by failure), and one item from the Adult Hope Scale [74], (e.g., I am optimistic about my future). The participants estimated on a 5-points Likert scale the level in which the affirmations described them (1. = completely false; 5. = completely true). A score is created by summing the averaged items. The observed Cronbach's Alpha is 0.80 in Italy, 0.79 in Romania, and 0.84 for Romanian immigrants.

The social support scale (4 items): we asked the participants to rate how confident they were that they would have received the social support from family members (parents, partner, and children) and from friends and relatives on a Likert type scale of 5 points (1 – not at all sure; 5 – completely sure). We created two indices of social support: (1) social support from family members, and (2) social support from relatives and friends.

The scale of distress: contains 6 negative emotional states (sad, frightened, concerned, anxious, distressed, tense). The participants were asked to rate on a 5-point scale how they were feeling during the first lockdown and immediately after (1 = never; 5 = always/usually). The exploratory factor analysis produced a single dimension that explains 61.29% of the variance. An index of distress was calculated and higher scores indicate higher levels of distress. Cronbach's α is 0.87 for Italians, 0.88 for Romanians in Romania, and 0.86 for Romanian immigrants in Italy.

The expectations for the future: We asked the participants to respond to these two questions: 1) When do you expect we will get rid of the Coronavirus in Italy? (Never; In more than one year; Before the end of the year; During the summer), and 2) When do you think a Coronavirus vaccine will be available? (In more than a year; Within 1 year; Within the next 3 months).

3. Results

The assumption of normality of the variables was evaluated and was found to be satisfactory as distributions in all groups were associated with skew and kurtosis less than 2 and 9, respectively.

According to ANOVA, most of the variables are significantly different among the three groups (Duncan's posthoc tests). From the means in **Table 1**, we can see that the level of fear of COVID-19 is significantly but not drastically different in the three groups, being the lowest among Romanian migrants and the highest in Romania. Also, the concern about the probability to get the Coronavirus was lower among immigrants, and highest in Romania. The participants in Romania perceived the highest level of widespread of the COVID-19 in their district in comparison to the other two groups. Among all concerns, immigrants have the highest levels of concern about their economic situation and concern about distance/isolation from the loved ones. The participants in Romania are especially concerned about the economic situation and about the risk to get the Coronavirus. At the same time, Romanian participants perceive a higher level of support from family in comparison to the other two groups, whereas Italians perceive a higher level of support from friends. Immigrants appear to be more resilient than the other two groups and less distressed than Italians. In addition, immigrants were more optimistic about time to get rid of the Coronavirus, whereas Romanian participants were more optimistic about time to have a vaccine.

We have explored the differences along some socio-demographic characteristics (e.g., gender, age). First, an ANOVA was run to check the differences between gender categories. We can see that female participants are more concerned and have a higher level of fear of COVID-19 than male participants. They also have a higher level of distress. It is supported also by another study which found significant effect of gender in Italy and Romania, what suggests that women, in comparison to men, are more prone to worry, to feel fear of COVID-19 and distress (**Table 2**) [75].

We calculated correlations between the variables considered and the age of the participants. There emerged significant correlations between age and fear of COVID-19 ($r = -.10$; more mature participants are less afraid than younger

Italy				Immigrants	Romania
	F	*p*	*M*	*M*	*M*
Fear of COVID-19	38.59	.001	2.90a (1.00)	2.53b (1.17)	3.30c (1.06)
Concern about the likelihood to get the Coronavirus	29.13	.001	2.86a (1.20)	2.32b (1.24)	3.08c (1.38)
Concern about own economic situation	8.29	.001	2.82a (1.19)	3.12b (1.25)	3.14b (1.32)
Concern about job/school tasks	39.49	.001	2.89a (1.52)	1.89b (1.36)	2.68a (1.62)
Concern about distance/isolation from loved ones	2.99	.001	3.19a (1.28)	3.33b (1.37)	3.41ab (1.31)
Concern how to take care about children	15.30	.001	1.56a (1.08)	2.04b (1.47)	1.95c (1.42)
Widespread of COVID-19	29.06	.001	2.22a (0.81)	2.43b (1.05)	2.76c (1.14)
Social support from family	21.81	.001	3.60a (1.16)	3.65a (1.21)	4.10 (0.85)
Social support from friends	25.15	.001	3.53a (1.11)	2.96b (1.17)	3.24b (0.98)
Resilience	35.23	.001	3.30a (0.91)	3.79b (1.02)	3.77b (0.87)
Distress	30.23	.001	2.73a (0.84)	2.30b (0.87)	2.35b (0.83)
Expectations about time to get free from the Coronavirus	100.33	.001	2.50a (0.70)	2.77b (0.82)	1.87c (0.94)
Expectations about time to produce a vaccine	123.48	.001	1.71a (0.52)	1.54b (0.67)	2.19c (0.39)
Age	48.52	.001	29.44a (14.07)	41.29b (23.67)	31.47a (10.71)

Legend: *M = means on a scale from 1 to 5 (except for age); SD in parenthesis.*

Table 1.
ANOVA among the three groups (Italy N = 491; Rumania N = 312; Romanian immigrants N = 275).

participants), between age and concerns to get virus (r = −.09; more mature participants are less concerned than younger participants), between age and concerns about job/school tasks (r = −.36; more mature participants are less concerned than younger participants), between age and concerns about children (r = .13; more mature participants are more concerned), between age and resilience (r = .08; more mature participants are more resilient than younger), age and perceived support from family and friends (r = −.07 and −.19; more mature participants perceive less support than younger participants), and between age and distress (−.14; more mature participants are less distressed than younger participants). It is important to emphasize that our participants are prevalently young people (**Table 3**).

In order to examine the relationship between various concerns in times of COVID-19 and distress, as well as to test if resilience and perceived social support may moderate these relationships, we conducted a multiple linear regression analysis. The percentage of variance of distress accounted by each of the predictors is visible in **Table 4**. We conducted a multiple regression analysis by using spss with the aim to examine the percentage of variance in distress accounted for by each of

			Female	Male
	F	***p***	***M***	***M***
Fear of COVID-19	34.27	.001	3.03 (1.10)	2.57 (1.04)
Concern about the likelihood to get the Coronavirus	26.11	.001	2.89 (1.29)	2.42 (1.25)
Concern about own economic situation	4.74	03	3.04 (1.23)	2.84 (1.29)
Concern about job/school tasks	13.18	.001	2.67 (1.59)	2.26 (1.45)
Concern about distance/isolation from loved ones	39.60	.001	3.43 (1.29)	2.84 (1.30)
Widespread of COVID-19	4.86	03	2.47 (0.99)	2.31 (1.03)
Distress	33.98	.001	2.60 0.86	2.24 (0.84)

Table 2.
ANOVA to test gender differences (only significant).

	Age
Fear of COVID-19	−.10**
Concern about the likelihood to get the Coronavirus	−.09**
Concern about own economic situation	−.04
Concern about job/school tasks	−.36**
Concern about distance/isolation from loved ones	−.05
Concern how to take care about children	.13**
Widespread of COVID-19	.01
Social support from family	−.07*
Social support from friends	−.19**
Resilience	.08**
Distress	−.14**
Expectations about time to get free from the Coronavirus	.09**
Expectations about time to produce a vaccine	−.09**

$^{*}p < .05$.
$^{**}p < .01$.

Table 3.
Correlations between the variables.

our predictor variables. We considered as predictors some socio demographic variables (gender, age), the perception of the widespread of COVID-19 in the place of living, the fear of COVID-19, all different concerns, resilience, the perception of social support from the family, and the perception of social support from friends (see **Table 4**). All the variables were standardized before entering the analysis. Furthermore, we considered double interactions between fear of COVID-19 and resilience, and between every single concerns and resilience. In addition, we

	Italy			Immigrants			Romania		
	β	*t*	*p*	*β*	*t*	*p*	*β*	*t*	*p*
Gender	−.10	−2.69	.007	−.04	−0.67	n.s.	−.09	−2.08	.04
Age	−.07	−1.59	n.s.	.03	0.52	n.s.	−.12	−2.33	.02
Fear of COVID−19	.22	3.71	.001	.10	1.09	n.s.	.33	4.15	.001
Widespread of COVID−19	−.05	−1.37	n.s.	−.03	−0.55	n.s.	−.01	−0.07	n.s.
Concern about risk to get virus	.21	3.18	.002	.04	0.36	n.s.	.04	0.49	n.s.
Concern about own economic situation	.06	1.39	n.s.	.24	3.59	.001	.10	1.59	n.s.
Concern about job/school tasks	.14	2.72	.007	.02	0.26	n.s.	.15	2.52	.01
Concern about distance from loved ones	.08	1.69	n.s.	.21	3.17	.002	.06	0.99	n.s.
Concern how to take care about children	−.04	−0.91	n.s.	.06	0.96	n.s.	.01	0.23	n.s.
Social support from family	−.02	−0.32	n.s.	−.18	−2.33	.02	−.20	−3.50	.001
Social support from friends	−.01	−0.13	n.s.	−.09	−1.15	n.s.	.02	0.29	n.s.
Resilience	−.36	−8.65	.001	−.20	−2.57	.01	−.19	−3.68	.001
Resilience x Fear of COVID−19	−.11	−1.84	.06	.01	0.02	n.s.	−.17	−1.83	.06
Resilience x Concern about the risk to get virus	.10	1.55	n.s.	.09	0.95	n.s.	.16	1.84	.06
Resilience x Concern about own economic situation	.03	0.58	n.s.	−.03	−0.34	n.s.	−.02	−0.39	n.s.
Resilience x Concern about job/school tasks	.02	0.41	n.s.	−.08	−1.15	n.s.	−.02	−0.31	n.s.
Resilience x Concern about distance from loved ones	.01	0.11	n.s.	−.11	−1.55	n.s.	.01	0.20	n.s.
Resilience x Concern how to take care about children	−.04	−0.88	n.s.	−.01	−0.18	n.s.	−.01	−0.24	n.s.
Social support from family x Fear of COVID−19	−.14	−2.12	.04	.03	0.24	n.s.	.03	0.34	n.s.
Social support from family x Concern about risk to get virus	.01	0.17	n.s.	−.08	−0.70	n.s.	.01	0.16	n.s.
Social support from family x Concern about economic sit.	.06	1.37	n.s.	−.09	−1.13	n.s.	.07	0.99	n.s.

	Italy			Immigrants			Romania		
	β	***t***	***p***	***β***	***t***	***p***	***β***	***t***	***p***
Social support from family x Concern about job/school	−.02	−0.53	n.s.	−.03	−0.46	n.s.	.02	0.32	n.s.
Social support from family x Concern about distance	.09	1.77	n.s.	.08	1.07	n.s.	.11	1.64	n.s.
Social support from family x Concern about children	−.03	−0.63	n.s.	.04	0.66	n.s.	−.02	−0.37	n.s.
Social support from friends x Fear of COVID−19	.11	1.89	.06	.03	0.24	n.s.	.09	0.92	n.s.
Social support from friends x Concern about risk to get virus	−.16	−2.37	.02	−.10	−0.84	n.s.	−.08	−0.81	n.s.
Social support from friends x Concern about economic sit.	.01	0.01	n.s.	−.03	−0.33	n.s.	.01	0.07	n.s.
Social support from friends x Concern about job/school	−.02	−0.37	n.s.	.04	0.46	n.s.	.04	0.74	n.s.
Social support from friends x Concern about distance	−.07	−1.26	n.s.	.03	0.32	n.s.	−.07	−1.14	n.s.
Social support from friends x Concern about children	.10	2.33	.02	−.06	−0.81	n.s.	−.04	−0.61	n.s.

Table 4.
Results of hierarchical regression analysis for distress during COVID-19.

included double interactions between fear of COVID.19 and social support from family, and between every single concern and social support from family. Finally, we considered also double interactions between fear of COVID-19 and social support from friends, and between every single concerns and social support from friends. The analyses were run separately for each group.

Results in Italian sample showed that the regression model accounted for good percentage of variance (43%) ($F(30, 456) = 11.32$, $p < .001$).

Among the socio-demographic variables, we found a significant effect only of gender ($\beta = .10$, $t = 2.69$, $p < .01$), indicating that female have higher level of distress. The analysis confirmed that fear from COVID-19 is a strong predictor of distress ($\beta = .22$, $t = 3.71$, $p < .001$). We found a significant effect of concerns about work/study ($\beta = .14$, $t = 2.72$, $p < .01$). This is the most important concern in Italian sample, but it was expected knowing that high percentage of the participants are students. As expected, analysis showed a significant effect of resilience on distress ($\beta = -.36$, $t = -8.65$, $p < .001$). More interesting, we found a significant effect of interaction between resilience and fear of COVID-19 ($\beta = -.11$, $t = -1.84$, $p < .06$). In addition, we found an effect of interaction between fear of COVID-10 and social support from family ($\beta = -.14$, $t = -2.12$, $p < .04$), and between fear and social support from friends ($\beta = .11$, $t = 1.89$ $p < .06$).

We have calculated the test in order to check the Multicollinearity, the VIF value and the Tolerance Statistic. The largest VIF (4.04) is for interaction between social support from family and concern about the economic situation, but it is not greater than 10, so it is within tolerance. The corresponding Tolerance Statistic is (0.87), is not below 0.1, and again this is within tolerance. Thus, we can conclude that we do not have Multicollinearity.

In Romanian sample, we considered the same variables as in the previous analysis. The regression model accounted for 49% of variance of distress ($F(30, 281) = 8.84$, $p < .001$). Here again emerged a significant effect of gender ($\beta = .09$, $t = 2.08$, $p < .04$). In addition, we found a significant effect of age ($\beta = -.12$, $t = -2.33$, $p < .02$), meaning that more mature participants are less distressed. Then, the analysis confirmed a strong effect of fear of COVID-19 ($\beta = .33$, $t = 4.15$, $p < .001$). Moreover, we found a significant effect of concern about work/study ($\beta = .15$, $t = 2.52$, $p < .01$), of social support from family ($\beta = -.20$, $t = -3.50$, $p < .001$), and of resilience ($\beta = -.19$, $t = -3.68$, $p < .001$). More interesting we found an effect of interaction between resilience and fear of COVID-19 ($\beta = -.17$, $t = -1.83$, $p < .06$), and a significant interaction between resilience and concern about the risk to get virus ($\beta = .16$, $t = 1.84$, $p < .06$). Here also a test of Mulitcollinearity was tested and it resulted acceptable.

Finally, the results on Romanian immigrants showed that the regression model accounted for 38% of variance of distress ($F(30,244) = 4.97$, $p < .001$). Here the analysis has not confirmed the significant effect of fear of COVUD-19, but there emerged a significant effect of concerns about own economic situation ($\beta = .24$, $t = 3.59$, $p < .001$), and of concern about distance from loved ones ($\beta = .21$, $t = 3.17$, $p < .002$). We found also a negative effect of social support from the family ($\beta = -.18$, $t = -2.33$, $p < .02$), and of resilience ($\beta = -.20$, $t = -2.57$, $p < .01$). We have not found any effect of interaction. The test of multicollinearity confirmed that it is acceptable also in this research group.

In order to better understand the interaction, we conducted a simple slope analysis for the effect of interaction between resilience and fear of COVID-19, considering the aggregated sample. We found that the relationship between fear of COVID-19 and stress is stronger for the people who have lower resilience ($\beta = .43$, $t = 11.99$, $p < .001$), then for the people who have better resilience ($\beta = .33$, $t = 9.44$, $p < .001$).

4. Discussion and conclusions

Our primary aim in this research was to explore some psycho-social predictors of fear and distress during the COVID-19 pandemic in three groups of participants: Italians, Romanian immigrants in Italy, and Romanians in Romania.

We found that immigrants have a lower level of fear of Covid-19 than the other two groups. This is certainly not a consequence of safe living conditions and adherence to measures, but rather it is connected with a major focus on other existential problems with which they are concerned. They are concerned mostly about the economic situation and about distance from the loved ones. It seems that these concerns have surpassed the fear of the virus itself. Migrants make up a large percentage of the workforce in sectors that have remained active throughout the crisis, such as agriculture, deliveries, personal care, and health-care provision, and cleaning services. Migrants are over-represented in some of the industries hardly hit by the crisis, such as catering services and non-essential retail, and thus many of them lost jobs.

Fear of COVID-19 is not significantly associated with the knowledge of the numbers of positive cases and deaths in Italy. People have little knowledge about statistics and they estimate the situation in terms of “a lot, many, few...cases”.

We found correlations between fear of COVID-19 and age: younger participants have higher fear than more mature participants. These findings are consistent with recent studies that have confirmed that middle-age people are less vulnerable to psychological stress and social isolation during a pandemic and are less likely to develop symptoms of mental health disorders such as depression and anxiety [76–80]. They have adapted without major difficulties and managed to maintain satisfactory subjective well-being despite the pandemic and restrictive measures.

We found a strong effect of the fear of COVID-19 on distress which is partly reduced by the perception of personal resilience. In general, economic difficulties and concerns about jobs among immigrants, more than in other samples, contribute to increased level of stress. In addition, the perception of personal resilience reduces distress in all groups of participants. Furthermore, the perceived support from family has an important role in reducing distress among Italians and Romanians, but not among immigrants. Particularly surprising is the relatively low level of importance of social support from friends for reducing distress.

The immigrants perceive the lowest social support from friends (probably due to the lack of social network in the host country), but relatively high social support from the family. Despite all this, their level of distress is paradoxically the lowest. This can be related to the subjective perception of their resilience, which is the highest in this group. This corresponds to the data of previous research [41]. In addition, it could be also that immigrants are more focused on economic survival and neglect their psychological well-being, as pointed out in the previous studies [81].

Uncertainty and anxiety due to fear from COVID-19 are strongly associated with distress, which is further exacerbated by different concerns. For immigrants, the major concerns are those regarding the economic situation, which exacerbated further their distress especially in those who do not perceive themselves as resilient and as having good social support. Preventive programs should be focused on promoting major social support to people in need and ensuring that migrants are not left behind.

There are some limitations of the study that should be noted. The research was undertaken during the first wave of the pandemic. The highly uncertain situation of the prolonged pandemic crisis poses additional challenges regarding its

consequences. Therefore, follow-up studies in different phases of the ongoing pandemic are needed.

The impact of some other variables was not considered, due to the limitation of an online survey that must not last too long. The selected variables explained about 35–40% variance of distress what indicates that we should consider other sources of risk or protective factors in future studies and creating some recommendations for improving preventive programs and policies.

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Ethical approval

This research was approved by the Ethics Committee at the authors' departments.

All procedures performed in this study involving human participants were per the said committee's ethical standards and/or national research committee.

Declaration of interest

None.

Informed consent

Informed consent was obtained from all individual participants included in this study.

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Chapter 46

Psychosocial Impact of Lockdown Induced Setback on Education during Pandemic in India

Chitra Mourali

Abstract

Educational reforms occur from time to time to keep up the pace of changing trends. The new generations of kids are exposed to modern technology at a very younger age. They are well equipped with the novel usage of digital technology to aid in a better teaching-learning process. Pandemic has invoked a lot of drastic changes in many sectors owing to changing norms and lockdown policies across the globe. In India also these lockdown policies were imposed as a measure to curtail the growing rate of infection. India is a country with a dense population with varied socio-cultural and economic differences. Closure of educational institutes adopted as a strategic measure to face the Pandemic lead to uncertainty among the stakeholders which had a huge impact on the psychosocial domain. The education sector took to the mode of digital learning by offering online classes to cater to the need of the students. Shutting down schools and educational institutes not only paralyzed the social contact a child develops on attending school but also increased the severity of screen time with absolute lack of physical activity among children. This chapter aims to explore the impact of the online mode of education and its psychosocial perspectives during the lockdown.

Keywords: Uncertainty, education policy, online teaching, physical health and mental health, child and adolescent behavior

1. Introduction

Indian education system catered by the private and public sector has diverse modalities of teaching- learning methodology concerning the child and adolescent education. Urban schools have the access to modern technology in the form of internet connectivity and access to smart board teaching. Schools present in rural areas are devoid of such infrastructure and facility and still rely upon chalk and board method of teaching, which was once the traditional method of delivering the curriculum. Lockdown during the pandemic period enabled the students to stay indoors with extensive measures to switch to the online mode of education. E- learning in India was in infancy which geared up following lockdown induced closure of schools. The prevailing COVID-19 pandemic has paved way for introducing digital learning across all ages [1].

The outcome of such sudden change in the mode of teaching- learning methodology is of utmost concern, due to its impact on psychosocial factors involved in the learning behavior of young children.

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2. Education: new normal ways of teaching and learning during COVID 19 pandemic

Pandemic has created profound impact on education. Schools and educational institutes were forced to adapt to new normal policies to face the uncertain situation irrespective of their existing infrastructure. E- learning was emphasized by Ministry of Education in India, which played a vital role in helping the learners during the lockdown period [2, 3].

Adapting to digital media is not an easy call within a short duration of time. It involved a series of sensitization measures to inculcate the delivery of curriculum in the field of education within a short spell. Various online platforms were explored to impart quality education in an emergency by educational organizations and they were compelled to implement even though much unprepared.

A lot of up-gradation processes were required from the teaching institutes in the form of online training workshops to the teachers, procuring AV teaching aids in addition to internet connectivity with good bandwidth. Economically, this was considered a challenge to many schools with the existing infrastructure. Educational institutes in India took a paradigm shift to keep the process of continuing education without break in curricular delivery. Schools and other institutes deployed strategies to overcome hurdles to face the challenge imposed during online teaching. Little minds that were used to the routine of going to school were retained at home to participate in online classes which were quite difficult. Though measures were included to make the sessions interactive with strict surveillance, online learning did have its pitfalls. The pandemic induced lockdown did impose a paradigm shift in the field of education which was initially thought to be for a shorter period. When uncertainty prevailed over for a longer time the impact of online education did have its toll on the mental and physical health of learners across all age groups. We all are aware of the fact that school forms the first point of social contact as the child grows. A child not only is benefitted academically but also attains emotional and behavioral development at school. Online classes for young children interfered with the overall development of a child in this aspect.

2.1 Challenges faced by educators

In India, the teaching methodology is mostly teacher-centric though some of the urban schools have upgraded to the student-centric method of the teaching learning process. The Government of India has been attempting to bring a paradigm shift from the teacher- centered to the learner-centered methodology over the years through many National programs such as (NCF 2005) National Curricular Framework, NCERT (National Council for Educational Research and Training). The traditional method of teacher- centered learning was slowly in the process of shifting to the learner-centric at least in most of the higher educational institutes in most parts of India. The instructors were trained to deliver the curriculum and prepare the student for facing assessments effectively in the traditional method of the teaching process. The teacher can figure out the understanding capacity of various students in the physical mode of teaching where more interaction was possible. Eye contact is a key factor during instruction which matters most as it implies good attention and builds a rapport between the teacher and the student [4]. Online teaching had the disadvantage of terminating this connection as it occurred in passive mode.

Educational institutes during the lockdown period had a massive challenge of training the teachers for online mode of teaching in India. Several training sessions within a short period took place to prevent a break in curricular delivery. Government policies to ascertain continuous teaching programs were inculcated to

keep the process going. Certain state Governments insisted on opening of Television channels to cater to the needy that did not have internet access. Scheduled telecasts of faculty participation in the form of presentations were made a mandate for easy access [5]. Amidst all challenges, the teaching fraternity was exposed to various platforms for online teaching with initial struggle. Capacity building for faculty in terms of technical training to go online was indeed a mammoth task for teachers who were not tech-savvy. In course of time, it was made possible by active participation by the enthusiastic teachers. Burnout is a phenomenon usually encountered by students, patients, and people working in the IT sector due to heightened occupational stress. But for the pandemic, which led to the exhaustion related to teaching exclusively online, it was less heard among teachers [6]. Technostress refers to a condition where the individual fails to adapt to new technology and changes in usage of technology which can predispose to psychological and physical stress. Technostress can largely impact the outcome owing to the dedication of extra time in preparing learning resources, errors in utilizing ICT, low reliability on technology, and inadequate training facility [7]. It can affect the physical and mental health of teachers which include negative symptoms like headache, fatigue, sadness, or anxiety [8]. The fear of job satisfaction and high demand by the employers in the educational sector with pay cuts were commonly encountered in many educational institutes in India. Teachers are novice for online teaching in many states of India, which can add up to the stress already experienced due to the global health crisis.

Teachers had the task of adopting measures to mitigate the absence of physical presence by inculcating interactive sessions digitally to make all students participate in an effectively [9]. This kind of digital initiative worked better for primary children when compared to senior students. E-learning updates, online assessments, remote learning, screen to screen interface are some of the technological adaptations undergone by the teachers that may be amalgamated into the regular stream of teaching in the future. Later, when the pandemic ends, blended learning will be propagated to reap the benefit of technology in teaching to young learners.

2.2 Challenges faced by students

The unprecedented situation during lockdown affected the student population by suddenly shifting to the online mode of learning which was very challenging. This type of learning experience was considered novel as it varied entirely from the traditional physical mode of the teaching-learning process. The anxiety of adaptation to newer technology is not the same across all age groups. Online mode of education is not the same across all ages as different age groups required specific methods of learning [10]. Some of the educational institutes in India have already introduced online teaching as a supplement to regular teaching before the pandemic. Students who were already sensitized found it very easy as opposed to students who were introduced to online teaching for the first time. Access, equity, and quality are regarded as the three pillars of the education system in the present. Educational policies governing the sudden change of mode of teaching should benefit every learner across all ages and different states. The emerging problem of the digital divide, where the needy students were deprived of e- learning access because of poor socio-economic status was observed in India. Families which could not afford a proper meal for children during lockdown did not bother to continue the education for their children via online mode as it incurred additional expenditure. Sharing of devices between siblings also was a major problem encountered as many families had access to only a single smartphone for their needs. Learners from poor socioeconomic status were deprived and were unhappy owing to limited access to gadgets and internet connectivity. The digital divide is a major barrier in imparting

equal education across all strata. As per survey analysis, it is found that only 11% of rural and 40% of urban population was able to use the internet and operate the computer in India [11]. Augmentation in internet usage and increased bandwidth connectivity soar to high limits with incurring expenditure was faced by many middle and low-income families following the closure of educational institutes.

As the students were stay put at home, it was not considered as a conducive environment for the learning by many students. This type of transition created anxiety among learners which had a profound impact on learning process. The transition is expected to occur early from traditional teaching to online mode for the betterment of the system and nation. Students reported that the closure of institutes made them feel lonely as they were unable to share their feeling with their peers hindering the social and emotional learning process.

Primary class children depended on their parents for accessing the online mode and participation in sessions as well. Stipulated screen time during sessions and beyond increased the vulnerability to the ill health of children. If unmonitored, young children took to internet addiction, gaming, and cyberbullying which would otherwise not be present before lockdown [12]. In an Indian study conducted on students pursuing Agricultural studies, lack of internet connectivity was the leading cause of constraint towards online learning, followed by other limiting factors like limited data pack and speed, little or no face to face interaction, intense requirement of self-discipline, lack of proper device, poor learning environment and technophobia [13].

The level of learning persistence is low in online learning which can modify positively the learning performance and achievement [14]. The role of academic emotions in the online learning is quite important as it can mediate and moderate students' interaction and learning persistence [15]. Tech-savvy students had the advantage of connecting better digitally for understanding core concepts than the physical mode of teaching. Uncertainties about the future still prevail among the young learners about their future endeavors in taking up a career-oriented course against the backdrop of pandemic crisis. Completing graduation process, assessments and new norms for competitive exams to pursue higher education in other countries remain a question affecting the moral and self-esteem of young scholars during this imposed lockdown.

3. Health impact of screen time

The physical health of children is often neglected during online sessions from home due to poor ergonomics. Children do not follow the instructions and resort to reclining posture during online classes which can predispose to common posture-related problems like backache, neck pain, and other musculoskeletal ailments. Disciplined monitoring to assume the correct posture during online sessions has been reinforced to avoid posture- related musculoskeletal strain in many schools through proper guidelines by authorities are not conveyed effectively to learners. Poor lifestyle adaptations at home and improper posture have resulted in an increasing number of orthopedic problems among young children. It has been observed that the awareness about ergonomics is very low among parents, children, and teachers in this aspect as per an Indian study [16]. The common problems encountered were Cumulative Trauma Disorders (CTD), Repetitive Strain Injury (RSI), and musculoskeletal disorders due to acquired incorrect postures assumed during online classes using laptops, smartphones, desktops, and other devices. Children who spend about 5–7 hours per day with gadgets often resort to forward head posture. It is aggravated by temporary furniture make-shift arrangement known to affect the cervical and lumbosacral spine [17] resulting in musculoskeletal pain that can impair the function and reduce the outcome from young learners.

The growth of a physically active child is better in terms of physical and mental health for the successive decades of life as per research [18]. Lack of physical activity induces obesity in children during the lockdown. Binge eating adds to a further rise in the incidence of obesity among school-going children. Such sedentary behavior in children predisposes to weight gain, poor sleep hygiene, and developmental delays which can easily be averted by following the recommended guidelines by the American Academy of Pediatrics to limit the screen time to not more than one hour for children under the age of 5 [19, 20].

Loss of muscle mass due to physical inactivity with a proportionate increase in fat can alter the physical fitness of a child, which occurs as a result of staying indoors. This can impair regular sports activity when they resume sports and physical training later on. Children staying indoors for a quite long period with reduced physical activity and sunlight exposure can develop deficiencies of calcium and Vitamin D. Indulging in binge eating and lack of balanced diet makes the matter worse predisposing to ill health which can have a deleterious effect on future health too.

