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Special Article

Emotional Well-being, Mental Health Awareness, and Prevention of Suicide: Covid-19 Pandemic and Digital Psychiatry

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Abstract

Emotional well-being is a state of positive mental health where the individual is able to handle his emotions and all life activities. He understands his emotions, learns, and copes with all the negative situations, achieves, and finds a positive emotional state which finally leads to success. Covid-19 is a disease caused by newly discovered novel corona virus. The outbreak came to light in December 2019 with the emergence of unexplained fever and pneumonia. In the next few months, the disease spread to various countries worldwide and turned into a pandemic. Governments around the world took drastic measures to control the pandemic and safeguard the citizens. Strict isolation, quarantine, and lockdowns were introduced. People were confined to their home for multiple days which led to intense mental stress. Day-to-day activities were disturbed, and people also suffered huge-economic losses. With the reduction in interpersonal contact and social activities, various psychological problems have emerged and suicides are being reported. Health-care personnel went through great stress and sleepless nights in taking care of the Covid-19 patients. In times of these stressful situations, the mental health awareness can play a crucial role. Simple behavior changes and mindfulness can make significant changes toward positive mental health. The maintenance of proper mental hygiene and regular support from mental health-care workers played a significant role in this regard. However, routine personal health care became less accessible to the general public during the pandemic. This has paved the way for the development of digital psychiatry. Thus, we bring out this review to provide an overview of the emotional well-being, mental health awareness of people during lockdown, prevention of suicide, and emergence of digital psychiatry during Covid-19 pandemic.

Keywords: Covid-19, digital psychiatry, emotional, mental health, pandemic

Introduction

Emotional well-being plays a significant role is maintaining positive mental health. It controls the health-seeking behavior, improves decision-making skill, increases interpersonal communication, and helps recover from stressful situations or illness. Thus, they play a significant role in overall well-being of an individual. However, this psychological aspect called emotion is usually neglected. Covid-19 emerged in the Wuhan province of China in the end of 2019 and over a span of next 4 months, it has spread to majority of the countries around the world. Strict quarantine was implemented, and several countries went in to lockdown to control this unprecedented pandemic. The implementation of quarantine had life-saving benefits, but it also led to many adverse consequences. Social isolation produced incredible stress and led to the emergence of new psychological challenges.[1] The diseases such as anxiety, depression, posttraumatic stress, panic attack, obsessive compulsive disorder, and suicides emerged and led to an increase in the chronic cases. Thus, sudden change in the lifestyle of people due to economic constraints and social problems led to serious psychological issues. Health workers also work under immense stress during a pandemic. Thus, regular screening, counseling, and support from mental health

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workers can play an important role in their psychological well-being. Mental health awareness can play a significant role in improving emotional well-being of the people. It involves prevention, identification, treatment, and overall management of mental illness without any kind of judgment or shame. However, health-care system has become less accessible to public during social isolation. With transport services going into shutdown, traveling to tertiary facilities has become impossible to many. Prioritization by the government in concentrating all the health resources and workforce toward controlling Covid-19 has adversely affected the physical and mental health issues.[2] Thus, in times, of this grave pandemic, digital mental health can improve service delivery. From providing emergency mental health services and treatment to performing suicide risk assessment and counseling its domains are multiple. With its various modes of functioning, telepsychiatry consultants can directly reach the clients at home and provide support.

Emotional Well Being During Isolation and Lockdown

Aristotle once said, "Man is a social animal." He is supposed to live in groups as a family and as a large community. These groups and social living have a deep impact on his mental health and helped maintain psychological integrity. Group cohesiveness has important influence on his mind and behavior, and it makes him fully functional. When this component or part of his life is hampered, it invokes high levels of stress in him and these stressors play an important role in the onset of mental illness.[3]

Social isolation is defined as inadequate quality and quantity of social relationship with other people in a group or in the community.[3] It is said to cause a significant negative effect on mental well-being. Taylor *et al*. performed a study during the equine influenza outbreak in Australia[4] in which the general population showed that extreme high level of nonspecific distress was found in 34% of the general population during the epidemic. Jeong *et al*. studied 1692 participants on the isolation during the middle east respiratory syndrome pandemic of 2015 among whom they found that anxiety and anger were the predominant psychological problems during the isolation.[5] During the follow-up visit after 6 months of release, there was a significant drop in psychological symptoms. He demonstrated that fear of social isolation, lack of food supplies, reduced social networking activities, and financial losses continued to bother the participants even after the release.[6]

