

DOI: doi.org/10.55627/mmc.002.002.0135**Review Article****Implications of COVID-19 for Mental Health among Different Sections of the Society**Manzoor Ahmed^{1*}, Sidrah Tariq Khan²¹Queen Mary University of London, Charterhouse Square, London, United Kingdom.²Ocular Imaging Research and Reading Center, Islamabad, Pakistan.*Correspondence: a.manzoor@qmul.ac.uk

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Abstract

Change is not easy; it is the nature of human beings to resist change. With COVID-19, people worldwide had to completely shift their lifestyles and adapt to an entirely new way of living. Following new rules and protocols has not been easy for everyone and has created new obstacles for people already suffering from mental health disorders. People have watched their loved ones suffer and surrender to their end. During such times, human connection becomes an important coping mechanism for people. Still, this connection is also lost with social distancing and lockdowns coupled with rising unemployment, fear, and paranoia. As this virus has spread across the world, people are facing another pandemic of depression and anxiety parallel to COVID-19, and it is affecting every single person, whether it's a doctor, a student, a parent, or a patient suffering from COVID-19. We are all victims of the psychological impacts of the current pandemic. With an alarming increase in mental health, it is imperative that governments across the world pay more attention to the psychological consequences of the pandemic while fighting the virus.

Keywords: COVID-19, mental health, pandemic, SARS-CoV-2, students, parents, healthcare workers, minorities**1. Introduction**

In November 2019, a novel strain of the coronavirus bearing much resemblance to the 2003 SARS-CoV virus, broke out in Wuhan, China. Despite the government's various efforts to contain the virus, it spread rapidly throughout the country and then, later, the entire world (Khan et al. 2020, Zhu, Wei, and Niu 2020). As of September 2022, there have been 608,328,548 confirmed COVID-19 cases, including 6,501,469 deaths (2022b). The primary mode of transmission of this virus is via respiratory droplets. It enters the body through the airways, mainly affecting the lungs, and according to recent studies, the kidneys and the liver are also affected (Rismanbaf and Zarei 2020). Owing to its transmission mode, it has been difficult to contain the virus, and as a result,

millions of people across the globe are still getting infected; millions have lost the battle of life, and still, some have recovered (Rupani et al. 2020). As of September 2022, a total of 12,613,484,608 vaccine doses have been administered. However, the world health organization (WHO) and the center for disease control (CDC) still recommend social distancing and the use of face masks for people who are not yet vaccinated, whereas fully vaccinated individuals are facing lesser restrictions except in crowded areas (2022b, Hause et al. 2022).

Moreover, even after vaccine availability and the world comes to a semi-normal state, the damage this pandemic has caused to the global economy will be a bigger challenge to revert, especially in

developing countries (Pak et al. 2020). The International Labor Organization has estimated an 8.3% drop in labor income worldwide, with an estimated 81 million inactive persons accounting for 71% of loss of employment across the world (2022a). Moreover, restrictions on movement across borders and air travel have directly impacted trade in many nations, further deteriorating the economy. The World Bank has estimated a 5.2% shrinkage in global GDP, with many countries falling into recession (Aktar, Alam, and Al-Amin 2021). A large population of the world has faced an unprecedented financial crisis in the middle of the pandemic leading to a significant negative effect on the mental health of the general population that was forced to completely shift their lifestyles to adapt to this new way of living, adjust to new protocols, practice social distancing, and live with the fear of mortality in the absence of an effective treatment all the while fighting a parallel pandemic of depression and anxiety.

Resumption to 'normal life' post quarantine and physical isolation has become a significant challenge, especially for the many people who went through major mood disorders, panic, and depression during the pandemic's peak (Hossain, Sultana, and Purohit 2020). We know that human beings undergo major mental health issues following a global crisis, whether natural disasters or economic depression (Chaves et al. 2018). With COVID-19 being a global health crisis, it was feared that the impact of this pandemic on the psychological state of vulnerable people would become a major burden on our presently collapsing healthcare system. While this is true for people who have not yet been infected with the virus, people who have been infected will be a greater challenge (Zhou et al. 2020). This fear is turning into reality now. Stigmatization, isolation, the absence of moral support, and inaccessibility to proper healthcare added to the pre-existing health disorders become major stressors for major psychiatric problems such as PTSD, memory

impairment, and dysexecutive syndrome in several patients (Guo et al. 2020, Rogers et al. 2020). It is important to consider that every single individual may not fall victim to the virus directly, but every individual is at risk of becoming a victim to the psychological impact of the 2019 pandemic.