Childhood obesity is considered a metabolic risk factor for cardiovascular disorders later in life. If not recognized early it can have a detrimental effect on the growth and economy of the nation. Indian children are overweight and obese and rank second next to China. The Pandemic lockdown has worsened the scenario increasing the incidence of childhood obesity owing to factors like physical inactivity and binge eating. Such increasing incidence of obesity may likely affect the social and emotional well-being of the child in the future [21].

Many schools in India promote physical well-being by inculcating virtual sessions to improve the overall health of children during this crisis. Family members during this adverse situation often encourage and set an example to promote fitness and health. Such initiatives should continue and be more readily implemented during these COVID-19 pandemic. The prevention and management of childhood obesity should be set as a priority at an individual, community and population-level during this pandemic to counteract the future crisis of obesity and its complications in the future [22].

Computer vision syndrome refers to visual disturbances due to chronic visual strain that occurs due to increase in the screen time. As the students are engaged with digital devices, symptoms like dryness, watering of eyes, redness, increase in refractory power has been the common complaints. Visual fatigue referred to as asthenopia is commonly encountered in young children who report having increased screen time. Focusing on the digital screen with different sizes of fonts, colors and moving screen can result in strain of ocular muscles. Often the students complain of headaches after the sessions are over and parental support to maintain proper posture and micro-breaks between sessions are advocated to overcome these health related problems. Digital Eye Strain (DES) was found to be more prevalent among adolescents using smartphones regularly with increased screen time, more than 2 hours per day [23].

However, the limitation of screen time with health-promoting strategies can widely induce positive health behavior among young students. Lifestyle modifications and reinforcing positive psychology can allay the anxiety of the current health crisis among students as they have to live in a pandemic fee world in the years to come.

4. Parents perspectives on e-learning during the pandemic induced lockdown

Many of the families which had to face the Pandemic-induced lockdown had to resort to practices that helped them to tide over the crisis. Uncertainty prevailed in many sectors leading to loss of jobs, change of profile, loss of business and adapting to work from home culture. Balancing the needs and adapting to minimalist

life though seemed to be the priority, providing uninterrupted education to their children remained a challenge for most of the Indian parents.

Middle and low socioeconomic families had to bear the brunt of providing quality education to their wards even though their livelihood was at stake during the lockdown period. Work from home (WFH) was not easily implementable by parents owing to the small household area. Families suffered to produce a conducive learning environment and had to support their children with whatever space existed. Multitasking mothers need a special mention as they had to juggle between household chores and attending to the child's classes in addition to attending office from home. Younger children needed assistance from their parents which was quite bothering during official dealings by the parents during work from home.

Although it was challenging, many parents were present during online sessions with the child and they were assisting in the learning process. The bonding and mentoring role was well evident during the crisis and enabled parents to participate rather than just supervise their child during e-learning. In a Chinese study, about 18.4% of parents believed that online learning was beneficial in content, better in learning outcome (11%) and about 12.6% of parents consider it to be more efficient [24].

Parents had mixed views related to online learning. As there was no choice left, this paradigm shift was embraced by most Indian parents with great resistance. Their concern about health as a priority reflected the disadvantageous effect of online learning. Also, shortcomings of online learning such as social isolation and lack of interaction bothered many parents. Digital addiction was quite bothering many parents which are considered as a negative factor of many online sessions [25].

4.1 Economic impact of online education: parents perspectives

As the online mode of education was the only means to continue with the curriculum, parents had to provide an adequate learning environment to their children. There was a surge in sales of devices and tools for supporting online learning which was a challenge to many low and middle-income groups of families in India. Families with two or more children had a tough time sharing devices while their parents were connected digitally during work from home. Peer pressure of owning the relevant infrastructure for e-learning was also considered an important challenge faced by the parents. Sharing of space within the house was problematic in many of the households in India. During the lockdown period, Indian parents experienced an economic crisis in providing quality online education to students.

Lockdown affected business and pay cuts which were experienced by many families. Schools and educational institutes also invested in infrastructure and enrollment of a new batch of students was also at stake. Overall economical impact due to lockdown affected many sectors in India which have to be revived.

5. Psychosocial factors and online learning

In India, there are about 350 million students, of which only 43.9% have access to a smartphone or other devices to take part in remote learning. The natural environment of learning is lost which can predispose to a variety of psychological issues among young children due to new normal guidelines for E-learning. As the change was abrupt, many students exhibited anxiety-related behavior which could hinder the learning process. Children were denied social contact due to the lockdown; as a result, many children increased the screen time in addition to online learning by engaging themselves in online gaming, excessive social media usage, online gaming, cyberbullying, and internet addiction. Digital education exposes the student to use

the internet for a wide variety of things which can lead to information overload. Because of flexibility of the schedules, students often are addicted to the internet which can result in poor academic performance [26].

Preoccupied behavior, excessive feeling of excitement when online, going online to avoid problems, internet obsession, losing track and the importance of time are some of the negative consequences of addictive internet behavior among students [27]. Research on neurocognition reveals that digital learning can produce structural changes in the cortex affecting the gray and white matter areas. As a consequence, attention, intelligence, memory processing, consolidation of long-term memory and memory retrieval are affected in the young brain [28–30]. Long-term effects of such changes have to be considered as it affects the learning outcome.

Internet connectivity is not equally available to all the children in many rural parts of India. Some children are forced to discontinue education and are employed at a younger age to meet the needs of the family. Domestic violence and child abuse were reported to be on the rise in some parts of India [31], which is a major threat to children during the lockdown. The dropout rates from school are predicted to be high during the lockdown owing to the economic crisis faced by the parents. Education in an affordable environment should be the priority of regulating bodies.

Children often exhibit behavioral problems as they are not allowed to socialize with their peers and are retained in their home instead. Continuous sessions online can induce mental fatigue in young learners and often they need psychological support to overcome this unique situation. The childhood habit of forcefully remaining indoors has paved way for distorted mental well-being during these tough times. The absence of school environment can affect the social and emotional learning which can lead to decreased cognition, empathy, participation in team and cooperation among peers [32].

Ways to mend the maladies of such psychological setbacks include parental guidance and monitoring of online sessions, counseling, promoting a positive outlook and reaping the best of E- learning and limitation of over usage of social media networks.

6. Building resilience for effective online learning during the pandemic

Adaptations are required at all levels to face the crisis laid down by the pandemic situation. Teachers have accepted the new normal ways of teaching even though it was sudden. Studies conducted in Greece reflect the mindset of teachers as it indicated less fear of pandemic-related depression and the emergence of resilience [33]. Measures to overcome the technostress and burnout among teachers can influence the outcome of teaching. Teachers are entrusted with the huge responsibility of catering to the educational needs in the prescribed format to the needy students. Schools and educational institutes have been shut for more than a year. This crucial time should be utilized for coping mechanisms that help to overcome the current crisis for the educational transaction.

Parents have to play a supportive role in e-learning. They have the responsibility of ensuring an adequate learning environment without any bothering to their children. Pandemic has induced fatigue which has exceeded the mental capacity of individuals. Resilience building in terms of assuming positive affirmations can have profound effect on the mental struggle by individuals.

Students are deprived of social and emotional learning during lockdown-induced closure of schools. Coping ability among young adolescents is considered an essential element to face uncertainty. Emotional resilience should be encouraged by positive emotions which can improve academic efficiency [34].

7. Conclusion

The pandemic-induced lockdown has made drastic changes in the education sector worldwide. With uncertainty prevailing about the future, the stakeholders are subjected to a state of psychosocial stress which requires efficient handling to form a strong community to face the crisis. Though online education has completely taken over traditional method of teaching and learning, novel techniques are adapted with full vigor to overcome the challenges. Students of school education, as well as higher institutes, exhibit problems in online learning which can be overcome by effective participation and timely feedback analysis. The role of parents is mere supportive in aiding their children in e-learning which is evident by our survey analysis on knowledge and attitude of parents on online learning. Ministry of education, Government of India has recommended usage of mass media network and other technological innovations to aid in remote learning to keep the process of continuing education across all age group of students. Unprecedented challenges and uncertainty are to be embarked upon to mitigate the crisis by building resilience among the public which is considered as the need of the hour.

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Acronyms and abbreviations

AV	Audio Visual
DES	Digital Eye Strain
MSD	Musculoskeletal Disorder
NCERT	National Council for Educational Research and Training
NCF	National Curricular Framework
WFH	Work From Home

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Chapter 47

Psychiatric Services and Teaching during the Covid-19 Pandemic in Romania

Ioana Valentina Micluția

Abstract

The Covid-19 pandemic has been declared in Romania on the 16th March 2020. The medical system reacted promptly: chronic patients had to be discharged within 48 h and further scheduled admittances were postponed, adequate epidemiological measures and circuits were organized. Anxiety, insomnia, frustration, binge eating, domestic violence were reported. The majority respected the general advises but soon, persons selected their information sources rather from social media, being victims of the infodemia and peculiar conspirationist theories. A new disorder has been described: coronaphobia. The psychiatric hospitals and outpatient settings had to reduce or innactivate their activity, switch as much as possible to TelePsychiatry. Psychiatry admittances were: onsets of psychosis, relapses of schizophrenia and alcohol, other psychoactive substances abuses, intoxications, and withdrawal states. Later, there were depressions, bipolar disorders, suicide attempts, self-harm in borderline disorder, dementia and delirium. Due to the closure of outpatient units for several months, patients visited the Emergency rooms. Personnel experienced burnout and new psychiatric pathology developed in the aftermath of Covid-19 infection. A big relief occurred with the initial vaccination of the medical staff and seniors, chronically ill persons, psychiatric patients being again left behind. Medical teaching shifted entirely to online and in 2021 the hybrid teaching system has been employed.

Keywords: psychiatric services in Romania, psychiatric Covid-19 specific pathology, psychiatric teaching

1. Introduction

The outbreak of COVID-19 pandemic was officially declared by WHO on 11th March 2020, most of European countries applying different state specific measures of lockdown in order to limit the spread of SARS-Cov 2 virus, mass contamination, and the consequences of the illness.

The characteristics of this pandemic were: ubiquity (in spite of its onset in a country, soon it affected almost all countries), severity, uncertainty, so far limited etiopathogesis and treatment knowledge, misinformation, and social isolation, economic restraint. These conditions are all stressful and might have huge consequences on mental health [1].

2. Brief history of one year Covid-19 pandemic in Romania

The first case was officially recorded on the 26th of February 2020, even before the official declaration of the pandemic in Romania, and the re-organization of the Romanian health system in order to assist adequately the Covid-19 patients. A strange phenomenon occurred during the first months of pandemic in Europe: repatriation of thousands of Romanian citizens living and working in European countries, affected already by the first wave of Covid-19 pandemic, either due to suspended work places or due to fear of contamination. The borders were assaulted by these people, which were briefly checked by an epidemiological triage, but not tested and quarantined in the indicated domicile, contributing probably to the supplementary spread of the disease [2]. As a consequence, initially positive but asymptomatic persons were admitted to hospitals but soon the hospitals were assaulted by problematic and critical cases and the hospitals especially the Intensive Care Units (ICUs) were exceeded. March 2021 recorded 859709 infected persons and 21483 deaths. The general situation was managed by the department of Emergency Situations and by the Ministry of Health, supported by a mysterious committee of strategic communication, and local authorities. Since December 2020 health workers have been vaccinated, followed by seniors, and chronically ill persons, residents in centers, and disabled persons. The access for the general population has been launched since 15th March 2021. In spite the initial popularity of the vaccination campaign, mistrust especially to the Astra Zeneca vaccine led to a decrease of the vaccination rhythm; still elevated incidence rates of morbidity and mortality of Covid-19 characterize the third wave. Besides the initial electronic patform for vaccination appointments and call-centers, mobile teams, drive though vaccination centers and vaccination marathons aimed the increase of accessibility of the general population.

3. International challenges of psychiatric care during the Covid-19 pandemic

The hallmarks of this Covid-19 pandemic were the uncertainty, unpredictability of severity, duration and the unforeseen effects of several areas: personal, social, economical, triggering enourmous burden on health services, on other essential domains. Though the phenomenon had been experienced some months before by China, European countries seemed shocked and unprepared for this huge global turmoil, accessing simultaneous protection and medical equipment, leading early to a shortage of medical supplies and sometimes competiveness to access these. However, the Chinese experience represented an important pillar of guidance for organizing medical and social services and also treatment approaches. The fact that the disease might trigger life threatening evolution, may involve several individual or mass psychological reactions or worsen previous mental health problems.

A glimpse into the psychological reactions of the population to a global threat, evidenced fear/anxiety, insomnia, depression, anger, guilt, grief, loss at the beginning and frustration [3], PTSD, stigmatization later on, as well as the burnout, somatization of health care workers [4], the onset or aggravation of several psychological/psychiatric symptoms in some of the Covid patients, and the reactions of their family members, caregivers.

Considered as vulnerable groups for mental health impact of Covid-19 were: older adults, the homeless, migrants, mentally ill patients, pregnant women, and students studying abroad [1].

A gender analysis has revealed that younger women are more prone to develop especially anxiety, despite family support and resilience [3], due to an increase of household responsibilities, decrease of physical activity, the emergence of domestic hostility (violence, psychological and/or sexual abuse), due to more time spent together in close proximity. Two peaks of these psychological disturbances could be recorded: at outbreak and more severe later on in a specially vulnerable population: younger, single women, exposed to the infection [3].

Regarding the different psychological reactions, they were not homogenous in different age groups. Children and parents had to adapt to confinement in a narrow space. Small children were deprived of social encounters, discovery and interactions of peers and other persons, institutional acquisition of knowledge and social skills. Predominant indoor seclusion might produce fear, loneliness, anxiety, depression, sleep disorders [5], restlessness [6] and even PTSD [7]. In school children, adolescents, the remote teaching promoted by e-learning developed attention and concentration difficulties [8], a peculiar friendship dynamics with isolation, frustration, and consecutive overuse of electronic devices, anger outbursts, proneness for alcohol and/or psychoactive misuse. The Flynn effect, that of constant increase of IQ by decades with at least 3 points, has recently registered a dramatic decrease [9] but probably not yet evidenced by the compensating Dunning-Krueger phenomenon. A better resilience seems to be in the case of families, peers, teachers' involvement [8, 10], and a balance between intellectual and physical tasks [8].

On the other end, seniors were at risk and vulnerable due to multiple comorbidities, low social integration, and social disadvantages [11] even before the restrictions imposed by the lockdown and higher risk of poor evolution in case of contamination. The isolation raised great concerns of the possible consequences in the disruption of daily routine, difficulties in provision of basic personal needs, health care services, loneliness, and limited access to neutral information and entertainment. As a consequence, they felt abandoned, stressed by the news, with sedentary lifestyle, with limited access to medical services, anxiety aggravated, depression, poor sleep and huge cognitive impairments [12, 13]. Social isolation, various restrictions of movement, social interactions were perceived as stressful and sometimes less understood as protective. A vivid debate regarding the respect of human rights and marginalization of seniors arose [14]. Even painful separations, limited funeral rituals, grief and bereavement were experienced as frustration [15].

4. Role changes during the Covid-19 pandemic

Active persons experienced the general pattern of psychological reactions, in accordance to the degree of understanding of the threat, protecting measures, adherence to the official recommendations of protection or denial of the existence of the infectious disease, different involvement in social roles. A dramatic shift has occurred: while medical staff and other emergency personnel were highly implicated in the last year, working intensely and under pressure, others had to adapt to passivity or even suspend their professional activity with huge economical downshift and uncertainty. Therefore, some became very involved and active and others had to freeze their professional identity or reorient towards other means of subsistence. Beside the huge personal reactions, the financial breakdown, the postponing of real life habits put some jobs under question (musicians, actors, hospitality). The responsibility for social, individual, family, financial survival put those persons on supplementary pressure and existential uncertainty.

While the active group had to practice and act rapidly, lacking a very precise documentation or scientifically evidenced based guidelines, being permanently

confronted with unexpected situations, unpredictability and task overload, the counterpart had to remain passive, in expectation, "hibernation", sometimes forgotten by the governmental sustainable support and resilience programs. Special behaviors developed: hoarding and food stocking, a special personal or group survival selfishness, binge movies and internet consumption, binge eating, and isolation in bunker similar homes.

The Covid-19 pandemic has shaken deeply communication, personal and group liberties, adherence to norms, values, the social boundaries and equilibrium, optimum proportion between implication/passivity, personal, professional, family and recreational activities. If the initial official recommendations stated "social distance" as a protective measure, it became soon obvious that taken literally, this could lead to huge unintended detrimental effects: isolation, loneliness, exacerbation of own fears, limitation of social interaction, even stigmatization. So, the term "physical distance" seems to coin more precisely the real need of the respect for safety distance in order to avoid contamination. Moreover, special efforts should be addressed especially towards vulnerable populations to provide social closeness, inclusion, connection and special care [16].

5. The dynamics of the public perception of medical personnel

At the beginning of the lockdown, as serious cases of Covid-19 patients applied for testing, diagnosis, and treatment, medical staff were idealized as "heroes", sent to the frontline of the triage, hospitals designated for this purpose, invested with great hope and confidence of healing and rendering all safe as soon as possible, taking less into consideration that protection methods and special beds for ICU were scarce, and treatment options were not universally lifesaving, being a new disease, without yet a guaranteeing cure. This emotional investment of trust in medical personnel has been shown by encouraging messages, gratitude stickers, TV interviews, outlining the devotion, overwork, exhaustion. As soon as complications, or even death occurred, with limitations of family members to take direct contact to the personnel, limitation imposed by isolation, restricted funerals, the initial attitude began to fade. Less objective information about testing, quarantine, hospital procedures were explained by the government, local officials, by personnel. But a tremendous shift occurred as the conspirationists gained ground in convincing persons that higher "interests" would intervene and declare healthy persons as Covid-19 patients. A further cognitive bias "concluded" that ICU ventilated patients were incurable and condemned to death. As a consequence, a virtual loop produced an avoidance of hospital admittance and application for admittance in tardive stages of the disease, which were hard to manage. Media and the general public reconsidered common medical procedures in ICUs as punitive (i.e. oxygen masks, restraint of confused patients, ventilation, with the inherent side effects, like bacterial suprainfections). Therefore, a radical shift in attitude of the population towards medical staff took place, also nurtured massively by the nonmedical adherents: they were considered corrupt, sadistic, even criminal. Mistrust and adversity, stigmatization contributed to supplementary work hardship and status decline. As infection incidence rose, more restrictions were imposed, less understood as protective, frustration of limitation of liberties during the second and third wave were hardly accepted, calling the epidemiological methods as "medical dictatorship", encouraging revolts, disobedience, promoting risky behaviors.

The prevalence of burnout among American nurses ranged up to 45%, being at double risk of depression than other health workers [17].

6. Infodemia versus scientific information

As soon as the infection with the new SARS-Cov 2 emerged in the Wuhan region of China, WHO launched an official evidenced based scientific information platform tailored to specific population groups-Information Network for Epidemics (EPI-WIN). The official general information delivered by media channels, according to the employment of the general safety measures, health professionals benefited of full access to free evidenced based studies, which were informative and valuable in exploring, adapting treatment plans according to the latest scientific achievements. But often the official information was overshadowed by more convincing false information, called infodemia (the rapid and massive spread of pseudoscientific information), with particular features: launching deep fake news, the misinformation had large channels of distributions, inducing an "illusory "truth by repetition, familiarity, promoted by influencers, by famous persons, relying partly on conspiracy theories, exploiting the general heightened level of fear, discouraging the medical approaches, along with intensive anti-vaccination campaigns [18]. Among the most popular "explanatory" theories can be cited: the pandemic has been planned by Big Pharma, companies, the virus is produced in laboratory, 5 G produce clinical signs of Covid-19 infection. There are several reasons which might explain the development of pseudoscientific information: subjective misinterpretation of some evidence, called cognitive biases, magical or irrational meanings, a hidden mercantile interest and the credible, persuasion reaching the fragile emotional ground of the receptor [19].

The conspirationist theories promote that certain events and phenomena are manipulations of occult forces, a plot of leading groups, offering some plausible believable simple explanations, but not reliable scientific sources, dividing irreconcilable adherents from contestants [20]. Why are some people more prone to accept false theories in spite the scientific proofs? Miclea advances the supposition that the emitter of the fake information launches an emotionally charged information that is in consonance with the own beliefs [21] that gives the impression of being special and having access to secret information; the person seems to have a cognitive bias, called by Mixich [22] "cognitive impermeability", selecting within the available data only the convenient information, being insensitive to contra arguments, proofs of the false assumptions. These persons select within the news only convenient data, being nurtured in their convictions by peers, denying neutral facts, and evidenced based data, similar to cognitive impenetrability.

Some "messianic" characters invaded social media, promoting personal theories, calling population to disobedience of the official rules, pretending that conspirations aim the subjugating citizens and obliterating their rights and freedoms. Even the contamination or death of close adherents did not lead them to conclusions that the illness is serious and might be fatal. Strangely, some of the doctors promoted peculiar theories about the inexistence of the Covid-19 disease or claimed to have cured thousands of patients with primitive remedies, contesting vividly the official protocols, gaining acceptance and trust by a significant number of people.

7. Coronaphobia

The spectrum of anxiety disorders is wide: it is usually indefinite in general anxiety or out of the blue in panic attacks, triggered by a phobic stimulus in specific phobias. At the beginning of the SARS-Cov2 outbreak, being limited to a faraway region, the concerns were vague and a certain conviction that the danger will never

affect us prevailed. After the European and American widespread of this respiratory transmitted disease with high transmission rate and mortality, WHO declared the disease pandemic, imposing several protective restrictions and mobilizing huge medical resources in research and medical assistance of Covid-19 disease. As soon as the incidence rate of the disease and mortality due to complications of the disease raised dramatically in developed European countries with advanced health systems, the general population developed a rapid awareness of the real dimension of the threat. As more and closer acquaintances were positive or ill, the proximal danger became real. Therefore, a specific acute anxiety developed, having a clear object of fear, namely the threat of being contaminated/contaminating by the SARS-Cov2 virus and the possible consequences (i.e. economic, status), severe outcome, and death. The circumscribed phobia, developing specific cognitive distortions and specific behavior (either of exaggerated disinfection or avoidance of public places) entitles a precise name for the phobia, different from other contamination phobias, called coronaphobia [23]. Arora et al. [24] conceptualized the excessive fear of contracting the Covid-19 disease into three main components of coronarophobia, namely the physiological, cognitive and behavioral aspects. The fear is triggered by situations of meeting potentiallly infected people, exposure to crowded places, traveling, touching potentially infected surfaces, misinterpreting mild signs of flu. The physiological part implies palpitations, breathing difficulties, appetite, and sleep problems. The cognitive component meant absolutistic assumptions like: if I contract the disease, I will die, it might represent an economic, personal disaster and trigger worry sadness, sleep disorders. The fear of contamination included both senses: to contract the infection or infect close persons. The behavioral component is represented by avoidance of getting out, meeting friends, and attending public places. Other consequences of combining recommendations and personal fears of contaminations were the development of compulsive disinfections, cleaning and washing.

The analysis and comparison to other phobias reveals the following characteristic features of coronaphobia: intense, widespread, involving also socio-occupational and personal domains, with apprehension ranging beyond self and present time [24]. The majority of phobias are personal diverse fears occurring during different points in time of life and, with different intensities, depending on the degree of de exposure to the phobic stimulus. Coronaphobia represents beyond an individual experience, a mass fear, with a special dynamics, a vicious loop of hardships during quarantine, new habits (hoarding, binge eating, binge TV series watching and, seclusion), the unforeseen end of the danger, some hope related to vaccination, doubts after escalation of incidence rates due to mutations of the virus and its virulence, the revolt of some people faced with further restrictions and limitations.

8. Romanian psychiatric care during Covid-19 pandemic

8.1 Romanian legislation during Covid-19 pandemic

Soon after the WHO declaration of COVID-19 pandemic, the Emergency state has been declared by the Romanian President on the 16th March 2020 [25] with the lockdown measures for 30 days in Romania, which reduced the unnecessary workplaces, shops, social encounters, travel bans and shift towards remote working and/or online teaching, quarantine/isolation when requested. The Emergency state has been followed by successive alert states or local confinements in high infection incidence zones.

On the medical level, several immediate measures were stated by the common order 74527/2020 issued by the Department of Emergency Situations of the Internal Ministry and Health Ministry in Romania at 23.03.2020 [26] such as: the hospital facilities had to discharge within the following 48 h most patients, only emergency admissions being permitted; postponing the programing of public and private ambulatory assistance. Health services had to adapt their circuits and programs according to the epidemiological safety needs and structures, personnel programmed their activity in shifts. The supply with protection materials and disinfectants, necessary medication was provided in accordance with the management strategies of each hospital/service. Some Covid hospitals were designated (infectious disease, pneumonology, internal medicine) and support Covid hospitals, which had to assist milder cases. But each department, regardless of the speciality, organized its own circuits according to the local buildings, endowment and personnel in order to assist suspected or confirmed Covid patients at the same time to protect the other hospitalized patients against contaminations. Updated case definitions and treatment protocols were provided as systematic scientific knowledge evolved. The Law no.136/2020 [27], partly in consonance with international health regulations, offers precise definitions of specific terms such as personal, regional quarantine, isolation and measures of report, application of the above mentioned measures aimed to avoid the spread of the infections, as well as the sanctions in case of deliberately refusal to comply with or violate these measures, respecting personal rights and freedoms. The law expresses the right of the person to ask for the annulment of the imposed measures, if the persons fill injured by the restrictions, steps to challenge the decided methods [28, 29]. Based on this later paragraph, specialists encountered difficulties to convince patients to sign the informed consent, accept treatments, and being admitted in spite of the severity of the Covid-19 illness.

8.2 Psychiatric services in Romania during the Covid-19 pandemic

The re-organization of psychiatric services varied depending of the type of service (ambulatory, hospital, state/private), location, type of buildings, proximity to a Covid hospital and specialized examinations, resources, local management. The general lines of the provision of medical services were stipulated by the Government Decision (HG 252/2020) [30], pointing the maximum protection of patients and medical personnel, recommending the provision for stable chronic patients remote consultations, treatments, the annulment of the mandatory use of the medical assurance card. The types of distance consultations were not clearly specified, since telemedicine systems were not yet officially employed. So GP's, ambulatory specialists decided to offer teleconference facilities to their patients WhatsApp, Skype or other smart phone applications, with great concerns of security of data protection, accessibility. If these communication facilities might be familiar to the Z-generation (born in the mid-nineties), they could encounter technical difficulties for both doctors and patients, partly due to some digital illiteracy or to the lack of availability of the device or the internet network by the later. In spite of older recommendations to apply TelePsychiatry emphasized by various Psychiatric Associations, these became imminent during the Covid-19 pandemic. But various components of this methods (secured electronic health record, synchronicity, teleconference, teleconsultation, monitoring of vital signs, psychological testing) lacked entirely, being in fact a videoconference, followed by an electronic recipe, send to the patient via e-mail or to the indicated Pharmacy, being reimbursed by The National Health Insurance system. Above the general depicted advantages (portability, cost-efficiency, accessibility, continuity) [31], the major advantage was to overcome the reluctance of patients to apply to direct medical

services, to guarantee the safe and quick follow-up; more barriers were recorded: the lack of personal psychological authenticity, missing clear juridical framework, problematic technical set ups, modest training. If the initial consultation seems the most problematic, the achievements could be employed later after the extinction of the current epidemiological risk in the aftercare, follow-up [32, 33].

The Romanian psychiatric hospitals organized their circuits and activities according to the local settings, profile, management decisions and epidemiological advisors. The case of huge, independent emergency psychiatric hospitals such those in Bucharest, Iaşi, Sibiu, Cluj-Napoca, built on a pavilionar style permitted the designation of special isolated Covid suspect and confirmed departments. Within the Covid pavilions, suspect cases and confirmed positive cases were totally separated and personnel respected strictly the protective rules, circuits, equipments. Face to face briefings were canceled and switched to online meetings. The suspect cases were monitored until negative RT-PCR test arrived and directed towards the designed sections. Positive cases, either asymptomatic or symptomatic were monitored or treated both for the Covid-19 signs and for the psychiatric illness, until negativation of RT-PCR, when transferred or discharged. Even Infectious disease hospitals or other Covid-19 hospitals and Covid-19 support Covid hospitals asked for psychiatric support or transfer when psychiatric symptomatology exceeded their capacity of specialized care, but guaranteed the somatic stability for a psychiatric ward that does not possess the adequate technical equipment for possible severe somatic outcomes. Each department could decide after a careful epidemiological triage to admit patients in buffer zones until the results of RT-PCR test oriented the patient within the ward or towards the special pavilion. Personnel and negative tested patients were also monitored for signs of a possible suspect case, according to the updated case definition provided by the Ministry of Health.

For acute patients brought by ambulance, Police, only direct consultations were possible and admittance often required special supplementary safety measures, being kept in a buffer zone until negative RT-PCR results were confirmed. Similar procedures were reported by colleagues in other countries, with the same difficulties, partly due to understaffing, less specialized training [34, 35].

For chronic hospitals, there were no new admittances. Psychiatric hospitals, part of a general hospital, could hardly organize safety circuits according to the imposed regulations. One major concern regarded the continuity of delivery of psychiatric treatments to the chronic patients, which could have been at risk of relapses, triggered by medication discontinuation. This led to the initiation of several programs and facilities that provided safe medication supplies after safe Tele-Psychiatry consultations. Due to the fact that the majority of ambulatory psychiatric services interrupted their onsite activity the first two months of pandemic, clients with psychiatric problems requested either online consultations or visited the emergency rooms. If oral medication reached easily the patient, either accustomed with the administration or in case of changes, a short explicative schema had been attached, more problematic seemed the administration of long acting injectable antipsychotics, which supposed the administration by a trained nurse.

