

NARRATIVE REVIEW

CORONA EXPERIENCE

A narrative review of mental health landscape of survivors, healthcare workers, and general public in the post–COVID19 world

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Abstract

The coronavirus disease 2019 (COVID–19) pandemic, caused by the severe acute respiratory syndrome coronavirus 2 (SARS–CoV–2), is still unravelling, and is expected to last for an indefinite time. The historical experience with similar pandemics in the past, and the nature of the viral illnesses as such, explains that not only the mental illnesses worsen in the existing patients during pandemics the new diagnoses increase as well and outlive the pandemic itself. This not only has profound effect on the wellbeing of the survivors of pandemics, the healthcare workers, and the general public alike, the financial implications and restructuring of the social fabric cannot be over stated. There is an urgent need to identify these risks and start planning to devise and implement strategies for effective mental health damage prevention and control.

Key words: COVID–19; Pandemic; Anxiety; Depression; Mental health; Healthcare workers; Post–traumatic stress; Psychological distress, Artificial intelligence, Emotional intelligence, Substance abuse, Self–harm.

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1. Introduction

Novel coronavirus disease 2019 (COVID–19), has been known to be caused by the severe acute respiratory syndrome coronavirus 2 (SARS–CoV–2), has created an unprecedented global public health crisis, disrupting daily lives of the people in the ways unknown to the living memories. With over 185 million confirmed cases and 4.0 million deaths worldwide,¹ healthcare institutions overwhelmed, frontline medical staff knackered, the world economies crumbling, unemployment on the rise, social isolation compromising the mental health,

and all walks of life, from education to businesses, and security to the bureaucracy being jeopardized, corona and the humans continue to live together.

2. Mental health in pandemics

The pandemics of the past posed serious stress to the whole of the world population physically, mentally, financially, and in many other ways. The prevalence of mental illnesses soared exponentially. The number of first time hospitalized patients with mental diseases caused by influenza, compared to normal situations

during the 1872–1889 and 1901–1917, increased by an average annual factor of 2.6 in the 5 years following the Russian influenza 1890–1894 in 1889, and by an average annual factor of 7.2 in the 6 years following the Spanish influenza 1918–1924.² The current pandemic is no exception, and a lot of concern has been raised about its adverse effects on the wellbeing of the COVID survivors as well as of the healthcare professionals.

An increased incidence of insomnia, anxiety, depression, and post-traumatic stress syndrome (PTSS) has been reported in COVID-19 survivors, existing patients, healthcare workers, and the general public.³ Multiple studies related to the previous corona viruses and a steady stream of the recent studies suggest that SARS-CoV-2 can affect the central nervous system (CNS) and subsequently neuropsychological functioning.⁴ Many of the surveys have confirmed the findings and recommended urgent attention to the COVID related mental health problems, failing which these may prove to be deadlier than the virus itself.

Taquet, et al. stated a higher incidence of psychiatric illness in confirmed COVID-19 patients than in patients with other health issues, in a retrospective cohort study of 62,354 cases in the USA.⁵ Another study on 2,36,000 post-COVID patients concluded that 34% of them suffered from some type of psychiatric problems in the following six months; almost half of them (16%) had these as their first psychiatric diagnosis.⁶ Among those psychiatric problems, anxiety (17%) was the most common, followed by mood disorders (14%), substance abuse disorders (7%), and insomnia (5%). According to these studies, the probability of being diagnosed with any psychiatric disorder was about 18.1%, which was significantly higher than the other health events. Similar findings were also evident during the SARS epidemic in 2002 and the Middle East Respiratory Syndrome (MERS) in 2012, where the affected patients later on presented with confusion, depression, delirium, insomnia, anxiety, sleep disturbance, recall of traumatic events, emotional lability, impaired concentration and fatigue after recovery from the infection.⁷

Increased incidence of PTSS and post-traumatic stress disease (PTSD) was also evident in these pandemic survivors. Erin T. Kaseda, et al. (2020) narrated that

42% of MERS survivors scored above a clinical cut-off for PTSD one year after the outbreak, with nearly 27% remaining above the cut-off after 18 months. Similarly, nearly 26% of SARS survivors met full diagnostic criteria for PTSD 30 months after treatment, and all identified SARS infection as their index trauma.⁸ Therefore, a high prevalence of PTSD and PTSS can be anticipated with confidence in COVID-19 survivors, during the pandemic and thereafter.

3. Pathogenesis

The etiology of these disorders in post COVID patients is not yet clear; whether it is a result of the direct effect of the virus on the body, or indirect effects like cytokines surge, hypoxic stress, medical intervention, social isolation, psychological effects of facing a deadly and potentially fatal disease, fear of infecting others and losing the loved ones and the stigmata related to the disease. But most researchers believe in a multifactorial etiology.