2. Students

With the rise of the pandemic, schools and universities across the globe have been closed, and many have switched to remote learning (Rapanta et al. 2020). This abrupt change in the curriculum delivery has led to an unusual amount of unrest amongst the students as they struggle to adapt to this new way of learning. Extra-curricular activities, sports, and spending time with friends have become a luxury, and due to social isolation, many students are finding themselves spiraling down into depression. University students had to abandon their projects and internship programs, and some even had to leave their part-time jobs due to lockdowns, resulting in increased anxiety states, especially regarding their future (Zhai and Du 2020). Studies have shown that the younger population, while at lower risk of mortality in terms of COVID-19 infection, is still at a higher risk of psychological distress.

Before COVID-19, a WHO survey reported that approximately 1/5th of students worldwide had some kind of mental disorder that mostly goes unrecognized and untreated (Pedrelli et al. 2015). There is no doubt that the pandemic has worsened their mental health (Figure 1). For the most part, students have to rely on self-study, develop new routines, effectively manage their time, and they are now experiencing more academic pressure than ever. A survey of young students showed that approximately 83% of the students had reported exacerbations in their preexisting psychological distress. Moreover, another study surveyed students' overall well-being and found that 25% of the students reported increased anxiety regarding the impact that the virus will have on their academic life and collective future

(Grubic, Badovinac, and Johri 2020). In Pakistan, a survey was carried out on students from the twin cities of Islamabad and Rawalpindi, which revealed that 22.7% of students suffered from severe anxiety and 15.9 % of the students suffered from severe depression (Aqeel et al. 2021). In light of these findings, universities and college administrations must consider the mental state of the students and design new curriculums that are efficient and fit individual student needs, especially with regard to the current circumstances, to help them cope with these newer systems as much ease as possible.

3. Healthcare Workers

With the advent of the virus, healthcare facilities faced an enormous number of difficulties with the

shortage of resources such as personal protective equipment and ventilators, and the sudden surge of patients put an immense load on the healthcare system and the frontline workers, being directly in contact with the virus and having been facing critically ill patients and human loss (Ranney, Griffeth, and Jha 2020). In addition, studies have found that frontline workers had an approximately 2 times higher chance of developing psychological distress than the average population (Cao et al. 2020, Cabarkapa et al. 2020).

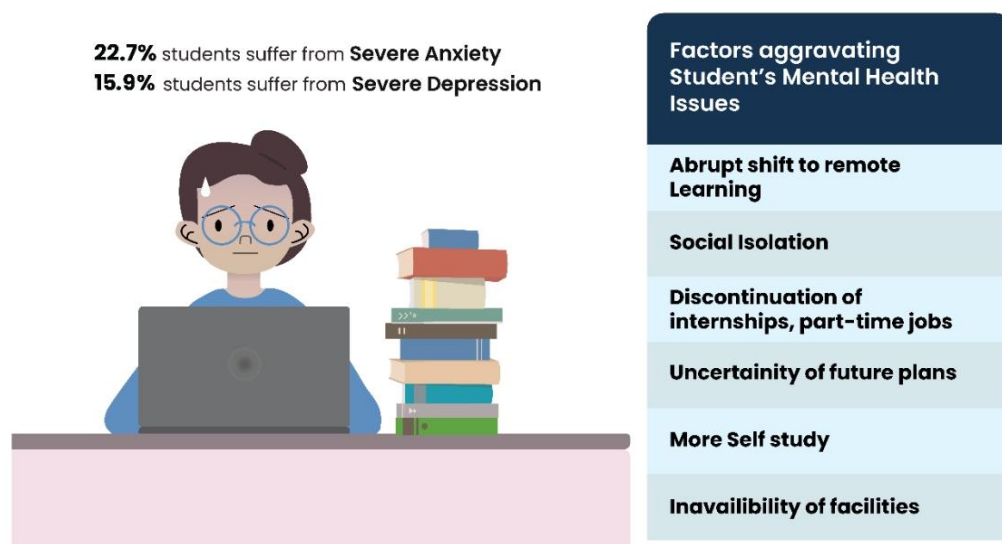


Figure 1: Several factors are affecting the mental health of students during the COVID-19 pandemic.