Speaking about admitted psychiatric patients, the quarantine measures interrupted the periodical visits into the hospital of family members or friends, the contact being possible by telephone. In order to overcome this emotional deprivation, especially in those patients and carers who did not afford a smart phone with videocalls, the Cluj emergency hospital initiated the technical support for this gap by offering two tablets to the patient and the carer in the proximity of the hospital, providing also technical assistance.

Some peculiar event occurred since the personnel had to wear protective kilts, masks, making daily visits and consultation difficult regarding the identification of

the persons, the establishment of confident relationships, limited face expression and changing personnel, producing gaps in adequate monitoring, coherent therapeutic plans. Some of the activities were canceled: morning conference, periodic meetings with shifts via online meetings, briefings, group messages.

During the first ten months of the pandemic, personnel had also been contaminated, ill, isolated and a shortage of personnel occurred besides reorganizations of other sections, where personnel had to be transferred. A great relief arrived with the vaccination of the personnel at the beginning of 2021.

8.3 Interhospital collaboration, onsite psychiatric care

The current situation imposed some flexible approaches: since some psychiatric patients suffered of symptomatic Covid-19 illness and were admitted into a dedicated hospital with special care needs and manifested psychiatric symptoms as well, the general strategy demonstrated that consultation and treatment plan in the initial hospital was the optimal attitude. In the case of serial contamination of senior residents that were assessed for various comorbidities, the common decision of the Cluj Emergency hospital was to temporarily detach a psychiatric nurse and a registrar to act onsite for the psychiatric decompensations (delirium, insomnia, agitation). But a better approach should be in case of senior stable residents to assist them in their familiar surrounding and transfer to a hospital only in the case of more complex investigations and medical assistance. Outbreaks, especially during the third wave posed special challenges, partly to the bigger contagion strength and the lack of available adequate suitable clinical facilities. Therefore, flexible designation of special wards, rapid transfer of patients into other hospitals should have been more functional and practical if we would have benefited of the efficient support and coherent coordination of the executive structures. In order to assess professional active Covid-19 ill psychiatric patients, psychiatrists employed the adequate explorations, beneficiated from guided and suitable treatment plans by the hospital infectionist.

Psychological hotlines were provided both for hospitals employees and for the academics, and recently by the Ministry of Health after the suicide of an anaesthesiologist, but which proved to be rather formal and modestly accessed.

8.4 Psychiatric ambulatory services within a psychiatric hospital

Respecting the strategy to avoid relapses due to medication discontinuation, the closure of the majority of ambulatory psychiatric services at least during the first two months, the difficulties to reach the ambulatory services and the centers for mental health, integrated ambulatories tried to provide consultations in both ways: remote and direct, adapted to the needs and preferences of the patients, and the confidence of the specialists in the authenticity and reliability of the newer method. But the direct consultation implied supplementary protection and safety measures due to the higher risk derived from the low reliable triage. As mentioned before, the TelePsychiatry approaches were preferred rather by young patients, for other patients hesitant to apply direct to the onsite consultations, intermediate caregivers facilitated the remote consultation but with lack of the adequate confidentiality.

8.5 Dynamics of psychiatric pathology: emergency hospitals, outpatients units

It has to be stated from the very beginning that data regarding admissions, psychiatric consultations, psychiatric patients infected with SARS-Cov 2 virus and their evolution have been requested in advance from the National Institute of

Mental Health, National School of Public Health, National Institute of Statistics but feedback has not been sent or data are not available yet. Therefore, we will present data recorded at the Emergency Cluj County hospital, Psychiatry Clinic with a capacity of 150 beds, during the first months of Covid-19 outbreak. It is to be stated that the general trend of the analysis refers to the admittances, consultations, emergency room presentations during the lockdown (15th March-15 the May 2020) compared to the same period of the previous year 2019. There was a dramatic drop in admittances by 49% (i.e. 555 vs. 283) [36] but also in presentations to the emergency room, applying for psychiatric problems that usually were addressed to the closed ambulatory offices or to the GP's (as insomnia, anxiety, mild depressions). The integrated ambulatory aimed at assuring continuity of treatment, had also their activity decreased, partly due to distrust of the safety sanitary measures and the fear of contamination or to the mobility restrictions; the decrease was by 37% regarding direct consultations, replaced whenever possible by Tele Psychiatry. The gender distribution revealed more men than women in all services described above [36]. The demographic profile of the hospitalized patients during the confinement was: man, from urban area, in the mid-forties, benefiting from a similar hospitalization duration-13.2 days [36].

Regarding the diagnosis profile of admittances during the lockdown in comparison to the same period of the previous year, there were mostly onsets of first psychotic episodes, schizophrenia relapses, and alcohol and other psycho active substances acute intoxications or withdrawal states, in consonance with other international studies [37–39]. But quite surprising, there were less mood disorders of any polarity (either depressions of any severity or bipolar disorder spectrum), or suicide attempts despite frequent predictions. This trend changed in the following months, increasing the number of hospitalizations, adding to the former categories depressions, bipolar disorders, suicide attempts, self-harm in border-line personality disorder and newly diagnosed cases of dementia. Especially this cognitive decline has been noticed by carers soon after the lockdown and the physical distance and isolation, but they did not apply for evaluation immediately due to hesitancy and fear on contamination, they did so only months later. In the beginning of March 2021, the number of admittances reached the figures similar to the previous year, still maintaining the testing procedure and the Covid pavilion, with positive cases hospitalized at the extension of the buffer zones according to needs; the number of admitted patients exceeding for short periods the wards' capacities. Due to the neurotropism of the Sars-Cov 2 virus, the environmental and psychosocial stressors, persons with Covid-19- illness, might be at risk for developing following psychiatric disorders in the aftermath of the infection: depression, bipolar disorder, PTSD, psychosis, OCD, cognitive disorders, epilepsia [40].

8.6 New kinds of delusions and behaviors

If there is no special specificity of the majority of the admittance diagnoses referring to alcohol and substance abuse, some particular trends could be noticed within the psychotic spectrum. The first case, a brief psychotic disorder was encountered in a young emergency doctor, who ran through the streets announcing an apocalyptic outcome of the Covid-19 pandemic and an overflow of severe cases exceeding the hospital facilities, trying to warn people, policemen of the imminent danger. The recovery was very fast within two weeks and returned after a month as an active doctor on a Covid-19 internal medicine ward. The majority of schizophrenia patients adapted their paranoid delusions to the actual social context, noticing the mimetics of the delusions: either delusion of contaminations or messianic mission of saving humanity, combined with mystic delusions. Worth mentioning

is that the content of delusions changed: a man developed at the beginning of the outbreak of Cobid-19 pandemic a delusion of contamination, followed by isolation, compulsive exaggerate washing, disinfection, mistrust in all persons, even close family members. After some months of total isolation, the same person developed another paranoid delusion of the influence of 5G radiations, employing several protection methods: switching off of the internet router, isolating wires, culminating with the concealment in an aluminum box, aiming at blocking the damaging effects of 5G.

Another young obese women, with two family members deceased because of Covid-19 disease, being aware of the risks of this comorbidity for Covid-19 disease, employed a peculiar self-harm behavior, namely repetitive injections of insulin, in order to lose weight and therefore be protected.

8.7 Information kits

General information about SARS-COV-2, Covid-19 disease, safety measures were adequately distributed for the general public through various channels (TV, radio, and internet) but the avalanche of alarmist breaking news might have triggered exaggerated emotional reactions. In order to ensure that psychiatric patients correctly understood the recommendations regarding physical distance, disinfection, the hand washing rules and the adequate wearing of masks, special groups were organized twice weekly lead by nurses and registrars. Special booklets regarding the psychological resilience and short life style advices were provided to patients and their carers. Short video clips were provided by a specialist in public health. Another concern of the staff was related to the potential tension triggered by alarmist news, being either filtered or replaced rather by entertainment programs or by the broadcast of poetry, delivered every evening by a local actor.

8.8 New recreational activities

Being admitted to any quarantinated hospital, involved a huge limitation of the usual activities and social interactions. Therefore, the lack of family members, friends could be surpassed by compensatory networking: video calls, safe distanced groups activities run as much as possible outside in the inner garden (badminton, dancing, art therapy, interactive but safe activities such as gardening).

9. Vaccination and psychiatric disorders

The national vaccination campaign began for seniors (above 65 years old) and persons suffering from chronic diseases (diabetes, cardio-vascular diseases, cancers, immunosuppressive diseases, immobilized or disabled persons) on 15th January 2021. In spite the evidence of higher infection rates, morbidity, severe outcome [41], and mortality risk of severe mental ill patients [41, 42], several examples of Covid-19 outbreaks in psychiatric hospitals, the general recommendation of prioritizing of this vulnerable persons for the early vaccination [43], this group was not included in the Romanian vaccination program. The situation has not been remediated although several memoirs have been send to Ministry of Health, National Coordinator of the vaccination campaign, psychiatric associations. Therefore, psychiatric patients were left further at risk of contamination, being further discriminated. At present, due to the fact that most of them do not have access to internet, are digitally illiterate, have modest information to reliable sources, the access is even more difficult though the national vaccination campaign

was launched on the 15th March 2021. Being frequently asked about opportunities, interactions with the medication, side effects, we decided to edit a short guide about the virus, contamination risk, vaccination dedicated to psychiatric patients and their caregivers [44].

10. Psychiatric graduate and postgraduate psychiatric teaching

The first Medical University which decided to suspend the onsite courses on the 5th March 2020 even before the official national lockdown, switching on exclusively on line teaching was the University of Medicine & Pharmacy "Iuliu Hațieganu" Cluj-Napoca, followed soon by all medical universities. This quite abrupt switch, along with the telework of the administrative staff, implied the huge effort so send safe national and international students on demand at home. For the graduate preclinical teaching, courses and seminars could be easily adapted for the online teaching, beneficiating of adequate online platform Microsoft teams, with multiple interactive opportunities. As clinical courses did not encounter any problems, seminars had to rely on case vignettes, official didactical video clips or on life streams of surgical procedures, with the respect of the confidentiality of the patient. These didactical video clips were available and appreciated by the English, French line, applied also to the Romanian students. In order to make seminars more interactive and to develop interview skills, audio calls facilitated the direct but confidential access, or blurred videos were a compromise. But we have to confess our concerns regarding deficitary adequate acquisition of essential practical medical skills for medical students and nurses. The postgraduate Psychiatry beneficiated on the other hand of both: online courses, case presentations, scientific updates, and the onsite clinical work and training. But a quite peculiar phenomenon occurred, with the "misunderstanding" of the official recommendations during lockdown for the general population but not for medical staff to stay at home, leading to a shortage of medical personnel and the exhaustion of the older doctors. The prolongation of shifts until February 2021 of the registrars had as consequence a decline of the daily medical routine, the difficult follow up of patients with changing doctors for one patient. As a direct consequence were the modest theoretical and practical knowledge, with scarce assumed clinical decisions. The doctoral studies continued as online courses, literature search and meta-analysis but there was a hardship in exploring, testing the planned patients samples. Clinician teachers had to focus on the tremendous pressure of patients' care and on teaching tasks as well, even though sometimes these tasks overlapped. The main problem faced by teachers and students as well, was the abrupt transfer of the educational system entirely towards online, with no previous planning philosophy of guidelines; the library did not offer the online resources of documentation. Teachers understood to transfer their orthodox teaching style online, not taking into consideration that students might have difficulties in understanding and acquiring information, tasks, skills. As seminars and practical clinical exams were canceled, innovative methods should be planned, the curricula overhauled, a steering committee point the general objectives and implement suitable pragmatic logistics, in order to diminish the gap of onsite training [45, 46].

11. Conclusions: lessons and future emphasis

The current pandemic was difficult to anticipate as magnitude, duration, health service organization and personal, social, economic burden. The three waves of

Covid-19 pandemic exhausted the medical capacities, medical staff is in burn out and citizens are frustrated due to prolongation of restrictions, high number of victims, accept hardly to conform to the epidemiological rules. The vaccination campaign represented a tremendous hope to diminish the dramatic effects of this pandemic and has proven that countries that employed intensive vaccination strategies reached low mortality rates. But this enthusiasm has been overshadowed by the intense highlight of side effects of some of the vaccines by the media, conspirationists, leading to mistrust, hesitancy in sustained programming. Psychiatric patients, especially those suffering of serious mental illness were more prone to contract the infection, as outlined previously due to smoking, somatic comorbidities, overcrowded housing, difficulties to understand and respect restrictions, to recognize the contagious disease and to access medical services and adequately quarantine [47], and reached higher morbidity and mortality rates. The health care in a psychiatric hospital of Covid-19 psychiatric patients was difficult to organize, limited due to the inadequate endowment and the insufficient specialization of mental health providers in treating this particular infectious disease the understaff. But more difficult seemed the transfer to a more specialized hospital or back home for isolation. Another issue that is not yet solved, is the stigmatization of these patients even within the medical system, all efforts to include these serious mental ill patients into the priority group for vaccination failing in spite solid scientific argumentation [43], and the experience of several outbreaks, severe outcomes. The consequent tsunami of psychiatric cases, either as onsets or relapses or the new psychiatric pathology in the aftermath of Covid-19 infections put psychiatric services under pressure like a marathon race, with same or weaker human resources but with unpredictable endpoint. Apart from the great effort during this period, health workers felt that there were no coherent central or local health strategies and support, even though initiatives were proposed. The psychiatric and infectious disease control measures should be further continuous adapted upon needs and as rapidly adapted renegociated based on best practices and local availability, equity [48, 49]. The general aims for the next future would be a better awareness of the general population regarding the medical, psychological, social, financial consequences of this illness and better, coherent health policies, that encourage initiatives and multidisiplinarity, employment and adaptation of successful testing and treatment algorithms.

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Section 4

Biological Perspective

Chapter 48

Psychological Aspects of Neuroinflammatory Disorders in COVID-19 Era

Abdorreza Naser Moghadasi

Abstract

Although the COVID-19 pandemic was initially manifested as a contagious respiratory infection, its other aspects quickly became apparent. Accordingly, the disease could affect various organs such as skin, digestive system, and the central nervous system. Apart from these diverse manifestations, it was rapidly cleared that the virus could potentially play a role in causing a wide range of autoimmune diseases. Moreover, various anthropological aspects of COVID-19 and its effects on human life were considered. In this regard, one of the important issues is its psychological effects, not only on the population of healthy people, but also on people suffering from underlying diseases. Inflammatory diseases of the central nervous system are included as one group of these diseases. Since these diseases can cause many psychological problems in patients, it is very important to pay attention to them during the COVID-19 pandemic. In the following section, the psychological aspects of COVID-19 in patients with neuroinflammatory diseases are described.

Keywords: COVID-19, Psychological aspects, Neuroinflammatory disorders

1. Introduction

Since the start of the COVID-19 pandemic in December 2019, many different aspects of severe acute respiratory syndrome coronavirus 2 (*SARS-CoV-2*) and the resulting pandemic conditions have been identified. Although COVID-19 was initially manifested as a lung disease as both pathogenic and lethal [1], it gradually became apparent that this disease can also involve other organs, including the central nervous system (CNS), [2] the peripheral nervous system [2], gastrointestinal tract [3], and skin [4]. These conflicts could be either due to the direct invasion of the virus or due to the response of the human immune system to it or the complications of both [2, 3]. Over time, of course, it became clear that the effects of the SARS-CoV-2 are not completely identified, and they are extended to a much wider range. By having a better understanding on the pathophysiology of this disease, our understanding on why it is so widespread could be improved. For example, scientists found that only a part of the symptoms were caused by the virus through directly invading tissues such as the lungs and nervous system, and most of the symptoms, leading to exacerbation of COVID-19 and even death, were due to the increased response of the human immune system to this virus. Correspondingly, the response is known as cytokine storm [5]. This enhanced immune response,

along with other mechanisms such as the similarity of virus proteins to human proteins, as well as the presence of genetic predisposing factors, have led to a wide range of autoimmune diseases following infecting with COVID-19 [6, 7]. Notably, some other problems can enhance the complexity of this pandemic. In the current research, the next topic is the psychological and psychiatric problems caused by the COVID-19 pandemic. These problems cover a wide range, all of which cannot only cause some problems in the patients' quality of life, but also have direct effects on various aspects of patients' life such as employment and education. On the other hand, these psychological aspects can be more reflected in someone with an underlying disease. Many of these diseases can be exacerbated by anxiety and depression; therefore, these people are more vulnerable to the psychological problems resulted from the COVID-19 pandemic. In the following section, we looked at these problems in people suffering from inflammatory diseases of the central nervous system. It was shown that these diseases, including multiple sclerosis (MS), are strongly influenced by stress, which in turn can exacerbate these diseases [8].

In this regard, a thorough understanding of the psychological aspects of COVID-19 and its consequences in this group of patients can help us in making better treatment decisions as well as discovering more effective prevention and counseling methods.

In this chapter, firstly, we examined the psychological effects of COVID-19 in general as well as the reasons of its occurrence, and then we studied those investigations specifically performed on these effects on patients with inflammatory diseases of the central nervous system. Finally, we mentioned the investigated methods to deal with these problems.

2. Psychological problems caused by COVID-19

Since the start of the COVID-19 pandemic, numerous studies have been conducted on its psychological aspects. It was found that not only those developing COVID-19 are exposed to these psychological traumas, but fear of developing the disease and the economic and social conditions created by it also have increased the prevalence of these psychological traumas among all populations. Quarantine conditions that have limited human and social interactions, are known as important causes of these psychological traumas.

The conducted studies in this regard have focused on various aspects such as anxiety, depression, and stress. A study performed in Brazil on 3,000 people selected from 26 separate regions of the country, found that almost half of the participants suffered from some symptoms such as stress, anxiety, and depression [9]. Another study conducted on 1,879 people in the Philippines from March 28 to April 12, 2020, revealed that a quarter of their participants suffered from moderate to severe level of anxiety. Additionally, one in six of these people suffered from moderate to severe level of depression [10]. Another study reported a wide range of symptoms such as anxiety, depression, post traumatic stress disorder (PTSD), and the increased substance abuse [11]. As mentioned earlier, many of these people suffered from such injuries without developing COVID-19.

3. Causes of psychological problems in the COVID-19 pandemic

Various causes manifested these psychological symptoms during the pandemic. Notably, developing COVID-19 was shown to increase the risk of psychological problems. A study performed on 402 patients recovered from COVID-19, found

that 28% of them suffered from PTSD, 31% suffered from depression, 42% suffered from anxiety, 20% suffered from obsessive compulsive symptoms, and 40% suffered from insomnia. This high rate of the occurrence of psychological disorders in people with COVID-19 indicates that the possible involvement of immune system leads to the development of these symptoms [12]. The same mechanism of the enhanced immune response occurring especially among severe cases of COVID-19 and then leading to various manifestations, has been implicated in causing such symptoms [12]. However, the pandemic itself, the fear resulted from it, and the socio-economic conditions that have arisen, regardless of whether a person is infected with this disease, are all involved in the occurrence of these psychological traumas.

Some people are at higher risk of such complications. In previous studies, various risk factors related to the possibility of psychological complications during the COVID-19 pandemic have been mentioned. For example, in a study conducted in the Philippines [10], some factors such as female gender, being unmarried, staying at home for a long time due to quarantine conditions, and poor health conditions were reported as effective factors on increasing the risk of psychological disorders in these people. In a systematic review, the factors exposing a person to psychiatric disorders were listed as follows: those who have developed COVID-19, people who were medical staff, elderly people or those with a previous history of Psychiatric disorders [13]. Another study emphasized that those who are medical staff or those caring patients are more exposed to various psychological injuries in pandemic conditions [14].

In addition to the above-mentioned general causes, psychological traumas in COVID-19 conditions can also have more specific reasons. As stated earlier, people with COVID-19 are prone to psychological traumas. One of the major causes of these injuries is the increased immune response during this disease, which is known as cytokine storm. This increased response can lead to a wide range of autoimmune diseases. These autoimmune diseases are not necessarily associated with brain involvement; however, they can cause a variety of psychological problems. Besides, autoimmune disorders of CNS following COVID-19, which are manifested in various forms such as MS [15], acute disseminated encephalomyelitis (ADEM) [16], and other demyelinating diseases [17], also have their own psychological symptoms [18].

On the other hand, by directly involving brain tissue, it was indicated that the SARS-CoV-2 can cause encephalitis, encephalopathy; and disorders associated with psychological manifestations such as memory impairment, hallucinations, and anxiety [19, 20].

The next important issue is the occurrence of COVID-19 in patients with neurological or those with psychiatric disorders. As mentioned earlier, a history of psychiatric disorder appears to increase the risk of exacerbating psychological symptoms during infecting with COVID-19. The same process should probably be true for neurological patients. It has been found that the presence of dementia increases the likelihood of exacerbation of COVID-19 [21], which may also increase the risk of psychological problems.

Inflammatory diseases of the brain include a wide range of diseases that can cause various manifestations such as cognitive and psychological ones. Given the above-mentioned reason, it is likely that these patients are more prone to psychological traumas due to various factors occurring during the COVID-19 pandemic. In the following section, we examined various psychological aspects of patients with inflammatory brain diseases during the COVID-19 pandemic and concluded some therapeutic recommendations for providing further services to these patients.

4. Psychological aspects of neuroinflammatory diseases under COVID-19 conditions

Neuroinflammatory diseases include a wide range of diseases that can be divided into two general groups. Accordingly, the first group includes diseases such as MS, neuromyelitis optica spectrum disorder (NMOSD) or cerebral vasculitis, which are known with the ability of involving the CNS. The second category includes a wide range of systemic diseases such as rheumatic or infectious diseases, which can also involve the CNS.

4.1 MS

MS is an autoimmune disease of the central nervous system that can cause a wide range of symptoms. The incidence and prevalence rates of this disease are increasing day by day and it mainly affects the young generation aged between 20 and 40 years old [22]. MS is known as one of the leading disease of the central nervous system that can have many effects on individuals' life and their social relationship. The range of symptoms occurring in this disease is wide, which varies from numbness, paresthesia, visual impairment, movement problems, and urinary problems to cognitive and psychological disorders [23]. Moreover, this disease causes a range of psychological disorders in the affected patients. The most common psychological illness associated with MS is depression; however, other psychological disorders such as anxiety, emotional intelligence problems, bipolar disorder, and psychosis were also found to be related to this disease [24, 25].

As the disease progresses, both the type and prevalence of these psychological disorders can change. Additionally, the personality of the patients can change, which could be due to the effects of the disease, the resulted cognitive impairment, and the effects of medications [26].

These psychological disorders cannot only affect the severity of the disease, but they can also affect the patients' desire to pursue treatment. Therefore, these disorders' treatment is very important [27].

Many of these psychological manifestations mostly have an internal aspect and are caused by the pathology of the CNS as well as the involvement of the relevant areas by the same autoimmune mechanism that has led to the disease and its symptoms [28].

It was expected that such a disease with this magnitude and complexity could be affected in various ways in the COVID-19 pandemic. All the mechanisms mentioned earlier about the causes of psychological disorders in COVID-19 conditions were also found to affect MS patients. Accordingly, the studies that have been done in this regard also showed these broad dimensions.

4.1.1 Psychological aspects of MS during the COVID-19 pandemic

Numerous studies have examined various psychological aspects of patients with MS during the COVID-19 pandemic. From the very beginning of this pandemic, the psychological effects of COVID-19 on patients with MS have been noticed. In this regard, in a study conducted at the beginning of the pandemic, it was found that the level of anxiety is moderate to high in these patients [29]. However, this study was performed on a limited number of patients with no control group.

Another larger study found that MS patients suffered from more anxiety and depression during the COVID-19 pandemic compared to healthy individuals and their caregivers [30]. This high anxiety was not only due to the previously discussed general condition of COVID-19, but the patients with MS also had other concerns.

Accordingly, they were concerned about the worsening of their disease following COVID-19 and also about the possible impact of the condition resulted from this pandemic on the availability of their main drugs. They also expressed their concern that they might not be able to receive the required hospital services to treat their MS under the above-mentioned condition [31, 32].

Another study found that people with MS have become more sad and anxious during this pandemic, which is in line with previous studies. The fact that their treatment visits were delayed due to pandemic conditions and the concern about not receiving their medications on time were the reasons for this worriedness, as 40% of the patients participated in this study requested for psychological services during this pandemic [33]. In fact, it seems that MS patients are more concerned about the worsening of their disease during the COVID-19 pandemic than the consequences resulted from developing COVID-19 [34].

Notably, some other studies have also reported the neuropsychiatric effects of the COVID-19 pandemic on people with MS. According to the estimations, the rate of depression during the COVID-19 period has increased in these patients, and this pandemic had a direct impact on the quality of life in these patients [35]. In a study conducted on 432 patients, it was found that 31.7% of patients suffered from significant PTSD-like symptoms. Moreover, 48.6% of patients suffered from moderate-to-severe anxiety, 22% suffered from moderate-to-severe depression, 50.9% suffered from moderate-to-severe stress, and 29.6% of patients suffered from insomnia [36].

Various causes were found to be involved in causing psychological problems in MS patients during the pandemic. Apart from the above-mentioned reasons about the reduced access to physicians and appropriate services, younger age, more severe degree of MS, low adaptability, less optimism, more loneliness, and less resilience have also been found to be associated with higher rates of depression [37].

Despite all these findings, due to the increasing prevalence of this disease worldwide, further studies are needed on the psychological effects of COVID-19 pandemic on MS patients. These patients due to their underlying disease suffer from a number of neuropsychiatric disorders [38] that increase the risk of being affected under critical condition such as a pandemic. High levels of depression, anxiety, adjustment disorders, emotional intelligence problems, and cognitive impairments all can increase the likelihood of these negative effects as well as their subsequent consequences. Therefore, these patients require paying special attention under such conditions [38].

4.2 Psychological aspects of NMOSD during the COVID-19 pandemic

NMOSD is an inflammatory disease of the central nervous system mainly characterized by the involvement of the optic nerve and spinal cord. Unlike MS, it is an astrocytopathy that can cause many physical problems with its disabling attacks [39]. Moreover, while MS is a relatively high prevalent disease, NMOSD is a rare disease with a prevalence ranged from 0.51 to 4.4 per 100,000 [40]. Therefore, it is clear that unlike MS, many aspects of NMOSD are unknown yet. However, our understanding on the disease, especially after the discovery of the aquaporin 4 antibody, has greatly increased and it became clear that this disease can have a wide range of manifestations. Of note, central nervous system involvement in this disease is not limited to the optic nerve and spinal cord and it can be associated with involvement of the brain parenchyma [41]. In recent years, some studies have reported cognitive impairment in NMOSD patients, which may reflect the brain involvement in these patients. In a systematic review, the rate of cognitive impairment in these patients was reported as 44% [42]. In addition, in

a few studies conducted on psychological disorders in patients with this disease, it has been shown that psychological problems are significantly prevalent in these patients. Ebadi et al. in their study found that depression, anxiety, hostility, and somatization rates were significantly higher in NMOSD patients compared to the control group [43]. Other studies have reported high rates of depression in these patients [44, 45]. It should be noted that the presence of brain involvement as well as psychological disorders in these patients can expose them to psychological damage during the COVID-19 pandemic. In addition to these, the type of drugs used, which are mainly immunosuppressive drugs, can increase anxiety due to fear of developing COVID-19. Furthermore, in a study by Sahraian et al., it was found that rituximab, which is one of the main drugs used in the treatment of this disease, can increase the chances and severity of COVID-19 disease in these patients [46]. This issue can be considered as a basis for psychological trauma in these patients during the pandemic of COVID-19. Correspondingly, in a study conducted by Shaygannejad et al., this issue has been mentioned as a cause of concern in these patients [47].

Despite all these facts, unfortunately, no study has been done on the psychological effects of the COVID-19 pandemic in patients with NMOSD yet. However, due to the above-mentioned reasons, these patients are highly at risk of psychological damage during a pandemic. In this regard, in addition to the requirement of performing studies on this issue, psychological treatment recommendations should also be considered for these patients during a pandemic.

4.3 Psychological aspects of other neuroinflammatory diseases during the COVID-19 pandemic

As far as the author of this study is concerned, with the exception of MS, a few studies have been done on the psychological aspects of other inflammatory diseases of the brain like NMOSD. This is also true for other neuroinflammatory diseases, especially those that involve the CNS in a secondary way. For example, up to now, there have been no studies on the psychological aspects of diseases such as neuroinfectious diseases, neurosarcoidosis, or other similar ones. The reason can be attributed to the low number of these cases. However, several studies have been conducted on the psychological aspects of diseases that can potentially lead to inflammatory involvement of the CNS, which also indicated the psychological effects of a pandemic on these patients. A study conducted three months after the onset of the pandemic in the Philippines reported that patients with lupus and rheumatoid arthritis are suffering from a significant proportion of psychological problems. According to this study, 38.7% and 27% of these patients suffered from moderate to severe anxiety and depression, respectively [48].

A study showed a high rate of depression as well as the increased risk of suicide in patients with rheumatoid arthritis during COVID-19 pandemic [49]. Another study on 134 patients with lupus also found that the depression, anxiety, and sleep disorders rates in patients with lupus were higher than those of the normal population during the pandemic [50].