Loneliness, on the other hand, is a subjective painful emotional state occurring due to reduced social interaction.[3] It is also associated with poor interpersonal relationship. Quarantine has led to increased chances of loneliness in all groups of people.[7] One of the initial responses of people to pandemic is that of fear and anxiety which leads to insomnia and panic. Fear of contamination and infection among people has led to the demonstration of certain ritualistic behaviors. This has, in turn, led to the exaggeration of symptoms of obsessive compulsive disorder in patients, such as repeated hand washing, wearing masks, and use of sanitizers.[8] Studies have also shown that there is a strong association between loneliness and depression. They have shown that loneliness is associated with depression in both men and women, but later they found that association is stronger for men.[9] Stravynski and Boyer performed a survey in Quebec and found that there is a positive correlation between loneliness and suicidal ideation. A study also demonstrated that severe distress also increased the frequency of suicidal thoughts.[10]

The present pandemic has invoked a lot of stress in the general population. A study by Zhang and Ma on the local residents in China showed that 52.1% of the participants felt horrified and apprehensive about the pandemic.[11] They also showed that up to 77.9% of the study population reported that family support helped them cope well with the situation and thus 53.3% did not feel helpless during the pandemic.

Infodemics play a crucial role in exaggerating the anxiety during isolation and pandemics.[12] Media frenzy topics such as pandemics go instantly viral and lead to information explosion. Huge amount of opinions and false information are fed into media which creates excessive confusion, uncertainty, and fear among generally public. People staying indoors for many days tend to use electronic devices for many hours in a day. With more and more days of staying indoors usage of electronic media has drastically increased which may lead to Internet addiction.[12]

The Government in India has banned the sales of alcohol and tobacco products to strictly implement isolation.[13] With reduced peer support and unavailability of substances, the rate of substance use has reduced. It provided a good opportunity for people who are willing to quit for stopping substance use. Lockdown has led to the rise of alcohol withdrawal state, seizures, and delirium which are difficult to handle in state of isolation.[14] People on opioid replacement therapy had trouble accessing the health-care center to acquire the regular dose of drugs resulting in a high chance of relapse.[13]

Factors that affect the mental state of people during pandemic lockdown are:

1. Rumors and false information
2. Lack of education resulting in fear of unknown, unfamiliar, and unexpected
3. Fear of infection
4. Sudden change in the routine activity
5. Restriction of movement with a fear of being trapped and helplessness
6. Reduced interpersonal or emotional support causing boredom, frustration, and loneliness
7. Separation from loved ones
8. Economic problems and shortage of household commodities and medicines
9. Safety of family, especially children and old age.

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Mental Well-being of Health-Care Workers

Risk assessment and categorization are the important aspects of all health-care management including mental health services. Health-care workers form the group of population at the highest risk in a pandemic. They work under incredible stress with constant monitoring to avoid getting infected. Fear of getting infected, long periods of quarantine, days of separation from family and loved ones, fear of accidentally infecting their own family, and witnessing death of colleagues and several patients add to their misery.[15] Worldwide, death of health-care workers has been rising since the beginning of Covid-19 pandemic. With increased exposure of health-care workers to Covid-19 stigma against them have increased. They are subjected to social isolation, and rejection due to their increased contact with Covid cases with the presumption that they may be infective. Violence against doctors also has been reported in certain countries which have added to their misery.