Studies have found that several healthcare workers have been experiencing depression, anxiety, and, most importantly, sleep disturbances since the pandemic's beginning. Multiple studies were carried out on 33,062 healthcare workers, of which 12 studies investigated anxiety symptoms, ten assessed depression, and five studies assessed insomnia. The results of these studies show the

prevalence rate of anxiety, depression, and insomnia in these participants to be 23.2%, 22.8%, and 38.9%, respectively (Pappa et al. 2020), where the most prevalent trigger is associated with the threat to their health and welfare (Tam et al. 2004). Adapting to new protocols and rules, such as conserving disposable PPEs and choosing between patients requiring ventilator support, has

been an even greater challenge (Wong et al. 2020). Nurses in the closest physical contact with patients are even more vulnerable to the virus, so they are highly susceptible to psychological disorders during such times. This is evident through a study carried out on 37 healthcare workers including 19 nurses, of which 10 nurses (approx. 52.6%) reported emotional stress regarding fear of infection, workload stress and loneliness (Cao et al. 2020). The factor of human connection, which is essential in dealing with depression, has been made difficult to maintain due to social isolation. Healthcare workers have been away from their loved ones in order to protect them, which has made it even more challenging to maintain their mental health (Hagerty and Williams 2020). With

the high fatality rate associated with COVID-19, many doctors and nurses have also reported high levels of depersonalization and low levels of accomplishments (Figure 2). The absence of effective treatment and the shortage of ventilators led to many fatalities, leaving doctors and nurses feeling unaccomplished and helpless. This has further added to their depressive state. While caring for these patients, many doctors and nurses have contracted the virus by being in close contact with patients and many have even lost the battle with the disease (Hu et al. 2020). A study conducted last year found that 299,157 health care workers across 37 countries were infected with the COVID-19 infection of which approximately 2736 lost their lives (Erdem and Lucey 2021).

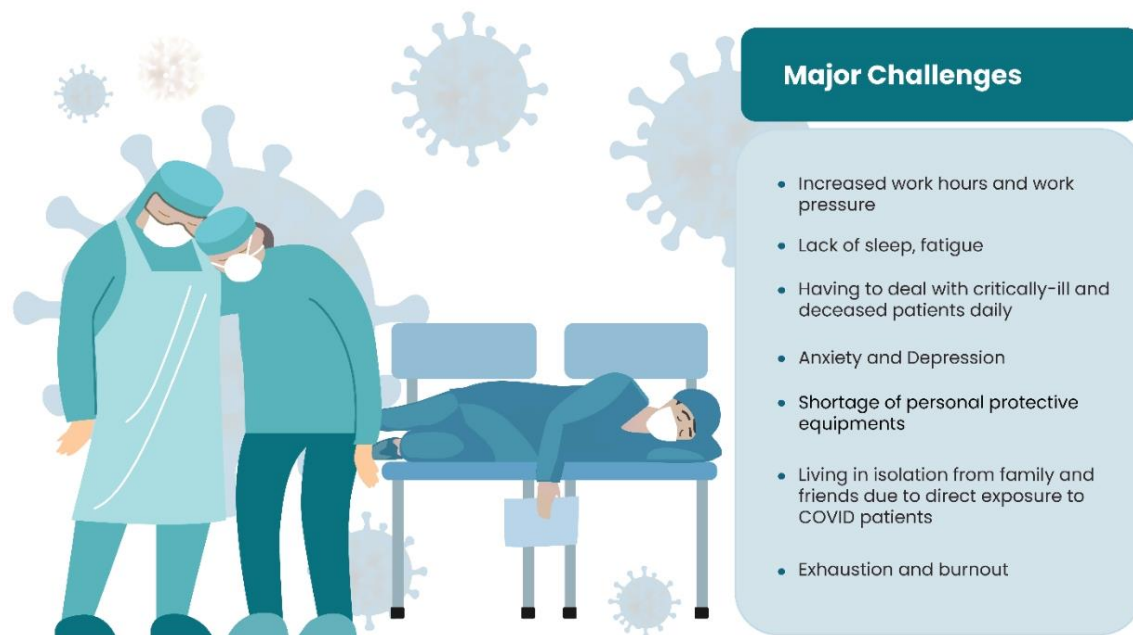


Figure 2: Healthcare workers are facing several challenges that affect their mental health during the COVID-19 pandemic.

