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The COVID-19 pandemic and its impact on mental health. Causes and consequences- an overview

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Abstract

Introduction:

This article provides an overview of the COVID-19 pandemic, which lasted from 2019 to 2023, and its impact on mental health. It will discuss risk factors leading to mental health disorders during the pandemic. Attention will also be given to the risk factors and possible causes, groups most affected and the ways to deal with mental disorders during a pandemic will also be discussed.

Aim of study:

The aim of the study is to assess the impact of the COVID-19 pandemic on mental health, identify risk factors and possible causes of mental disorders during this period, and identify groups that are particularly vulnerable to the negative psychological effects of the pandemic.

Materials and methods:

A comprehensive literature review was conducted using the PubMed database, focusing on articles published up to the end of 2024. The search included the keywords “COVID-19”, “mental health”, “pandemic”, “depression”, “isolation” in different combinations. Relevant studies were selected based on criteria such as causes and risk factors. Special attention was paid to vulnerable groups (e.g., children and the elderly, etc.) and how changes in the pandemic (e.g., social isolation) affected mental health.

Conclusion:

The pandemic of COVID-19 has affected not only people's physical health but also their mental health. Studies indicate that during the COVID-19 pandemic, the incidence of mental illnesses increased, and the symptoms of people with mental disorders were exacerbated including symptoms of general anxiety, sleep disorders, depressive disorders, etc. The study discussed risk factors such as social isolation, etc. and how they caused an increase in mental disorders

Key words: COVID-19; mental health; pandemic; depression

1. Background

SARS-CoV-2 is the virus that causes Coronavirus Disease 2019 (COVID-19), which spread worldwide, leading to the first confirmed Coronavirus pandemic starting in 2019[1]. Globally there was almost 777 million confirmed cases leading to at least 7 million deaths reported to WHO (Most recent data submission date: 1st of December 2024)[2,3]. The virus spreads through direct human-to-human contact, airborne transmission, and during certain medical procedures [4,5]. COVID-19 is generally categorized as a mild to moderate infection but can also lead to severe or fatal illnesses. The virus provokes pneumonia, respiratory failure, sepsis and multiple organ dysfunction syndromes[6]. Still, the most common symptoms are non-specific, such as fever, cough, muscle pain, chest pain, sore throat, headache, chills, nausea, vomiting, diarrhoea, and more [5,7,8]. While there is no universally accepted definition of a pandemic, work is ongoing to establish one [9,10]. As proposed by the WHO, a "pandemic" means the global spread of a pathogen or variant that infects human populations with limited or no immunity through sustained and high transmissibility from person to person, overwhelming health systems with severe morbidity and high mortality, and causing social and economic disruptions. All of which require effective national and global collaboration and coordination for its control[10]. A pandemic is a multifaceted phenomenon that creates a sense of danger, uncertainty, and fear of death in people. The devastating impact of pandemics like the 1918-1919 "Spanish flu," which infected approximately 500 million people and resulted in 20 to 50 million deaths, and the 2009 A/H1N1 pandemic, which caused

100 000-400 000 deaths and 1.48 million cases worldwide, illustrate the catastrophic consequences of uncontrolled disease spread [6,11,12,13,14]. Governments and health ministries introduced various ways to combat the pandemic, which in some cases had a dramatic impact on lives. The implementation of social distancing, contact tracing, isolation, the closure of schools and workplaces, restrictions on gatherings, transportation, and travel, as well as quarantine, drastically altered everyday life[5,11,13,15]. These measures reshaped how people interacted, worked, and moved, creating a profound shift in daily routines and interactions across the globe. All of these changes have had a significant impact on people's lives, contributing to increased stress levels, decreased well-being, and negative effects on mental health, at the same time becoming risk factors and possible causes for the development or exacerbation of mental disorders. In addition to these can be added: economical, mass media misinformation and fear about health and life.

This article explores the causes and consequences of mental health disorders during pandemics, focusing on vulnerable populations (such as children and adolescents, elderly, individuals with preexisting mental disorders) and will discuss comprehensive strategies for coping with these challenges.

