

The COVID-19 disaster and mental health—assessing, responding and recovering

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The coronavirus disease 19 (COVID-19) pandemic is a disaster that has impacted lives globally. The purpose of this paper is to understand the linkage between COVID-19 and its impact on mental health. To reach this aim, we reviewed the literature on COVID-19 and mental conditions. Based on the literature, we identified COVID-19 as an unexpected, large-scale event that disrupted communities and caused death, destruction and trauma which upended normal existence. For mental conditions, effects of the pandemic are likely to manifest in different ways: development of symptoms in previously healthy individuals, new episodes in those with predisposition to mental disorders and development of symptoms that do not meet diagnostic criteria. The level of mental health problems varies depending on the stage of the pandemic, country, population groups and types of conditions. This also applies to the level of suicide, although suicides do not seem to have increased during the pandemic. Yet, we identified a net of factors contributing to mental conditions, in general. These factors include demographic factors (e.g. female gender, younger and older age), social factors (e.g. economically disadvantaged), mental factors (e.g. pre-existing mental conditions) and relationship factors (e.g. stressful relationship, lack of relationships). Additionally, we identified COVID-19-specific factors such as threat to own life and threat to life of loved ones, containment measures and interruption of services and social life. We further explored potentially additional suicide-related risk factors. Regardless of differences, health care and psychosocial systems were in many countries not prepared to respond to a viral disaster. Viral disaster requires that responses not only include direct care but also responses to populations that may need support due to known determinants of mental health.

Background

Coronavirus disease 19 (COVID-19) is a pandemic and can also be defined as a disaster, as it is an unexpected, large-scale event that disrupts life, daily routines and the social and economic development. COVID-19 causes death, destruction and trauma and shares key characteristics with large-scale traumatic events (threaten harm or death to a large group of people, affect social processes and involve mental and physical health outcomes).¹

Findings from disaster literature and earlier viral epidemic literature suggest that many individuals experience deterioration in mental health and stress during and after disasters.

Although the majority of people cope well during a disaster, a substantial part of the population may develop symptoms and a smaller proportion will move on to develop mental disorders. It will take time to know what is the ultimate impact of the COVID-19 outbreak on mental health.

The emerging literature suggests that the pandemic due to its unpredictability causes mental conditions, especially stress-related conditions which change over the course of the pandemic.² The unpredictability of disasters such as a pandemic leaves the affected population at the beginning in a state of shock, fear and helplessness and populations tend to deny the threat, especially those populations who are not used and not trained in disaster preparedness. The impact is complex and heterogeneous and not only changes over the course of the pandemic but differs across countries and between population groups. Therefore, identifying the potential mental

health impact of the pandemic within and between countries is critical for developing early interventions to support public mental health.

Already in 2020, the United Nations published a policy brief on COVID-19 and the need for action on mental health. It highlighted that the mental health of whole societies has been severely impacted by this disaster and must be a priority to be addressed urgently, as a long-term upsurge in the number and severity of mental health problems including suicide was likely. The policy brief recognized the longstanding implementation gap of public mental health interventions and recommended that mental health must be at the center of every country's response to and recovery from the COVID-19 pandemic. At the European level, there is a lack of Europe-wide knowledge on the mental health impact of COVID-19.

In this paper, we review literature on the mental health effects of COVID-19. Specifically, we aim to review public mental health determinants in general and their intersections with pandemic-specific mental health determinants. We aim to review evidence on the impact of pandemics on suicide and suicidal behavior, and we describe potential policy responses. Finally, the review aims to identify potential interventions for the general population and for groups in vulnerable conditions.

Methods

We screened the top-cited articles for mental health impacts, suicide and policy responses. Search terms included 'mental health',

'depression', 'stress', 'suicide', 'suicidal behaviour', 'epidemics', 'disasters', 'COVID-19' and 'SARSCoV2', mental health systems and policy response. We used Google scholar and PubMed to search for primary and review articles published in the years 2020/2021 pertaining to the search terms listed. Snowballing technique was used to find additional relevant articles. Searches were made for high-quality studies. A small number of countries produced a large proportion of publications. So far, to the best of our knowledge, no multinational study on the mental health impact of COVID-19 on the general population is available in the European region.

Prior to the COVID-19 pandemic, 9.9% of overall disease burden, and 21% of non-fatal disease burden (as measured by Disability-Adjusted Life Years and Years Lived with Disability, respectively) was attributable to mental and substance use conditions. The reports on the estimated prevalence rate differ. In 2019, Organisation for Economic Cooperation and Development (OECD) estimated that around 17% of the population in Europe were affected by mental conditions, representing about 160 million people. This not only brought personal suffering and premature mortality but also reduced the quality of life including poverty, poor education and employment outcomes, and familial suffering with high direct economic costs. Various factors contribute to higher risk of mental conditions. The various factors can be understood as a network of factors in an ecological Public Mental Health model.