Healthcare workers have always been victims of extreme exhaustion, and now, several healthcare workers have reported higher levels of burnout and exhaustion than ever before due to the longer work hours and the fear of losing their jobs. Also, many hospitals across the globe have put a hold on elective surgeries to prioritize COVID-19 patients and to save the general population from

contracting the virus. Out-patient departments have been shut down, putting physicians and nurses under financial stress (May 13, 2020). Healthcare workers are working at the front and are doing their best to tackle this pandemic. However, several studies have suggested that due to the amount of exhaustion and burnout they are facing, once the pandemic is controlled, the world

may face a widespread shortage of healthcare workers (Panagioti et al. 2018). They should be provided with proper job security, straightforward protocols, and psychological

help, along with other benefits, to motivate them and prevent depression and burnout.

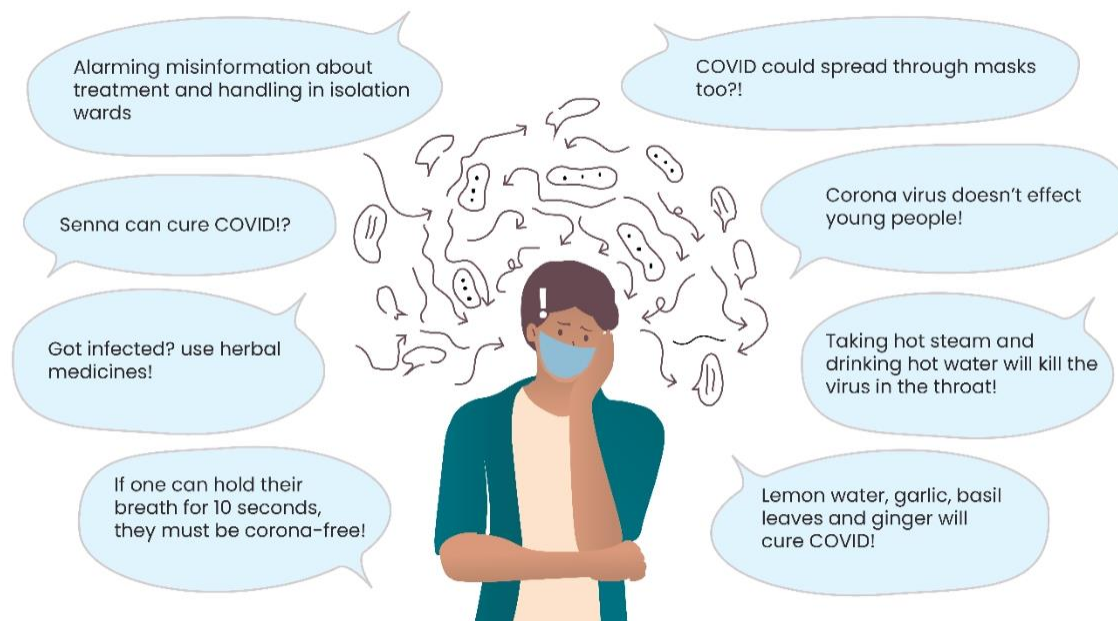


Figure 3: General public is overwhelmed with a plethora of information, some of which may cause confusion and fear, affecting their mental health during the COVID-19 pandemic.

4. General Population

While the news and social media are contributing to spreading awareness regarding COVID-19, they are also adding to the negative psychological effects of the disease (Games et al. 2020). People who follow the news and social media are in constant contact with the horrors of COVID-19. Pandemics such as this often have a very high impact on the mental well-being of the common people, especially since people falsely believe that a positive COVID-19 test is a death sentence in itself and any flu-like symptom and every sneeze is an indication of infection with the same (Singhal 2020). Several studies have assessed the impact of Physical isolation and social distancing in socially isolated/quarantined persons. One such study carried out on approximately 2400 quarantined

people using the PHQ9 scale and the Post Traumatic Stress Disorder checklist found that apart from sleep disorders and fear of COVID-19, depression was prevalent in 9% of these people whereas PTSD was prevalent in 2.7% of these patients (Tang et al. 2020).

Moreover, preventative measures such as social distancing, hand washing, and facemasks are causing a rise in stress, anxiety, and paranoia in people, especially those who are not used to taking such precautionary measures and because of the amount of emphasis that has been put on hygiene by authorities such as CDC and WHO (Pedrosa et al. 2020). Forgetting to wash hands or using sanitizers, especially when in public, can put anxiety and fear in ordinary people during such times, let alone those with preexisting mental

disorders.

