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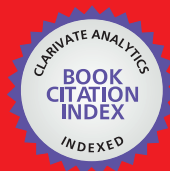
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Mental Impact of COVID-19 - Fear, Stress, Anxiety, Depression and Sequels

Ashwin Parchani, Prasan Kumar Panda and Vijay Krishnan

Abstract

Disease pandemics are known to cause mental impact, COVID-19 is not an exception. The ensuing mental health issues are not only restricted to the patients and their relatives/friends but affect the healthcare workers (HCWs) as well. Home isolated/quarantined patients/care takers experience a greater tendency of fear, stress, anxiety, and depression compared to those admitted in the hospital. Similarly, HCWs posted in COVID-19 designated areas of the hospital display higher levels of mental problems in comparison to those posted in non-COVID areas. Furthermore, long COVID-19 syndrome encompasses another large mental impact after 4-12 weeks of acute illness. Several instruments are available to screen for anxiety, fear, stress and depression, including the PSS 10 and DASS 21 questionnaires. These can be used by any HCW and even by educated patients or their care takers with telemedicine guidance from HCW. Treatment is also simple and cognitive behavioral therapy is a major solution and can be markedly practice with tele-consultation. The high degree of uncertainty associated with novel pathogens like COVID-19, both during acute and chronic effects has a profound effect on the mental state of asymptomatic/suspected/confirmed patients, their care takers, friends, as well as HCWs. However, by accepting pandemic with new-normal life of COVID-19 appropriate behaviors, human mankind can overcome these impacts.

Keywords: anxiousness, coronavirus, suicide, fearfulness, post-traumatic stress disorder, stress disorder

1. Introduction

The development of the coronavirus disease 2019 (COVID-19) epidemic, caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection, triggered a global scenario of socio-economic catastrophe and psychological anguish. Many psychological problems and essential mental health consequences, including stress, anxiety, depression, frustration, uncertainty during the COVID-19 outbreak, emerged progressively.

In response to this dire circumstance, specific public policies were introduced by governments globally. These measures include self-quarantine, isolation, and social distancing. Implementing these policies caused the closure of educational institutes, offices, workplaces, public places, and social gathering restrictions. People were advised to stay at home and follow advice proposed by the WHO to protect

themselves and others from the spread of COVID-19. The strict self-quarantine order (lockdown) has kept the entire population in selected jurisdictions in isolation, with a significant impact on people's life [1]. Although social activities have been restricted in most countries, almost all non-essential individual movements were prohibited due to quarantine, while the local hospitals received suddenly thousands of critically ill COVID-19 patients and were forced to implement their emergency protocols.

In this context, the general population and most of the front-line healthcare workers became vulnerable to the emotional impact of COVID-19 infection due to both the pandemic and its consequences worldwide. The modern society, in which everyone can travel and communicate quickly, has seldom been subjected to the present social isolation and constraints associated with feelings of dissatisfaction and uncertainty. This unusual scenario surrounding the COVID-19 epidemic illustrates that people are fundamentally and emotionally unprepared for the negative impacts of biological disasters, which immediately highlight how everyone may be vulnerable and helpless.

There is a constant update about the disease available on news channels and over the Internet, highlighting the number of individuals affected and deaths due to COVID-19. Also, inadequate knowledge and overwhelming news may contribute to fear and anxiety among the public. People at large may experience disappointment, irritability, and boredom under isolation measures [2]. The communication technologies' facilities and transmission of inaccurate or sensational information may increase unacceptable social reactions such as aggression and rage [3].

The psychological reactions to the COVID-19 pandemic may vary from panic behavior or collective hysteria to pervasive feelings of hopelessness and desperation associated with adverse outcomes, including suicidal behavior [4]. Significantly, other health measures may be compromised by abnormally elevated anxiety. According to the social role invested, the security measures adopted in managing the pandemic had different consequences on individuals. Suspected and confirmed COVID-19 cases are likely to experience anxiety, loneliness, depression, denial, insomnia, and fear [5]. Health authorities' strict quarantine policy and mandatory contact tracing policy may lead to social rejection, discrimination, financial loss, and stigmatization. Medical health workers are first-line fighters treating patients with COVID-19. They are a unique subset of exposed individuals as they are equipped with the resources and knowledge to address the dangers imposed by a pandemic. Despite this, they are not impervious to the detrimental impact of the pandemic on their psychological health and behavior. During the challenging times of a pandemic, healthcare workers, the most exposed group, are vulnerable to psychological challenges. Every day, they face a high risk of being infected and are exposed to prolonged and distressing work shifts to meet health requirements. This has placed healthcare workers around the world in an unprecedented situation.