Another systemic disease that can be found in association with known inflammatory manifestations of the central nervous system is Behçet disease. Unfortunately, like other similar cases, the effects of the COVID-19 pandemic on patients with Neuro-Behcet Disease (NBD) have not been well-studied yet. However, a study on 156 patients with Behcet's disease revealed that these patients are also suffering from more anxiety and depression than the control group and are more prone to suicidal ideation [51], emphasizing on the need for more psychological care.

4.4 COVID-19 and autoimmune encephalitis

Although autoimmune encephalitis is included in a very broad category, it is still a rare disease. Therefore, it is not far-fetched if a study has not been conducted on the psychological effects of COVID-19 on this disease so far. However, there is a very important point about these diseases that should be considered, which is as follows: Neuropsychiatric manifestations including cognitive impairment, psychosis, and depression are considered as common themes in autoimmune encephalitis, which can even be early manifestations of the diseases [52]. Therefore, according to previous studies, these patients are more prone to psychological injuries caused by COVID-19 compared to the healthy people. Another important point is that COVID-19 can be known as a factor in the development of autoimmune encephalitis. There are reports on autoimmune encephalitis cases following COVID-19 [53, 54]. On this regard, Panariello et al. reported a 23-year-old man hospitalized with some symptoms such as delusion, anger, anxiety, and auditory hallucination. Due to the presence of fever in his examinations, the patient was diagnosed with COVID-19. Following the deterioration of the patient's neurological condition, further examinations were performed and the patient's Anti-N-methyl-d-aspartate receptor (NMDAR) test was also resulted as positive. Therefore, he was treated with Intravenous immunoglobulin (IVIG) and his condition has then improved [53]. In fact, COVID-19, as a factor effective on developing autoimmune encephalitis, can present itself through psychiatric manifestations.

5. Treatment

As mentioned earlier, people with inflammatory brain diseases can be severely affected by various aspects of the pandemic and then experience a variety of psychological injuries. Therefore, paying enough attention to various points in preventing the occurrence of these psychological injuries and treating them can help in improving these patients' condition.

5.1 Diagnostic recommendations

The first point in the treatment is paying special attention to the psychological disorders caused by COVID-19 in patients with neuroinflammatory diseases. It should be noted that most of the aspects of these psychological injuries have not been identified yet. As mentioned previously, since a large number of these diseases are considered as rare diseases, so no study has been done on them so far. Therefore, besides paying special attention to these symptoms and trying to improve them, various studies should be continuously conducted on them, only then we can provide better services to these patients. On the other hand, most of these diseases were found to be associated with psychological disorders. Differentiating the conditions caused by COVID-19 from those of the psychiatric disorders caused by the disease itself can help us in providing better treatments and services.

5.2 Psychological recommendations

Various factors were reported to be involved in causing psychological injuries in patients with neuroinflammatory diseases during the COVID-19 pandemic. Accordingly, one of them is the fear of developing COVID-19 and the complications resulted from that. Providing health advice to prevent infection can help in improving the mental condition of these patients. Moreover, these patients should be advised to take such pieces of advice carefully and then follow them regularly.

The use of online methods and telemedicine can also help in reducing the anxiety of these patients as well as preventing them from being present in places where there is a possibility of disease's transmission. Online psychological services can also help patients to express their problems, and consequently reducing their psychological problems [55, 56]. Unfortunately, this service has not been prepared for patients with neuroinflammatory diseases and a special model for online interview doesn't exist. However, some important points should be considered:

Depression, anxiety and PTSD are the most important issues in this interview and mental health professionals should emphasize on these symptoms. In addition, they should know the medical aspects of neuroinflammatory diseases and patients' concerns about their condition during COVID-19 pandemic. This knowledge helps therapists to do better interviews with these patients.

5.3 Physical activity

Advising to continue physical activity under pandemic conditions can help in reducing patients' psychological problems. Quarantine conditions as well as social distancing cause these patients to stay home more often and to avoid physical activities [57].

A study performed on patients with rheumatoid arthritis found that physical activity could significantly reduce the mental health problems among these patients. Physical activity was also found to be associated with the decreased depression and the increased vitality [58]. It is important to pay enough attention to various aspects of these patients' problems such as cognitive, gastrointestinal, and motor problems, and then to notice these symptoms and the possibility of their exacerbation during the COVID-19 pandemic. Developing rehabilitation programs for these patients with varying degrees of disability can also be effective on improving their mental health. Using cyberspace and holding online rehabilitation programs can help in reducing patients' problems and then reducing the anxiety of developing Covid-19 as it may happen by participating in face-to-face rehabilitation programs [59].

5.4 The role of special associations in reducing the possible problems of the patients during the time of COVID-19

Up to the author's knowledge, most of the psychological aspects have not been studied in a wide range of specific patients yet, and research remains practically limited only to a few diseases. The roles of associations in providing regular programs and psychological, physical, and therapeutic advices to these patients are of great importance. Many of these patients also need receiving psychological support from medical staff. Such a communication can be on the agenda of the relevant associations.

6. Conclusion

Neuroinflammatory diseases are prone to different psychological problems during the COVID-19 pandemic. It is very important to pay attention to them and manage these complications carefully.

Conflict of interest

The author declares there is no conflict of interest.

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Chapter 49

Local Knowledge, Community Experiences, Nature, Collaboration, and Resilience in Times of Pandemic, Uncertainty, and Climate Change in the Anthropocene Era

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Abstract

The pandemic afflicting the world is accompanied by a social, economic, political, cultural, and climatic multi-crisis. It is the crisis of the Anthropocene Era and modern paradigms. Modern society is in a complex situation. The responses to the multicrisis, including the pandemic, will probably come from the revalorization and resignification of experiences and socioecological knowledge of communities. Their historical experiences, currently fragmented by modernization processes, will be able to intercommunicate and, with resilient energy, open new possibilities for human and planetary life. It will be a great transformation, in which old and new models of development will be in tension. These tensions will also be expressed in the form of social and political radicalization and result in conflicts over natural resources, especially water, natural forests, ecosystems, and productive land. Human and planetary life is seriously threatened. Intellectual and scientific activity must connect with the ecological knowledge of local communities to defend human and natural life.

Keywords: Local knowledge, relocation, nature, interdependence, collaboration, pandemic, uncertainty, climate change, adaptation, resilience, commons, Anthropocene

1. Introduction

The global and local multi-crisis has cast doubt on the old, dominant paradigms of recent centuries, including the capitalist, neoliberal growth paradigm that has caused great damage to ecosystems but has "charmed" significant portions of the population with the siren songs of products and ease of buying on credit and an excess of consumerist advertising. The renowned ecological economist Herman Daly refers to the growth problem in the following terms:

> *"Steady-state comes from the realization that the economy is a sub-system of a larger system, the ecosphere, which is finite, non-expanding, materially closed. It's open to a flow of solar energy, but the Sun itself is non-growing. So those are the overall conditions of the parent system. If the subsystem keeps growing, it eventually coincides with the whole parent system, at which point it'll have to behave as a steady state. Purists would force me to say quasi-steady, because there is of course development, continuous evolution and qualitative change. But the Earth itself is not getting quantitatively any bigger, and there comes a point in the expansion of a subsystem where it encroaches too much on the operation of the system as a whole. We convert too much of nature into ourselves and our stuff, and there's not enough left to provide the biophysical life-support services that we need. Standard economics does not have any mechanism to register the cost of the economy's scale, relative to the biosphere" ([1]: 35).*

There is extensive international discourse on the ideology of growth. One of the authors who took on the problem early was Serge Latouche, in his book "The Bet for Degrowth":

> *"We are likely living through the sixth mass extinction of species. They (plants and animals), indeed, disappear at a rate of fifty to two hundred a day, that is, at a rate 1,000 to 30,000 times greater than that of the hecatombs of past geological times. But, unlike in the preceding extinctions, human beings are directly responsible for the current "decrease" in living beings and could very well be its victims...*

After a few decades of frenzied squandering, we have entered the storm... The acceleration of natural catastrophes – droughts, floods, cyclones – is already underway. The climate disorder will be accompanied by oil wars, which will be followed by water wars, as well as possible pandemics, not to mention predictable biogenetic catastrophes.

We also know that the cause of all this is our way of life based on unlimited economic growth. And, nonetheless, the term 'degrowth' sounds like a challenge or a provocation.

> *Thus, the term 'degrowth' is of very recent use in the economic, political, and social debate, although the ideas upon which it is based have quite a long history... The failure of development in the South and the loss of references in the North have led many thinkers to reassess the consumer society and its imaginary foundations, progress, science, and technology. At the same time, the increased awareness of the environmental crisis we are experiencing has added a new dimension. The idea of degrowth is also two-sided, as it has been shaped by both awareness of the ecological crisis and critiques of technology and development" (Serge [2]:9–15).*

It is important to note that this author established very early the impacts that the growth policy has had on the planet and the threats it represents to species preservation, as well as eventual conflicts, including wars, resulting from the fight for dominance over resources, including water. Among the catastrophes, he even mentioned, in 2006, "possible pandemics," mere years before the outbreak of the COVID-19 pandemic that is humanity is enduring. His book not only explains the meaning of degrowth, but also develops a strategy for achieving and advancing in a process of degrowth:

> *"Of the eight "R"s that make up the virtuous circle of building a serene degrowth society que (reassess, reconceptualize, restructure, redistribute, relocalize, reduce,*

> *reuse, recycle), reassessment is, logically, the first action and the basis of the process. However, relocalization is simultaneously the most strategic means and one of the main goals of reassessment. This translates, in a certain way, the old principle of ecological politics: think globally, act locally" ([2]:183).*

With very good reason, Latouche holds that many important activities of daily life still take place, in many countries, at a microterritorial level. In addition, in recent years a great number of non-profit organizations, including cooperatives, agricultural communities, exchange networks, daycares managed by fathers and mothers, ethical banks, fair and solidary commercial movements, and resale shops have flourished:

> *"Initiating concrete alternatives to leave the dead-end street of development takes place, at first, locally. It is necessary to revitalize local terrain, in both the North and South, first, because, even on a virtual planet, until proven otherwise, life is lived locally, but also to depart from development and the economy and fight globalization …*

Relocalizing is, evidently, producing locally, essentially products that satisfy the needs of the population from local business financed from savings generated locally.

Relocalization, from a revitalization perspective, certainly involves the 're-enclose/re-compartmentalize' step. As much as possible, it is even desirable, as has been seen, to return to self-production. Self-production of energy is also a solid argument of relocalization. Renewable energy sources such as solar or wind are adapted to local implementations and uses. Losses due to transport and the theft of farmland are avoided. With the end of oil, producing and consuming energy as locally as possible will become a necessity" ([2]:188–190).

The strategy or core idea of possible escape from the crisis, which the author calls relocalization, coincides with various experiences recorded and analyzed throughout this book. In fact, interruptions to economic globalization and supply chains caused by the COVID-19 pandemic have increased the importance of the international discourse, in countries in both the North and South, on the need – even urgency – to redirect the focus to local and national spheres to resupply drugs, medications, vaccines, masks, and other essential products that, before the health crisis, used to be produced locally. However, such local production was abandoned by globalization that outsourced, with the support of governments and the interested action of multinational companies, some or all manufacturing processes, which were moved to countries or regions with "comparative advantages" – as argued for and applauded by neoliberalism – in terms of cheap labor (precarious work) and environmental deregulation (unprotected ecosystems and natural resources: mining resources, water resources, forests, soil, atmosphere, oceans, rivers human populations, etc.).

Relocalization obliges us to look to that which is nearby. To return our gaze and attention to our surroundings, to the socioecological spaces where life unfolds with its complex and interdependent social fabrics and interactions. It involves a return to real life, to the existential roots that join us as humans in living ecological niches.

In this regard, the anthropologist Alice Roberts gives us an interesting historical view of the processes of contact and interaction with the species that have shaped part of this civilizing process, which she calls "domestication", concluding: "Every species exists in an ecosystem – we are all interlinked and interdependent," as can be read below:

> *"Human history would have played out very differently if the other species we interacted with had been different – missing altogether, impossible to catch or domesticate, for example. We sometimes approach history as through we humans are so much the lords of our own destiny that external forces have little or no role to play. But the story of any species can never be told in isolation. Every species exists in an ecosystem – we are all interlinked and interdependent. And serendipity and contingency are woven into all the interactions that have played out in the course of our intertwined histories" (Alice [3]: 403).*

The multi-crisis and the Covid-19 pandemic in particular are casting millions of people into poverty and absolute destitution: without jobs, dignified housing, health, education, incomes and social support to subsist and feed their families. They are the new poor who are joining those who are already poor. For these people, the creation of a universal basic income that covers the necessities of life is urgently needed. In addition, the relocalization of production activities, guided by the concept of the sustainable circular economy, which decreases entropy and social and environmental liabilities as much as possible, would contribute substantially to reducing poverty and social and environmental vulnerability. The multi-crisis, particularly the health crisis, obliges us to regard health as a foundation that structures the health of society and nature in interdependence.

The neoliberal strategy of hypergrowth, based on the "free" market, has made it necessary to think of new development strategies and look to the past for knowledge and practices that are more environmentally friendly.

The illusion of unlimited growth, fueled by economic theories, is among the paradigms being questioned in the 21st century, as unlimited growth in a planetary system with limited resources and the use of only gross domestic product as a valid indicator of the development of nations can no longer be considered sustainable, as it is known that this famous indicator does not consider the environmental degradation caused by the sort of development that economic growth promotes as the cornerstone of higher levels of global development [4]. The big question raised by planetary limits is whether greater prosperity can be achieved without necessarily growing [5].

2. Ecology of knowledges and community experiences: socio-eco potentials of development alternatives

In recent times, fortunately, awareness of the magnitude of the socioproductive, institutional, cultural, and environmental problems and crises faced by modern society has begun to emerge. These issues consist of a set of challenges related to a planetary crisis that have turned development alternatives into necessary, current, and urgent strategies. The challenges are complex because they are associated with structural, historically cumulative problems: injustices, inequality, authoritarianism, violence, plunder of nature and emissions of all types of unsustainable waste that, at present, no revolution or reform has been able to confront or resolve with due decisiveness, efficacy, and historical depth. This is the Anthropocene Era, characterized by profound socioeconomic, ecological, territorial, geological, political, and cultural transformation of the planet and society by human beings.

From this global reality arises the importance of researching and preserving traditional local knowledge. Scientists from different disciplines have recognized this importance, indicating that, due to its complexity, it must be treated as interdisciplinary topics, the understanding of which requires holistic knowledge that goes beyond the limits of monodisciplinary sciences.

In this sense, the science developed by academia is indebted to the experiences and knowledge fostered for centuries in various communities around the world, including those cultivated in Latin America, inherited from pre-Columbian cultures: a debt of recognition, awareness-raising and valorization of the forms of local production and life and the multiplicity of historical practices that reflect a better and more sustainable treatment of ecosystems.

Attaching epistemological importance to local practices and knowledges that have been present throughout the history of modern society, precisely in uncertain times of economic, social and climate crisis could well – from their scattered, fragmented existence that is questioned by capitalist mega-models, particularly the neoliberal model – represent possibilities and hopes of more sustainable development than that of the model that currently prevails in many countries and regions of the world.

To advance the discourse on the meaning of local ecological practices and knowledges, an understanding of the concept of ecology of knowledges, proposed by Boaventura de Sousa Santos, who delves into the diversity of knowledges, is of interest:

> *"It is premised upon the idea of the epistemological diversity of the world, the recognition of the existence of a plurality of knowledges beyond scientific knowledge. This implies renouncing any general epistemology. Throughout the world, not only are there very diverse forms of knowledge of matter, society, life and spirit, but also many and very diverse concepts of what counts as knowledge and the criteria that may be used to validate it" ([6]:50).*

The author holds that this diversity of understandings and worldviews is situated in and arises from a territorial-political context exposed to constant inequalities and discrimination caused by capitalism and its model of colonial development, shaping what we typically understand as the North–South relationship. These knowledge systems that emerge can be called epistemologies of the South, understood as "demand for new production processes and valorization of valid knowledges, whether scientific or not, and new relationships among different types of knowledge, based on the practices of classes and social groups that have suffered systematic unjust inequalities and discrimination" ([6]:43).

According to Sousa Santos, the epistemologies of the South are based on two main premises: first, they have an understanding of the world that is broader and more comprehensive than that of the western view; second, it is necessary to understand that there is infinite diversity in the world, which includes diverse ways of being, thinking and feeling, multiple forms of building relationships among species, organizing, constructing an understanding of history, and producing various goods and services.

Based on these premises, it is understood that the responses of today's society to the challenges posed by the global crisis must not be limited to a purely western – including critical western – conception of action, but rather must be broadened to include and understand the diversity of traditional and emerging knowledge systems that exist. The author rightly holds that a significant portion of these systems and experiences of traditional knowledge are "largely wasted because the theories and concepts developed in the global North and employed in the entire academic world do not identify such alternatives. When they do, they do not valorize them as being valid contributions towards constructing a better society" ([6]: 44).

Western knowledge has acted hegemonically in driving the development of modern science and technology parallel to the expansion of the capitalist development model, characterizing the recent history of a large portion of colonialized

countries. The foregoing brought about the constitution of a system of scientific-technical knowledge charged with carrying out a "civilizing mission" in developing countries and regions, validating the hegemonic understanding of the domination of man over nature [7].

When addressing traditional ecological knowledge (TEK) and scientific-technical knowledge (STK), we can visualize two currents that, in the words of Souza Santos, make up a duality of knowledges that historically have been related, with traditional knowledge – for centuries – having been practically relegated or rejected by formal science; only amid the current global crisis have some scientists come to look at and reflect on the adaptation capacity of indigenous peoples and rural societies, with particular attention to traditional ecological knowledges [8].

In the view of Mexican academic Enrique Leff [9], STK is a more recent current of knowledge, associated with the scientific-technological revolution, unleashed by the dynamics of capital and industrialization processes, where the extrapolation of knowledge in different times and contexts is appealed to.

In this dialogue between knowledge systems, Berkes et al. [10] define TEK as a "cumulative body of knowledge about the relationships of living things and their environment, evolving through adaptive processes" (2000: 1252). Other authors hold that this knowledge represents a cultural teaching-learning model in which the symbolisms and intergenerational transmission of information are the central elements; these elements ultimately construct worldviews through which peoples have interpreted the relationship between humans and nature [11–13].

These systems have developed a close relationship with the territories in which they exist, creating a bond that encapsulates the difference experiences of the commons of life. As David Bollier states: "These commons integrate economic production, social cooperation, personal participation and ethical idealism into a single package" (2016: 13). Valorizing the offerings of TEK, Hill et al. [14], state that traditional systems contribute to sustainability in various contexts, serving as a contribution to the study and conservation of biodiversity and ecosystem services.

The same authors carry out a characterization of TEK systems based on three key facets: first, this type of knowledge has a holistic component, as it addresses economic, political, and cultural aspects such as governance, family institutions, practices regarding use of available resources, and various worldviews, as well as rituals and languages. The second characteristic of TEK is that it is diverse, and while there are some occupations and groups that exist all around the world (farmers, fishers, traditional doctors, etc.), they present different cultural systems that are constructed in and adapted to diverse ecosystems. Finally, traditional ecological knowledge systems are governed by different cultural institutions, with each generating and applying its own systems of validation, rules, and coexistence [14].

The role of TEK in the survival of traditional communities is defined by authors such as Gómez-Baggethun et al. [15], who emphasize that these social structures provide elements that allow an understanding of how to adapt to changes a territory is undergoing. Alzate et al. [16] state that "one of the main ways which TEK contributes to building resilience in socio-ecological systems is by promoting bio-cultural diversity" ([16]:340). Thus, research processes that address this knowledge must be aimed at including territorial actors and generating knowledge co-construction relationships [17].

It is precisely this traditional knowledge that represents a new analysis perspective, of great value for the re-understanding of the relationships that human communities establish in and with a territory, allowing more sustainable management and governance of resources such as water. This management can also be complemented by new water technologies that allow more sustainable, efficient, and horizontal modes of production for local needs.

García Flores [11] reviews and discusses how sociocultural factors are important in natural resource management, again highlighting the mechanisms through which traditional knowledge is learned and spread, specifically through language, observation, and practical experience. The foregoing is evidence of the relationships that rural societies and indigenous peoples have developed over centuries, in which "people carry out everyday tasks, expressed in activities that affect the obtainment of sustenance and other benefits" ([18], cited in García Flores [11]: 262).

The practices and knowledges developed by these peoples also represent the embodiment of elements associated with local identity. María Ester Grebe highlights that "ethnic identity and self-recognition of the indigenous person is greater in meeting and interaction spaces" ([19]: 66); these aspects make up the basis of the cultural institutions that are constructed by indigenous peoples, influenced by the current migratory pressure that moves communities to urban spaces, which ultimately weakens knowledge systems.

When all these elements are considered in practical terms, TEK represents an eco-cognitive potential of great value for moving forward a process of new understanding of and interaction with ecosystems, while also driving processes of co-construction, dialogue, and productive collaboration with modern scientific-technical knowledge.

Interesting experiences regarding the interrelationship between the traditional and the scientific-technical are highlighted by Šūmane et al. [20], who offer the example of TEAGASC, an Irish research and education agency that carries out joint work between farmers and researchers, allowing ongoing feedback and the implementation and validation of new technologies in agricultural systems and advancing sustainable education initiatives. Meanwhile, Miguel Altieri and Víctor Toledo complement and confirm this – positive – trend in stating that many traditional systems have resisted the passage of time, which has allowed the documentation of a "successful and resistant indigenous agricultural system" ([21]: 593); such practices allow, for example, low agrochemical use and high yields over time. Interaction between traditional knowledge and technical knowledge produces synergistic effects, leading to better sustainability models generated on a local scale.

Common practices for indigenous communities and rural societies such as vegetable gardens or small farms, seasonal crops and irrigation techniques are some of the many and varied examples of dynamics that have allowed these groups to manage their resources since pre-Hispanic times. In fact, the "the diversified use of geographic space allowed rural populations the possibility of coping with variability in access to resources… thereby decreasing vulnerability to environmental disturbances" ([22]: 262).

Local practices, knowledges, and experiences regarding territorial governance and solutions to various socioecological problems that affect modern society represent important spaces for community management of social coexistence and coproduction of goods and understandings, but for them to be truly effective and continue into the future, the support of local and state institutions is required. The COVID-19 pandemic has shown that the state has been an absent figure in many societies, including Chilean society, as a result of the extreme application of neoliberal orthodoxy that favors the role of the market, which does not exactly operate under standards of justice or equity. Nor does the market understand the functioning of ecosystems, the limits of growth, or solutions to pandemic diseases. Something similar has also been observed in politics and among the elites of organized power. The absence of the state, especially in the social, work, health, and education spheres, has been felt strongly among the most vulnerable populations, which are all too abundant in Latin America, resulting in increasing levels of poverty, anxiety, desperation, and vulnerability.

To come out of the multi-crisis well, a new type of state is required: close to citizens, indigenous communities, young people, boys and girls, women, workers, and producers; institutions that promote the deglobalized and sustainable circular economy, that are open to dialogue, innovative, promote research at all education levels, and protect nature and its ecosystems, the providers of life, are required.

Finally, in the context of the current evolution of modern society, information accumulation and development of scientific knowledge and new, efficient technologies, there are enormous possibilities and opportunities to establish a synergistic, positive interrelationship between scientific findings and traditional knowledges produced, tended to, applied, and preserved as genetic and cognitive banks by various peoples, especially indigenous communities around the world.

The COVID-19 health crisis and climate change in particular represent enormous new challenges for the appearance and valorization of inter-knowledges.

3. Challenges of global climate change: inter-species collaboration and universal basic income

Climate change, irreversibly underway, demands that we move beyond the human visions of the industrial fossil era. The few decades (probably between 20 and 30 years!) that remain before reaching the – impassable – limit of 1.5 or 2 degrees of global temperature increase (as established by the Paris Agreement of the United Nations Framework Convention on Climate Change of December 2015, signed by 195 countries), require urgent thinking of new post-Anthropocene visions and more sustainable action. Climate change and the COVID-19 pandemic are undoubtedly the most serious, complex problems faced by humanity and the planet. They are very difficult to solve, especially the former. In fact, due to the advanced state of CO^2-emission accumulation, climate change can only be slowed. Indeed, since the beginning of the Industrial Age, the concentration of CO^2 emissions has increased exponentially, significantly altering historical climate variability cycles. In the year 1000 (A.C.) the CO^2 concentration was 280 ppm (parts per million), a quantity that remained stable for thousands for years. This CO^2 volume was indispensable – as a stable greenhouse gas level – to maintaining temperature levels that made – make – natural and human life on the planet Earth possible and sustainable over time. However, in mid-2020, the CO^2 concentration reached 420 ppm. According to data from 2017 the countries responsible for the greatest quantities of CO^2 emissions were: China (1; 28% of total emissions) followed in descending order by the United States (2; 14%), India (3; 7%), Russia (4; 5%), Japan (5; 3%), Germany (6; 2%), South Korea (7; 2%), Iran (8; 2%), Canada (9; 2%) Saudi Arabia (10; 2%), Indonesia (11; 2%), Mexico (12; 1%), Brazil (13: 1%), South Africa (14; 1%), Australia (15; 1%), Turkey (16; 1%), the United Kingdom (17; 1%), Italy (18; 1%), France (19; 1%), Poland (20; 1%) [23].

Twenty-first century society faces major, cumulative transformations that continue to occur, including climate change. Altogether, it is a profound multi-crisis, which can be characterized as the socio-environmental-climate and health crisis of the Anthropocene Era. Indeed, global climate change currently presents a geological dimension of risky alteration of the planet. Thus, it is a planetary threat for far-right political forces and governments to cling to neoliberal fossil capitalism, irresponsibly ignoring the dire consequences of the crises. Stager dates the beginning to the Anthropocene Era precisely to the start of the Industrial Age:

> *"The Anthropocene began during the 1700s when our greenhouse gas emissions started to change the atmosphere significantly" ([24]: 17).*

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Meanwhile, the COVID-19 pandemic is casting millions of people into poverty and absolute destitution: without jobs, dignified housing, health, education, incomes, and social support to subsist and feed their families. They are the new poor who are joining those who are already poor. The absence of the state, especially in social, work, health, and education spheres, has been felt strongly among the most vulnerable populations, which are all too abundant in Latin America, resulting in increasing levels of poverty, anxiety, desperation, and vulnerability.

However, the slowing of outsourcing-driven globalization and the temporary interruption of supply chains caused by the COVID-19 pandemic have increased the importance of the international discourse, in countries in both the North and South on the need – even urgency – to shift the focus to the local and national spheres to resupply drugs, medications, vaccines, masks, and other essential products that, before the health crisis, were produced locally.

Overcoming the multi-crisis will be a complex challenge: it will require new cultures, leadership, visions, public policies, lifestyles and forms of development. The Anthropocene Era crisis could give rise to a transition to a new age, demanded and hoped for by millions of defrauded citizens outraged by malaise and mobilized in different parts of the world: they demand healthy, quality living conditions and development underpinned by common goods such as water, basic foods, the atmosphere, oceans, clean air, good social relationships, biodiversity, green production, and renewable energy.

More substantial solutions with future prospects would require, for example, the creation of a universal basic income that covers the basic necessities of life. Universal Basic Income represents the social condition of resilience.

> *"By 'basic income' we mean an income paid by a political community to all its members on an individual basis, without means test or work requirement" ([25]: 25).*

Poverty has accompanied humanity throughout its history. According to Rutger Bregman:

> *"Where 84% of the world's population still lived in extreme poverty in 1820, by 1981 that percentage had dropped to 44%, and now, just a few decades later, it is under 10%" ([26]:11).*

For centuries, inequality has been a problem that has affected millions of people: it has been expressed in poverty, discrimination, marginalization, mistreatment, bad jobs, low incomes, poor health, poor diets, and, indeed, low life expectancy. For many, life has become endless suffering, frustration, hopelessness, fear, and anxiety.

Nonetheless, in the second half of the 20th century and the early 21st century, the situation has improved substantially for certain social sectors, but there remain enormous differences and sociological inequalities, with millions of people struggling to survive in conditions of vulnerability and poverty. This reality affects families of workers, the unemployed, and the impoverished middle class. Furthermore, the COVID-19 pandemic has produced new poor people.

The universal basic income is one of the valid alternatives to confront the problems of poverty and social exclusion in the 21st century. It is an idea that has gained importance in different regions and countries:

> *"When I first began writing about basic income, most people had never heard of it. Now, only three years later, the idea is everywhere. Finland and Canada have*

> *announced large-scale experiments... And in my own country, the Netherlands, no fewer than twenty municipalities are putting basic income into action" ([26]: 241).*

In this regard, it is interesting to note that already in 1948, in Article 25 of the Universal Declaration of Human Rights, one could read about the topic:

> *"1. Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond his control" (Universal Declaration of Human Rights, Art. 25, United Nations [27]).*

This United Nations declaration practically enshrines social rights as a human right.

In conservative quarters it is argued that under this policy no one would work and that financing it would be impossible. But the cited basic income defenders have carried out studies on the enormous costs of the bureaucracy that handles poverty, unemployment, and hundreds of subsidy measures. Neoliberalism, meanwhile, subsidizes big businesses (through taxes on the exploitation of nonrenewable resources such as mining resources) and maintains undignified policies of provisional and temporary vouchers – so-called "targeted policies" to partially "make up for" market deficiencies. COVID-19, a true tragedy, has unmasked the lie and inefficiency of these neoliberal policies and raised a cry for the implementation of a universal basic income that actually protects vulnerable people in times of multiple crises and pandemics, which cause uncertainty and anxiety in most of the population. Basic income will not discourage people from working. It is merely a basic support that will allow people, through decent work, to aspire to a better quality of life and personal fulfillment and secure their futures.