Several studies from the past pandemics show that they cause a significant effect on the mental health of health-care workers. Maunder *et al*. who studied the long-term mental health of health-care workers after severe acute respiratory syndrome (SARS) outbreak in 2003 found that they had significantly higher level of burn out, psychological distress, and posttraumatic distress.[16] Another study by Chong *et al*.[17] on health-care workers in Taiwan after SARS outbreak showed that there was increased psychiatric morbidity. Psychiatric morbidity was three times more (75.3%) than in the general population in Taiwan. Hence, the authors rightly termed the incident as a bio disaster.[17]

Lai *et al*. performed a study on the mental health outcome of health-care workers during Covid-19 pandemic in China.[18] They showed that there was a high incidence of mental health issues in health-care workers posted in fever clinics and Covid-19 wards. Among the 1257 participants they showed that 50.4% had depressive symptoms, 44.6% had anxiety, 71.5% distress, and 34% suffered from insomnia. Thus, overall around 70% of health-care workers reported psychological distress during the pandemic.

Zhang *et al*. performed another nationwide survey and showed that medical health workers had significantly high psychiatric morbidity.[19] They showed that heath workers had higher prevalence of insomnia, anxiety, depression, somatization, and obsessive compulsive symptoms. Being female, living in rural areas and being at the risk of contact with Covid-19 cases were the most important risk factors for the above mental illness.

Another study by Kang *et al*. on health-care workers during corona outbreak in China had similar results. They examined 994 people and showed that 22.4% suffered moderate psychological disturbances and 6.2% suffered severe psychological disturbances. Among the participants, 50.4% accessed mental health resources through media and significant 17.5% participated in counseling and psychotherapy.[20]

Diseases such as Covid-19 which emerge without any warning lack clear guidelines for its treatment which can add to the increased stress among medical fraternity.[21] These diseases make the medical fraternity take unexpected decisions during the treatment which can seriously hurt their moral values and ethics causing severe moral injury.[22] Experiences from our past clearly show that pandemics cause lasting damage on the mental health of health-care workers.[16]

Doctors and health-care workers have shown immense courage in handling the pandemic. In spite of acute shortage of personal-protective equipment and medical resources, they have managed to fight the pandemic effectively. The health-care workers due to their medical knowledge are better equipped mentally in handling the pandemic, but they are not invincible. Hence, all mental health workers need good psychological support programs for the intense job.[23] Most important necessity for the health-care workers to function effectively is the maintenance of good personal health. Good nutrition, quality sleep, maintenance of proper hygiene, and good relaxation are absolutely necessary. Sharing thoughts and experiences with friends can have an important role is reducing stress. Talking to family and emotional support can help them work effectively.

Another important need of the day is to mentally prepare the staff for the management of disasters.[22] They have to be educated and counseled regarding the decision-making techniques and handling grief. With continuous days of hard work, burnout among health-care professionals is expected. Good leadership and formation of support groups can help in this regard. If the symptoms turn to be pathological, then mental health professional are to be consulted. Continuous monitoring of health workers by mental health professional is very beneficial in this regard. Health-care professionals also need special recognition for their intense hard work. Benefits in the form incentives can act as rewards which will support and motivate them in their fight against disease.

Vulnerable Group

Children and adolescents form a group of vulnerable population during a pandemic. Closure of schools, separation from friends, and loneliness can have a negative influence on mental wellbeing.[24] School mental health programs and Anganwadi supplementary nutrition programs have been disrupted due to lockdown. Thus, people from low economic strata having difficulty to provide good care and nutrition to the kids make them more vulnerable to the infections.

The patients suffering from chronic mental illness have also felt the effect of Covid-19 pandemic. The process of social isolation and quarantine is known to cause multiple psychological issues in the vulnerable population.[21] Due to the rule of social isolation and lock down, patients with chronic mental illness had to avoid their routine doctor consultations.[25] This has also resulted in poor drug compliance and reemergence of certain psychiatric symptoms. More number of beds in

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specialized hospitals have to be reserved to manage fever cases during the pandemics which has indirectly resulted in the reduced admission of psychiatric cases.[25] The presence of psychiatric disability can result in poor self-care, reduced cognitive capacity, difficulty to maintain social distancing, and also failure to consult emergency services when needed. Poor insight also has resulted in late identification of new psychiatric symptoms and delayed consultations during emergencies.

Studies on schizophrenia have shown that fear of the new disease or higher level of predicted fear due to swine flu was associated with increased chance of willingness to adopt protective measures.[26] This correlation was only effective as long as the patient was calm or less anxious. As the patient became anxious, the perceived threat from the disease dropped and chances of person taking protective measures against disease too dropped. Thus, patients affect plays an important role in how effective safety measures are taken.