This network includes individual demographic factors (e.g. female gender, younger age, older age, economic disadvantage, lower education), health-related factors (e.g. chronic disease, previous episodes of mental illness), event-related factors (life events, especially violence, losses), family factors (e.g. parent-child relationships, family conflicts, intimate partner violence), job-related factors (e.g. high workload, stress, exposure to traumatic events) and community factors (poor housing, lack of residential green space, low social capital in the community). A societal level determinant is a lack of coherent mental health policies or suicide prevention strategies.³

COVID-19 and mental conditions

COVID-19 is a disaster which—like other disasters—induces insecurity, fear and the need to change behavior. There are various components of the COVID disaster, which trigger mental conditions such as insecurity and fear, such as death of a loved one, socio-economic loss and disruptions of normal behavior. A range of negative mental health consequences is likely during the pandemic due to disaster-related factors such as trauma due to the experience of illness or bereavement, fear of being infected, fear of losing loved ones or withdrawal of psychosocial and healthcare services. Further mental conditions are likely when the disaster is over such as moral injury, survival guilt and unemployment.

Longitudinal studies suggest that mental health symptoms reach a peak in the year following a disaster and then improve. The course of mental health symptoms may follow four distinct symptom cluster trajectories (resistance, resilience, recovery and chronic dysfunction). Resistance is defined as having no symptoms, resilience has been defined as reacting but reacting with rapidly declining symptoms, recovery is defined as suffering from symptoms for a period of time and recovering gradually, and finally chronic dysfunction which describes trajectories of stable symptoms over a longer period of time.

Evidence of the mental health impact of the COVID-19 pandemic varies. This might be due to various reasons. One reason might be methodological: data from cross-sectional studies at the beginning of the pandemic or during high infection intensity may differ in their results compared with studies during low infection intensity. Another reason might be that most studies are still cross-sectional. Some studies suggest that mental health conditions remained stable or declined throughout the initial lockdown period, others show an

impact on specific groups such as women and young adults with an increased risk of a variety of mental conditions as consequences of COVID-19 including anger symptoms, depression, anxiety, stress-related conditions and substance use.^{4,5} According to studies, symptoms of depression varied between 14.6% and 48.3%⁶ and of anxiety between 6.33% and 50.9% and post-traumatic stress disorder (PTSD) of 7–53.8%.^{2,4,7} Another reason might be that macro-level factors contributing to mental health and mental conditions (e.g. country-specific factors such as economic security in case of illness, social cohesion) and interpersonal factors (e.g. caring and inclusion behavior) differ between and within countries. In a survey, conducted among more than 21 000 people in 16 countries and regions, the proportion of people who said that COVID-19 had an impact on their mental health differed between countries [65% in UK, 62% in Italy, 61% in Spain, 60% in Poland, 57% in France, 54% in Sweden, 51% in Denmark and 44% in Germany].

Studies have shown that most individuals who experience a disaster do not develop psychopathology.⁸ As most individuals who experience a disaster do not develop mental conditions, they have the capacity to function and adapt and show resilience. Resilience, however, does not indicate the complete absence of any psychological symptoms. Resilient individuals can experience mental conditions after a disaster, but can return to pre-disaster functioning or to even better functioning. The literature on COVID-19 so far suggests that the pandemic may cause mental conditions for many but not for all individuals, especially stress-related mental conditions.² The unpredictability of the pandemic at the beginning left the population in a state of shock, fear and helplessness. It can be expected that the impact of COVID-19 on mental conditions not only changes over time but differs across countries, regions and between population groups. Therefore, identifying the potential mental health impact of the pandemic on specific population groups is critical for developing early interventions to support public mental health.

In addition to mental conditions, early common responses include distress reactions (e.g. insomnia, irritability) (prevalence rates of 34.3–38%) and health risk behaviors (internet use, smoking, alcohol use).⁹ For example, among middle-aged British adults, high-risk drinking increased by 5.2% (from 19.4% to 24.6%) ($P < 0.001$) between 2016–18 and May 2020. The mental and behavioral health impact of COVID-19, however, differs in line with a network of factors at the individual, familial, communal and societal level which contribute to aggravate existing vulnerabilities.