2. Analysis

2.1 General impact of pandemic on mental health

The COVID-19 pandemic significantly affected people's mental health, leading to numerous disorders and symptoms. Isolation and quarantine, which are extreme forms of social distancing, exacerbated depression and anxiety, which has also been reported in previous pandemics [5,6]. Those cut off from loved ones, deprived of freedom and daily routines struggled with frustration, boredom, low mood and, depression, generalized anxiety, somatic anxiety symptoms and social anxiety [7,16]. Fear of infection and lack of clear guidelines further exacerbated anxiety, worsened by misinformation and media activities that heightened fear [8,17]. The enforced isolation disrupted access to social support, which further worsened people's mental health, even those who had not previously experienced problems in this area [18].

Studies have shown that anxiety, depression, loneliness and sleep problems increased during lockdown [19,20,21,22,23,24,25,26]. Individuals subjected to social isolation were more likely to develop disorders such as post-traumatic stress disorder (PTSD), anger and avoidance, and a longer duration of quarantine was associated with poorer mental health [18].

Loneliness acted as a mediating factor in emotional disturbances and behavioural regulation [27]. An increase in symptoms of depression and anxiety was observed among young adults and adolescents. Uncertainty about the development of the pandemic, rumours and misinformation led to the marginalization of some social groups e.g. the elderly and led to mental health problems [28,29].

The pandemic also revealed links between the body's inflammatory responses and psychiatric disorders. Elevated levels of pro-inflammatory cytokines such as interleukin (IL)-1 β and IL-6, triggered by ARDS (Acute Respiratory Distress Syndrome) during COVID-19, were also associated with depression and somatic functional syndromes, suggesting a common psychoneuroinflammatory mechanism [30]. The COVID-19 pandemic has highlighted the profound and multidimensional implications for mental health, underscoring the importance of social support and access to appropriate services during health crises.

Figure No. 1 (Fig. 1) illustrates the impact of the COVID-19 pandemic by individual factors on vulnerable groups and its effects on mental health. The illustration highlights how these circumstances can lead to increased levels of stress, anxiety, depression and other psychological disorders.

2.2 Vulnerable groups:

Groups at particular risk during a crisis are the elderly, especially those in nursing facilities, the recently unemployed, and children and adolescents. These groups are at higher risk due to social isolation, economic instability and disruption of daily routines. The elderly in nursing homes are particularly vulnerable to both physical and psychological challenges. Similarly, children and adolescents can experience developmental difficulties and emotional crises [31,32,33]. Vulnerable people can also include those with pre-existing mental disorders [29,34].

Children and adolescents

During infancy, early childhood and adolescence, the nervous system (CNS) is in a sensitive phase of development. Experiencing stress during this crucial period can lead to immediate as well as long-term effects on physical health, cognitive abilities and behaviour [35].

The social isolation caused by the COVID-19 pandemic has severely disrupted daily life around the world, especially among children. Most schools were closed, classroom activities were cancelled, and learning moved to homes or took place online. These measures were aimed at promoting the principles of social distance and limiting the spread of the virus [36].

Before the pandemic, children learned mainly through face-to-face interactions with teachers and peers. However, school closures affected more than 91% of students worldwide, changing the way young people learn and spend their time. The lack of structure, routine and daily activities at school led to boredom and difficulty engaging in educational and extracurricular activities [37].

The closure of schools and the transfer of learning to a remote mode were intended to limit the spread of the virus, but at the same time disrupted key social interactions that are essential for children's mental development. Positive relationships with family, peers and caregivers support emotional development, cognitive skills and a sense of security and self-esteem. A lack of these can lead to emotional problems and increase the risk of developing depression in later life [35,38]. As a result of the pandemic, children and adolescents did not have the opportunity to interact with their peers daily, which was partially replaced by virtual interactions. Nevertheless, the lack of direct contact affected their psychological well-being. Loneliness during this period was strongly associated with an increase in symptoms of depression and anxiety, both in the short and long term [35,39]. For children aged 3-6, the fear of infecting the family with the virus was particularly worrisome, causing anxiety and concern for the safety of loved ones. Older children (ages 6-18) struggled with a lack of attention and anxiety related to the pandemic situation. The study also found that adolescents had difficulty adjusting to the changed school routine, which affected their ability to cope with daily challenges [40].

The pandemic has intensified the fears of children and adolescents, especially those related to concerns about their own health, the health of loved ones and the possibility of infecting others. Adolescence, being a particularly stress-sensitive period, makes such experiences particularly intense during this stage of life. In addition, children and adolescents have experienced uncertainty, anxiety, irritability, sleep problems, decreased appetite and separation anxiety [37].