This epidemic, as well as the public health measures put in place to slow it down, has drastically altered people's lifestyles and is believed to pose a threat to their physical and mental health. This significant health catastrophe is impacting numerous countries, with high rates of transmission and death, and extensive outbreaks and mortality are linked to negative mental health consequences.

2. Fear

Strasner (1987) defined fear as "an emotional reaction (rational or irrational) to an object (animate or inanimate) or event that is associated with increased risk of

danger and also unpleasantness, agitation and a desire to hide, flee or seek protection.” Phobia, on the other hand, is characterized by intense, severe, and persistent fear. Such fears lead to persistent efforts to avoid (flee) the source of distress, often by undertaking a number of “safety behaviors”. As a new infection with the potential for loss of life, COVID-19 has provoked legitimate fears. However, in a minority of subjects, this has also led to extreme restrictions, which could be characterized as “coronaphobia” [6]. Adequate communication that engenders a realistic appraisal of the risks, along with clear statements of behaviors that can reduce transmission, have been effective to control these fears, while also preventing viral transmission.

2.1 Fear among patient population

SARS-CoV2 infected patients experienced a high degree of fear stemming from uncertainty of illness outcome, inability to communicate with family members, lack of complete knowledge of the disease process and the stigma associated with being infected with the virus. Moreover, the fear of isolation, discrimination and stigmatization was also noted in this group [7]. Those patients suspected to have SARS-CoV2 infection are also prey to the terror of having the disease, advancement of disease, precariousness of healthcare delivery and quarantine as per government regulations. Besides, even patients suffering from other illnesses displayed features of trepidation of inability to receive proper treatment due to overwhelmed healthcare resources. Patients with chronic diseases like diabetes, TB, and heart failure, for example, were found to avoid seeking medical treatment because they were afraid of contracting the illness from others in a healthcare facility, adding to fear of contagion. The type of chronic disease is a significant predictor of fear with higher levels noted among those diagnosed with autoimmune diseases or receiving immunosuppressants [8].

2.2 Fear among HCW population

Despite being the highest risk exposure group, healthcare workers have been found to experience less fear compared to the patient population as well as the general public. In a study conducted in India it was observed that a mere 18.3% healthcare workers reported of fear of contracting the infection. Most healthcare workers displayed concern and fear of transmitting the infection to their families and loved ones, especially to their children and the elderly [9]. Higher levels of fear were present in lab technicians, X-ray technicians and nurses while physicians were found to have the lowest level of fear. A possible explanation of this is that technicians and nurse have more exposure to contracting the illness during sampling, testing and medication of patients [10]. Non-medical healthcare workers were assessed to have lowest fear quotient juxtaposed to medical healthcare workers who are usually in direct contact with SARS-CoV2 infected patients and have a better understanding of the disease and its mortality [11]. Alike patients, healthcare workers are not immune to the fear of social marginalization. Assault on doctors, eviction of resident physicians from their rented houses, and fear of infection from healthcare workers have all been reported [12, 13]. These factors alongwith the shortage of sufficient protective equipment, absence of effective therapy and the virus's high infectivity rate might possibly play a role in their fearfulness of coronavirus pandemic. The presence of fear among HCWs poses a significant threat to their psychological adjustment skills and impede delivery of optimum care to patients.

3. Stress

Claude Bernard noted that the maintenance of life is critically dependent on keeping our internal milieu constant in the face of a changing environment. In 1956, Selye coined the term “stress” to represent the effects of anything that seriously threatens homeostasis. The actual or perceived threat to an organism is referred to as the “stressor” and the response to the stressor is called the “stress response.” Although stress responses evolved as adaptive processes, Selye observed that severe, prolonged stress responses might lead to tissue damage and disease. During pandemics, the victims and at-risk groups tend to experience stress. As a consequence of the pandemic, even the health professionals who were overworked suffered high level of psychophysical stress. Various tools and questionnaires have been devised to measure stress levels in individuals. The most commonly used are DASS-21 and SAS. Studies have shown that psychological stress can affect the immune system through neuroendocrine pathways [14].