Another possible way to a solution is the relocalization of production activities, inspired by the concept of the sustainable circular economy, which decreases entropy and social and environmental liabilities as much as possible, and would contribute substantially to reducing poverty and social and environmental vulnerability. The multi-crisis, particularly the health crisis, compels us to regard health as a foundation that structures the health of society and nature in interdependence. Relocalization obliges us to look to that which is nearby. To return our gaze and attention to our surroundings, to the socioecological spaces where life unfolds with its complex and interdependent social fabrics and interactions. It involves returning to real life, to the existential roots that join us as humans in living ecological niches.

Finally, collaborating rather than competing against each other will make us greater, more human, and happier as people and communities. Collaboration represents virtue and nobility that emanate from the depths of human nature. It is also a natural form of inter-species collaboration in the biosphere. Human life, since its conception, has been ontological collaboration, the foundation of the human being that can only achieve fulfillment as a person through interrelationships with others and nature.

In this regard, in 2020 the United Nations Intergovernmental Panel on Climate Change (IPCC) recommended recognizing and applying indigenous and local knowledge to combat the negative impacts of climate change on agriculture:

> *"Agricultural practices that include indigenous and local knowledge can contribute to overcoming the combined challenges of climate change, food security, biodiversity conservation, and combating desertification and land degradation*

> *(high confidence). Coordinated action across a range of actors including businesses, producers, consumers, land managers and policymakers in partnership with indigenous peoples and local communities enable conditions for the adoption of response options (high confidence)" ([28]: 31).*

4. The commons as a life reserve: sense of community, collaboration, identity, and adaptation to crisis

In times of multi-crisis, such as that we are living through, the need arises to reflect on different alternatives – beyond those we have already pursued – that we could draw upon to confront the unknown scenarios to come. This crisis is also one of thought, current paradigms, science, and even the future we face; therefore, no one today can claim to have "the answer" to the crisis. The scale of the global crisis does not admit magical formulas or simple answers, and much less does it leave room for definitive, conspiratorial, or fundamentalist answers or strategies, which usually emerge in times of crisis and human anxiety and desperation.

Indeed, various alternatives have emerged, of varying relevance and influence in this complex reality; many of these paths will be – are already are – pragmatic responses to problems. For example, the hunger that affects millions of people in the world as a result of the COVID-19 pandemic and the ensuing social crisis have given rise to thousands of soup kitchens, community meals, spaces springing out of human solidarity, an innate intangible good in human nature that, appears precisely when governments, in various countries, offer neither rights nor protection to all people.

This solidarity rooted in the foundation of communities represents a life reserve that must be cared for and applied at all times to create a just, sustainable, and enduring social order for future generations. According to David Bollier, such experiences are instances of the commons in life, and they "represent a practical paradigm of self-help and collective gain. The commons is essentially a parallel economy and social order that quietly but confidently affirms that another world is possible. And more: we can build it ourselves, now" (2016: 13). These same practices reaffirm and give insights into the possibility of building a new paradigm.

The global crisis of the Anthropocene Era could give way to the emergence of a new age, one of life and development rooted in common goods such as water, the atmosphere, oceans, clean air, good social relationships, biodiversity, green production, and renewable energy. There are different traditional representations of the commons, including the legal representation, which tends to limit the concept to certain global goods such as water, air, or knowledge, and that rooted in philosophy, which links the commons to the universal, posing the idea that the commons belongs to all of society [29].

Other core values in thought on a new paradigm based on sustainability and ecological knowledge systems are collaboration and trust, which are human spheres that contribute par excellence to the development of social life and personal fulfillment. American sociologist Richard Sennett [30] has researched the historical course of cooperation, acknowledging its strengths and weaknesses; according to the author: "natural cooperation begins with the fact that we can't survive alone. The division of labour helps us multiply our insufficient powers, but this division works best when it is supple, because the environment itself is in a constant process of change" (2012: 107).

Meanwhile, structural inequality and digital socialization limit the abilities of new generations, which are naturally more equipped to fully connect with each other and cooperate more deeply. At the same time, isolation and hierarchical

authoritarianism at work weaken the sense of cooperation by creating mistrust. In contrast, teamwork strengthens collaborative capacities. Sennett states that current forms of capitalism promote the fragmentation of institutions, giving way to short-term work, which weakens relationships and collaborative support; the promotion of such practices builds the idea of a "perverse solidarity," narrowing spaces for a "dialogic" and empathetic interrelationship among members of the community, which runs counter to the history of the social human being, as, according to the author, we are "capable of cooperating more deeply than the existing social order envisions" ([30]: 329. Cited in [31]).

All these reflections lead us to put the focus on the community as an ideal space to seek a good quality of life, but this idea is in direct conflict with the current situation, in which these relationship spaces must struggle to survive; Sennett's theory states that elements such as faith, identity, and informal sociability are the keys for communities – especially among poor or marginalized portions of the population – to build support networks, establishing the values and limits of the relationships that are developed. According to the author, "these limits are political and economic; value, on the other hand, is social. Although the community cannot completely fulfill a life, it promises important pleasures" ([30]: 383).

The crisis invites us to search for alternative ways of life and development crisis. Against this backdrop, *Buen Vivir* or Sumak Kawsay, historically practiced by Andean peoples, has emerged, or, more precisely, has been resignified and revalorized [32]; indigenous people of the south, such as the Mapuches, call it "*Kume Mongen*."

According to Diego Ancalao [33], professor and scholar of the Mapuche worldview, these *Kume Mongen* or *Buen Vivir* proposals require one to move beyond current ideologies that, however legitimized they are, have failed; an example is capitalism, which alludes to the free use of money as the center of development. The main difference of the Mapuche – and indigenous in general – worldview is the center of development, as these peoples place life at the center, understood as the only way of sustaining or species over time.

The current crisis makes us redirect the development focus and reminds us of the fragility of life; facing a climate change scenario and the pandemic teaches society an important lesson: "that we are all undoubtedly equal and that the value of life is primordial" [33].

An understanding of these visions directs us to the formation of an economy of the common good, about which Christian Felber [34] states that "in regard to our friendships and everyday relationships, we thrive when we live in accordance with human values: the building of trust, honesty, esteem, respect, empathy, cooperation, mutual help and sharing" (2014: 29). Such a perspective moves away from the logics laid out by the free market economy, which is based on competition, which ultimately unleashes values such as envy and greed, principles that, in large part, have led us to a complete, catastrophic transformation of the world, dividing us as individuals and a society.

Felber states that in the future, the values that have allowed the existence of society to date must be repositioned as the backbone of economic relationships, with our attention turned to the main human values, those we have highlighted and that center the search for the common good and cooperation [34].

These values – cooperation, respect, empathy, solidarity – have been at the foundation of the historical constitution of the human being, whether forming one's closest circles or giving rise to an endless multiplicity of communities with different characters or orientations, while also lending importance to the condition of being a society and constructing the different rationalities present in the world; among the various spaces for communal relationships, we can mention neighborhood

(grassroots organizations, community meals, for solidarity purposes), ethnic, youth, school, athletic, regional/local, academic and institutional (non-profit NGOs, associations), and production (family gardens) communities and socioenvironmental movements; it can be stated that in every human activity values that are not governed by individualism, selfishness, gain, accumulation of power, and commercial competitiveness are put into action and flourish. Furthermore, common sense values that are true gifts, similar to the previously mentioned ecosystem services, circulate. These relationships are not based on a monetary value; rather, they require only reciprocity from those involved.

In this case, the commons can be spoken of as reserve of life, collaboration synergies, and relational democratic governance. The global crisis demands exactly these commons, that which makes up part of social/natural life, but has historically been expropriated from local contexts. Nonetheless, many disadvantaged families make use of these valuable human and natural resources – the commons – to survive the dire pandemic and environmental emergency.

However, while it is relatively easy to talk of the commons, it is more difficult to understand the process of "enclosure of the commons" that culture and sources of traditional values are subjected to by the capitalist market, especially the neoliberal market, raising the question of how this enclosure process occurs. David Bollier [35] states that, faced with the uncontrolled power of the markets:

> *"it becomes quite clear that the privatization and commodification of our shared wealth is one of the great unacknowledged scandals of our time. This process is often called the enclosure of the commons. It's a process by which corporations pluck valuable resources from their natural contexts, often with government support and sanction, and declare that they be valued through market prices. The point is to convert resources that are shared and used by many to ones that are privately owned and controlled, and treat them as tradeable commodities" ([35]: 43).*

A review of the history of common goods shows that they have been present throughout practically all human history, with their presence and application merely hidden in some periods, mainly by the prevailing rationality. In the Roman Empire, shortly after the year 500, universal common goods such as air, running water, and the coast were already recognized. These rights, arising in Rome and ratified in the Magna Carta, laid the groundwork for what today is discussed in international law, and in their time ensured the sustainability of communities and the environment that surrounded them [36].

It is paradoxical, not to mention curious – and absurd – that, in the 21st century, we are still discussing the public or private nature of resources such as water and, of course, many other natural resources that have historically been recognized as common, public goods. In this regard, the Chilean discussion is important, but the country must learn from the past, including its own history, and modernize the legal status of natural resources such as water its approach to defending them; water in particular is scarce and diminished as a result of institutional management, extractive production activities, and the negative impacts of climate change.

The history of the commons continues to unfold, despite the enclosures being carried out by large multinational companies, with the complicity of governments; this history must be recognized by governments in the same way that societies have already recognized it, rooting and recognizing the different expressions associated with these common goods. Recognition or particular attention has been given to only some commons, ascribing a traditional character to them, with the focus on natural resources such as water, forests, arable land, or biodiversity.

These commons that have been recognized and are the focus of contemporary research seek to solve the problems of sustainable access, management, and distribution of natural resources; it is here that some communities and bioregions have experimented, using their local knowledge systems. Thus, many examples have emerged, which, according to Bollier [36] ultimately develop "a socio-ecological system that blends social customs and practices with the natural dynamics of a river, forest or farmland" (2014: 128).

The commons that operate outside the market system are vital for around "two billion people in the world" ([36]: 129). The massiveness of the commons that are present and operate in different territories is accompanied approaches to local self-determination of these communities, which are a means of celebrating and protecting their distinct identity-forming elements, reaffirming their sense of rootedness.

David Bollier [36] highlights some examples of these commons that have been valorized by local communities. In Peru, the Potato Park, created as a "landscape conservation commons," has given Andean indigenous groups the possibility of exercising their right to manage a variety of endogenous species of this tuber, maintaining the productive heterogeneity developed by the ancient Incas: "Officially known as an Indigenous Biocultural Heritage Area (PBCI), the Potato Park authorizes 7,000 villagers from six indigenous communities (Amaru, Chawaytire, Cuyo Grande, Pampalaqta, Pau-Paru and Sacaca) to jointly manage their communal land for their collective benefit" ([36]: 130).

Another interesting example, worthy of repeating, comprises ways of preserving traditional knowledge, driven by commoners in India, who have created the Traditional Digital Knowledge Library, a platform that acts as an organizer and database of ancestral medicinal knowledge, in addition to serving as a means of resisting the advancing pharmaceutical patent market. A third example highlighted by Bollier consists of the legal instruments created by South African lawyers called "biocultural community protocols," which are also intended to conserve the expressions associated with traditional ecological knowledge systems [36].

There are certainly numerous valuable experiences with commons in various corners of the globe; indigenous communities in Chile have maintained and continue to develop ancestral practices guided by these commons in different aspects of life: in agriculture, along coastlines and riverbanks, in forests, and through countless rites, traditional customs, unique institutions, religious worldviews, and community social relations. The preservation of these ways of life has resisted colonialism and the interventionist power of the modern state and big businesses, with little support from current government institutions.

As we have seen, such experiences have taken place in many countries, and the global crisis has lent them greater visibility, highlighting their effectiveness at confronting some of the basic problems of the population. In the face of the absence of or abandonment by the state, the population resorts to these common experiences and knowledges, mobilizing millions of people motivated by ancestral culture and armed with good feelings and innovative initiatives.

The commons are not relics of a "premodern" past that must be wiped off the map and removed from socio-productive life; on the contrary, the commons, relevant in many places and regions in the world, represent a true life reserve and hope for change from the current prevailing way of life. They represent deep-rooted cultures endowed with powers and values capable of confronting the great problems and challenges presented by the global crisis. Of course, their solution is neither "magical" nor the only solution; rather, it is simply one of the many valid alternatives that, to the extent that it has survived many previous crises throughout

history, also contains innate strength to face the current crises. That which survives does so because it has the internal and ecological strength to achieve survival; therefore, it should not be undervalued. Instead, the commons should be resignified and revalorized as solid spaces for opportunities for a new start and a sustainable future.

The commons comprise a socio-natural, historical foundation that, along with basic income and good social life, provide greater security and can decrease existential anxieties, making them a crucial supporting condition for the human and community resilience of the social being.

5. Resilience of the social being and good public policies: adaptation capacities amid disasters, anxieties, and pandemics

The modern age, in philosophical and sociological discourse, is considered the age of uncertainty. The crisis of reason – and its diverse rationalities – as an absolute instrument to understand and direct human activity that rules us up to the present day, introduced uncertainty to life. No longer would anything be certain. Reason could cause one to question anything. According to Hegel, reason would play the historical-idealist role – understood as an immanent process – of self-comprehension of the world or self-affirmation, in the words of Habermas. Meanwhile, Max Weber defined this process as the "disenchantment of the world." Adorno, in defining the role of sociology in modern life, refers to "revealing" reality, showing it as it really is at its core that is hidden by the system of domination. Ulrich Beck conceptualizes the global risk society when referring to the evolution of the capitalist world and its self-exposure to insecurities and risks that are intra-systematically organized by the powers that be. Edgar Morin developed the theory of complex thought specifically to confront the risks of the blindness of positivist, linear thought and overcome the uncertainties an threats of epochal collapse. And Boaventura de Sousa Santos, in his Epistemologies of the South, appeals to the ecology of knowledges and inter-knowledge to face the environmental and development crisis.

As the modern age has arisen marked by uncertainty and insecurity, the individual feels thrust into an uncertain future that he must try to understand and somehow adapt to if he wants to survive and achieve a certain level of wellbeing or even happiness. In other words, to enter modernity means to enter unknown terrain of human fulfillment, which of course causes insecurities and anxieties over present and future life, historically reinforced by tragedies and catastrophes of various sorts, as expressed very well by the authors Evans and Reid:

> *"Catastrophically speaking, the prevailing mode of contemporary affect is a state of normalised anxiety. Fear of course remains a constitutive element. But it is anxiety which is more apt in explaining the well-being of the resilient subject. Anxious conditioning is default setting for a system which is insecure by design" ([37]: 128).*

The exponential increase in socio-natural disasters, particularly those fueled by global climate change and, currently, the terrible human impacts of the COVID-19 pandemic, has led to frequent use of the concept of resilience as a human capacity to resist catastrophic events and readapt to new situations of vulnerability and existential uncertainty. It is a form of appeal to immanent capacities, to the human and social capital of people and communities to confront grave problems and threats to life and planet Earth. Thus, it is very enlightening to refer to the terms in which renowned psychologist Sula Wolff defines resilience:

> *"Resilience is an enduring aspect of the person. Genetic and other constitutionally based qualities both determine and are in turn modified by life experiences. Good intelligence plays a major part, as does an easy, adaptable, sociable temperament which, together with an appealing appearance, attract positive responses from others which in turn contribute to that inner sense of self-worth, competence and self-efficacy that has repeatedly been identified as a vital component of resilience. The sources of such positive responses are threefold: primary relationships within the family; the network of relationships with adults and children outside the family; and competence and achievement" (Sula Wolff [38], cited by [37]:139–140).*

Resilience is naturally a very important human capacity when facing a multi-crisis, threats, and catastrophes, but it is not enough as a lone, isolated resource. Furthermore, as the author notes, resilience depends on genetic, inherited factors, good families, and good socialization, but it also depends on external factors and determinants, especially the sociocultural and ecological conditions in which one must live, which can benefit or harm the development of personality, self-esteem, and, therefore, resilience capacities.

The passage from uncertainty and human suffering and anxieties to the enjoyment of greater and better levels of certainty and personal and community security also depends on the quality of the sociocultural environment, especially good public policies, basic state protection of children, young people, adults, women, and indigenous communities, as well as the ecosystems – their biodiversity – in which human life unfolds interdependently. The COVID-19 pandemic has hit the population unevenly. According to preliminary assessments, the most vulnerable populations, those without adequate infrastructure, good housing, space to spread out, economic resources to endure and survive job losses, that live in areas without drinking water and local primary health services (hospitals, clinics), that do not have access to healthy food or green areas, or simply lack social support networks, as often happens with seniors; these most disadvantaged, social sectors, poor or impoverished by the pandemic, have been – are – the people, families, and communities that have suffered the most terrible consequences of the spread and mutations of COVID-19. They have suffered the most infections and losses in their families and closest social circles. Indeed, in Latin America there are millions of people who, abandoned by the neoliberal state, have suffered grave consequences of the pandemic. But this has also occurred in developed countries, in the countries of the so-called "North."

Good public policies that are concerned with and strengthen the social being and human life and protect ecology and common goods are fundamental pillars for facing the crucial moment that humanity, communities, and the planet are living through with strength, scientific knowledge, physical and mental health, innovation, and human sensitivity and opening new paths to present and future socioecological sustainability.

6. Concluding remarks

In this chapter we discuss the illusion and threat of unlimited growth on a finite planet with limited resources. The neoliberal model has driven this trend during the last 40 years in Latin America and other regions of the world, bringing some economic prosperity, but under an unequal distribution of benefits and environmental degradation. It is then about moving towards a model of sustainability in harmony and respect for nature and reestablishing a new relationship between society and nature. In that sense, a potential path to recovery is to look back, turn to traditional and ecological knowledge that could help modern society increase resilience and

move towards a more sustainable society, preventing the collapse of the planet and providing quality life to the population.

Now, to open towards a more eco-human society, it is necessary to deal with the narcissistic culture present historically and in various ways in social and institutional life, as Lasch has studied in depth:

> *"Narcissism is, realistically, the best way to deal with the stresses and anxieties of modern life. Current social conditions tend to bring out narcissistic traits that are present to a greater or lesser degree in each of us. These conditions have also transformed the family, which shapes the underlying structure of the personality. A society fearful of having no future probably pays scant attention to the needs of the next generation, and the ever-present sense of historical discontinuity - the ruin of our society - falls with devastating consequences on the family."*

The perception of the world as a dangerous and restrictive place, although it originates from a realistic understanding of the insecurity of modern social life, is reinforced by the narcissistic projection of aggressive impulses. The belief that society has no future, which implies a realistic perception of the dangers that threaten it, incorporates at the same time the narcissistic ineptitude to identify with posterity or to feel part of the historical flow"([39]: 74–75).

For its part, according to this author, the prevailing social bellicosity in modern society - which would tend to produce antisocial men and women - would weaken social ties, as a reflection of a narcissistic defense of dependency. The author places narcissism in a permanent struggle between the desire/illusion of self-sufficiency of the human being and the dependence imposed by its own limits and life in society. Furthermore, he rightly argues that modern capitalist society "makes explicit and reinforces the narcissistic traits of everyone" ([39]: 280). This trend is clearly expressed for example in the promotion of aggressive mass consumer behaviour, fashions, individualistic competitiveness and, in general, in the ontological belief of individuality. Lasch sees the way out of this kind of existential dualism in the limits:

> *"The great hope for emotional maturation seems to lie, then, in a recognition of our need and dependence on people who, despite this, continue to be different from us and refuse to submit to our whims. It rests in an acknowledgment of others, not as a projection of our wishes, but as independent entities with their own wishes. In a broader sense, it rests on accepting our limits" ([39]: 291).*

Sennett reinforces the approach to the dissolution of social ties, by analyzing the type of capitalism that drives the human character with the strategy of "Nothing in the long term" that is especially applied to work:

> *"How can long-term goals be pursued in a short-term society? How to maintain lasting social relationships? How can a human being develop an account of his identity and life history in a society made up of episodes and fragments? The conditions of the new economy are fed by an experience that drifts in time, from one place to another, from one job to another. If I could establish Rico's dilemma (labor flexibility situation of a worker analyzed by the author) in broader terms, I would say that short-term capitalism threatens to corrode his character, especially those aspects of character that unite human beings. each other and give each one of them a feeling of a sustainable self" ([40]: 25).*

For Sennett, the flexible strategy of "Nothing in the long term" - destabilizing the subject - of capitalism, can be counteracted through the construction of the

community, which also constitutes a historical counter-trend, which cultivates trust, security, collaboration and, it facilitates null human emancipation.

In a broad and sociological sense, it is also necessary to recognize that narcissistic tendencies.These are social constructions - as Lasch also recognizes in a way - disorganizing collective life and functional to the establishment of domination systems.

For his part, for Adorno, human life is essentially coexistence; the human being is a neighbor rather than an individual, he relates first to others rather than to himself; it exists thanks to the other, it is what it is thanks to the others; It does not exist primarily defined by an indivisibility and particularity, but thanks to the fact that it participates in others and can communicate with others. The individual is a moment of relationships, in which he lives, before he perhaps once decides for himself. This relationship is not something external, but something of his own, internal to himself; within social relationships individual life acquires meaning. Furthermore, the individual biography of each person is a social category [41].

Precisely, the traditional experiences and visions explained in this work constitute historical tendencies for the construction of life in common, true non-capitalist spaces, which represent hopes for a better human life, which coexists and shares goods with ecosystems.

In this sense, Buen Vivir, a traditional vision of the Andean peoples, could represent a path towards transformative, socio-ecological change, which we must promote by returning to the local commons and rebuilding the human community in its diversity and interdependence with ecosystems. COVID 19 can represent a catalytic drive for these relocation and movement processes in a bottom-up approach, that is, from the local to the regional and global scale. Collaboration and synergies are essential to move towards better means and quality of life.

A less materials-intensive, circular economy approach that maintains the usefulness of resources for longer, but at the same time generates less waste and pollution, can help advance towards sustainability goals, as well as provide more space. to natural environments that allow their ecological self-reproduction, even in regulated coexistence with urban environments. Proper consideration of the conservation of local commons is a cornerstone for achieving community sustainability and resilience in these times of pandemic and multi-crisis, including, by the way, the global climate. By providing individuals, families and communities with the basics to live, through a universal basic income -recognized as a human right of the 21st century-, we will ensure the basis for prosperity, cohesion and social peace, avoiding unworthy aspects, suffering and depressing poverty, as well as avoiding environmental degradation. The strengthening of social resilience that stops the disastrous impacts of climate change and the pandemic that generally hits the poorest and most vulnerable, should be the fundamental basis for the definition of good public policies. Finally, it is necessary to move towards better public policies that aim to reduce the impacts of the current crisis on the population, that decarbonize economic activity and significantly reduce the ecological footprint of the development model.

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Section 5

Anthropological Perspective

Chapter 50

Buddhist Monastery, Amulet, Spiritual Support and COVID-19 Outbreak

Rujitika Mungmunpuntipantip and Viroj Wiwanitkit

Abstract

COVID-19 is an important global problem. The disease causes illness and results in anxious state and panic. It also has a lot of socioeconomic impact worldwide. The supports for the affected persons are by several partners including religious unit. The religious unit can play important social welfare role to support the local people. In Indochina, many local Buddhist monasteries act this role. This is an interesting anthropological phenomenon. Many monasteries issue amulet as gimmicks for sale to the donor. The donor buys amulets for spiritual support during frustrate period and the monastery receive money for its welfare function. This is an interesting social sustainability phenomenon.

Keywords: Buddhist monastery, amulet, spiritual support, COVID-19, outbreak

1. Introduction

In late 2019, an emerging infectious disease was firstly reported from Asia. The disease is a novel virus infection. The causative agent is a coronavirus which is presently known as SARS CoV2 [1–3]. The disease is named "COVID-19 [4–10]". The new disease manifests as an acute febrile respiratory infection. The patient might have no, mild or severe clinical symptoms. In the worst case, the patient might develop respiratory failure and die. At present, this disease already causes problem worldwide. It is declared by WHO as the newest pandemic [11–14]. Now, the disease already occurs in all continents of our world and results in more than 100,000, 000 affected persons. There are already more than 2,000,000 deaths from COVID-19 worldwide (February 2021).

When the outbreak starts, an influx of heaps of patients occurs in several countries and exceeded the facilities limitation of the local hospitals. This leads to the disruption of normal public health system worldwide [15–19]. The disease outbreak becomes an important urgent issue to be managed in any nations. Adding to the medical problem, COVID-19 also causes a non-medical problems. It results in a lot of socioeconomic impact worldwide. The local government has to implement several control measures against the outbreak. A common control measure is the lockdown [20–24]. According to the COVID-19 lockdown policies, an abrupt cessation of normal business and transportations systems occurs and this result in several socioeconomic impacts.

Of several impacts of COVID-19, the impact of mental health status of the general people is an interesting issue. In psychological point of view, there are many specific problem related to the present COVID-19 pandemic. At early stage of the pandemic, the limited knowledge on the disease leads to worldwide panic [25–28]. Due to the stressful situation and the frequent news on outbreak situation, many people get the mental problem. Several people worldwide become anxious state and panic [29]. In a more serious case, a post-traumatic stress disorder might occur [30–33]. In a report from Iran, the survey on local Iranian during the early attack of COVID-19 showed that the prevalence of mental problems among local people in Iran was up to 35% [34]. Many people get problem of anxiety and sleep disturbance [34]. In another study from Spain, the high prevalence of anxiety and depression among local Spanish children was reported [35]. In another report from Brazil, more than 50% of local people had anxiety and the concurrent problem of loss of job and income also occurred in the similar magnitude [36]. Based on those examples of publications worldwide, the mental problem is similarly common among local people in different countries during the crisis.

Although there are many new data on the new disease at present, the problem is still out of control. The disease is still the problem for general world population to control. Psychological care and support to the people under the situation of COVID-19 pandemic is still necessary. It is necessary to have an urgent control of the problem. The help for the affected persons during the outbreak is needed. The supports for the affected persons are by several partners including religious unit. The religious unit can plays important social welfare role to support the local people. In Indochina, many local Buddhist monasteries act this interesting welfare role. This is an interesting anthropological phenomenon. Many monasteries issue amulet as gimmicks for sale to the donor. The donor buys amulets for spiritual support during frustrate period and the monastery receive money for its welfare function. This is an interesting social sustainability phenomenon.

2. Mental health problem due to COVID-19 outbreak

As already mentioned, COVID-ID-19 outbreak becomes the big global public health threaten. The disease has several health consequences. Physically, the viral pathogen can affect respiratory tract and it can result in permanent damage, which might lead to death. Additionally, the disease might cause other non-respiratory clinical presentations. Therefore, COVID-19 has a very wide range of clinical presentation. Regarding mental issue, the disease can result in psychological problems. Several mental disorders are reported as consequences of the new disease. The summarizations on important mental health problem are hereby given.

2.1 Panic

Panic is expressed as an excessive fear. It is usually related to a big serious event. It is usually related to the lack of information and rumor. As already mentioned, the early phase of COVID-19 fulfills with the mentioned problem. Therefore, panic becomes an important mental health problem resulted from COVID-19 outbreak [25–28]. Ahmad and Murad demonstrated that there was a significant Impact of social media on panic during the COVID-19 pandemic [19]. Therefore, it is necessary to have a good system to control fake news on COVID-19 during pandemic.

2.2 Post-traumatic stress disorder

Post-traumatic stress disorder is a psychological problem that is observed in a person getting a serious problem in life. The COVID-19 might be considered as a very serious episode and might cause post-traumatic stress disorder [30–33].

2.3 Depression

Depression is also a possible problem seen during pandemic [37–40]. Shader noted that "*COVID-19 pandemic embodies overwhelming stresses-unemployment, death, and isolation, among others*" and noted for requirement for managing depression in patients during COVID-19 [37].

2.4 Bipolar disorder

Since bipolar disorder is a variety of depression. It is no doubt that bipolar disorder might be seen during COVID-19 outbreak [41–43].

2.5 Anxiety

Anxiety is also a possible problem seen during pandemic [37–40]. Insomnia is a common complaint of patient during the outbreak [44]. Also, the patient COVID-19 induced anxiety might try committed suicide [44]. Peteet noted that "*Growing concerns about anxiety associated with COVID-19 have led to recommendations for effective self-care, and greater availability of mental health treatment* [45]." Özdin and Bayrak Özdin noted that the most of patients affected by the COVID-19 pandemic are women [46]. Özdin and Bayrak Özdin also found that individuals with previous psychiatric illness, individuals living in urban areas and those with an accompanying chronic disease were also common groups that had anxiety during the COVID-19 outbreak period [23].

There are many possible mental health problems during COVID-19 outbreak. Not only general people but also medical personnel who have to work hard during pandemic also experience the mental illness [47–52]. Therefore, it is no doubt that there is an urgent need for proper plan for screening and managing mental health problem that occurs during the COVID-19 pandemic.

3. Religion based mental health problem management

there are many ways to manage mental health problem. At present psychologist and psychiatrist might play important role in hospital and public health sections. Nevertheless, the maintenance of the problem might be by the other personnel. In the past, the local wisdom is the classic way for managing of mental health problem. The religion based mental health problem management is a good examplee of a classical way for managing psychological problem.