Elderly

About 14% of people aged 60+ struggle with mental disorders, with depression and anxiety being the most common. Global figures show that nearly 27.2% of mental illnesses ending in suicide involve people in this age group [41]. Older people with pre-existing mental disorders, lack of social support, and living alone were particularly vulnerable to mental health deterioration during the pandemic [29]. The media, emphasizing the lower “value” of seniors' lives in terms of allocating medical resources, in favor of younger patients further increased

their sense of fear and marginalization[29]. Social isolation among the elderly, particularly exacerbated during the COVID-19 pandemic, had a negative impact on their physical and mental health. Seniors who remained isolated showed lower physical activity and a greater tendency toward sedentary behaviour than those who maintained social contact, which negatively affected psychological well-being [42,43]. The elderly often lose social ties due to the death of loved ones, decreased mobility or cognitive decline, which significantly increases the risk of isolation [44]. Social distancing exacerbated these difficulties, especially for seniors who relied on the support of family, friends or caregivers, as well as those using community or religious centres as meeting places. In addition, restrictions on access to places such as worship facilities, community centres and daycare centers, combined with fears of abandonment and neglect, have contributed to increased social isolation, anxiety and depression, especially among the elderly[45]. The lack of such contacts led to feelings of loneliness and deterioration of mental and physical health [46].

Individuals with pre-existing mental disorders

The COVID-19 pandemic had a serious impact on people with pre-existing mental disorders, including those suffering from obsessive-compulsive disorder (OCD), depression, schizophrenia, addiction and depressive disorders. The increase in anxiety, fear and panic associated with the pandemic exacerbated the symptoms of these disorders, especially in people with obsessions about contagion and purging rituals [47].

People with chronic mental illnesses, such as depression, anxiety or other disorders, were particularly vulnerable to pandemic-related stressors, which further exacerbated their fears. Movement restrictions and quarantine made it difficult to access medical services, which exacerbated their health problems [34]. Social isolation in people with mental disorders exacerbated their symptoms through the policy of social distancing. These individuals were more likely to suffer negative effects, such as lack of access to social support and therapy, which are crucial to their treatment. Isolation and limited contact with medical caregivers may have worsened their condition, leading to an exacerbation of symptoms. In addition, those experiencing problems such as homelessness or loneliness were particularly vulnerable to mental deterioration as a result of the difficulties associated with the pandemic [17,18].

2.3 Possible causes and risk factors of mental problems during a pandemic:

Financial and economical difficulties, mass media misinformation, social isolation and routine and lifestyle disruptions can contribute to the development or exacerbation of mental health

disorders and symptoms. This group includes people with pre-existing mental disorders, the elderly, adolescents and single people[6].

Financial and economical difficulties

During the COVID-19 pandemic, a lockdown was implemented in many countries, resulting in the closure of many jobs and the conversion of forms of work to remote. It should be noted that the switch to remote forms of work itself may have been a stress factor in some cases, especially among those with less computer skills. The COVID-19 pandemic caused a number of negative economic impacts, including an increase in economic uncertainty, a decrease in investment and consumption, and a deterioration in the financial situation of households and businesses. Extreme economic shocks, such as the negative effects of lockdowns, have led to increased stress and deterioration of citizens' mental health, especially in developed countries. [48] Remote working during the pandemic increased stress, negatively affected work-life balance and job satisfaction, while initially increasing productivity and engagement. In addition, stress exacerbated the negative effects of remote work on life balance and job satisfaction [49]. Those who lost their jobs as a result of the pandemic, for example, employees of food service establishments faced further challenges.

Routine and lifestyle disruptions

The COVID-19 pandemic has had a serious impact on lifestyle behaviors, including eating habits. Social isolation and the shift to home office work have contributed to an increase in overeating and sedentary lifestyles. Reduced physical activity became common, and pandemic stress and social isolation increased the risk of worsening depressive symptoms. In addition, unhealthy coping mechanisms such as binge eating and excessive drinking of alcohol have emerged[15,50,51].

Social isolation

Human as a social being, develops and maintains relationships and contacts with other people, which are often the basis of his functioning. [52] The impact of social isolation on mental health was one of the biggest challenges during the SARS-CoV-2 pandemic even beyond the hardships of those directly affected by the virus. The relationship between social interactions

and physical health may be shaped by various factors. One possible explanation is that participation in social gatherings or activities stimulates the musculoskeletal, cardiovascular, respiratory and nervous systems through physical activity and interpersonal interactions. Maintaining close relationships with significant others is key to creating and sustaining social ties among people and has a significant impact on well-being [35,53,54].