Prevention of Suicide

Social isolation reason is an important risk factor for suicidal death. It contributes to the high number of deaths in the age group of adolescents and young adults. With the emergence of Covid-19 pandemic and imposition of quarantine social activities of an individual is seriously curtailed resulting in isolation. Several studies have shown that subjective feeling of loneliness is a potential factor associated with suicidal thoughts.[10] The factor called loneliness is also associated with various psychiatric conditions such as depression, substance abuse, and excessive stress which, in turn, contribute to suicide.

Loss of sense of purpose or sense of belongingness in life has acted as the important factors contributing to loneliness and in turn to suicide. Drastic measures taken by the governments in some countries during pandemic like not to resuscitate terminally ill case of cardiac or other illness which can cause high amount of anxiety among patients. These serious measures taken during the pandemics can easily effect the vulnerable population. Certain personality characteristics, guilt/fear of spreading the illness to family members, and past family history can act as significant contributors which can drive people to take serious decisions like suicide.

Suicide is a condition associated with various risk factors in young adults. Features such as aggression, impulsivity, and poor frustration tolerance can be the factors that increase the likelihood of suicide. Emotional state of a person plays an important role is staying calm. Emotional turmoil of young adolescents, anger, and irritability results in poor interpersonal relationships. The long periods of quarantine also contributes to higher incidents of child abuse, physical, and sexual abuse which, in turn, results in posttraumatic stress, panic, and depression. All the above factors in unison or in combination can drive a person to suicide.[27]

Zamora-Kapoor *et al*.'s study on adolescents has shown that social connectedness has an important role in their development.[28] A sense of social isolation, disapproval, and exposure to the past incidents of suicides are the causative factors for suicidal behavior. Several studies around the world have shown that social isolation is significantly associated with suicide in adolescents. Chan *et al*. studied 2789 adolescents of 16–17 years' age group and showed that loneliness, anxiety, worry, and lack of friends significantly contributed to suicidal ideation in adolescents.[29]

A less explored fact of this pandemic is the problem of weight gain and metabolic disorders. Due to multiple days of reduced physical activity, the chances of obesity increases. Body weight also plays an important role in maintaining over all mental well-being of an individual. Studies by Zeller *et al*. showed that adolescents who are obese have a high chance of having suicidal ideation.[30] They also showed that adolescents who were accurate in their weight perception have significantly high chance of getting suicidal ideation.

Elderly age is another group of population at the high risk of suicide. Unique feature of elderly people is that they show less-warning signs and use highly lethal methods of death. Hence, the suicides in the elderly are often well planned and highly successful as they are more determined to end their life. Personality characteristic in the form of "narcissistic crisis'' consisting of inflexibility and rigid thinking strongly contributed to suicides in the elderly.[31] Due to advanced age-related physical debility, they often turn angry, irritable, and demanding.[32] Various studies have demonstrated that a past history of suicide in the elderly is a significant risk factor for future attempt. Juurlink *et al*. demonstrated that multiple common physical and psychiatric conditions often contribute to suicidal behavior in the elderly.[33] Their study has shown that there is a strong relationship between severe pain and suicidality in the elderly. Patients with severe physical pain and inadequate analgesia often try suicide as a method to escape from the intolerable suffering.

Social media can play a significant role in shaping the emotions of a person during pandemic. Recently, Goyal *et al*. from India reported a case of suicide due to the fear of contracting Covid-19 infection.[34] The subject had witnessed few videos on the social media on the death of suspected Covid-19 cases. Later, when a local doctor diagnosed him to be infected with some unknown viral infection, he wrongly assumed it to be Covid-19. Due to the fear of infecting Covid-19 to his family members, he quarantined himself and later died due to hanging. This case clearly showed us how misinformation acquired from media can turn lethal during a pandemic.[35]

Mental illnesses have been found to be inherently associated with the increased chances of death.[36] Schizophrenia has been associated with a high risk of suicidal thoughts inherently and due to secondary depression. The hallucinations and delusions can push the patients to suicidal behavior in the times of intense stress.