On top of the circulating news about deaths and the rise in the number of COVID-19 cases in certain countries, being in quarantine and constantly living in fear of contracting the virus, and reading about the number of fatalities and critical cases across the globe, it is no surprise that the virus has been putting much emotional stress on the general population (Figure 3). When the virus broke out in China, a study was carried out on approximately 1200 participants from the general public to study the psychological impact of the virus. Out of the 1200 respondents, about 53.8% rated the psychological impact of the virus, i.e., depression, anxiety, and stress, as moderate to severe. However, people with accurate knowledge of the virus and those who practiced all precautionary measures expressed lower psychological symptoms. Their findings suggest that inaccurate knowledge of the pandemic and the inability to follow precautionary measures properly can contribute to widespread psychological distress (Wang et al. 2020).

People from across the world had to go through several lifestyle changes during the pandemic. It is something that no one predicted nor prepared for, and one of the most important groups of people affected indirectly are the parents, who now must shuffle their time watching their children during online classes while working from home (Azuma et al. 2021). Due to quarantine and social distancing, most of the daycare centers have been closed, and other help is hard to get by since everyone is practicing self-isolation, making it exceedingly difficult for parents to shuffle work, children, and other household chores (2020). This has resulted in a lack of sleep, absence of a proper routine, and poor mental health, which can directly impact the surrounding environment (Figure 4). In addition, single parents find it even harder to bring consistency into their lives and their children's lives during these testing times (Richter and Lemola 2017).

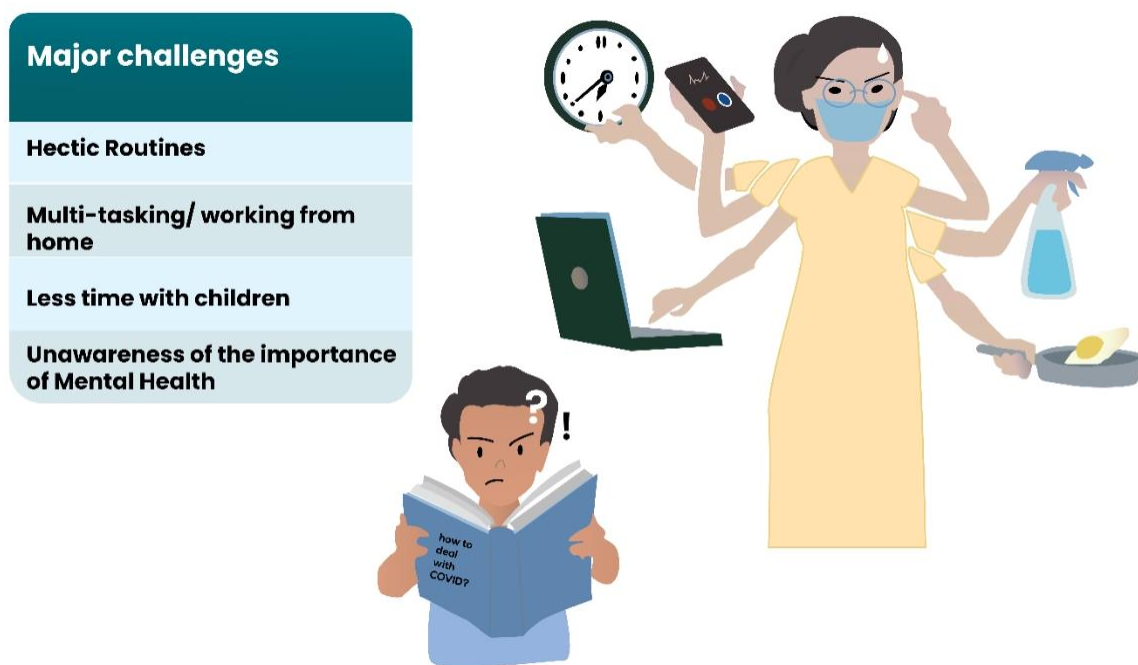


Figure 4: Parents have to multitask during the COVID-19 pandemic, adversely affecting their mental health.

In the beginning, it was feared that the pandemic would increase substance abuse, child abuse, and domestic violence due to the shutting down of schools and workplaces (Galea, Merchant, and Lurie 2020). Unfortunately, those fears are now a reality. An article published in The Guardian stated that there had been a rise in the number and severity of domestic violence cases since the start of quarantine, especially since the victims find it even harder to seek help from proper authorities. Similar cases of domestic violence have also been reported in Pakistan since the start of social isolation (2020g). Furthermore, approximately 55 million people in Pakistan live below the poverty line, of which most earn in the form of daily wages (Rs.600/day on average) and carry the responsibility of their entire household with 4-5 children (Figure 5). Also, many companies have sent their employees on either unpaid leaves or deducted 50% of their salaries, resulting in further depression, anxiety, and suicide rates (2020i).