In line with the knowledge on factors contributing to mental conditions, the effects of the early phase of the pandemic on conditions of depression, anxiety and PTSD effects were more drastic among women,¹⁰ younger age groups,¹¹ those with lower education,¹² those with pre-existing mental conditions,¹³ people with psycho-social and other disabilities, people with poor economic status,¹² among hospitalized COVID-19 patients and among individuals who have or had COVID-19.¹⁴

Further factors may be related to the measures taken to contain the pandemic.¹⁵ These measures have disrupted psychosocial and medical services in many regions. Accordingly, the disruption of services disproportionately affected individuals with psychosocial or other disabilities and older individuals in need of psychosocial and medical services.

Intersectionality of risk factors

Studies suggest that during a disaster including viral outbreaks, existing vulnerabilities intersect with new vulnerabilities. Disasters and pandemics magnify issues.¹⁶ Like other disasters, COVID-19 spread more easily among certain more vulnerable population groups and the economic consequences of social distancing measures are leading to an increase of inequalities in many countries of the world. Accordingly, the inequality of the pandemic interacts with pre-existing inequalities along dimensions such as age, gender

and socio-economic conditions. In this context, intersectionality means that current inequality structures not only affect the spread of the infection but also how the containment measures affect the existing structure of inequalities. The pandemic did not equally affect population groups nor countries.

Female gender and higher age are established demographic risk factors, which are associated with impaired mental health in a pandemic.¹⁷ Women maybe at higher risk of developing mental conditions in non-disaster times, and at even higher risks due to viral outbreaks.^{18,19} So far, there are no studies on older individuals' mental conditions during COVID-19, but studies from former pandemics suggest a link between mental health impairment and increasing age.²⁰ In the net of contributing factors for older people, the risk of getting the infection, the risk of poverty and poor housing conditions intersect.

Basically, the impact of COVID-19 on mental conditions is that the effects of the net of contributing factors are amplified. However, the amplifications change over the course of the pandemic and robust data from longitudinal studies on this pandemic are still missing. However, some knowledge is available from previous disasters.

Phases of the pandemic and course of mental disorders

Following a disaster, affected communities often progress through several phases of psychosocial recovery.²¹ These phases have been observed in a variety of disasters. The 'Honeymoon phase' coincides with increased availability of support. Community bonding occurs through a shared catastrophic experience as well as giving and receiving assistance. Rates of mental conditions may decrease during this time period. The 'Disillusionment phase' is characterized by disappointment as hopes for quick restoration go unmet. The sense of community is weakened as people focus more on unmet needs. Survivors may become physically exhausted due to growing multiple demands. Mental conditions and exacerbation of pre-existing conditions emerge as a result of ongoing stress. The 'Reconstruction phase' may last for years. Survivors of disasters attempt to rebuild their lives as well as social identities by returning to old jobs or finding new work, and resuming or establishing new social bonds. Some are able to accept new circumstances, including losses and changes that have occurred. Finally, individuals may adapt with an increased sense of personal strength and belief in their ability to manage future adversity. Others may instead focus more on resentment, developing conspiracy theories, anger and scapegoating.

What can be done to mitigate the short- and long-term mental health impact of the pandemic and promote resilience? Mental health and resilience-promoting strategies should focus on the net of supportive factors. Accordingly, not only longitudinal but multi-national studies are needed to better understand individual, communal and societal factors contributing to mental conditions, suicide and suicidal behavior or to resilience.

COVID-19 and suicide

Numerous studies have revealed the dynamic and complex interaction of different types of factors contributing to suicidal behavior and suicide, and several explanatory models have been developed trying to better understand this interplay of risk factors²²⁻²⁵ [e.g. genetic, (neuro)biological psychological characteristics]. However, this vulnerability only leads to suicidal behavior in interaction with triggering events and stress factors, while sufficient protective factors are being absent.²⁶ COVID-19 increases exposures and vulnerabilities in the setting of factors which have been identified as potential risk factors for suicide (e.g. economic insecurity, loneliness).^{25,26} The COVID-19 experience alerts us to the possibility of an increase in suicide rates among persons aged 65 years and over; we