Religion is a rooted practice and belief. In anthropology, religion usually exists in an area with a long history. The high level of basic human need is self-actualization and religion is a way to derive self-actualization. Conceptually, religion usually promotes doing good thing. Calmness is usually a principle. Those ways of practice is useful for management of mental health problem. There are some interesting reports on Religion based mental health problem management as presented in **Table 1**.

Authors	Details
Murakami and Campos [53]	Murakami and Campos discussed on religion and mental health and proposed for the challenge of integrating religiosity to patient care [50]. Murakami and Campos concluded that "*religion is a dimension that can contribute positively to the treatment of patients with mental illness, by providing emotional and social continence and teachings on customs, that encourage quality of life* [53]."
Turner et al. [54]	Turner et al. studied on mental health care treatment seeking among African Americans and Caribbean Blacks [51]. Turner et al. concluded that "*Strong religious/spiritual beliefs may promote mental health care usage* [54]."
AbdAleati et al. [55]	AbdAleati et al. concluded that "*religion could play an important role in many situations, as religious convictions and rules influence the believer's life and health care* [55]."
Thompson [56]	Thompson mentioned that "*spirituality is often limited to recording the client's religion. This article asserts that religion and spirituality are not synonymous, although spirituality might sometimes be reflected through religious practices* [56]."
Ng et al. [57]	Ng et al. studied on religion, health beliefs and the use of mental health services by the elderly [57]. Ng et al. noted for "*lower tendency of elderly people with religious affiliations to seek treatment for mental health problems* [57]."
Chattopadhyay [58]	Chattopadhyay studied on religion, spirituality, health and medicine in Indian context [58]. Chattopadhyay concluded that "*Religion and spirituality play important roles in the lives of millions of Indians and therefore, Indian physicians need to respectfully acknowledge religious issues and address the spiritual needs of their patients* [58]."

Table 1.
Some interesting reports on religion based mental health problem management.

In modern contemporary medicine, the concept of holistic care deals with physical, mental, social and spiritual care [52–59]. The consideration on religious background of the patient is useful. For managing mental health problem, the management based on religious background is also very interesting [60–62].

4. Amulet and its role in spiritual health care

Amulet is a specific object that is made by religious unit. This is usually aimed at symbolization of holiness. Amulet is usually kept by general people who practice according to the religion. Many local people usually seeks for amulet from famous shrine for keeping and worshiping. It is usually believed on the power of goodness within amulet that can bring health and wealthy. This is an actual classical local wisdom. It is a way for controlling of local people to do a good thing. The spiritual effect of belief is also observable and it is a way for spiritual care according to the holistic concept in modern medicine. There are many reports on amulet and its role in spiritual health care. The important reports are summarized in **Table 2**.

It can see that amulet is commonly used by patients and cousins in several developing countries. The religious background is related to the use of amulet. This can confirm that amulet is a way in religious medicine for spiritual care.

Regarding mental health, the use of amulet is a classical wisdom for managing mental health problem. The usefulness of amulet in spiritual dimension of care is confirmed. Amulet is also a way for expressing religious art [68]. Littlewood and Dein demonstrated on "*simultaneous trust in psychiatrists as well as in the widespread use of healing amulet*s [69]" among the patients in London. The long history of amulet use in religious medicine is seen worldwide and the evolution of the system by time is demonstrable [70]. The simultaneous combined use of amulet and modern psychological management is possible and confirmed for clinical usefulness.

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Authors	Details
Wiesendanger et al. [63]	Wiesendanger et al. discussed on chronically ill patients treated by spiritual healing including using amulet [63]. Wiesendanger et al. concluded that "*Chronically ill patients who want to be treated by distant healing and know that they are treated improve in quality of life* [63]."
Hossain et al. [64]	Hossain et al. studied on patients with acute viral hepatitis in rural Bangladesh [61]. Hossain et al. reported that "*Anicteric patients with reported jaundeesh perceived their illnesses to result from humoral imbalances, most commonly treated by amulets, ritual handwashing, and bathing with herbal medicines* [64]."
Lloreda-Garcia [65]	Lloreda-Garcia studied on religion, spirituality and folk medicine and superstition in a neonatal Unit in Catargena and concluded that "*The use of amulets and ritual objects is still common and can express the need for emotional and psychological support* [65]."
Venkatrajut and Prasad [66]	Venkatrajut and Prasad studied on use of complementaryand alternative therapies among rural TB patients in Nalgonda, Andhra Pradesh in India [66]. Venkatrajut and Prasad found that "*TB patients employed a variety of alternative therapies such as massage, prayer, amulets, diet, faith or spiritual healing, restriction in alcohol consumption and smoking, abstinence from sex, and herbal teas as an adjunct to biomedical TB treatment* [66]."
Tekle-Haimanot et al. [67]	Tekle-Haimanot et al. studied on clinical and electroencephalographic characteristics of epilepsy in rural Ethiopia [64]. Tekle-Haimanot et al. found that "*Traditional treatment with local herbs, holy water and amulets was the most common* [67]."

Table 2.
Some interesting reports on amulet and spiritual health care.

Nevertheless, it is still necessary to control on safety. Case report on amulet related toxicity in a patient using amulet as alternative care is the good evidence to confirm the safety requirement [71].

Focusing on medical and scientific component, the psychological effect of amulet is explainable. Fear is a common feeling of anyone in a dangerous or uncertain situation. Based on Maslow's hierarchy of needs, safety needs are basic. Religious practice and belief is a way that people can attach to gain the safe feeling. In a recent phenomeonological study from China [72], religious practice according to belief of the patient, is identified as an important spiritual need to be manage in medical nursing. In the non-COVID-19 outbreak situation, risk occupation such policeman also usually find amulet and use as spiritual object to promote sense of safety and brevity in daily job [73].

5. Buddhist monastery as health care center in Buddhist country

Religious unit might play role in social welfare. It sometimes might play role as a medical center. Since religious place usually locates in center of community, it is no doubt for this possible role. Church, mosque or pagoda might host a medical center for caring local people. In Buddhist community, the Buddhist monastery might play this role. There are many reports on its role as health care center (**Table 3**).

During the crisis, the general Buddhist monastery that has no role as health care center might display this new additional role. The good example is on the present COVID-19 crisis. The important role in mental health care support is mentioned. In fact, the principle of Buddhism is applicable for containing of anxiety problem. The basic Buddhist concepts of resilience is well applied as the concept of crisis concierge [81]. Anālayo, a Buddhist monk in USA, mentioned that "*Out of the different possible modalities of cultivating mindfulness in this way, the discourses present*

Authors	Details
Chalepad et al. [74]	Chalepad et al. reported on basic resuscitation training and public-access defibrillator deployment in Buddhist temples of Thailand [74].
Hathirat [75]	Hathirat discussed on role of Buddhist monks as community health workers in Thailand [75]. Hathirat proposed that "*If Buddhist monks are able to expand their roles to health care and education, Buddhist temples will automatically become community health posts* [75]."
Kasai et al. [76]	Kasai et al. studied on psychological effects of meditation at a Buddhist monastery in Myanmar [76]. Kasai et al. concluded that "*meditation mitigates anger, hostility and fatigue and increases vigor at a relatively early stage after starting meditation practice, and if meditation practice is continued for more than a year, enhancement of psychological flexibility can also be expected* [76]."
Kaewla W, Wiwanitkit [77]	Kaewla and Wiwanitkit discussed on healing Buddha and Buddhism-related natural medicine in the Japanese context [77]. Kaewla and Wiwanitkit reported that "*there is already a lack of continuum of Buddhism-related health care within the temples in Japan. Due to further civilization, Japan might have less use of temple care compared to the local practice in Thailand, Southeast Asia* [77]."
Kaewla and Wiwanitkit [78]	Kaewla and Wiwanitkit reported on local primary health care operated by local religious center, Mahayana Buddhist monastery, in Thailand [78].
	Kaewla and Wiwanitkit concluded that ""*the temple is a primary care center to support physical, mental, and spiritual illnesses. The main therapeutic actions include the following: a.Using a standard Chinese herb regimen for treatment, b.Meditation, and c.Eating vegetarian food* [78]."
Treerutkuarkul [79]	Treerutkuarkul mentioned that "*Buddhist monks and their temples have been strongly involved in health promotion and education, particularly in remote, rural communities* [79]."
Kondou [80]	Kondou discussed on private facilities for the mentally disturbed in the Tohoku region in Japan. Kondou mentioned for the history of setting temples for containing mental patients [80].

Table 3.
Some interesting reports on role of Buddhist monastery as health care center.

awareness directed to one's own bodily postures as a practice already undertaken by the Buddha-to-be when he was still in quest of awakening. In this particular setting, such mindfulness of postures served as a way of facing fear. The potential of this exercise to provide a grounding in embodied mindfulness, being fully in the here and now, is of particular relevance to the challenges posed by the current pandemic [82]." Additionally, Small and Blanc discussed on mental health during COVID-19 outbreak in Viet Nam [83]. Small and Blanc concluded that "*Vietnamese resilience, attributable, in part, to "tam giao," a coexistence of religious and philosophical Taoism, Buddhism, and Confucianism through cultural additivity, provides a unique mindset that other countries can learn from to adapt and even build psychological resilience against COVID-19 pandemic's psychological outcomes* [83]."

6. COVID-19, Buddhist monastery, role for mental/spiritual health care and amulet sale

COVID-19 occurs worldwide and it usually causes problem. The role of religious unit to support the community during crisis is interesting. In Buddhist area, such as Indochina, Buddhist monastery might play social welfare role to support the local suffering people. Many monasteries offer shelter to homeless people and offer food to the poor and hopeless people. The monasteries also issue amulet to be a

tool for spiritual care during the COVID-19 crisis. Many new versions of amulets are designed for correspond to COVID-19. The good examples are Anti-COVID-19 facemask and anti-COVID-19 coin. Those new amulets are usually locally made and sold at the monastery.

Sometimes, the news on production of the amulet are broadcasted via social media. The news usually attract local people to visit to the monastery to buy the amulet. Mainly, local people who bought the amulet usually believe on supernatural power of the amulet. This is the way for spiritual support. Additionally, the monastery that sold the amulet will get money and further use it for social welfare support to local people. This is a way that seems to promote community based sustainability. In this case, local people help local people with medium as monastery. The amulet buyer get amulet for mental support and relieve anxious life. The seller, monastery, gets money for further uses with aim at returning the advantage to local people in the community.

Also, the use of amulet has its important characteristics that are appropriate for spiritual support during the COVID-19 crisis. Comparing to other form of spirituality such as holy water bathing or having a monk performed holy praying or the amulet use requires no help or participation of other person. It is concordant with the present concept of social distancing. Additionally, amulet is a small object and can be carried as individual personal belongings, which means a lower chance of personal contact than other form of spirituality during COVID-19 outbreak.

It is apparent that spirituality is configured as an element of reassurance. It can be well integrated with visions of hard science in the area with long history and rich of religious cultures. For the other area, in order not to create anti-scientific prejudices, there should be the modification of classic spiritual into a more modern form. For example, the difficult religious language might be transform to simple modern language and use for a simple and effectivee communication. In case of amulet, the new fashion might be use for designing. In fact, many COVID-19 related amulets in Indochina are designed to correspond with the present situation such as facemask style amulet.

Nevertheless, there might be the adverse unwanted of this process. The promoting of COVID-19 related amulet via social media has to be well controlled. It is possible that there might be a fake claim aiming at luring of local people. The amulet might be issued by a bad person and sold aiming at making profit. Cheating is possible and some bad persons gave incorrect information such as amulet can be used for treatment or prevention of COVID-19. The legal punishment for those illegal attempts is necessary.

7. Conclusion

During COVID-19 crisis, the religious unit can play important social welfare role as well as provide spiritual care. Thee manipulation via the amulet distribution by Buddhist monastery in Indochina is the best example. This process is an interesting social sustainability phenomenon and good case study in anthropological aspect.

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Chapter 51

In the Darkness of This Time: Wittgenstein and Freud on Uncertainty

Dorit Lemberger

Abstract

Both Wittgenstein and Freud experienced the crisis of humanism resulting from the first and second world wars. Although they were both considered to be influential figures, they hardly investigated the ways in which people could cope with the consequences of these crises. However, Wittgenstein and Freud did suggest ways of understanding uncertainties caused by real life events, as well as by the nature of human thought processes. This article will explore the therapeutic ways of dealing with uncertainties common to both thinkers and the different concepts facilitating their methodologies. The central contention of this article is that both Wittgenstein and Freud developed a complex methodology, acknowledging the constant and unexpected changes humans have deal with, whilst also offering the possibility of defining "hinge propositions" and "language-games" which can stabilize our consciousness.

Keywords: Wittgenstein, Freud, uncertainty, hinge propositions, chaos, complexity, defense-mechanism, uncanny

1. Introduction

The relevance of philosophical and psychanalytic thinking to existential problems.

"I make them public with misgivings. It is not impossible that it should fall to the lot of this work, in its poverty and in the darkness of this time, to bring light into one brain or another a but, of course, it is not likely"[1].

In what ways can the years in which Freud and Wittgenstein lived, brighten the darkness of our own era? This chapter will examine Freud and Wittgenstein's main ideas about feelings of certainty or uncertainty in everyday life and at times of crisis to learn from them how to cope with uncertainty. Freud and Wittgenstein lived in pluralistic Vienna at the beginning of the 20th century, sharing the same cultural climate, an era when a multidisciplinary approach to culture was blossoming.

Though Wittgenstein was younger than Freud he could not avoid relating to him [2]. Ostensibly, Freud and Wittgenstein were involved in different fields of knowledge. However, both thinkers experienced two world wars that led to personal crises for each of them alongside the general crises that afflicted Vienna as a consequence of these wars (Although Freud died in 1939, he nonetheless experienced the consequences of the Nazi's rise to power including the arrest of his daughter and

their escape to London in the dead of the night). Freud (1856–1939) the father of psychoanalysis, formulated the characteristics of the psyche's development and the psychoanalytic technique that facilitates coping with pathologies in the functioning of the human psyche. Wittgenstein (1889–1951) commonly accepted as having been the progenitor of the Linguistic Turn, [3] stepped beyond the boundaries of philosophy, involved himself in the social sciences and humanities and proposed a set of tools to investigate the way in which language functions in various practices. According to Wittgenstein, the need for such an investigation existed due to illusions and confusions that arise from a mistaken use of language [4].

Both thinkers dealt with a central question, namely: 'What can be said to be the connections between man and his world as they come to be expressed and accessible to us in language'? Each of them dealt with this question from a different perspective. Freud formulated the 'Reality Principle', [5] and Wittgenstein 'the picture theory' [6]. In both contexts. The external reality imposes on an individual the recognition of a situation which, at least in part, it is difficult for him to accept. This common position is an important starting point for the purpose of this article which also deals with coping with the reality of Covid 19 imposed on humanity and has created – among other things – an existential feeling of uncertainty.

The intellectual closeness between Freud and Wittgenstein applied only to Wittgenstein who considered himself to be Freud's pupil, [7] and wrote about various aspects of psychoanalysis [8]. However, especially from the 1990s onwards, much has been written in research papers about the parallels between them [9]. However, with the passage of time there has been a change of view. In the twenty-first century, it has become more common for researchers to discuss the contribution of Wittgenstein's study of language to psychoanalytic technique, than the subject of Freud's influence on Wittgenstein [10]. In this century, in which interdisciplinary research has become the accepted methodology, a further possible line of inquiry inspired by these two important thinkers can be suggested, namely: an investigation of the concept of uncertainty in the writings of Freud and Wittgenstein. Uncertainty is a major cause of difficulty in dealing with a crisis, including the crisis of Covid 19 which has affected many aspects of people's lives across the globe.

Freud addressed both personal and social epistemological processes in situations of crisis. Wittgenstein wrote his third book to suggest a way of coping with inherent uncertainty which characterizes modern thought. Ostensibly, Freud and Wittgenstein investigated uncertainty in entirely different contexts. Freud in the context of the analysis and the identification of psychic pathologies, whilst Wittgenstein carried out his investigation in the context of thought and the daily use of language. However, in both contexts, Freud and Wittgenstein examined the concept and sense of uncertainty, and proposed ways of coping. Similarly, we shall see in what follows, how Freud was aided by linguistic studies during his research and the ways in which Wittgenstein pointed to psychic states to shed further light on the philosophical content of a subject. The central argument is that there exists a significant common denominator in the approaches adopted by Freud and Wittgenstein to the subject of uncertainty. Alongside this, ideas will be presented that typify each of the thinkers and which characterize the uniqueness of coping with existential uncertainty.

2. Types of uncertainty according to Freud and Wittgenstein: the common denominator

One can distinguish between two types of uncertainty shared by Freud and Wittgenstein. The first is existential uncertainty, which arises from a recognition of

a continuously changing reality and an inability prophesy the future. The second, is the uncertainty that exists in the pragmatic realm of psychoanalytic techniques and language research. This field deals with the dynamic boundaries of methodological concepts as well as changing aspects of interpreting reality.

I propose terming existential uncertainty "conceptual uncertainty" since it is derived from two facts. The first being that the world, including our own bodies, are in a continuous state of movement and change. Fact number two is that the future cannot be prophesied with any degree of certainty. All we can do is speculate as to what that future will be like. I suggest terming this uncertainty "methodological uncertainty" because it arises from the nature of psychoanalytic and linguistic inquiry. Freud and Wittgenstein demonstrated, each in his own way and in his own research, that the methodological concepts they adopted are prone to a process of continuous change.

3. Conceptual uncertainty according to Freud

Freud formulated two kinds of existential conceptual uncertainty. The first is the uncertainty created because of an unforeseen eruption of human cruelty which undermines the ability to rely on human moral values. Freud described this in his article "Thoughts for the times on war and death" (1915) [11]. In this article, Freud dealt with "the disillusionment of the war" when, in its aftermath, he was forced to admit to himself that he had difficulty explaining the aggression and destructiveness that erupted in the course of the conflict on the part of people who shared a similar culture based on the values of modern humanism [12].

As a result of the total humiliation that included the world of science, people were left "without a glimmering of the future that is being shaped" [13]. The surprising depths to which humanity had sunk led to a sense of uncertainty about human nature itself. In retrospect, Freud offered explanations and a proposal to improve human future. The explanations offered by Freud with the benefit of hindsight, pointed to man's primitive mind as a permanent infrastructure to which a person returns in certain circumstances even after gaining a higher "stage of development" [14]. The second explanation concerned the dependence of our intelligence in emotional life [15]. Meaning that emotional interest supersedes logical interest so that where there are emotional resistance human beings will act in line with the emotion of resistance rather than with wisdom. The war proved this to be the case at the level of nations rather than only in relation to individuals [16].

These two characteristics are shared by both ancient and modern man. However, with respect to modern man, Freud suggested the psychoanalytic description of the mind which sheds light on the mechanism that leads to regression as well as the capacity to cope with it. This, by offering an additional clarification of the nature of the unconscious.

According to Freud, modern man's unconscious is problematic in three ways.

"Our unconscious is just as inaccessible to the idea of our own death, just as murderously inclined towards strangers, just as divided (that is, ambivalent) towards those we love, as was primaeval man" [17].

As was the case with primeval man, participation in war enables modern man to actualize his unconsciousness's problematic inclinations and even compels him to do so. When war coerces a person to be a 'hero', it forces him to ignore the possibility of his death and be cruel to others. In the best psychoanalytic tradition, Freud suggests that modern man should deal with the repressed by creating space for thoughts about personal death. This would achieve two psychic gains. A recognition of reality

and making life bearable. Freud concluded the article by saying that "If you want to endure life, prepare yourself for death [18].

Thus, Freud dealt with the existential uncertainty which developed from coping with the First World War I, by pointing to the permanent source in a person's psyche that leads human beings to be cruel to one another. The source, Freud posited, is the inclination to regression that remains in an individual's psyche throughout his life. Uncertainty, in times of war against an enemy or a virus that spreads across the globe, awakens the inclination to regression. The solution proposed by Freud is a way of coping that characterizes the psychoanalytic world view. Awareness and coping with threatening and frightening subjects. It should be noted that there is a significant juxtaposition between the "enduring" proposed by Freud, and the nature of the "the depressive position" formulated by Melanie Klein. According to Klein, this position is the result of a fear of loss. However, it is a position that can also become a developmental achievement when there is an acceptance of such dangers as hunger and loss [19].

4. Methodological uncertainty according to Freud

The second type of conceptual uncertainty was formulated by Freud in the context of investigating the boundaries of analysis. Freud argued that total and final fulfillment of analysis cannot be reached because individual defense mechanism that resist therapy cannot be discovered entirely by the therapist. In Freud's view, even experienced analysts must return to analysis every few years because conceivably their defense mechanisms create disturbances of which they are unaware.

In his article "Analysis terminable and interminable (1937), Freud discussed the reasons why one cannot say at any point that the analysis has come to an end [20]. First, Freud returned to the three known conditions for terminating analysis [21]. One of the paper's central subjects, which subsequently enable Freud to formulate his concept of Fundamental Methodological uncertainty, was the way in which the Ego's defense mechanisms operate during analysis. When the patient's defense mechanisms resist the exposure of the contents of the Id, the therapy becomes deadlocked [22]. By its very nature, the Ego resists change and the power and depth of this resistance to change will determine the therapy's fate. In the case under study here, the defense mechanisms collide with the uncertainty embodied in the therapist's interpretations and in world events that threaten the Ego's regular tendencies. Up until now we have been discussing ideas already expressed by Freud in earlier articles. But the novelty in this article lies in the importance that Freud attributed to the individuality of the defense mechanism [23].

Freud described defense mechanisms as a universal system which, in part, is formed culturally and socially and is, as such, inherited. However, alongside this, Freud stressed the individual functioning of these mechanisms which is expressed by a choice [unconscious of course) unique to every individual and is reflected in his conduct. The difficulty of researching this choice limits the therapeutic dialog and, at times, halts it. Moreover, sometimes the patient's personal resistance cannot be in this or any other defense mechanism. Thus, in Freud's view, the obfuscation that is created makes it difficult to continue the therapy. For example, at times it is not possible to understand the patient's difficulty in transferring the libido from one object to another. Or, conversely, one cannot comprehend the ease with which the patient passes from one object to another.

Considering the difficult in pinpointing the form of the individual personality that is the foundation of defense mechanisms, Freud formulated his conclusion

with respect to the endlessness of analysis. He likened analysis to education and government and argued that "It almost looks as if analysis were the third of those 'impossible' professions in which one can be sure beforehand of achieving unsatisfying result." [24].

Further to this it can be argued that Freud formulated a new context of uncertainty with which the therapist should be reconciled. This is a conceptual uncertainty involved in the psychoanalytic technique: it is never possible to find out in detail how the individual components of the defense mechanism work. In the context of uncertainties caused because of the corona virus, different and varied ways of coping can be seen, alongside a sharp increase in requests for psychological help. The combination of the two types of uncertainty according to Freud sharpens the difficulty of observing the collective and personal behavior of human beings and leads to the placement of the principle of uncertainty as a key principle in both the analyst and the patient's consciousness. Moreover, towards the end of his article on the infinity of analysis, Freud formulated an idea that makes it possible to reformulate the reality principle.

"we must not forget that the analytic relationship is based on a love of truth - that is, on a recognition of reality - and that it precludes any kind of sham or deceit" [25].

Meaning that, even when reality is unbearable, the pursuit of truth underlies psychoanalytic theory and does not allow for the disregard or distortion of reality. In the two articles we have discussed, it can be seen that despite Freud's successful and extensive experience in the study of the mind, his love of truth was the basis for placing uncertainty (theoretical and technical) in a central place in human consciousness.

5. Conceptual uncertainty according to Wittgenstein

Though Wittgenstein was younger than Freud, he preceded him in formulating the notion conceptual uncertainty. In his first book, *Tractatus*, Wittgenstein formulated the boundaries of thought and expression including the place of free will.

"The freedom of the will consists in the fact that future events cannot be KNOWN now. It would only be possible for us to know them if causality were an INNER necessity--like, say, that of logical inference." [26].

Free Will is not dependent on facts and is even based on our inability to prophesy future events. From this it follows that decisions based on prophesying the future include inherent uncertainty. This uncertainty also exists in relation to claims of the recurrence of routine and permanent natural phenomena such as sunrise [27]. The principle is that "The world is independent of my will." [28].

A second kind of uncertainty is described in Wittgenstein's second book "Philosophical Investigations, the best known and most influential of his works. It was published in 1953, two years after Wittgenstein's death.

The book's influence spread well beyond the fields of philosophy, reaching all the social sciences humanities, including psychoanalysis. In it, Wittgenstein explores the common ways in which everyday language is used, pointing to the illusions held and the mistakes made by people who attribute to grammar the possibility of creating absolute concepts or meanings that have clear boundaries.

Wittgenstein coined several methodological terms that enriched the discourse in various fields such as: language-games, patterns of life, rule, and depth-grammar. At the same time, he repeatedly returned to the idea of language's constant dynamism, including its concepts and the possibility of unambiguous interpretation. The paragraph in which Wittgenstein formulated the essence of his claim is Section

201, in which he formulated the paradox which determines the constant uncertainty in the use of language [29].

The central paradox formulated by Wittgenstein in the book means a particular word one cannot be said to have just one firm meaning. Even when a word is used in accordance with the rule, and within a concrete pattern of life, there is no impediment to a different application of the rule and the creation of a different meaning [30].

· At the end of the section, Wittgenstein re- established one of the linguistic turn's significant innovations: that the meaning of a word is, in fact, the replacement of a word with another, and not beyond that. That is, it is not possible to distinguish between a word and its meaning, but only one word can be replaced by another. The conclusion to be drawn from this move is that there is inherent uncertainty in the use of language, and that in fact one cannot be sure of the meaning or permanence of a concept in our lives. In the second part of the book, Wittgenstein clarified the precedence that reality has over concepts. This precedence illustrates the possibility of changing our concepts in line with changes [31].

Even when a person believes that his propositions are correct, and that changing them would result in a missed opportunity to examine reality, he can, according to Wittgenstein, imagine a change in the facts of nature and thus also come to terms with changing his concepts. The difficulty in changing ones beliefs, as proposed by Wittgenstein, is the basis of a fundamental question that runs like a second thread throughout this article: If reality changes, why is it so difficult for us to adapt to the fact that concepts also change? Why is there a tendency to attribute a physical quality to concepts, instead of seeing how they are used in a certain pattern of life?

In his article, "Patterns of Life: A Third Wittgenstein Concept", Michel Ter Hark discusses Wittgenstein's thoughts referred to above [32]. In answer to the question of how to cope with the difficulty of psychological "indeterminacy and uncertainty", Ter Hark showed that there are numerous manuscripts in which one can find examples of Wittgenstein's position that a concept with sharp and fixed boundaries cannot be created [33]. Ter Hark emphasized that part of Wittgenstein's revolution lies in his attempt to understand this uncertainty of our concepts which arises because of 'unharness' and 'indeterminacy' not as a defect, but as.

"...revealing the structure of psychological thought itself, he has to devote himself to investigating the facts of human nature that shape the indeterminate contours of our use of psychological concepts." [34].

It seems to me that what Wittgenstein has proposed here is a way of dealing with the uncertainty created by an international epidemic, or a major disaster: the emotional difficulty stems from the need to change the concepts to which we are accustomed. However, if we understand the dynamic mechanism of our concepts, and accept the impossibility of setting any concept in stone, it may be easier for us to alter our concepts and adapt them to the changes that have taken place as a result of the event, however difficult that may be.

6. Wittgenstein from conceptual to methodological uncertainty

"On Certainty", Wittgenstein's third and final book, was being written by him up until a few days before his death and summarizes the complexity of his worldview. In the book, Wittgenstein formulated the nature of certainty [35] along with a constant awareness of the possibility of change:

"The mythology may change back into a state of flux, the river-bed of thoughts may shift" [36].

With the help of a comparison between a river and consciousness, Wittgenstein illustrated two ideas he had already presented in his book "Philosophical Investigations", and which are the basis of conceptual uncertainty: language is dynamic, [37] and language use has already been made within the framework of a pattern of life that must be accepted as a given. However, his main innovation in his last book was that in every pattern of life there are "hinges" without which it is impossible to think and act:

We just cannot investigate everything, and for that reason we are forced to rest content with assumption. If I want the door to turn, the hinges must stay put. My Life consists in my being content to accept many things [38].

The use of language for the purpose of making claims must be based on assumptions that are beyond any doubt. For example, the assumption that a thought can be formulated in a language, that speakers of that language can understand these claims, and so on. These assumptions belong to the basic logic of language use, which creates a kind of confidence, and function as "hinges". However, immediately after claiming the need for "hinges", Wittgenstein made the claim that he was coming to terms with many things in his life. The metaphor of the "hinges," as Danièle Moyal-Sharrock put it, means that the part of the hinges on which knowledge turns, are not justified by the facts of nature, but " anchored in regularities of nature" [39]. Wittgenstein adopts the metaphor of the "hinges", thereby signaling a shift from conceptual uncertainty to methodological uncertainty: the hinges represent a means that make it possible in practice to use language, although the mythology that created them may change. Like the paradox of rules, presented above from "Philosophical Investigations", the hinges also function paradoxically as a means, on the one hand of achieving stability, and, on the other hand as a means that can change.

The conclusion so far from the discussion of uncertainty in both Freud and Wittgenstein's writings has been that it exists on the conceptual as well as on the methodological level. Uncertainty on both levels has been described as an integral part of the nature of language and thought.