5. Minorities

Ethnic minority groups have been severely impacted by COVID-19. Due to the shutting down of businesses and industries, many people belonging to this group who earn a minimum

wage, mostly in the form of daily wages, have been a victim of the economic impact of COVID-19 (2020f). It has been challenging for them to pay living costs and support their families. Moreover, because they belong to a minority group, these people are often blindsided regarding (non-government) relief funds. There have been reports that people belonging to ethnic/religious minority groups have been denied medical and financial relief. These people mostly lead an underprivileged life, deprived and disadvantaged, and due to their poor socio-economic status, they usually present with several underlying health problems that have far gone undiagnosed, making them an easy target for the SARS-CoV-2 (2020d). Since these people live under poor conditions, often packed into a single room with the rest of their families, in a small but densely populated area, social distancing and self-isolation have been a massive challenge for them and have turned many households into breeding grounds for the virus (Hassan et al. 2021). Research has suggested that COVID-19 has particularly impacted the psychological well-being of people who do not have direct access to decent socio-economic resources and other forms of support (Saladino, Algeri, and Auriemma 2020).

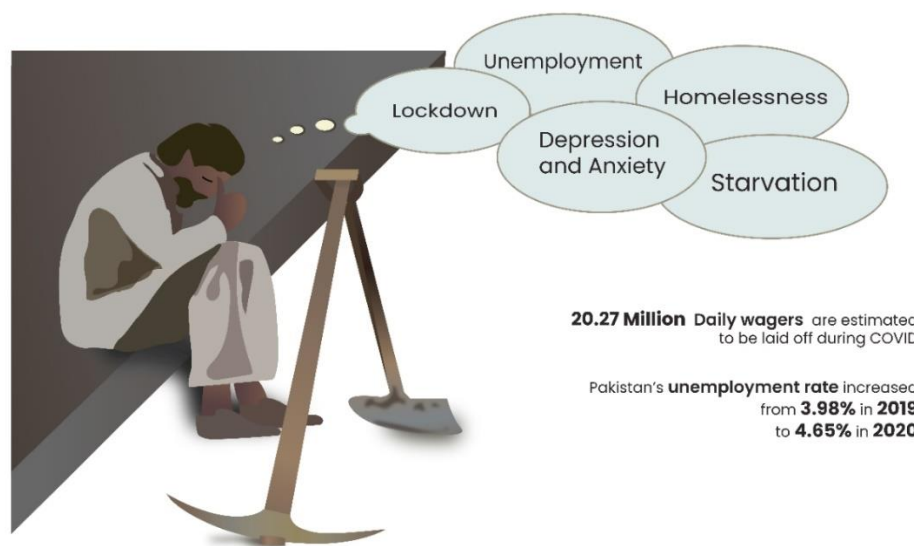


Figure 5: Several factors, the most important of which is unemployment, are severely affecting the mental health of daily wage workers.

People belonging to these groups are often overlooked and discriminated against, and it is extremely unfortunate that even during this time of a global crisis, the fact still holds true, particularly for the transgender community. Since the beginning, the transgender community has faced many challenges, from rejection to financial difficulties, and more often than not, they are found living in extremely poor conditions where most of their income comes from bottom-tier jobs and/or begging (Shah et al. 2018). Because of lockdowns and the economy's load, many have been laid off and have been struggling to make ends meet, let alone get medical treatment when contracting the virus (2020c). Governments across the world must look closely into their conditions and offer sensible financial and health support, along with awareness programs to minimize their psychological distress as much as possible(2020h). In Pakistan, the Shia/Sunni wars have been a part of the country since the beginning(Krause, Svensson, and Larsson 2019). Over time, people have lost the tolerance they had in themselves and have become victims of hate and false senses of entitlement. The gap between these communities has expanded even more so during this pandemic. In Pakistan, the initial surge of the virus started when a group of people belonging to the Shia community returned from visits to their Holy places in Iran(2020b). The community has since been a target of discrimination, even more so than before, and has been labeled as the 'people who brought the SARS-CoV-2 to Pakistan', and there is no doubt that this kind of discrimination has had a huge impact on their mental well-being. People fear that even after the situation normalizes, even after the virus is gone, will they still be labeled as such? (2020e)

6. People with Disabilities

Safeguarding people with disabilities should be our top priority. They need special care and protocols, different from those who are more privileged. Many people with developmental

disabilities live in nursing, or other congregated care settings, making it difficult for them to practice social distancing (Constantino et al. 2020). As a result, they fall into the category of people at higher risk of contracting the virus, which on top of their preexisting condition, can have a severe impact on their mental health. This is especially true when they do not fully understand the severity of the situation or are unable to follow preventative protocols (Constantino et al. 2020). It is important to provide these people with constant support and reassurance to help minimize their distress as much as possible.