are not sure what is going to happen as the COVID-19 pandemic still continues.²⁷

In many countries, there are raised concerns that suicide rates might increase, underpinned by research findings showing an increase in rates of suicidal and self-harm thoughts in certain sub-populations, of problems accessing mental health services and of evidence of association between previous epidemics and rise in deaths by suicide.²⁸⁻³³ Some papers even predicted increases in suicide rates from 1% to 145%, emphasizing the vulnerable position of specific subgroups such as young people and older adults. However, robust epidemiological studies on the association between the COVID-19 and suicide are lacking. Most recent studies are based on preliminary data, convenience samples and pre-post COVID-19 comparisons, often preprints, letters or commentaries. In Japan, suicide figures declined by 14% in the early 2020, but increased by 16% during the second wave of pandemic.³⁴ Also in India, there was an initial decline in suicide rates during the lockdown period followed by an increase during the unlock period.³⁵ In Queensland, Australia and Massachusetts, USA, no indication of increased suicide was found until now.²¹ The same goes for the UK, also reporting a lower incidence of self-harm.³ In Europe, mortality figures in Norway and Tyrol, Austria,³⁶ and hospital data in France indicated a decreasing trend in suicide rates. This was also the case for the countries with the highest European suicide figures, Lithuania and Belgium. No change was found for Greece,³⁷ the Netherlands and Leipzig, Germany.³⁸ So, in conclusion, until now, there is no indication that suicide rates would have increased during the pandemic. On the contrary, most suicide figures rather show no change or even a decrease.

The risk of suicide associated with COVID-19 also seems to be dynamic, changing over time and to vary according to the specific phase of the disaster and subgroups in the population.

Responding to the psychological consequences of the pandemic

Specific groups appear to be disproportionately affected not only by the pandemic itself but by disruptions to mental health services across the European region. Disruptions on mental health-related services occurred in 38% of the WHO countries.³⁹

Knowledge of the net of influencing factors for mental conditions, and knowledge on pre-existing mental conditions would enable politicians, policymakers and medical experts to plan and distribute resources and promote mental health and resilience to mitigate the effects of disasters. In the case of COVID-19, many countries did not have systems to assess mental health in the community prior to the pandemic. In addition to poor knowledge of mental health problems, mental health services in many countries were significantly reduced or terminated at some locations. In some instances, treatment of psychiatric patients has been largely discontinued, school or work-related health services were not accessible, and patients were left at home with their families, resulting in severe concerns for their well-being and for their family's wellbeing.

Learning to respond to disasters in the future is a public mental health priority.⁴⁰ This involves addressing the gap of knowledge on influencing factors for mental conditions, including individual, familial, communal and societal factors beyond developing mental health interventions. Targeting the net of factors is an important public mental health strategy, which is necessary to be better prepared. Thus, community resilience is a primary goal of preparation for pandemics or other disasters. Resilience, however, is a contested term. We define resilience as a multidivisional varying adaptation to adversity. Resilience, accordingly, is not necessarily a personal trait but can be defined broadly as 'the capacity of a system to adapt successfully to disturbances that threaten the viability, function, or development of the system'.⁴¹ The concept of resilience includes that

resilience is a multidimensional developmental concept, which can be understood as a lifelong modifiable process of effectively coping with uncertainty and hardship.

Accumulating evidence on resilience has identified a number of factors that could explain why some individuals fare better than others during uncertainty and hardship. Some of these resilience-influencing factors are related to the population level (e.g. financial security), other to the community (e.g. health care provision), the interpersonal (e.g. effective caregiving and supportive relationships) and finally some at the individual level (a problem-solving and self-regulation skills, beliefs that life has a meaning). These factors have been identified in studies with diverse populations and in intervention trails designed to promote resilience. As the pandemic persists, its consequences on mental health, however, might gradually change or appear with variations across populations and nations. Much more work and data are needed to better understand the long-term consequences of mental health on different population groups.

Conclusion

COVID-19 has created profound disruptions worldwide that extend far beyond the immediate effects. An understanding of individual and community responses and cultural and contextual influences that influence the development and the course of mental conditions are critical for developing tailored responses. These responses should be aware of the phases of disasters. Not only do we need more multinational general population cohorts to better understand trajectories of the impact of the disaster and individual, familial, communal and societal responses but also cohorts on high exposed groups such as health workers and workers in caring institutions. An understanding of disaster phases and trajectories will optimize health and psychosocial responses and will serve to develop phase and population group-specific interventions.

But we also need new models for preparing and delivering responses. These new models would require the collaborative efforts of the public health, medical care and emergency systems. Finally, we also need the collection of longitudinal high-quality data on the mental health of the whole population and population subgroups, together with the development of strategies at different levels. The pandemic has shown the need for taking care, particularly of those groups who are experiencing the most distress.

Conflicts of interest: None declared.

Key points

- The pandemic has an impact on population mental health.
- More exposed population groups were more affected by the mental health impact of the pandemic.
- Pandemic preparedness plans should include mental health preparedness plans.
- There is a need for long-term monitoring of population mental health after the pandemic as the long term effects are still unclear.

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