The above-mentioned psychiatric consequences raise a strong suspicion about the neurotropism of the SARS-CoV-2 virus⁴ as was evident for many viruses like herpes simplex virus, poliovirus, influenza Type A virus, and the coronaviruses. Some evidence of encephalitic brain injury has been found in a few COVID-19 patients admitted in ICU. Some researchers believe that there is a possibility that certain viral infections may increase the susceptibility of Parkinson disease and parkinsonism. The first link between viruses and parkinsonism came from the possible relationship between encephalitis lethargica and the 1918 Spanish flu, where affected people later presented with two to three fold increased incidence of parkinsonism.⁹ Keeping in view the possible neurocognitive effects of SARS-CoV-2 virus we should keep ourselves ready face a possible surge in parkinsonism in COVID-19 survivors not immediately but may be in the longer run.

4. Frontline and other healthcare workers

Besides these stressors for COVID-19 survivors, the pandemic related economic recession and social isolation due to the curfews and lockdowns are important factors that have increased the prevalence of

psychiatric problems. The patients have been found to suffer from fear of unemployment, job insecurity, and low socioeconomic status, lack of social support, and uncertainty and unpredictability of the situation. These are some of the major factors that can lead to many of the other mental health problems or potentiate the existing ones.

One of the most serious effects of these stressors is an increased tendency towards self-harm and suicidal thoughts, especially in susceptible people and the patients with other co-existing disorders or conditions that may get activated. Eleonora Iob, et al. stated that 9% of the surveyed participants reported experiencing psychological or physical abuse during the lockdown and 18% reported thoughts of suicide and self-harm.¹⁰ This finding indicates a serious potential for increased frequency of suicide and self-harm in near future if left unchecked.

The pandemic has not only stressed and traumatized the general population physically and mentally, it has also resulted in a huge psychological burden on the healthcare professionals. In particular, the frontline healthcare workers in the critical care wards have demonstrated higher incidence of mental health problems. Increased levels of stress due to pandemic may lead to anxiety, depression, burnout, and in severe cases PTSD, among healthcare professionals.

Greenberg N, et al. in their study conducted on 709 healthcare professionals working in critical care units, reported that 45% met the threshold for probable clinical significance on at least one of the following measures: PTSD (40%), severe anxiety (11%), problem drinking (7%), or severe depression (6%). Thirteen per cent of the respondents reported frequent thoughts of death, or of hurting themselves in the preceding two weeks. They found that doctors reported better mental health than nurses across a range of measures.¹¹

Anwar ul Huda, et al. found out in a study conducted on 60 resident trainee doctors in Saudi Arabia that 83.3% of the trainees suffered from moderate stress and 10% suffered from high stress.¹² Ram Sandesh et al. discovered in doctors on duty in COVID isolation ward that 72.3% of the respondents reported moderate to extremely severe depression, 85.7% moderate to extremely severe anxiety, and 90.1% exhibited moderate to severe stress level.¹³ Crowe S, et al.

conducted a study on critical care registered nurses. They revealed anxiety by 67%, mild to severe depression by 57%, and stress by 54%; PTSD was identified with significant symptoms in 38%, of clinical concern in 23%, and probable in 13%.¹⁴

The wide-ranging sequel of COVID-19 on healthcare workers, including long working hours, sense of isolation and restricted social contact, strict instructions and safety measures to be followed, need for constant concentration and vigilance, scarcity of personal protective equipment (PPE) and necessary gadgets, lack of moral support, concerns about the health and wellbeing of their family, and a prevailing sense of chaos, are some of the factors believed to be leading to high stress and thus influencing mental health of the healthcare professionals.

A systematic review of 71 studies published during the COVID-19 pandemic showed the pooled prevalence of anxiety in healthcare workers to be 25%; among them in frontline healthcare workers it was 43%, in nurses 27%, and in medical doctors 17%.¹⁴ Previously, epidemic studies examining the psychological impacts of the SARS outbreak worldwide found a greater risk of PTSD and overall increase in mental health disorders during and after the epidemic among the public, as well as among healthcare practitioners.¹⁵ These problems will surely stay with them even after the virus is over and will continue to dread them in the aftermath. The psychological trauma will haunt them for a long time, and will affect their working environment and families as well.

5. Mental illnesses in general public

Besides these stressors for COVID-19 survivors, the pandemic related economic recession and social isolation due to the curfews and lockdowns are important factors that have increased the prevalence of psychiatric problems. The patients have been found to suffer from fear of unemployment, job insecurity, and low socioeconomic status, lack of social support, and uncertainty and unpredictability of the situation. These are some of the major factors that can lead to new mental health problems or potentiate the existing ones.