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Emotional Wellbeing in an Epidemic

Pandemics can cause serious mental health issues, but a planned systematic approach toward quarantine can help and ease it. In the times of pandemic and isolation, family forms the most important support group. Stravynski and Boyer showed that marriage acted as a significant protective factor in reducing loneliness.[10] Avoiding boredom and isolation are also important in maintaining good mental health care. During these stressful times, all people besides you are your family. Maintaining loving and caring interpersonal relations play a significant role in preventing mental breakdown. It is hardly possible to feel lonely when you are preoccupied with useful activities. Hence, investing the stay during isolation on useful activities can greatly reduce boredom and stress.

Maintenance of proper mental hygiene is a key to success. Lack of adequate information and uncertainty increase the fear response. Hence, it is absolutely necessary to get adequate and reliable information on the current status of the disease. The reliable health-related websites often supported by the government are the best ones to consult. Eg: https://www.mohfw.gov.in/or https://www.icmr.nic.in/or https://ncdc.gov.in/is to be consulted in India for all the Covid-related authentic reports. As fake news reports create panic in public, government has to monitor the Covid-19 related reporting in media and also remove the fake news reports. Educational programs in the media by health-care workers have to be encouraged which can also help general public with managing the stress.

Skill-enhancement programs can be helpful in the personal development. In the present day, various online educational platforms offer short-term courses which can help in this regard. Performance of regular physical exercise, relaxation methods such as yoga and good sleep are essential to maintain positive health. Picking new hobbies and performing cognitive exercises increase help in this regard.

The prevention of suicides is also an important area to be looked for in pandemics. Introduction of toll-free help lines, continuous monitoring of at risk people, targeted delivery of mental health care services can be undertaken wherever feasible by recognizing the target population. Enhancement of resilience and coping factors are highly essential in managing stress. This can be enhanced with better understanding of personal self and psychoeducation. One of the predominant stresses for the general population during the pandemic is inadequate household commodities. The prevention of this helplessness is crucial in this regard. Anticipation of stressful circumstances and disaster preparedness help people prepare themselves for stressful situations. The government can help the people by providing economic support, subsidies, and insurances and also by instilling hope and positivity.

Rise of Digital Psychiatry

Providing psychiatry services and training through digital media is an integral part of working solutions during the time of pandemic crisis and aftermath. The Covid-19 pandemic which had spread like wildfire made cities go into lockdown. It has made hospitals and clinics inaccessible to public. With the public transportation facilities coming to closure, it has been a good time to explore newer methods for consulting doctors and maintain doctor–patient relationship.[37] Hence, the time has come for the doctors to reach to their patients at home through digital medium.[38] With the technological revolution in the field of telecommunication in India, the field of telepsychiatry has shown lot promise to the people.

The field of telepsychiatry has made a significant development in the last decade. Tele psychiatry is a branch of psychiatry that uses digital medium for consultation and treatment. Starting with digital data management system, it has extended itself to video conferencing and latest to the use of artificial intelligence in the treatment. Technological advances in the last few years have made the field of telepsychiatry more accessible and feasible in the rural and urban settings. In the past due to lack of direct human touch, physical signs, and emotional connection, it was less preferred by most psychiatrists. However, with the outbreak of Covid pandemic telepsychiatry has found to be highly effective in treating most of the psychiatric illness during emergencies. During the time of pandemics and other emergencies or disasters, the normal mental health services in the hospital may go disrupted.[39] During those days, the system of telepsychiatry can help in the emergency management of cases and also provide psychological first aid to the patients.

Digital or telepsychiatry has been effective in treating various psychiatric emergencies. It has found to be useful in emergency consultations and disasters. Current Covid-19 outbreak and isolation has led to increased amount of stress, depression, and posttraumatic stress disorders (PTSDs) in the first responders and also the general public. This has made telepsychiatry highly crucial in the current setting. With more and more people suffering and constraint of mental health resources, the system has turned to be highly effective. Bolton *et al*. studied the effectiveness of telepsychology on PTSD.[40] By evaluating total of 472 patients from 11 studies, they showed that video and Internet act as potentially effective modalities in short-term psychiatric care. They showed that telepsychiatry modality was highly comprehensible and gave a good outcome in PTSD patients. Only trouble faced by the patients performing videoconferencing was with performing cognitive restructuring exercises which could be better performed with mobile applications.