Mass media misinformation

Social media use has also been associated with increased mental health disorder symptoms, due to the confusion caused by the large amount of misinformation, false reports on COVID-19, and frequent exposure to disturbing content [55].

Moreover, studies have shown that misinformation that was spread during the COVID-19 pandemic resulted in increased mortality by undermining trust in the health system and health workers. False information about COVID-19, myths, rumours or conspiracy theories circulated in the mass media during the pandemic. People were mostly exposed to misinformation related to infection prevention, COVID-19 diagnosis and treatment, vaccines, and politics and economics during the pandemic[56,57]. Undoubtedly, such phenomena exacerbated stress and may have exacerbated existing mental disorders[6].

Fear about health and life

Fear of COVID-19 causes several mental symptoms and ailments that significantly affect the mental health of those affected by the pandemic. One of the most common effects is anxiety, which has a strong connection to the fear of infection with the virus and the course of SARS CoV-2 disease, and resembles symptoms characteristic of phobias and anxiety disorders. Another problem is distress, a generally negative emotional state that includes depression, anxiety and stress. Fear of COVID-19 also leads to a moderate increase in stress levels, which is due to the mental burden associated with the pandemic. An increase in depressive symptoms is also observed in those affected by anxiety, indicating a moderate relationship between the two. Post-traumatic stress and PTSD, which often occur in response to crisis situations such as a pandemic, are also strongly linked to fear of the virus. [58]. In addition, fear of COVID-19 can cause sleep problems, including insomnia, although this relationship is weaker and is mainly due to anxiety-induced brain stimulation[58]. In conclusion, fear of COVID-19 pandemic causes serious psychological problems such as anxiety, depression,

stress, distress, post-traumatic stress, and insomnia, which underscores the need for adequate psychological support[58].

3. Overview of coping strategies and interventions

While the COVID-19 pandemic has had a significant impact on the mental health of many people, there are a number of strategies that can help manage the negative effects of the pandemic on mental health. Mindfulness meditation - Regularly practicing mindfulness meditation is an effective strategy for improving mental health. This meditation helps increase mindfulness, improve mental well-being and reduce stress, anxiety, depression and pain [59]. Physical activity and sports - Exercise and participation in sports have beneficial effects on mental health. Physical activity helps reduce stress and depression, as well as prevent anxiety and psychological functioning problems. It can improve quality of life by reducing the risk of depressive disorders, anxiety disorders, and physical and mental impairment that may have been exacerbated during the pandemic [60]. Participation in team sports, in particular, has a positive impact on mental health and social outcomes, providing an effective method of improving mental well-being, especially in the context of the social isolation that occurred during the COVID-19 pandemic [61]. Sports activities can improve feelings of belonging and social support, which were limited during lockdown. Online mental support - For those struggling with emotional difficulties, the pandemic has increased the availability of online therapy and consultations with psychiatrists over the Internet. There are also helplines that offer emotional support, especially during crisis periods such as the COVID-19 pandemic. These forms of mental support can help cope with depression, anxiety, and psychological well-being that may have been exacerbated by the difficult situation associated with the pandemic[62].

Using these strategies may be an effective aid in countering the negative mental health effects caused by the pandemic, improving the overall well-being and quality of life of those affected.

4. Conclusions

The COVID-19 pandemic has had serious health consequences, both on physical and mental health. Constraints of social isolation and difficult access to health care exacerbated existing health problems in vulnerable groups, with children and adolescents particularly in need of mental health support. The pandemic has highlighted the need for new research to better understand the long-term effects of the crisis. In addition to the direct impact of the virus on physical health, COVID-19 also had a significant impact on mental health. Fear of illness,

loss of loved ones, prolonged isolation and economic uncertainty worsened the mental well-being of many people, leading to an increase in cases of depression, anxiety and other mental disorders. Children, adolescents and the elderly were particularly affected, requiring additional support.

It is important to develop effective mental and physical support programs that will be available in the future, especially in times of crisis. Strategies should be implemented to allow easier access to mental health services, especially for children, adolescents and the elderly. Promoting physical activity can help reduce stress and prevent the onset of mental illness. Promoting new avenues of telemedicine, such as online access to doctors and psychotherapists, is also recommended, as well as showing special concern for the elderly to ensure that they receive adequate support.