7. Freud and Wittgenstein on chaos and complexity and its relation to uncertainty

Further to this conclusion, it is worth examining the similarities between conceptual and methodological uncertainty inspired by Freud and Wittgenstein, as well as theories of chaos and complexity from the 1980s onwards. On the one hand, it would appear that the seeds of theories of chaos and complexity already exist in Freud's and Wittgenstein's writings. Wittgenstein described language and thought in terms of complexity, and Freud used the term 'chaos' in two main contexts. On the other hand, neither of them conceptualized chaos nor complexity as components of the same range, that are usually considered in these theories. Therefore it is firstly necessary to clarify the principal part of theories of chaos and complexity so as to conceptualize Freud's and Wittgenstein's concepts of uncertainty. Secondly, I will summarize Freud and Wittgenstein's contribution to notions of chaos and complexity. Thirdly, to emphasis the novelty of this article, it will suggest Freud and Wittgenstein's contribution to coping with a sudden and unexpected event, while filling the existing lacuna in chaos and complexity theories.

The term "complexity" can be attributed to the revolution described by Thomas Kuhn in his influential book: *The Structure of Scientific* Revolution [40]. Influenced by Wittgenstein who resisted the possibility of a final and complete definition of any concept [41]. Kuhn coined the term "paradigm" to express the view that

scientific theories are not bound to any a priory order. The position adopted by Kuhn, is compatible with the main-stream definition of complexity:

"complexity is the awareness that nothing can be included in an exhaustive definition, as the possible observation vertexes of a single phenomenon are potentially infinite. There are no pontifical meta-psychological models" [42].

Complexity is a scientific theory that reflects the acceptance of the impossibility of limiting and defining any phenomenon, as well as an understanding that there is no theory that can completely unite or clarify all the experiences of a particular concept. Thus, this position leads to an epistemological change in the worldview, which becomes based on inherent uncertainty:

"Irreversibility and non- linearity of processes originates diversification, beauty and the complexity of the natural world, constituting the creative dynamics of very different systems: from biochemistry to meteorology, from cosmology to psychology. [...] **All this involves a radical epistemological change which makes us observe the world in terms of uncertainty**, and of the ephemeral but at the same time creative self- organization which discovers time as fundamental concept to the comprehension of the evolutive process" [43].

Uncertainty stems from the nature of processes in all aspects of life, nature, human society, and works of art. In each of the areas, the theory of complexity reveals diversity and dynamism that lead to a conceptual change accepting uncertainty as a starting-point of any scientific clarification. This kind of uncertainty, both conceptual and methodological, is also the ground [basis?] for a renewed concept of chaos.

The concept "chaos" (Chàos) originated in Greek philosophy, meaning a shapeless and disorderly situation that preceded the existence of the world. From the days of Greek philosophy and throughout Western thought, this concept was discussed in different contexts. From the 1980s, new, interdisciplinary theories developed a new scientific attitude emphasizing the chaos's nature[quality?] of complexity, instead of its formlessness and disorder. In this spirit, Nicoletta Sala described the relationship between the two concepts as a possible point of view[perspective?] for examining any kind of system.

"Complexity can occur in natural and man-made systems, as well as in social structures and human beings. [...] A complex system is neither completely deterministic nor completely random and it exhibits both characteristics. [...] **The complexity is the most difficult area of chaos**, and it describes the complex motion and the dynamics of sensitive systems. **The chaos reveals a hidden fractal order underlying all seemingly chaotic events**" [44].

This description clearly illustrates the combination of the structural and post-structural aspects of theories of chaos and complexity. The way chaos is defined, as the hidden-ordered basis of the complex organization of each system, challenges the possibility of unexpected events. Although an event like the Covid-19 pandemic can be explained retrospectively, from a psychic perspective, this explanation is insufficient.

The study of psychoanalysis from the late 1980s welcomed theories of chaos and complexity [45]. The basis for this lies in Freud's writings, in his description of the dream and the unconscious, as well as the nature of impulse [46]. Freud was unaware that he was ahead of his time, but it must be possible to find both concepts of chaos and complexity in the infrastructure of his thinking. Freud's contribution to our discussion is to show that it is impossible to create direct access from the id and from the unconscious to the conscious and ordinary language.

Rather than using the term "chaos", Wittgenstein used the adjective "complex" when describing the action of language. The main cause of this complexity, in Wittgenstein's view is that "Language disguises thought", and therefore mistakes

and disruptions are created in the use of language (which create methodological uncertainties). The key to solving this is in social agreements how to use the language correctly:

"Man possesses the ability to construct languages capable of expressing every sense, without having any idea how each word has meaning or what its meaning is. [...] **Everyday language is a part of the human organism and is no less complicated than it**. [...] Language disguises thought. [...] The tacit conventions on which the understanding of everyday language depends are **enormously complicated**" [47].

In the *Tractatus,* Wittgenstein already presented the complexity of language as well as the complexity of the conventions of everyday language. Two separate levels of consciousness participate in the mechanism of creating sense: the universal grammar, independent of human influence and decision, and social agreements, independent of individual choice. Nevertheless, we use language instinctively, being unaware not only of its complexity, but also of the gap between its "outward form" and our thought. In this manner, Wittgenstein initiated the wave of theories of complexity concerning the relationships between language and thought.

These two distinctions, about the complexity of language and the importance of consent, also appear as key arguments in Wittgenstein's late thinking:

"It is not only agreement in definitions, but also (odd as it may sound) agreement in judgements that is required for communication by means of language. This seems to abolish logic but does not do so" [48].

Just as Wittgenstein emphasized the importance of social agreements in his early and later work, so he also pointed to the logical basis of grammar, which allows for a ratio of pictoriality between language and the world:

"The agreement, the harmony, between thought and reality consists in this: that if I say falsely that something is red, then all the same, it is red that it isn't." [49].

Llanguage can be used in a false way, but Wittgenstein claimed a statement that is not obvious in the postmodern era: there may be a correlation between the use of language and facts in the world. Naturally, there may be a discrepancy as we saw above. However, it is key to the understanding not only of ordinary use of language, but also of a sudden crisis. In conclusion, Freud and Wittgenstein's joint contribution to contemporary theories of chaos and complexity lies in their presentation the mental system as one of complexity that stems from the difficulty of bridging the gap between two types of consciousness: the unconscious way in which we dream, and even use language, which creates mistakes and disagreements (in which there is a chaotic dimension). Conversely, when consent is reached language can be used effectively, and human suffering becomes easier to bear.

However, this uncertainty is part of a proper examination of reality, and it does not involve dealing with a surprising change that cannot be predicted. Thus, in the final stage of the article, I would like to offer a discussion of uncertainty embodied in the concept of **The Uncanny** which expresses an experience of sudden and unexpected uncertainty. Freud Wittgenstein both related to the concept of **The Uncanny**, its clarification with their help may assist in coping with the experience.

8. The Uncanny as methodological uncertainty according to Freud and Wittgenstein

If, inspired by Wittgenstein, we relate to a pattern of life as a given in the framework of which certainty exists, then if the form of life radically changes, as it did during the Covid 19 pandemic, that certainty is also undermined. Such a situation not only exposes the relativity of certainty, since it is dependent on the permanence

of the pattern of life, but also creates an experience of ambivalence: on the one hand, patterns of life such as the daily routine, the division of time between work and home, are disturbed. Added to that, are worries about one's health and livelihood. These create an experience of ambiguousness and anxiety. On the other hand, there remain hinges from the previous form of life, whose reality creates difficulty in verbalizing reality and defining its nature.

In their writings, Freud and Wittgenstein tried to discover how psychic experiences that cause distress are verbalized. Each of them also wondered in their own way, how a person gets caught up in an experience of ambiguousness and the difficulty he has in verbalizing what he feels. Wittgenstein's assertion that interpretation involves the substitution of one word by another, facilitates the substitution of 'uncertainty' by 'The Uncanny', a concept shared by Freud and Wittgenstein, and one which may be helpful in shedding light on the experience. Both were interested in this experience in the context of daily life, and which is also highly relevant to the period in which we now live, when the pandemic caused by Covid 19 is phenomenon that can be monitored both empirically and rationally. In what follows, I will show that although in his 1919 article which he devoted to the subject of the Uncanny [50]. Freud focused on the aspects involved in the creation of literature, he also sought to link his conclusions to the actual reality rather than limiting it to the realm of literary research.

Inspired by Freud's article, Nicholas Royle [51], devoted an entire book to an interdisciplinary discussion of the concept, and in another book in which he discusses the concept in the context of literary research, he concluded that:

"The uncanny can be described as the thoughts and feelings which may arise on those occasions when the homely becomes unhomely, when the familiar becomes unfamiliar or the unfamiliar becomes strangely familiar. Alternatively, the uncanny is [...] – that which 'ought to have remained... secret and hidden but has come to light" [52].

The uncanny, as being a confusion between the familiar and the unfamiliar, and as something that should remain hidden, is appropriate for the construction of a literary text, especially a detective or horror story. However, this definition leaves the uncanny as a literary ploy but does not allude to its cause, nor does it include any guidance as to how one deals with the experience. On the other hand, Freud in his discussion of the concept, offered his opinion on the 'before' and 'after' encounter with the uncanny.

In the first place it should be noted that Freud used this title throughout his writings, and not just in an article devoted to its discussion. For example, in his book "Dream Interpretation", Freud often mentions a sense of uncertainty in the context of dream interpretation. Uncertainty can arise because of partial recollection of the components of the dream, the patient's disagreement with the interpretation offered by the analyst, and because of difficulty in creating an integration between the dream's components. To connect dream-thoughts to construct a dream-situation, Freud proposed a technique that dispels uncertainty:

"In analyzing a dream, if an uncertainty can be resolved into an 'either-or', we must replace it for purposes of interpretation by an 'and' and take each of the apparent alternatives as an independent starting-point for a series of associations" [53].

Freud proposed a grammatical guideline for solving the interpretive complication, and even adopted, as did Wittgenstein. To this end Freud suggested replacing a dichotomous interpretation with an interpretation that contain two starting points. Namely, it leads to a softening of the perception of reality and of its sense of finality.

Freud also used this concept in the context of 'omnipotence of thoughts', a phrase suggested to Freud by one of his patients, who tended to attribute magical power to his thoughts [54]. In the same context, Freud noted that we

sometimes attribute an "'uncanny' quality" even when we are able to use our rational judgment [55].

This sense of independence of thought is also at the heart of Freud's article on the threatened. Freud disagreed with Jentsch, the psychiatrist who preceded him and wrote an essay on the threatened. Jentsch focused on the threatened as intellectual uncertainty and Freud disagreed with him [56]. Freud suggested focusing on two key components of the experience: doubleness and a compulsion to repeat. "Intellectual uncertainty," [57] according to Freud, means that a person sees something or someone and is unable to identify it or them. This uncertainty, in Jentsch's view, originates in the cognitive system which is why he termed it thus. Freud, however, disagreed with him, arguing that it was a different kind of uncertainty that originates in the defense mechanism which hides early and primary anxiety stemming from castration anxiety in childhood. In the framework of the mental process of protection, a person sees a different image, that conceals the original nature of anxiety. In this instance, Freud described the link between repressed anxiety and the uncanny as a symbolic connection and argued that there is no necessary connection between the nature of anxiety and the nature of the uncanny, but that the repressed anxiety constitutes the uncanny [58]. Which is to say, that repressed anxiety turns any given state into the uncanny. In another case, when a person encounters the "secret nature of the uncanny", there is no symbolic copy, but only something familiar that seems Unheimlich:

"this uncanny is in reality nothing new or alien, but something which is familiar and old-established in the mind and which has become alienated from it only through the process of repression" [59].

Freud expanded the understanding of the threatened beyond its function as a literary ploy, to incorporate an experience indicative of early anxiety. In our case, it can be inferred that the greater the pool of repressed anxieties in the mind, so the uncertainty that arises because of an external event will create an uncanny experience. Could an uncanny experience be related to a mechanism other than repressed anxiety that is transformed into the uncanny, or anxiety that arises and creates a sense of being thrown out of home?

Wittgenstein suggested another aspect of the uncanny experience:

"But can't I imagine that people around me are automata, lack consciousness, even though they behave in the same way as usual? […] the idea is perhaps a little uncanny. But just try to hang on to this idea during your ordinary intercourse with others - in the street, say! Say to yourself, for example: "The children over there are mere automata; all their liveliness is mere automatism." And you will either find these words becoming quite empty; or you will produce in yourself uncanny feeling" [60].

The only section in Wittgenstein's book "Philosophical Investigations" in which he discusses the experience of the uncanny, depicts a combined experience of uncertainty and the uncanny. Wittgenstein describes a situation in which a person experiences human he observes as laborers working mechanically and automatically. That is, he fails to make the analogy between himself and them, and to attribute to them an inner world, feelings, and thoughts, but only actions that appear to be inhuman. Although many scholars have discussed the uncertainty in Wittgenstein's writings regarding what is happening to an-other, the above citation shows the opposite: the (temporary, apparently) inability to see the individual humanity, and the vision of another person as an automaton, creates in the observer an experience of uncanniness. Moreover, in this section, Wittgenstein goes beyond the routine boundaries of certainty within a pattern of life and focuses on an experience that can be universal, a sense of alienation that creates discomfort. One can combine Freud and Wittgenstein's thoughts about the uncanny and argue that

this experience stems from an outburst of repressed anxiety which creates a sense of loneliness, strangeness and alienation, and a difficulty in seeing vitality and humanity in other human beings.

9. Conclusion

The discussion of Freud and Wittgenstein's concept of uncertainty revealed two main types of uncertainty which are intermittently activated in their investigations in key contexts. The central argument, that uncertainty is in- built into the recognition of a constant process of change (of the world, of language, and of self-awareness), leads to a deeper understanding of psychoanalytic methodology and of language research, both of which include concepts that cannot be defined conclusively. Additionally, during a significant traumatic event, the ability to contain, bear and come to terms with constant uncertainty is undermined, creating an experience of uncanniness. This experience transcends the constant acceptance of uncertainty, in which repressed anxieties are released, and the ability to feel empathy and see the humanity in other humans is impaired. Dealing with outbursts of anxiety can be ameliorated with the help of the philosophical-psychoanalytic examination proposed above, by the possibility of action based on the hinges, which human beings can examine and re-establish, and with the aid of free will based on exactly the same uncertainty pointed to by Freud and Wittgenstein.

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[2] "....though psychoanalysis was not a major theme of Wittgenstein's work, it was a theme that Wittgenstein could not leave alone, Edward Harcourt, "Wittgenstein and Psychoanalysis", in John Hyman and Hans-Johann Glock (eds.), *The Blackwell Companion to Wittgenstein* (Oxford: Blackwell, 2017), pp. 651-66

[3] See for example Gustav Bergmann's article, in which he coined the term "the linguistic turn" and attributed the revolution to Wittgenstein's book: (Bergmann, "Logical positivism, language, and the reconstruction of metaphysics", in Rorty, R. (ed.). *The linguistic turn.* (The University of Chicago press, 1967: 63-71, p. 63.

[4] "A simile that has been absorbed into the forms of our language produces a false appearance which disquiets us" (Wittgenstein 2009, &112); "The confusions which occupy us arise when language is, as it were, idling, not when it is doing work" (Wittgenstein 2009, &132)

[5] "The first example of the pleasure principle being inhibited in this way is a familiar one which occurs with regularity. We know that the pleasure principle is proper to a primary method of working on the part of the mental apparatus, but that, from the point of view of the self-preservation of the organism among the difficulties of the external world, it is from the very outset inefficient and even highly dangerous. Under the influence of the ego's instincts of self-preservation, the pleasure principle is replaced by the reality principle. This latter principle does not abandon the intention of ultimately obtaining pleasure, but it nevertheless demands and carries into effect the postponement of satisfaction, the abandonment of a number of possibilities of gaining satisfaction and the temporary toleration of unpleasure as a step on the long indirect road to pleasure" (Freud, S. "Beyond the pleasure principle", in *The Complete Psychological Works of Sigmund Freud*. Trans. and ed. James Strachey. New York: W. W. Norton, 1976, p. 3717).

[6] "We picture facts to ourselves. A picture presents a situation in logical space, the existence and non-existence of states of affairs. A picture is a model of reality. In a picture objects have the elements of the picture corresponding to them" (Wittgenstein, L. *Tractatus Logico-Philosophicus*. trans. D. F. Pears and B. F. McGuiness [London: Routledge & Kegan Paul, &
2.1 – 2.13)

[7] "Freud was one of the few authors he thought worth reading. He would speak of himself-at the period of these discussions-as 'a disciple of Freud' and 'a follower of Freud' (Quoted by Rush Rhees, in Wittgenstein, L. *Lectures and Conversations on Aesthetics, Psychology, and Religious Belief*. ed. Cyril Barret (Berkeley: University of California Press, 1967), p. 41.

[8] Wittgenstein, ibid

[9] See for example: Heaton, J. *The Talking Cure: Wittgenstein's Therapeutic Method for Psychotherapy*. Palgrave Macmillan UK, 2010; *Heaton, J. Wittgenstein and Psychotherapy: From Paradox to Wonder.* Palgrave Macmillan UK, 2014, Harcourt, E. "Wittgenstein and Psychoanalysis", in John Hyman and Hans-Johann Glock (eds.), *The Blackwell Companion to Wittgenstein* (Oxford: Blackwell, 2017), pp. 651-66.

[10] From a philosophical point of view one can agree with Edward Harcourt's determination that ""psychoanalysis was not a major theme of Wittgenstein's work" (in "Wittgenstein and Psychoanalysis", in John Hyman and Hans-Johann Glock (eds.), *The Blackwell Companion to Wittgenstein*. (Oxford: Blackwell, 2017), pp. 651-66.

[11] Freud 1976, pp. 3066-3092.

[12] Freud, ibid, p. 3067.

[13] Ibid.

[14] "This extraordinary plasticity of mental developments is not unrestricted as regards direction; it may be described as a special capacity for involution - for regression - since it may well happen that a later and higher stage of development, once abandoned, cannot be reached again. But the primitive stages can always be re-established; the primitive mind is, in the fullest meaning of the word, imperishable" (Freud, ibid, p. 3077).

[15] Freud, ibid, p, 3079.

[16] Freud, ibid, p, 3080.

[17] Freud, ibid, p, 3092.

[18] Freud, ibid.

[19] "The depressive position [...] is stimulated and reinforced by the 'loss of the loved object' which the baby experiences over and over again when the mother's breast is taken away from it, and this loss reaches its climax during weaning. Sándor Radó has pointed out that 'the deepest fixation-point in the depressive disposition is to be found in the situation of threatened loss of love (Freud), more especially in the hunger situation of the suckling baby" (Klein, M. (1935). "a contribution to the psychogenesis of manic- depressive states". (Int. J. Psycho-anal., 16:145-174, p. 171).

[20] Freud, *The Complete Psychological Works*, pp. 5014-5047.

[21] First, that the patient shall no longer be suffering from his symptoms and shall have overcome his anxieties and his inhibitions; and secondly, that the analyst shall judge that so much repressed material has been made conscious, so much that was unintelligible has been explained, and so much internal resistance conquered, that there is no need to fear a repetition of the pathological processes concerned" (Freud, ibid, p. 5018).

[22] "The therapeutic effect depends on making conscious what is repressed, in the widest sense of the word, in the id. We prepare the way for this making conscious by interpretations and constructions, but we have interpreted only for ourselves not for the patient so long as the ego holds on to its earlier defenses and does not give up its resistances. Now these resistances, although they belong to the ego, are nevertheless unconscious and in some sense separated off within the ego. [...] The ego ceases to support our efforts at uncovering the id; it opposes them, disobeys the fundamental rule of analysis, and allows no further derivatives of the repressed to emerge" (Freud, ibid, p. 5035).

[23] Freud, ibid, p. 5036.

[24] Freud, ibid, p. 5037.

[25] Freud, ibid, p. 5042.

[26] Wittgenstein, *Tractatus* & 5.1362 (emphasis in the original text, D.L.).

[27] "It is a hypothesis that the sun will rise tomorrow: and this means that we do not know whether it will rise. There is no compulsion making one thing happen because another has happened. The only necessity that exists is logical necessity. The whole modern conception of the world is founded on the illusion

that the so-called laws of nature are the explanations of natural phenomena" (Wittgenstein, *Tractatus* & 6.36311-6.371).

[28] Wittgenstein, *Tractatus* & 6.373.

[29] Wittgenstein, *Philosophical Investigations*, & 201.

[30] Wittgenstein, *Philosophical Investigations*, & 201.

[31] Wittgenstein, *Philosophical Investigations*, part II, & 366.

[32] Ter Hark, ibid, in Moyal-Sharrock, D. *The Third Wittgenstein: The Post-Investigations Works.* Ashgate: Routledge, 2004: 125-144, p. 130.

[33] Ter Hark, ibid.

[34] Ter Hark, ibid, p. 131.

[35] I make assertions about reality, assertions which have different degrees of assurance. How does the degree of assurance come out? What consequences has it? We may be dealing, for example, with the certainty of memory, or again of perception. I may be sure of something, but still know what test might convince me of error. [...] I should alter my opinion, and this would not mean I lost all faith in judging" (Wittgenstein, L. *On Certainty*. Ed. G.E. M. Anscombe and G. H. von Wright, Translated by Denis Paul and G.E.M. Anscombe, Basil Blackwell, Oxford, 1975, & 66)

[36] Wittgenstein, *On Certainty*, & 97.

[37] Wittgenstein, *Philosophical Investigations*, & 23.

[38] Wittgenstein, *On Certainty*, & 341-343.

[39] "Realism, but Not Empiricism: Wittgenstein versus Searle", Moyal-Sharrock, D. in *A Wittgensteinian Perspective on the Use of Conceptual Analysis in Psychology*. Edited by T. P. Racine and K. L. Slaney Hampshire: Palgrave Macmillan, 2013: 153 – 171, p. 166.

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[43] Ibid, p. 56 (my emphasis, D.L.).

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[46] Freud, S. *The Complete Psychological Works.* p. 4683.

[47] Wittgenstein, *Tractatus,* & 4.002

[48] Wittgenstein, *Philosophical Investigations,* & 242.

[49] Wittgenstein, *Philosophical Investigations,* & 429.

[50] Bennett & Royle accepted the agreed definition of the term but related

it to literary texts. Later on, Bennet & Royle defined the term thus: "Uncanny: an adjective made especially rich for literary studies by Freud's essay 'The Uncanny' (1919), 'uncanny' means not simply weird, spooky or strange, but entails some disturbance of our Glossary 145 sense of what is familiar and unfamiliar. It has to do with a suggestion (but not conviction) of something supernatural going on" (Bennett, A. & Royle, N. *The thing called literature.* New-York: Routledge, 2015, pp. 145-146).

[51] Royle, N. *The Uncanny*. Manchester: Manchester University Press, 2003.

[52] Bennett, A. & Royle, N. *An introduction to literature criticism and theory.* Pearson Longman, 2005 p. 38.

[53] Freud, S. "The interpretation of dreams", *The Complete Psychological Works.* p. 1067.

[54] Freud, S. *The Complete Psychological Works.* p. 2729.

[55] Freud, ibid, emphasis originally, D.L.

[56] Jentsch did not get beyond this relation of the uncanny to the novel and unfamiliar. He ascribes the essential factor in the production of the feeling of uncanniness to intellectual uncertainty; so that the uncanny would always, as it were, be something one does not know one's way about in" (Freud, ibid, p. 3677.

[57] Freud, ibid, p. 3691.

[58] Freud, ibid, p. 3692

[59] Freud, ibid.

[60] Wittgenstein, *Philosophical Investigations,* & 420.

Chapter 52

Human Reconfigurations: Conversations on Being Therap(ist)eutic in Time of Covid

Jolanda Spoto, Valentina Stirone and Romina Coin

Abstract

In this paper the authors' aim is to reflect on the impact the Sars-CoV-2 Pandemic has had and is still having on our external and internal reality, in terms of individual and collective implications. In an open dialog with colleagues and patients, through a psychoanalytic viewpoint capable of respecting the suffering and the solutions identified by the Ego-subject within the "therapeutic dance", it was possible during this period to observe movements and processes underlying these changes. Throughout the paper, the authors highlight both difficulties and resources that the patients put in play within the relational space and the need to "reconfigure" them; our focus is on the creativity and the repercussions this event, significant for the majority of the Society, has had on the practices and beliefs of each of us. The peculiar experience of loneliness and isolation, faced during this pandemic emergency, has profoundly transformed and shaped our living space, demanding a collective reorganization of the social space and thus forcing us to rethink our humanity. In the relational exchange, the possibility of finding one's own space to exist and to inhabit one's present, can be unfolded. A shared resilience is necessary to face current challenges.

Keywords: ego-subject, collectivity, reconfigurations, relations, space, inhabit, social dimension, loneliness, suffering, creativity

1. Introduction

From February 2020 our lives have changed in an unexpected way. While we are writing our reflections the spread of the contagion is worrying because of unexpected variants of the virus, and the emergency cannot be considered over. Therefore, it is necessary to think of this writing as an outline of reflection on this enormous change that we have been going through for more than a year now.

Some food for thought will therefore concern the effects on our existence, physical and psychological (if we still want to consider them separately), of the perception that a foreign body is spreading among us, putting our safety at risk, and of the limitations implemented by governments to contain its spread.

The interruption of all activities that accompanied our daily routine, although destabilizing, can be an opportunity to highlight and bring reflections on some assumptions and some changes that have characterized our lives in recent years, without our full attendance.

Suddenly space, time, relationships, everyday life, the sense of our proceeding, have taken on different colors. Reactions have been progressively more differentiated, and only in the coming years, with a look less immersed in the phenomenon, it will be possible to have a reading with more defined boundaries and to understand the long-term effects.

What we would like to present in this work are the first impressions gathered in this first period, in the exchange with patients, with colleagues, and in our daily life immersed ourselves in this same reality. In Victor Turner's words, we are in the midst of a liminal phase where everything is possible except returning to the previous state [1].

2. The breakout of a pandemic

If we had been asked to think about what a pandemic would have been like and how we would have inhabited it, we would probably not have imagined it that way. We are likely more inclined to imagine impactful events, delimited in time and definitive, in which little can be done, if not heroic acts that are the prerogative of a few.

In fact, the spread of Sars-CoV-2, for more than a year now, has changed our world as we knew it, not so much in a sudden and evident way, but by transforming that fabric of habits and implications which structure and move our existence. In an anthropological reading of the pandemic, Tosetto recalls the concept of "total social fact" by Marcel Mauss, precisely to define "a significant event for the majority of society that has repercussions on the practices and beliefs of all of us" [2]. We all remember how this emergency initially affected our lives here in Europe; it initially felt as a distant fact that would not concern us, with manifestations of intolerance or solidarity towards citizens of Chinese origin (or Asian in general), with growing concern and disbelief when we realized that the virus was already circulating widely in our territory and in our community, and few days later (at least here in Italy), with drastic and strongly impacting daily life measures, which still characterize it to a great extent. Pietro Saitta [3], in his comment on Covid-19 as a "cultural and political object", observes how "the times of suspended normality are those that better illuminate the ordinary than others". In fact, the outbreak of a social matter that interrupts and alters normality "highlights the relationships and tics of everyday life in times of peace". This alteration of "normality" allows us to highlight some assumed assumptions, automatisms and functioning that have become inherent part of our cosmology, they normally belong more to a pre-reflective and implicit sphere, something that directs us without even realizing it.

Again Tosetto [2] observes that the pandemic has precisely "reconfigured our practices relating to movement and communication, it has broken the balance between these two dimensions, which the anthropologist Arjun Appadurai identifies as the foundations of globalized modernity". A halt in the movement that has long characterized our realities, both on a small and large scale; the possibility of moving so quickly and in so many people to the other side of the world has to be considered, actually, something recent and certainly impacting. A revolution that is grafted onto another revolution in progress, the latter which seemed indisputable and unstoppable. This arrest of concrete spatial movement has been accompanied by an enormous expansion of the use of technological devices to communicate and keep contact spaces, which were suddenly interrupted, open. We are hardly fully aware of the era in which we live in, of the transformations underway, of the direction that some aspects are taking; however, when something so imposing is

looming, we are given the opportunity to become more aware of what is moving-with-us. In the first lockdown phase (it is identified as the months from March to May 2020, taking as reference the first measures to contain the spread of the virus taken by the Italian government), it was common to read some comforting slogan like "everything will be fine" and "we will make it" that accompanied a sense of human and national solidarity, which characterized the first phase of this emergency period. But another feeling also arised and it was represented by another sentence, which appeared in different languages and in different contexts: "We won't return to normality, because normality was the problem".

In the first period of pandemic emergency, a shared experience of shock, led to mobilize as much energy as possible to stay alive (some on the front line putting all their effort to do the best possible to ensure adequate care, some immobilizing to stop the contagion), but there was also a sudden realization of some changes, and perhaps limits, previously denied or even just poorly enlightened.

The post Coronavirus is as disturbing as the crisis itself, in fact many share the idea that the world will no longer be what it was before, but what will it be then? We have entered the era of uncertainty, the unpredictable future is now in gestation [4]. In a short time, we have passed from the uncertainty about the origin of the virus to its propagation, its mutations, its treatments as well as its political, social, psychological and planetary consequences.