6. Consequences of mental illnesses

One of the most serious effects of these stressors is an increased tendency towards self-harm and suicidal thoughts, especially in susceptible people and the patients with other co-existing disorders or conditions that may get activated. Eleonora Iob, et al. stated that 9% of the surveyed participants reported experiencing psychological or physical abuse during the lockdown and 18% reported thoughts of suicide and self-harm.¹⁶ This finding indicates a serious potential for increased frequency of suicide and self-harm in near future if left unchecked.

A growing number of studies suggest that trauma can pass its effects to the coming generations through epigenetics.¹⁷ COVID-19 related psychological trauma may as well have enduring effects even on the next generation. It is quite possible that the consequences of this mass trauma may continue to express in the future generations; people who suffered and survived could possibly transmit their traumatic experiences and their post pandemic mental status to the future generations through encouraging unconscious imitation, deliberate and conscious conditioning, or through epigenetics..

7. Forecast of mental illnesses and prevention

It is the need of the hour to look upon these stressors and post-COVID trauma in healthcare professionals and survivors as seriously as we are looking to defeat the virus itself. We cannot predict unequivocally when shall we get rid of this virus but what we can say with certainty is that, if left unconstrained, these post-COVID physical, mental, economical, behavioral and social stressors will prove more consequential and will be more damaging than the pandemic itself.

Post-COVID era will have a surge in mental health problems, with the etiological differentials thinning out owing to the lack of specific diagnostic and screening tools, and limited or even reduced capacity to treat these problems following closure of 'non-essential' services to minimize exposure to potential COVID contacts. It would be a great challenge for mental health professionals to manage the situation in the coming years. A growing number of evidence

proves that people who need the mental health services the most get the least access to them.¹⁸ This situation will deteriorate in the post-COVID era due to economic recession, strain on resources, and increase in unemployment.

Healthcare sector in general, and mental health services in particular, will have to fundamentally reevaluate operational best practices; a huge responsibility lies on healthcare policy makers to reconsider the preferences of where to invest more. The world has already started shifting to virtual healthcare and this may even put a new stress to the present healthcare systems. A revolution of adopting artificial intelligence (AI), from prediction to diagnosis and management of many illnesses, is underway. Telemedicine and telehealth have proved to be a strong entity that has transformed the doctor-patient relationship completely during the pandemic, yet introduced new problems of their own, including inherent lack of face-to-face doctor-patient consultation with a paradoxical negative impact on the patients' mental health.

8. Capacity to deal with mental illnesses

The World Health Organization (WHO) carried out a global survey in 130 countries which provided the most detailed insight into the impact of COVID-19 on the critical mental health services.¹⁹ Only 7% of the responding countries reported fully functional mental, neurological, and substance (MNS) related services; 93% had one or more of the 10 surveyed services disrupted, with community based services most heavily affected seeing full or partial closures in around 70% countries. The high-income countries responded by establishing telehealth services and helplines, whereas low income countries relied on training in psychosocial skills of the existing healthcare workforce to bridge the gap. The most worrisome finding was significant disruption to critical harm reduction services (65%).

Based on this survey the WHO has recommended inclusion of MNS services in the list of essential medical services encouraging member states to ensure increased funding. How far telehealth and AI will help to fill the gaps, is yet to be seen; AI cannot replace emotional intelligence of the mental health services

staff, and the sub-group of patients with mental illnesses need it by far the most.

Post-COVID era will bring new horizons for the whole world. One would expect to see growing role of telehealth and telemedicine in the short term, and more innovative technological revolution including genomic medicine and nano-robots facilitating preventive and functional medicine in the longer run.^{20,21} In order to defeat the monstrous mental illness pandemic knocking at the door, mental health services urgently need to expand their facilities; identify and train new supportive roles from non-medical personnel; brace the updated diagnostic criteria and tools for early recognition and prevention of mental illnesses; develop strategies and affordable technologies like helplines and chatbots.²² to meet the surge demand and triage those requiring expert help. They need to innovate and deploy newer and more effective therapies like nano-medicine.²³

9. Conclusion

The significance of identifying the vulnerable healthcare providers and devising policies to reduce their stress and promote their mental well-being cannot be over-stated; the healthcare providers themselves should remain healthy in the first place to support physical and psychosocial well-being in their patients. Governments worldwide need to enhance funding for prevention of mental illnesses, and increasing capacity to treat those, in line with the WHO recommendations.

10. Conflict of interest

None declared by the authors.

11. Authors' contribution

SA, MA: literature search, manuscript writing

AM: Concept, manuscript writing, supervision

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