Information regarding the virus must also be provided in formats that are easily understandable by people with hearing, sight, and learning disabilities in order to remove the barriers between them and relief/health services provided by the government. If these people do not fully understand the purpose behind these new protocols and this new way of living, they are more likely to resist it (Bavel et al. 2020). Forcing new policies upon them without making them fully understand can greatly impact their psychological condition, making it extremely difficult for themselves and their caretakers to provide them with the necessary support. Children with learning and other mental/physical difficulties are finding it hard to cope with this new online system of learning (Hasan and Bao 2020). Disabled children, especially those with visual or learning disabilities, often require specialized equipment and teachers, which cannot be accessed online (Hayes et al. 2018). These children need specialized care and full-time attention, for which reason untrained and working parents are finding it difficult to handle disabled children and fear that they may end up further damaging their mental health. The lack of routines like that of school and other recreational activities can impact the development of these children, especially those with autism. It is important to be fully open about the current global situation in

order to make them understand as much as possible (Patel 2020).

7. People with Pre-existing Psychiatric Disorders

People with psychosocial and other mental disabilities have also been greatly impacted by the pandemic (Wang et al. 2021). We know that healthy people are falling into depression as a result of the stress that is being imposed by the consequences of the pandemic and while healthy people become depressed and anxious, those with pre-existing mental disorders are facing a bigger challenge as these abrupt changes to their routines and their mental health care are causing further exacerbations in their psychological distress as they battle to bring some stability back into their lives. Events such as pandemics can put an immense amount of stress on people. At the same time, some people are better equipped to cope with that; those with disorders such as schizophrenia and bipolar disorder experience worsening symptoms and higher anxiety levels (Haider, Tiwana, and Tahir 2020). These individuals often rely on social connections for emotional support mostly in the form of support groups, and due to social isolation and the inability to access proper mental health care, they are finding it extremely challenging to deal with their emotional issues, sending them into further depression (Pietrabissa and Simpson 2020). This is evident in many studies where individuals with pre-existing anxiety/mood disorders have been reported to be highly susceptible to COVID-19-related mental stressors. These individuals have reported heightened fears of getting infected and other traumatic stress symptoms, along with increased anxiety, depression, feelings of loneliness, and loss of interest in day-to-day activities (Kumar and Somani 2020). These symptoms can also manifest as other health problems, such as dementia, paranoia, and heart problems, especially in the elderly (Brendel and Stern 2005). Moreover, due to the risk of

contracting COVID-19 infection, caregivers may now be hesitant to provide support as they used to, making people with disabilities more conscious and depressed about their condition.

As mentioned earlier, the WHO and CDC have put special emphasis on handwashing and sanitizing as preventative measures. While these practices do help in preventing infection, people with pre-existing obsessive-compulsive disorders, especially of the hygiene type, including those in remission, are now being reported to fall into relapse, causing them to repeatedly wash their hands which can be very disabling for them as they cannot resist the urge to do so because of their condition (Sulaimani and Bagadood 2021). Apart from hand washing, many patients are also becoming overly obsessed with the SARS-CoV-2, where the virus has taken over most of their thoughts, adding more fuel to their already heightened fear of infection or contamination.

8. COVID-19 Patients

Considering the psychological condition of the general public during the pandemic, one cannot fathom the psychological state of the patients who have been direct victims of it (Clemente-Suárez et al. 2021). People are living in constant fear of contracting the virus; the amount of information freely available about the virus, the fatality rate, and the condition of critically ill patients have induced fear and paranoia in the general population, and when one does get infected, the fear and paranoia are multiplied (Chaddha, Kaul, and Agrawal 2020). When people test positive for SARS-CoV-2, they panic, which is a direct consequence of their fear of becoming completely socially isolated, feeling guilty about transmitting the virus to their loved ones, not being able to see their families, and possibly dying in that state. Furthermore, there is a false notion floating about that being infected with COVID-19 means death is inevitable, for which reason many people, especially those without full knowledge or understanding of the virus, lose hope of ever

recovering, leaving more room for depression and panic to settle (2021).