3.1 Stress among patient population

The increasing number of confirmed cases, a lack of knowledge of COVID-19, the rapid transmission rate, infection fears, lockdown conditions, difficulties in routine medical treatments, shortages of human resources in hospitals, insufficient psychological preparation, separation from loved ones, financial loss, stigma, loss of freedom, and uncertainty over illness status act as significant stressors for patients. These patients often display features of distress such as feeling nervous, worried in certain situations of panic, tendency to overreact, inability to control things in life, inability to overcome difficulties in daily life, and coping with things. The early months of pandemic had the higher reported prevalence of stress with a significant proportion of individuals reporting being upset due to things happening unexpectedly, inability to overcome difficulties in daily life, and anger at things being outside their control. Among suspected patients, those with history of travel to areas with ongoing community transmission were found to display greater stress [15]. Patients who are kept in isolation and quarantine experience significant levels stress as well [2]. It is expected that individuals may resort to social media during corona-led social distancing for stress relief and with the aim of accessing entertaining content, such as movies, comedies, and communication with family and friends, but frequent media exposure may itself be a source of psychological stress for these patients [16, 17]. Distress and panic during pandemics can propagate and promote misinformation in various ways along with increased digital screen time and unhealthy use of technology. Amid this, there has been a hidden epidemic of “information” that makes COVID-19 stand out as a “digital infodemic” from the earlier outbreaks. Misinformation and fake news are invariable accompaniments to this “information pollution” which can add to existent superior stress levels in the population [18]. Unfortunately, even immunocompromised and chronic disease patients are under tremendous psychological and physical stress in the face of this large-scale infectious public health crisis due to lack of proper healthcare infrastructure and treatment [19–21].

3.2 Stress among HCW population

Amid the ongoing unforeseen situation of coronavirus disease 2019 (COVID-19) pandemic, health care workers of multiple disciplines have been predisposed to a considerable amount of stress. A statistically significant association was found between perceived stress and female sex, designation

(postgraduate trainees), work hours ≥ 6 hours/day, COVID-19 positive ward duties and staying with family due to potential risk of transmission to family members [22]. Disturbed sleep time and schedules due to rotational duties exhaust these HCWs both physically and mentally. The physical discomfort and occupational dermatoses associated with the use of PPE have also been shown to be related to greater levels of stress symptoms [23]. Practicing new methods of a discipline different than what he/she has mastered over the years, long hours of working in extreme conditions under PPE kit discomfort, long duty hours with no food/water/urination allowed during the time of duty with PPE, and irritation and physical strain in PPE during the summer season have been constant precipitators of stress among the doctors of all the disciplines working as frontline warriors [22]. With a scarcity of resources and an ever increasing number of patients, life-saving decisions have to be made. Making such decisions amid intense work pressure leads to added stress within emergency departments as well as during after-duty hours [24]. All doctors are susceptible to developing higher stress irrespective of their discipline during the COVID-19 pandemic, and this is further precipitated by their quarantined living conditions [22, 25]. Older HCWs demonstrate a high level of psychological distress, possibly as a result of increased complications of COVID-19 with increasing age and also because older people may have health issues making them more prone to infection with its complications [26]. In conclusion, HCWs are exposed to a protracted source of distress which may exceed their individual coping skills and lead to further chronic psychological problems.

4. Anxiety

Anxiety is an emotion characterized by the feeling of tension, worried thoughts and physical changes such as increased heart rate, according to the American psychological association. Since the onset of pandemic, many studies have been conducted to ascertain the prevalence of COVID-19 related anxiety among various sectors of the population. Conventional tools utilized to assess anxiety are:

- Depression, anxiety and stress scale-21 (DASS-21)
- Self-rating anxiety scale (SAS)
- Generalized anxiety disorder scale (GAD-7)
- Chinese version of GAD-7 scale
- Hospital anxiety and depression scale (HADS)

The magnitude of anxiety varies across the country of origin of study, measurement tool used and size of the studied sample.