Special attention should be paid to information appearing in the mass-media. Governments should introduce appropriate programs to counter disinformation and false information to reduce panic and fear in emergency situations. It is also crucial to implement sustainable economic policies and social distancing principles that will effectively limit the spread of pathogens while not hampering the economy. Such measures will minimize economic losses for individuals, households and businesses.

In conclusion, the pandemic has revealed important areas in need of reform and investment. Further research into the long-term effects of the crisis and the implementation of policies that provide effective psychological, but also physical and economic support are needed.

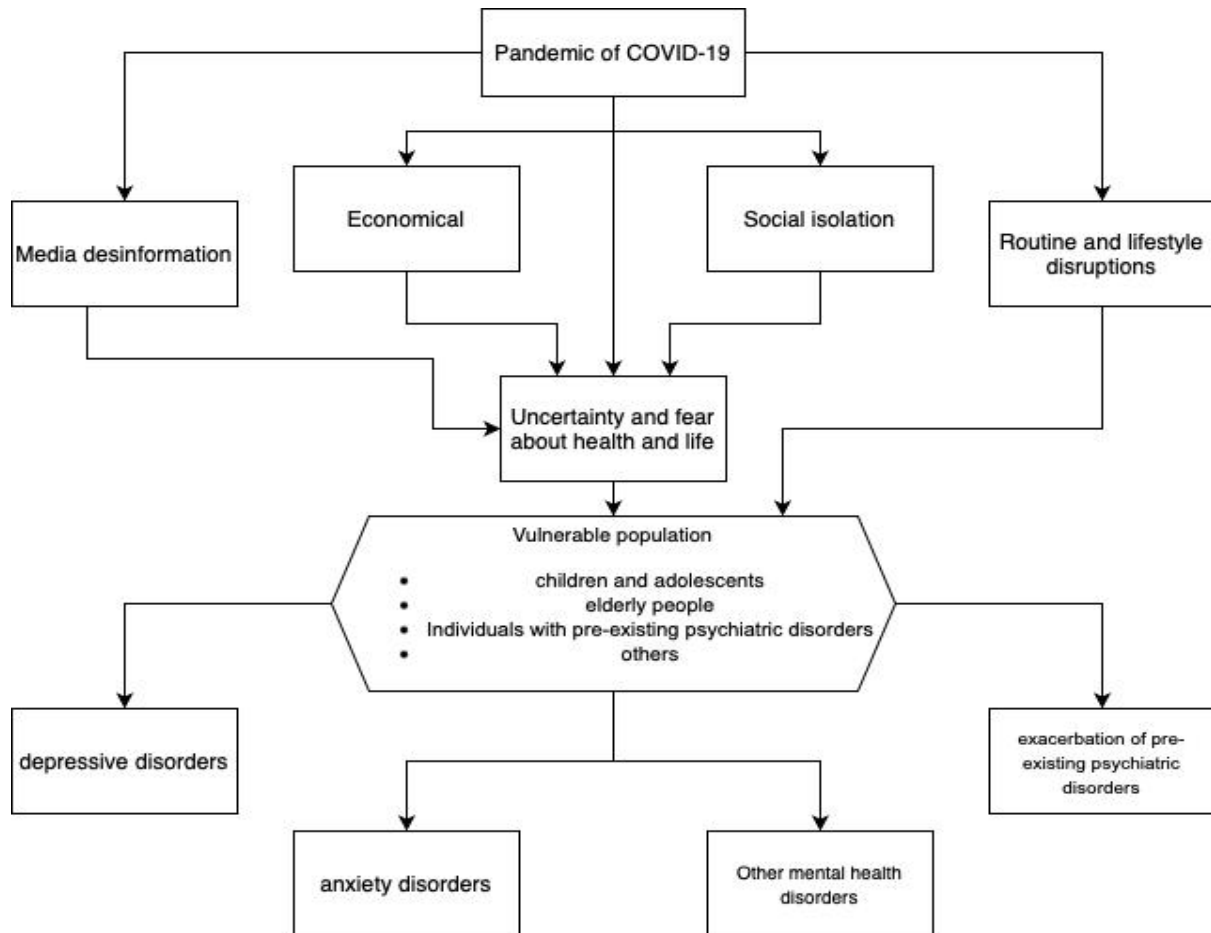


Fig. 1.

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All authors declare that they have no conflicts of interest.

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