Unfortunately, there is no proper evidence of mental illness associated with COVID-19. However, studies done on previous epidemics caused by other coronaviruses, such as SARS and MERS, have suggested that many patients will suffer from some kind of mental disorder, including panic disorder, anxiety, depression, and post-traumatic stress disorder (PTSD), during and after the course of their illness (Shi et al. 2020). One study carried out on COVID-19 patients showed that 2/3rd of the patients admitted to the ICU exhibited delirium and agitation and 1/3rd of the patients exhibited a dysexecutive syndrome during discharge (Library et al. 2020). Other studies have reported a higher percentage of PTSD in recovered patients prior to discharge, and some patients have reported feeling anxious, frustrated, and depressed when being weaned off of invasive mechanical ventilators (Merchán-Tahvanainen et al. 2017). A survey including 402 COVID-19 patients showed that 42% of the patients suffered from anxiety, 28% suffered from PTSD, 31% from depression, and 20% exhibited symptoms of OCD. Furthermore, studies suggest that these patients may experience disruptions to the quality of their life, as symptoms such as psychosis, depression, PTSD, and OCD may prevail long after their recovery (2020a). Such evidence and that collected from the literature available on other coronaviruses such as the SARS and MERS have given us some valuable insight into what the psychological effects of COVID-19 can look like on a larger scale and have helped better prepare us to fight this battle of mental health.

9. Mental Health Interventions During Pandemics

Keeping in view the mental health state of the people during the SARS-CoV-2 pandemic, it is imperative that governments all over the world take necessary measures to provide easily accessible mental health services to their people,

especially those with pre-existing mental disorders. In addition, counseling services should be provided to students if they face any problems. Moreover, they should also be providing students with some room to adjust to remote learning.

According to data provided by the WHO, about 24 million people in Pakistan suffer from some type of mental problem, and out of every 10,000 people, only 0.19% have access to mental health services (2020i). These numbers have increased since the start of the pandemic, which is why it is important to spread awareness about the mental health issues that people may develop during these times and to provide these people with the services they need, especially in the remote parts of the country(2020i). In addition, Telemedicine services should also be increased to help minimize the psychological distress of people as much as possible.

9. Expert Opinion

Change is not easy and takes a long time to adapt to. Adapting to the new realities of the post-pandemic world, which have significantly impacted our lifestyle, including working from home, home-schooling kids, and restricted physical contact with friends, family, and colleagues, are especially challenging used to. In addition, fearing to contact the virus and worrying about loved ones, particularly the most vulnerable among us, further aggravate mental health issues. The situation has improved after the introduction of safe and efficacious vaccines. However, the emergence of the variants of concern, particularly the delta variant, has instilled a constant fear in the minds of the general public that the virus is never going to be eradicated. Those with pre-existing mental health conditions are particularly affected by this constant milieu of fear.

There are several things we can do to take care of our mental health. We must keep ourselves informed with trusted news following trusted local, national, and international news channels. Keeping up with the daily routines such as getting

up and going to bed as per normal routine, having regular exercise, having separate timings for work and rest, eating regular and healthy meals, maintaining personal hygiene, and doing activities that give us the most joy, will help us in looking after our mental health. Reducing newsfeed exposure and seeking the latest information only once or twice daily, on pre-selected time points, would definitely reduce mental distress. Contact with those close to us, on the telephone, if physical movement is restricted, would also improve mental health.

In order to deal with social isolation and anxiety due to COVID-19, some people start drinking alcohol or using drugs. This could have unintended consequences as an increased risk of infections is common with the excessive use of alcohol. Those who had stopped taking alcohol may revert back. The use of alcohol will also make it difficult to set up a proper routine, including keeping personal hygiene, as pointed out earlier. Screen time should be limited, and long and continuous screen time should be interrupted with regular non-screen activities and rests. Video games may help in relaxing and ameliorating mental health. However, keeping the right balance is strongly recommended. With lockdowns and resulting long periods of stay at home, it has been observed that too often, people are tempted to spend more time with video games or other online activities. This will likely result in further aggravation of mental health. Social media can also be utilized to spread positive attitudes and promote valid and useful information. Correction of the misinformation will also help oneself and the wider community. Supporting the people in the community will also help achieve a positive and healthy frame of mind. During these challenging times, supporting each other will help overcome this pandemic and avert the pending mental health pandemic.

Conflict of Interest

The authors declare that they have no competing

interests.

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Study Approval

NA

Consent Forms

NA.

Authors Contribution

MA conceptualized the study and wrote the final manuscript, STK helped in the analysis and writing the first draft, and did the review analysis.

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