4.1 Anxiety among patient population

Patients suspected or diagnosed with SARS-CoV2 infection experience significant anxiety related to disease and external factors associated with having the infection. Several patient related factors influence the vulnerability to anxiety such as sex, marital status, symptoms and sleep quality, among others [27–30]. There are many patient-related factors associated with anxiety such as:

- a. Female gender
- b. Older age
- c. Divorce/bereavement
- d. Married
- e. Residing with family
- f. Need of oxygen inhalation
- g. History of fever
- h. Two or more symptoms of infection
- i. Suspected/confirmed infection
- j. Poor sleep quality
- k. Quarantine/isolation

The external factors include spread of misinformation by media, government regulations such as quarantine procedure, lockdown and travel restrictions, and social stigmatization. The current pandemic underlined the vital role played by media in dissemination of information. Ideally, media should ensure that crisis communication helps in dispelling fear and uncertainty, but in the recent pandemic it played a reverse role in spreading anxiety and panic behavior [31–33]. The endless newsfeeds related to COVID-19 infection and death rates considerably increased the adverse psychological outcomes in general population as well as patients. The spread of misleading narratives, provoking controversies and advertisement of unapproved therapies resulted in widespread fear, confusion and panic with serious mental health consequences such as anxiety [34, 35]. Quarantine and isolation of suspected and confirmed cases as per government regulations also led to abnormally increased anxiety. Additional measures like lockdown and travel restrictions also contribute to feeling of uncertainty, perceived lower social support, separation from loved ones, loss of freedom and boredom [2]. Notably, individuals with a previous health disorder experienced worsening of their symptoms due to anxiety.

4.2 Anxiety among HCW population

Healthcare workers are directly involved in diagnosis, treatment and care of SARS-CoV2 patients and therefore experience the highest share of mental health issues compared to the other groups in the population. The prevalence of anxiety among healthcare workers is high and has been assessed to be between 23.2% to 30.5% [36, 37]. Several factors have been attributed to cause anxiety in healthcare workers. These include increased workload, inadequate PPE, inadequate isolation precautions, risk of contracting disease, high infectivity and mortality of disease, burnout, lack of clinical experience, young age, chronic health illness and prior history of mental health disorders [31–33]. Socio-demographic variables play a key role in determining the level of anxiety in healthcare workers with higher prevalence among those above the age 40, females, unmarried individuals and presence of offspring [38]. Anxiety in this group manifests as palpitations, tremors, dryness of

mouth, feeling scared without any reason and tendency to panic [15]. These symptoms are more prevalent in workers who were assigned duties in COVID designated areas and those who encountered SARS-CoV2 suspected or confirmed patients without adequate protection [5]. Nurses have unfavorable mental health outcomes among the healthcare staff since they usually spend more time caring for patients than any other group of HCWs [11, 36, 39]. The existence of anxiety is associated with reduced performance and fatigue in healthcare workers and impedes optimum healthcare delivery to the population.

5. Depression

Depression is one of the five most incapacitating illnesses, and by 2030, it is expected to be one of the major issues in industrialized countries. It's a common reaction to a rapid deterioration in living conditions, which involves isolation and uncertainty. When people are subjected to unpredictable circumstances, they feel helpless and unmotivated, which can lead to sadness [40]. During past epidemic outbreaks (SARS and Ebola), rates of depression in the general population have been reported with a prevalence approaching even 73.10 percent [41]. Past epidemics were more quickly contained, and infection rates were lower despite greater fatality rates, which might explain why depressive symptoms were less common [42]. Furthermore, during the SARS pandemic in Canada, Hawryluck et al. discovered that the length and unpredictability of the lockdown contributed to greater levels of depression [43]. As a result, the present global lockdown measures might explain the increased incidence of depressive symptoms reported during the COVID-19 epidemic. According to a research that looked at 69 million health data from over 62,000 persons diagnosed with COVID-19, 6% of COVID-19 patients suffered mental health problems including sadness and anxiety within three months of diagnosis, compared to 3.4 percent of non-COVID-19 patients [44]. The addition of a psychological burden to an already devastating physical burden affects the prognosis in a number of ways, with long-term consequences. Furthermore, those who are depressed are less likely to seek treatment for physical or mental problems; as a result, depression, like anxiety, can act as a barrier to reasonable medical and mental health interventions during a pandemic.