Telepsychiatry is highly effective in providing emergency psychiatric care to patients.[39] By performing this effective process, it significantly reduces the crowding of emergency rooms. By providing immediate treatment to many psychiatry emergencies such as suicides, it can drastically reduce suicidal deaths. Studies have also shown that tele-mental health screening has dropped the stay in emergency department from 4.2 days to <1 day in more than 80% of patients. Telepsychiatry has also led to preservation of time, reduced use of psychiatric

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intensive care unit ICU, reduced transfer to emergencies, and less overall psychiatric admissions by up to 50%.

Rees and Maclaine performed a systematic review on the videoconference delivered psychological treatment for anxiety disorders and showed that this mode of treatment is highly effective for the management of anxiety disorders.[41] The study showed that greatest evidence of improvement was in the treatment of PTSD. Another review published by Hilty *et al*. showed that telepsychiatry is highly reliable and preferred by patients as well as doctors.[42]

Although telepsychiatry is highly effective in the present age is not without limitations.[43] Most important drawback is it lacks human touch. The energy and expressiveness in communication are reduced during the communication. It can be overcome to certain extent by being more loud and adaptive to the telepsychiatry sessions. The videoconferencing maybe at times delayed due to technological glitches which the patient has to be used to. Usually, introductory sessions and demonstrations are useful which help the patients to adapt to the newer methods of consultations. At times, certain physical cues and signs maybe missed during online consultations; hence, proper interview of the patient's relatives is highly important and beneficial. There are also reports saying that telepsychiatry is ineffective in the treatment of acute suicidal patients, acute intoxication, and borderline personality disorder cases.

Digital psychiatry also incorporates utilizing digital world for providing the awareness to public on the psychological aspects of pandemic and providing psychiatry training in the digital format for building human resources. Government bodies and medical educational institutions across India have enhanced digital psychiatry teaching learning. However, it is important to critically review digital psychiatry versus conventional psychiatry in the coming years.

Conclusion

Covid-19 has wreaked havoc affecting the health-care system and economy of various countries. With just few months of experience, various studies have clearly shown the negative psychological impact of Covid-19 on the population. Social isolation and quarantine have led to the emergence of multiple psychological disorders in the general population as well as health care workers. As day goes by the number of infected only increases and add on to the psychiatric morbidity. The long-term psychological outcome is still unknown. Thus, it is the responsibility of everyone to take proper mental health precautions and safety measures. Specific mental health intervention strategies are also to be introduced for general well-being of the society. In order to increase the accessibility of health-care facility during the isolation, the development of telepsychiatry consultation is the need of the hour.