3. How long does an emergency last?

The human being is phylogenetically ready to respond to sudden and adverse events, mobilizing as much energy as possible to survive. If we refer to the psychotraumatological studies and evidence [5–8], we can consider the first period of this pandemic as the traumatic event that we were ready to respond to, despite the subjective differences of the case, mainly with subcortical activations and with almost automatic mechanisms and with poor reflexive mediation. The possible answers in situations of extreme danger are attack, escape and, as a last resort, collapse, when the first two fail or are impossible. Much has been said about the terminology and the metaphor of war used to talk about this pandemic [9], the concept of enemy often used to identify the virus risks of creating a real misunderstanding, thus mobilizing incorrect reactions that could increase the sense of helplessness. Precisely, a visible enemy allows confrontation or escape but in front of this invisible entity, we cannot attack and even escaping is difficult. Is therefore collapse, or to a lesser degree denial, the only exit strategy, in conditions of grave danger where the only solution is "pretending to be dead"? However, if we pause on the metaphor of war, widely used in some countries to talk about this pandemic, we could ask ourselves: what kind of war? Then perhaps this comparison can be useful, in another way, to linger on some questions about the duration of some events. Probably no one at the beginning of a war would think of a long duration, perhaps of years; also as a psychic defense mechanism, we are led to see that event as point-like and not lasting, probably only this way we could have the energy and strength to cope with it. So it seems to be like this also for this pandemic which is still ongoing while we are writing and it is not over yet and certainly it is not a blitzkrieg. What kind of reactions, in the short, medium and long term, are therefore possible? Over time it will be more likely to understand the responses prevailing in the different phases of this pandemic, and the long-term effects that certain reactions can have, on the functioning of the I-Subject and on its auto-hetero-regulation, in the continuous exchange with the reality [10].

It is also interesting to mention the impact of the restrictions implemented to contain the contagion, here in Italy managed from October onwards through a system of zones (different colors have been used to indicate the greater or lesser danger and therefore the need for more or less stringent measures). In a discussion with colleagues and in the exchange with patients it was possible to collect an observation that we consider interesting to highlight: it was reported how this repeated scenario changes created a succession of "last days", "last times", "last meetings". If on one hand the gradualness can be considered easier for our psychic apparatus to digest, on the other hand the continuous change of state might have created an emotional instability, whose long-term outcomes will only be understood in the future.

The issue of time, which we will discuss later, can help us understand the different observed behaviour as well as the different experiences, of citizens between the first and second phase. The first phase was characterized by a greater readiness to accep indications, the need to receive and show solidarity, and a poor differentiation of behaviors. In the second phase, however, the single management and the climate of sharing and solidarity seem to have left room for different positions, contrasts and less willingness to waive.

It is difficult to say whether precise temporal criteria for defining a state of emergency exist, from a sociological point of view; from the psychological point of view, the difference between a traumatic event delimited in time and what is defined as a prolonged trauma, a traumatic atmosphere, makes the possible outcomes of these events different from each other. A distinction between Post Traumatic Stress Disorder and what is recognized, by various authors dealing with trauma, such as Complex Post Traumatic Stress Disorder (it has recently joined the European diagnostic categorization ICD-11, not so for the DSM-5) consists in a more pervasive and destructuring impact on the personality, and concerns etiopathogenetic situations prolonged over time and often with a characteristic of impossibility to escape [11].

It is not possible here to go into clinical reflections on the psychic outcomes of the pandemic, but we can reflect on the prolonged duration of this situation and ask ourselves if it is still possible to consider it "emergency". Indeed, it is not possible even at the time we are writing to consider this period behind us, so we are forced to reflect "in vivo", probably in a strongly embodied way, which has not yet left room for reflexivity, as we usually define it, that is, detached from what we are experiencing at a precise moment. A question that will be discussed more deeply later on, concerns precisely the space for reflection and understanding, not in the "après-coup", as we are used to, but initiated at the same time as the event, especially if it is excessively long.

3.1 The temporal and spatial dimension

In the various conversations we had with patients and colleagues in this period, and no less in personal experience, it was soon evident that the experience of time gradually assumed curvatures that we are not used to. We tend, perhaps also for psychic economy, to conceive time in a linear and non-contradictory sense. Having worked for some time with traumatized patients, accustomed to temporal leaps and contradictions in autobiographical narratives, it was soon evident to us that what was happening followed this temporal circularity, which tends to curl up around the subject, isolated and plundered by those routines that allow to "keep things in order".

In personal life, time became more and more relative, normative criteria (such as data and recurrences) less usable, no longer responded to perceptions of

speed/slowness, brevity/length; it was simply something else. It was a suspended time, which followed the tendency to put what was happening in brackets, waiting to return to normality, or on the contrary to absolutize it, as when we are experiencing such intense pain that we have the feeling that it will last forever [5]. In conversations with patients, or in discussions among colleagues, we found ourselves clearly dividing this situation from life, as if this were not part of it, as if this were not fully and profoundly life. In the process of life, a body has been grafted which, again, we recognize as foreign, not integrable, detached from the plot of what we consider to belong to us.

The days that are always the same, the loss of the references we were used to, especially in the first long lockdown, led to a crushing of experiences and an agglutination around a theme that, more or less consciously, we only wanted out of our reality. This could be considered as a nuance of a well-known defense mechanism, which has also accompanied this pandemic situation, which helps us in the moments of greatest difficulty to cope with it: denial. If a clear denial cannot be sustained in the course of this emergency, although denial and conspiratorial positions have emerged especially in the second phase, this putting time and life in brackets can be considered a prelude to what will happen next.

Yet, it is also possible to consider this abandonment of the linearity of time and history (especially if identified with a path towards unlimited progress) as an interesting factor compared to the illusion of total domination over it. One of the issues that distinguish our time is precisely that of the use of time, the hunger we have in consuming it, filling it and never allowing ourselves to inhabit it. The feeling of never having enough time, which produces suffering and feelings of growing alienation and dissatisfaction, is precisely the mirror of our use and abuse that prevents us from being, in the continuous pursuit of doing.

Those of us who are inclined to never stop, now that we are forced to do so, we face an opportunity and "over the course of time, time passed on my steps and slowly I was filled up with forgotten things that slowly forgot me" [12].

The time we have to live cannot be chosen, for this reason, as the existentialists maintain, we are thrown into the world and the only answer we can give to our throwaway is a project of a world hopefully authentic, unique and unrepeatable, and this freedom makes man condemned to liberty [13].

Only now that the pandemic stops the world, and even our "little world", we do realize what world we had built, public and private; and that the dimensions in which we live, time and space, have changed radically and that the space, as well as the time that we have already talked about, undergoes an identical upheaval. In fact, with the pandemic we have gone from a urban space, dense, overcrowded, full of lights, voices, sounds, to an empty, dark, silent and semi-desert space; we have gone from the density and frenzy of a thousand relationships, to a single relationship; we went from changing a thousand clothes to living in a single space wearing disused home clothes, thus stripping ourselves of desires and wearing a psycho-uniform instead and being in relationship with whoever is there, regardless of being comfortable with them or not. The multiplicity of spaces, the cosmopolitan nature of places and the speed have made room for slowness, staticity; and in this living some have felt safe closed in their dimension of semi-isolation, others facing sacrifices and sufferings have experienced a real situation of suffering and nightmare. Reflecting on what happened, one remembers the times when one could freely live our time and space, one could organize outings, a weekend, a trip, choose a film and go to the cinema or to an exhibition, conditions that assume a connotation of privilege in front of a succession of DPCM that regulate and discipline our life and thus our feeling.

4. The relational and collective dimension

In this suspended time, many people have tried to live their time differently, they have dedicated themselves to tasks that they had delegated or left aside for a long time, they have ventured into new activities, experiencing in an unusual way a being in everyday life that suddenly seemed empty.

Already in the first phase of severe restrictions, different positions were observed in regard to these new routines. There were those who appreciated a recovery of self-care time, those who could not wait to return to their previous habits and those who began to reflect on their previous lifestyle, identifying its limits and planning possible changes.

But living is something that does not only concern individuals and their doing, but above all concerns our way of being in relation to others, in community.

Containment measures, prescribing distancing and isolation (or limiting social contacts to a minimum beyond the close ones – the cohabitants - and necessary - from indispensable work), could be considered as a "collapse of collective life", on which much of our life is based. As Van der Kolk states, "Our culture leads us to focus on our own uniqueness, but, on a deeper level, we hardly exist as individual organisms. Our brains are designed to make us function as members of a tribe. Most of our energy is spent on connecting with others" [5].

We therefore have found ourselves in a paradoxical situation in which, as observed by Giuseppe Grimaldi "avoidance rather than contact, distance rather than commonality, solitude rather than the group are reconfiguring what it means to" make community "[...] redo everyday life, however not starting from trust and closeness but from mistrust and distance" [14].

But if it is true that we are deeply social creatures [5], how can we live in this new configuration that greatly redefines the way we relate to each other? With geographic, ethnic and social differences perhaps, making community has always been conceived in the proximity of bodies. So what happens when bodies are potential vehicles of contagion, when does proximity, instead of assuming positive connotations, become a herald of danger?

At the end of February already, in Italy, the first precautions began to be suggested, avoid touching each other as much as possible, stay at a safe distance. Then the more restrictive measures came, up to isolation which, for those who lived alone and no longer went to work, became almost total, except for some fleeting encounters at the supermarket or with neighbors in proximity contexts. As much as solitude may be appreciated, those who appreciate being able to take refuge in there, this condition never corresponds, apart from exceptional situations, to a state of almost total and obligatory isolation. In psychopathological evaluation, withdrawal and isolation are indeed considered serious symptoms that distinguish severe disorders such as psychotic or important depressive states.

Tosetto [2] states in this regard: "This retreat is not a free choice of hermitage but, on the contrary, it drags behind the expectations, roles and practices we have experienced in public spaces". The author articulates, as previously reported, the impossibility of movement and a communicative hypertrophy, made possible by the availability and wide diffusion of technological devices, which "through the transition to the virtual [...] crumbles the boundaries [...]". Everyone squeezed onto the screen of a device, we translated the habits of everyday life that concerned the way we used to meet, into a deterritorialized [15] and separated level.

Starting from a relational perspective and from the affirmation that there cannot be an individual isolated from relationships with the other, even in exceptional conditions, reflections on the individual inevitably lead to come to terms with

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an inseparable co-presence of the individual and of the group dimension and the circularity of the relationships between these different dimensions, in a reading of "circularity of relationships" [16]. The Covid-19 emergency has brought about a revolution in and of our daily life, leading us individually and collectively to reflect on the effects that have been produced on the interaction on social ties. There is no doubt that technology has opened up new possibilities for communicating at a distance, impacting our sociality, thus reducing our opportunities to be together and relate to each other; an extreme negative example is the Hikikomori Syndrome, a pathology widely spread in recent years that describes a particular psychiatric phenomenon manifesting as a profound social withdrawal, a self-exclusion from the outside world and a total rejection of any form of relationship, if not virtual. However, the need for relationship and sociality is still evident, alive, profound: the desire to see each other, to find each other, to communicate, to hug, to aggregate and simply to be among others, remains and is placed as the "higher floors of our feeling". The relational dimension has been undermined in its roots and through a sense of destabilization and collapse of certainties, it has forced us to deal with pervasive feelings of distrust, deception, suspicion, fear that many people have resorted to cope with in dysfunctional way of isolation and by staying at home, identifying them as a safe haven, thus leaving an indelible mark on social relationships, creating a large consumption of psychic energy, which over time, has inevitably produced, states of anxiety, frustration and boredom. Covid represents for the current Western generations the first time in which history has entered and influenced our lives in such a meaningful way that transformed their dynamics. Until before the Pandemic, "History and Politics" were perceived by most people as external dimensions to our lives, afterwards people have began to feel that they no longer have control over their lives but that they are heterodirected by exogenous factors, which have pervaded the most intimate dimensions, configuring the right to free movement and the freedom to express and live one's desires and needs. During this period of great uncertainty, we have in fact witnessed phenomena of strong polarization between "denial and security" for example, two apparently opposing postures that have in common the impossibility of holding up, for more or less long, uncertainty, confusion and bewilderment. The continuous closures, openings, closings and reopenings that have followed one another, have exasperated a longing for return to peace, requiring a continuous and extraordinary effort. One thing in the course of these long months has become clear, Covid is a Pandemic which by its nature can be defeated only through collective actions, both as regards the infection, the treatments and the vaccine. Once again thoughts, feelings and individual actions can and must be relocated in a framework of complex globality which, as Ceruti had already argued in 2018 [17], is the great challenge of our age. The philosofer added that it is urgent to rethink our traditional paradigms and effectiveness of our established modes of human action. This challenge requires careful and weighed reflection on the nature of national identities and their "community of destiny". Therefore, it is urgent to reflect on the psychological ties' complexity that the members of a society feel because only in this way, in a rereading of the circularity of relationships, we could deal with the suffering and the ties of the individual and of everyone.

5. The return of the body and the eruption of death

A lack of human contact with others, in "real" sociality, which involved an encounter of bodies, was contrasted by an excess of the presence of vulnerable, sick, dead bodies.

The discussion concerning the communication style used during this period by mass media, to describe and narrate what was happening, cannot be treated here because it deserves an analysis and a dissertation on its own. However, it is important to underline that in this period, characterized by limited possibilities of meeting, exchange and discussion, the impact that information can have is to be considered different from that of a period in which it is mediated by other methods of knowledge, less impersonal and asymmetrical. The method used to inform us about the current emergency has influenced, in an exceptional way, our thoughts and the cognitive constructions that we were building with respect to our current reality.

The body dimension is often scotomized by considering ourselves human beings, all focused on our rationality and our "higher" mental functions.

In the new everyday life the body started to assume previously unknown boundaries, the contact no longer allowed, the movements no longer natural. Other people's bodies gradually became the bearers of potential dangers, our embarrassed way of preserving the others from the same potential danger.

The body therefore assumed an imposing nature to which we were not used to, it was through it that the virus could reproduce and stay alive, endangering our life.

Will the procedural memory and the somatosensory memory keep these "missed acts" or rather withheld, this new way of relating, this caution and this distance, necessary up to now? At the end of the emergency it will be possible and important, to evaluate the results of these limitations and the new bodily and relational configurations.

From a clinical point of view, there are several aspects to pay attention to. Having transferred the therapeutic work from the studies to the virtual platforms, has allowed to maintain a therapeutic and relational continuity, especially in this period of great changes and challenges, and it has been a way to guarantee presence and stability, but we cannot ignore the differences between the two contexts and the effects of these translations.

Fabio Dei [18] asks himself "if Freud had been able to use Skype, would he have constructed the analytic setting in a different way? Would he have renounced the coexistence of bodies and elements of material culture (the ancient and ethnic objects that crammed his office, referring with their presence, to the "archaeological" depth of the unconscious?)". His answer tends towards yes, being psychoanalysis "a verbal therapy that avoids contact between bodies (as opposed to popular therapies studied by anthropology which are based on touch instead: yet even in these, the principle of action at a distance is valid)". Today many psychoanalysts pay increasing attention to various factors and they do not just consider the verbal component, although, what is exchanged through language still plays a preeminent importance.But it is perhaps precisely because of, or thanks to, this sudden change that some aspects have come to light. Beyond the attention to the setting, often simplistically identified with a physical space, many therapists have paused to ask themselves the type of work possible in those new conditions, both for the state of exceptionality in which they found themselves and which involved both (we will return to this point later) and because of the differences in the new "rules" of the meeting. The tendency to "go back to doing what had always been done", to put in brackets the consequences of the spread of this virus and the containment measures adopted, certainly also affects mental health professionals, who have been no less affected from what happened. Meeting in a completely new way has brought multiple meanings and multiple reflections; here we focus in particular on the absence of corporeality. If on one hand, as Fabio Dei observed, this new structure could be the essence of the "talking cure", few have considered this type of meeting preferable,

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especially when extended over time. Knowledge, learning, change, necessarily pass from a substantial involvement, which cannot be separated from the body, precisely because it passes through it.

This same body, through which we experience our being in the world, has been discovered vulnerable, or rather rediscovered. Vulnerability, the very essence of being alive, is in our time an aspect that we would like to deny or overcome, for that more or less explicit omnipotence that distinguishes the contemporary human being. The worry of getting sick, the fear of a body contaminated by an invisible and potentially lethal being, have brought back to the center the absolute violability of the body and human existence, which we tend not to consider in our reality, especially in the so-called developed countries, where early death, but perhaps by now death in general, is considered something exceptional and unacceptable.

And the return of the body and its mortality was accompanied by death burst that could not be ritualized. Academics have recognized, among the anthropological constants, the cult of the dead and the passage between life and death, as a moment to be accompanied by collectively shared rituals.

The now well-known images of the army wagons that, in Bergamo, carry the bodies of COVID-19 victims away from the hospitals, will remain a symbol of this cultural break that highlights the state of exceptionality. As Dei affirms, we observe an "anonymization of death, and the absence of any ritual filter that helps, to use De Martino's words, to transcend anguish in value", and always taking up De Martino's concept, it brings us back to the importance of groupality in order to go through this phase of transition, both for the living and for the dead, "this transcendence can only be collective, communitarian. There is no reintegration into pure individual experience" [18].

Some hypothesize, once the emergency is over, a recovery of this collective rituality, which can be reparative with respect to this cultural break that will certainly leave scars. Dei is not positive about this, however he asserts "Having studied the forms of traumatic memory, even if in contexts completely different from this one (such as the massacres of civilians in war), I feel I can foresee rather bitter memorial conflicts" [18]. The loneliness resulting from the death and loss of a loved one brings excruciating emotions and the idea of dying "alone" is the most painful and excruciating expression that one can relive. This pandemic has seen us coming to terms with the awareness that death could not be shared with anyone, that the precious little world of a loved one would disappear with all its unique memories, feelings, experiences, dreams and desires known only by the one who was disappearing, reminding him of having no importance for the people who remain and giving back in turn, to those who wanted to cry and remember that person, the human need to be able to give and have a farewell from loved ones. The mystery of death and dying is immersed in the deep waters of solitude [19]. So what distinguishes loneliness from isolation? Loneliness is defined by the relationship to the other, which does not happen in isolation, it is staying open to the world of the other, of people, of things, keeping oneself open in a meaningful relationship with others. And in this, there is the real antithesis with isolation, in which one is closed and lost to the world, in its dimension of disinterest in interpersonal and community values. The emergency saw us sink into solitude but also into isolation and in some cases found us particularly negative, monads without doors and windows and in other cases, particularly positive, capable of opening loopholes and drawbridges to the experience of the story of suffering of the other which also met ours a little.

The invitation that Nietzsche addresses to each of us is to flee into our solitude, a solitude that in a different way belongs to each of us, to be silent as the tree that rises above the sea is silent and as the stone is silent. When loneliness ends, then the market begins [20].

We faced a crisis of meaning that sees us rethinking profound categories of living and dying, confronting ourselves with desperate fears that affect and attack our body, alive and dead, and ask us to activate a deep look in trying to rethink what has always been, as it has always been: "mourning makes us human and not being able to say goodbye upsets us", the devotion and the cult of the dead transcends religions because, as the anthropologist Marta Villa [21] says "it is an intrinsic characteristic of being human". In the time of Covid we face a mutilated mourning and this marks a profound fracture from a historical, cultural and anthropological point of view. Forced hospitalization has prevented us from greeting our loved ones, it breaks a moment that is personal but cultural at the same time, and checkmates the possibility of the individual being able to alleviate the moment of detachment from this land with the presence of the group, not being able to thus collectively manage the pain.

The psychological repercussions of this impossibility echo a *pietas* that goes beyond good and evil and that is even reserved for an enemy and that even in times of war was respected with a truce aimed at burying the dead which is why, in this serious emergency health, we are led to individual and collective destabilization at the same time. History and our history struggle to meet. How can such peace be found? It is therefore really important to think about mourning elaboration, where the mourning process is interrupted and there is the risk of being trapped and doing so we must keep in mind that "this remains, in spite of ourselves, a great shared historical moment, and that adequate support psychological can be fundamental to elaborate such conditions of complicated bereavement. Suddenly Covid broke personal death into our daily lives, so far postponed to the future, into our daily lives, counting and quantifying the mortality rate, with a number in brackets in red, with a small positive sign [4].

6. Recognizing oneself in a single reality, in a world made up of islands

As already said, pandemic danger, the containment measures adopted to cope with it, have suddenly made it necessary to rethink the places and methods for continuing psychotherapy with patients. The disruption of the therapeutic work has led colleagues to discuss issues connected to this particular situation in a way that has probably never happened before in terms of frequency and intensity. Multiple reflections have been made about the setting change, with very different positions, as already mentioned. However, it can be hypothesized that the majority of therapists considered it essential to give continuity to care, especially in this particular period of high stress, by finding alternative methods of meeting.

Nevertheless, it seems more interesting to us to focus on another aspect discussed in these close comparisons: what should be handled in this "new meeting space"? The Covid issue, especially in the first pandemic phase, not only became part of the topics addressed in the session, but also seemed to occupy a different space. According to the discussions we had with colleagues at that time and our own clinical experience, there seemed to be a "surplus" of reality that it was difficult to place. The feeling of losing a degree of asymmetry, which allowed the therapist to "read" the reality with sufficient distance, to be able to understand it and restore it digested, made the therapeutic work different, apparently more complex. It has been stressed by many that this "social fact" involves everyone, recognizing this situation as different and unique.

It is curious to think how, focusing on our personal reality, we sometimes forget that we are part of a world that moves together and, without having to resort to complex phenomena such as the "butterfly effect", there is nothing that really does not concern us. We tend to see ourselves outside the world, as if we were not part of

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it ourselves, as if we could observe it from the outside, even protect it, forgetting that we ourselves are what we consider and define "nature" and what we destroy or protect is ourselves, inserted in our reality, deeply interconnected with it and the other living beings who inhabit it; as Siegel claimed "Ironically, we come to feel attuned to ourselves while we also attain a sense of being connected to a much larger whole" [22].

Minolli [10] observes how there is the "danger of letting oneself be taken by self-organization and eliminating the eco-organization seen as "disturbing" because they are either opposed or remain distinct as if they were two alternative aspects".

In our clinical practice we meet people from very distant countries, defined until recently "third world" or "developing countries", although the stories they brought, as well as their reading, may seem distant, we soon realize that we can share feelings that allow for a profound exchange in which the distance tapers until it vanishes.

This danger, which has involved everyone, has allowed us to touch this closeness, the perception that what happens even far away from us directly involves us, to the point of upsetting our daily lives.

Therefore, how is it possible to inhabit the therapeutic space by sharing experiences and sensations that have rarely crossed us in such synchrony? Is it possible to understand what is happening to us "in the heart" of the very moment in which we go through it or is it only understandable in the après-coup?

Minolli [10] identifies two levels of functioning of the I-Subject. The first level is given by the "conscience" which has the task of "maintaining coherence with the received configuration and affirming itself". The second level is given by the "consciousness of consciousness" which allows the I-Subject to "recognize its own configuration and existing being".

It is possible to hypothesize, although it cannot be taken for granted, that in an emergency moment the I-Subject is more inclined to keep itself alive by affirming its own coherence and only in a moment of less external pressure, the activation of the "consciousness of consciousness" leads to a grasp of what has happened in the movement. If we remain in the conception of a body subject to external stress and its reaction to this pressure, as well as in the concept of resilience as the ability to return to the initial state, we risk losing the possibility created by this grasping itself in transformation, in a movement that it can go far beyond the "initial state" from which one started.

Several authors, among which we want to mention Marcelo Viñar, a Uruguayan psychoanalyst who lived under the civil-military dictatorship, criticize the concepts of trauma and resilience because, when decontextualized, they risk "fixing" the person in a out of time and out of context state, determined without escape from the outside. Viñar [23] writes about this "for a long time I have opposed the medicalization conveyed by the concept of PTSS (Post Traumatic Stress Syndrome) and its proliferating symptomatology, just as I have equally opposed resilience and its voluntaristic normalization. From pass-partout words by which pathologization replaces reflection. In their place, we have proposed the notion of sign, replacing that of outcome, since this is characterized by the pejorative tone of the handicap; on the other hand, the sign returns the multipurpose dimension of the painful experience, both in the sense of a handicap or outcome and in the sense of creativity".

7. Being therap(ist)eutic? Open dialogs between resilience and creativity in a pandemic

In all these months we have been constantly engaged with every ounce of energy and by all means to avoid contagion, to maintain social distancing, hoping that the lockdown of the bodies would not irremediably translate into a lockdown of the soul

and feelings, thus living the pandemic as a watershed between the world before and the world after and where no gesture, however small, can be taken for granted. In several articles and texts, the need for the presence of the other has been mentioned, the coordinates of "dematerialization" of life, as the safest way to keep everything and everyone safe, displacing so many of our functions on the network, placing the relational sphere in the abstract art of bodies. But we have lacked and we lack bodies, we miss feeling and touching that are among the highest senses as stated by Hegel, because they connote us as humans and whose lack over time, could lead to being socially and spiritually distanced humans. Anyone who has given a caress or a kiss knows that in that instant the soul comes out of itself to meet another. For that meeting we fought, we are fighting and we will fight to keep our bodies alive. With this idea of living and embodied presence, we therefore come to terms with the psychological and social effects of a prolonged time of distance learning, smartworking or homeworking, which are not necessarily immediately visible but whose prolonged effects could accompany us for a long time, and as Lingiardi argued in his recent interview [24] we do not contrast the culture of the *agora* with that of the hospital, but we can think that this is both a psychological and cultural opportunity to rediscover solidarity and protection of the most vulnerable, to redefine and rethink relationships with ourselves and with each other. Vulnerability that could belong to each of us. The body, both in its absence and in its hyper-presence, has been the undisputed focus of this Pandemic, it has been placed at the center of private considerations and public debate, invested with the restlessness of individuals but also with global interest. The body was presented as fragile and to be protected, shown to be delicate and sick and no longer put on display as in recent times, by the dictates of fashions and esthetics, but instead health has clothed and covered a collective habitus. We face social distancing and a crisis of presence, the primary feeling of one's "making sense" in a world endowed with meaning", a feeling that according to the philosopher De Martino [25] is however a precarious acquisition, constantly exposed to the crisis risk "the existential drama of being exposed to the risk of not being there".

In the processes of the "Presence to oneself", patient and analyst work on shared method conditions that allow an opening to the possibility of going, both beyond the other and the other made one's own [26] facing it and taking positions about it. This is where the space of crisis and creativity is experienced and in which you can actively choose your own path. Life poses challenges to us and never, as in the past year, the challenge has been and is ongoing, with objectives to be pursued, doubts, our patients' anxiety and our own as well, to be handled with care and attention; "The quality of creativity not only goes beyond the contents, but it is present regardless of the achievement of any objective, and the mere fact of glimpsing the light at the end of the gallery already modifies one's walk. It is already creativity to be on the way, in motion, despite the lows and the halts, towards taking one's life qualitatively in hand" [27]. We as therapists can only emotionally support the process, always being on the patient's side, whatever path he may take. In this presence and creativity of being, our Resilience could reside, as the ability to be Present to what is happening in that given moment.

After this long period of distancing and the strenuous attempts to avoid contagion, the feeling of needing to touch each other again, to contaminate oneself seems to be gaining ground; the ease with which the virus passed from one body to another has shown how much considering ourselves as single and separate beings is an illusion that is still difficult to sustain. Perceiving oneself as part of a single reality can be experienced as a bond but also as an opportunity to regain possession of a us that is constitutive, not questionable, and that does not block our personal progress but on the contrary supports and enriches it, in a dance which is made up of balance and rupture, harmonic by the mere fact of existing.

8. Conclusion

During this very long period, many sessions took place online, many "meetings" had instead of the consulting room, a "virtual" setting, such as the telephone and the internet. We constantly questioned about the quality and therapeutics of these interventions, and how it was possible to continue to be so, albeit with great fatigue reported by both sides. Covid entered the sessions, not only through the rooms of the house, the children and pets that burst onto the screen, but with all its reality and emotionality, the shared reality and the concrete suffering of the historical moment, they were no longer contents brought only by the patient, did not concern him excluding the therapist from that given moment, they were our daily life, our life. As reported by the psychotherapist Nancy Mc Williams [28] the Pandemic has made our work more intimate, informal, more revealing of the real interdependence between the patient and the analyst.

The fear of Covid affected both of us. It is here, in this theory of suffering, that this conception is assumed as a condition inextricably connected to the passage. "When a system faces a passage it is inevitable that it is bad, its passage from one state to another implies a passage that is not neutral at all, because it is marked by a laborious and dense elaboration, aimed at assuming the new. This transition is not a private, individual, intrapsychic fact, but also involves the outside world and the environment. The objective of the clinical intervention cannot therefore be the elimination of suffering, neutrality, but the therapist must make sure with his or her presence, that the patient appropriates it, actively, increasing self-awareness to make himself Present to himself, and to accept his own suffering and use it to cross the ford" [29].

Therefore, there is no normality to return to, a return to a first free from suffering, but an active, creative, suffered being there, which leads us to co-construct together, patient with analyst, person with person, an "uncertain here and now" made of human beings. In this perspective of care as a social paradigm, there is an intrinsic peculiarity of the relationship that binds patient and analyst together, trusting and relying, which transforms the process of taking care into an authentic anthropological project. Even beyond the Coronavirus these aspects belong to the human being, "the extraordinary thing of our time is to be open and available to a new vision of the world and therefore of the human being" [29].

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Conflict of interest

The authors declare no conflict of interest in preparing this paper.

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The COVID-19 pandemic has had adverse effects on many people's mental and physical health. As such, this book explores research, theories, biopsychosocial perspectives, and intercultural studies about the pandemic with the ultimate goal to promote better quality of life, resilience, and psychological wellbeing of the general population during this period.

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