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Conflicts of interest

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References

1. Qiu J, Shen B, Zhao M, Wang Z, Xie B, Xu Y. A nationwide survey of psychological distress among Chinese people in the COVID-19 epidemic: Implications and policy recommendations. Gen Psychiatr 2020;33:e100213.
2. Kavoor AR. COVID-19 in People with Mental Illness: Challenges and Vulnerabilities [published online ahead of print, 2020 Apr 8]. Asian J Psychiatr. 2020;51:102051. doi:10.1016/j.ajp.2020.102051.
3. Wang J, Lloyd-Evans B, Giacco D, Forsyth R, Nebo C, Mann F, *et al*. Social isolation in mental health: A conceptual and methodological review. Soc Psychiatry Psychiatr Epidemiol 2017;52:1451-61.
4. Taylor MR, Agho KE, Stevens GJ, Raphael B. Factors influencing psychological distress during a disease epidemic: Data from Australia's first outbreak of equine influenza. BMC Public Health 2008;8:347.
5. Jeong H, Yim HW, Song YJ, Ki M, Min JA, Cho J, *et al*. Mental health status of people isolated due to Middle East respiratory syndrome. Epidemiol Health 2016;38:e2016048.
6. Rubin GJ, Wessely S. The psychological effects of quarantining a city. BMJ 2020;368:m313.
7. Auerbach J, Miller BF. COVID-19 exposes the cracks in our already fragile mental health system. Am J Public Health 2020; p. e1-2. doi:10.2105/AJPH.2020.305699.
8. Shuja KH, Aqeel M, Jaffar A, Ahmed A. COVID-19 pandemic and impending global mental health implications. Psychiatr Danub 2020;32:32-5.
9. Cacioppo JT, Hughes ME, Waite LJ, Hawkley LC, Thisted RA. Loneliness as a specific risk factor for depressive symptoms: Cross-sectional and longitudinal analyses. Psychol Aging 2006;21:140-51.
10. Stravynski A, Boyer R. Loneliness in relation to suicide ideation and parasuicide: A population-wide study. Suicide Life Threat Behav 2001;31:32-40.
11. Zhang Y, Ma ZF. Impact of the COVID-19 pandemic on mental health and quality of life among local residents in Liaoning province, China: A cross-sectional study. Int J Environ Res Public Health 2020;17:2381.
12. Jakovljevic M, Bjedov S, Jaksic N, Jakovljevic I. COVID-19 pandemia and public and global mental health from the perspective of global health securit. Psychiatr Danub 2020;32:6-14.
13. Kar SK, Arafat SM, Sharma P, Dixit A, Marthoenis M, Kabir R. COVID-19 pandemic and addiction: Current problems and future concerns. Asian J Psychiatr 2020;51:102064. doi:10.1016/j.ajp.2020.102064.
14. Shukla L. Complicated Alcohol Withdrawal – An Unintended Consequence of COVID-19 Lockdown. Open Science Framework; 2020. Available from: https://osf.io/89svq. [Last accessed on 2020 May 13].
15. Lu W, Wang H, Lin Y, Li L. Psychological status of medical workforce during the COVID-19 pandemic: A cross-sectional study. Psychiatry Res 2020;288:112936. doi:10.1016/j.psychres.2020.112936
16. Maunder RG, Lancee WJ, Balderson KE, Bennett JP, Borgundvaag B, Evans S, *et al*. Long-term psychological and occupational effects of providing hospital healthcare during SARS outbreak. Emerg Infect Dis 2006;12:1924-32.
17. Chong MY, Wang WC, Hsieh WC, Lee CY, Chiu NM, Yeh WC, *et al*. Psychological impact of severe acute respiratory syndrome on health workers in a tertiary hospital. Br J Psychiatry 2004;185:127-33.
18. Lai J, Ma S, Wang Y, Cai Z, Hu J, Wei N, *et al*. Factors associated with mental health outcomes among health care workers exposed to coronavirus disease 2019. JAMA Netw Open 2020;3:e203976.
19. Zhang WR, Wang K, Yin L, Zhao WF, Xue Q, Peng M, *et al*. Mental health and psychosocial problems of medical health workers during the COVID-19 epidemic in hina. Psychother Psychosom 2020; p. 1-9. doi:10.1159/000507639.
20. Kang L, Ma S, Chen M, Yang J, Wang Y, Li R, *et al*. Impact on mental health and perceptions of psychological care among medical and nursing staff in Wuhan during the 2019 novel coronavirus disease outbreak:

[Downloaded free from http://www.amhsjournal.org on Sunday, July 12, 2020, IP: 93.44.189.35]

A cross sectional study. Brain Behav Immun 2020. doi:10.1016/j.bbi.2020.03.028.
21. Usher K, Bhullar N, Jackson D. Life in the pandemic: Social isolation and mental health. J Clin Nurs 2020;10.1111/jocn.15290. doi:10.1111/jocn.15290.
22. Greenberg N, Docherty M, Gnanapragasam S, Wessely S. Managing mental health challenges faced by healthcare workers during covid-19 pandemic. BMJ 2020;368:m1211. doi:10.1136/bmj.m1211.
23. Alikhani R, Salimi A, Hormati A, Aminnejad R. Mental health advice for frontline healthcare providers caring for patients with COVID-19. Can J Anaesth 2020; p. 1-2. doi:10.1007/s12630-020-01650-3.
24. Golberstein E, Wen H, Miller BF. Coronavirus disease 2019 (COVID-19) and mental health for children and adolescents. JAMA Pediatr 2020. doi:10.1001/jamapediatrics.2020.1456.
25. Cui LB, Wang XH, Wang HN. Challenges facing coronavirus disease 2019: Psychiatric services for patients with mental disorders. Psychiatry Clin Neurosci 2020;10.1111/pcn.13003. doi:10.1111/pcn.13003.
26. Maguire PA, Reay RE, Looi JC. A sense of dread: Affect and risk perception in people with schizophrenia during an influenza pandemic. Australas Psychiatry 2019;27:450-5.
27. Greenhill LL, Waslick B. Management of suicidal behavior in children and adolescents. Psychiatr Clin North Am 1997;20:641-66.
28. Zamora-Kapoor A, Nelson LA, Barbosa-Leiker C, Comtois KA, Walker LR, Buchwald DS. Suicidal ideation in American Indian/Alaska native and white adolescents: The role of social isolation, exposure to suicide, and overweight. Am Indian Alsk Native Ment Health Res 2016;23:86-100.
29. Chan YY, Lim KH, Teh CH, Kee CC, Ghazali SM, Lim KK, *et al*. Prevalence and risk factors associated with suicidal ideation among adolescents in Malaysia. Int J Adolesc Med Health 2016;30. doi:10.1515/ijamh-2016-0053.
30. Zeller MH, Reiter-Purtill J, Jenkins TM, Ratcliff MB. Adolescent suicidal behavior across the excess weight status spectrum. Obesity (Silver Spring) 2013;21:1039-45.
31. Conwell Y, Thompson C. Suicidal behavior in elders. Psychiatr Clin North Am 2008;31:333-56.
32. Conwell Y, Van Orden K, Caine ED. Suicide in older adults. Psychiatr Clin North Am 2011;34:451-68, ix.
33. Juurlink DN, Herrmann N, Szalai JP, Kopp A, Redelmeier DA. Medical illness and the risk of suicide in the elderly. Arch Intern Med 2004;164:1179-84.
34. Goyal K, Chauhan P, Chhikara K, Gupta P, Singh MP. Fear of COVID 2019: First suicidal case in India ! Asian J Psychiatry 2020;49:101989. doi: 10.1016/j.ajp.2020.101989.
35. Reger MA, Stanley IH, Joiner TE. Suicide mortality and coronavirus disease 2019 – A perfect storm? JAMA Psychiatry 2020; p. 1060. doi:10.1001/jamapsychiatry.2020.1060. Available from: https://jamanetwork.com/journals/jamapsychiatry/fullarticle/2764584. [Last accessed on 2020 Apr 24].
36. Appleby L. Suicide in psychiatric patients: Risk and prevention. Br J Psychiatry 1992;161:749-58.
37. Chipps J, Brysiewicz P, Mars M. Effectiveness and feasibility of telepsychiatry in resource constrained environments? A systematic review of the evidence. Afr J Psychiatry (Johannesbg) 2012;15:235-43.
38. Mahmood S, Hasan K, Carras MC, Labrique A. Global preparedness against COVID-19: We must leverage the power of digital health. JMIR Public Health Surveill 2020;6:e18980.
39. Yellowlees P, Burke MM, Marks SL, Hilty DM, Shore JH. Emergency telepsychiatry. J Telemed Telecare 2008;14:277-81.
40. Bolton AJ, Dorstyn DS. Telepsychology for posttraumatic stress disorder: A systematic review. J Telemed Telecare 2015;21:254-67.
41. Rees CS, Maclaine E. A Systematic Review of Videoconference-Delivered Psychological Treatment for Anxiety Disorders; 2015.
42. Hilty DM, Luo JS, Morache C, Marcelo DA, Nesbitt TS. Telepsychiatry: An overview for psychiatrists. CNS Drugs 2002;16:527-48.
43. Shore JH. Telepsychiatry: Videoconferencing in the delivery of psychiatric care. Am J Psychiatry 2013;170:256-62.