5.1 Depression among patient population

Earlier outbreaks such as SARS and MERS have displayed the presence of depressed mood among those with acute infection [45]. The COVID-19 pandemic is no different. The reported prevalence of depression at 6% in COVID-19 patients is higher to general population [44]. Females are more likely to experience depression than males [46]. According to one study, nearly one-fourth patients had intended to commit suicide or harm oneself [27]. Individuals who were married or underwent a divorce exhibited greater levels of depression than single individuals [27]. This could in part be explained by worries for one's family and grief of separation respectively. Having a family member with confirmed COVID-19, and having two current physical symptoms are independent risk factors for depressive symptoms [28]. Suicide has become a more pressing concern as the pandemic evolved [47]. Those with psychiatric disorders experience worsening symptoms and others are predisposed to develop depression, are all associated with increased suicide risk. Media and other news platforms also affect mental health and psychological behavior [35]. Despite the fact that receiving regular updates on COVID-related health information appears to reduce sadness, it is also claimed that social media exposure

is linked to depression and mixed anxiety and depression [48–50]. Unemployment, low social status, a lack of social support, and financial losses are among socioeconomic variables that might contribute to greater incidence of depression. [48, 49, 51, 52]. The added impact of quarantine has led to high occurrence of depression and even self-reported suicidal thoughts [29, 53].

5.2 Depression among HCW population

The COVID-19 pandemic has significant negative impacts on healthcare workers' psychological health, fostering anxiety, depression, and sleep disturbance. Studies conducted during the SARS have reported a prevalence of depression among the front-line HCWs to be 38.5% [54]. The factors in play causing depression are pretty similar to those contributing to anxiety. Increased workload, burnout, inadequate PPE, the risk of contracting the disease, and the challenge of making difficult moral decisions about care priorities during the pandemic have exposed healthcare workers to severe psychological pressures leading to depression. The high infectivity and mortality rates also contribute to depression among healthcare workers around the world. Furthermore, factors such as a high-risk workplace, a lack of clinical experience, young age, and a history of psychological disorders can contribute to depression among healthcare workers. Working on the front lines was found to be an independent risk factor for poor mental health outcomes across all aspects studied, including the prevalence of depression among HCWs. Between doctors and nurses, the latter have been studied to harbor a greater level of depression [55–57]. This may be partially confounded by the fact that nurses are primarily female but could also be attributed to the fact they may face a greater risk of exposure to COVID-19 patients as they spend more time onwards, provide direct care to patients and are responsible for the collection of sputum for virus detection [55]. Emotional exhaustion, depersonalization, being a nurse, 12- or 24-hour shifts or on-call hours, those who live with people who are at risk, and being very concerned about a possible infection of a family member they do not live with are all positively and significantly related to having depression symptoms [58]. Depression is also significantly higher among HCWs who did not know the latest COVID-19-related research/information. Lack of information may precipitate mental health concerns, and prior studies have suggested that updates and knowledge about COVID-19 may have psychosocial impacts, possibly as they represent an active way of coping and dealing with pandemic-related issues [59, 60]. Research also indicates that healthcare workers who take vacation days experience lower levels of depression [26]. Unfortunately, the COVID-19 pandemic crisis witnessed doctors along with other healthcare workers question their choice of profession, in part due to rising infection rates, unavailability of adequate personal protective equipment and other unexpected pandemic related experiences [60].

6. Sequelae

Long COVID is a term used to describe a condition in COVID-19 patients who have symptoms over an extended period [61]. These patients report prolonged, multisystem involvement and significant disability, which can last for more than six months in 93.2% of patients after the acute phase of illness [62]. Musculoskeletal, cardiovascular, gastrointestinal, pulmonary, and neuropsychiatric symptoms are prevalent in >85% of participants. Fatigue, breathing problems and cognitive dysfunction are among the most debilitating symptoms [62]. Such prolonged physical sequelae are associated with and often are a harbinger of psychological

sequelae. Multiple studies conducted during previous pandemics also support the development of psychiatric sequelae in survivors. SARS-CoV-1 survivors exhibited posttraumatic stress disorder (PTSD) with an incidence of up to 55%, depression was observed in 39%, pain disorder in 36.4%, panic disorder in 32.5%, and obsessive-compulsive disorder in 15.6% of SARS-CoV-1 survivors [63]. Long term psychiatric complications such as depressed mood, anxiety and insomnia were also reported in 10-20% of patients following SARS and MERS infections [45]. These complications could result from central nervous system involvement of the virus or perhaps a consequence of fear associated with the infection and isolation itself.

Among the psychological sequelae, the most prominent and popular condition is posttraumatic stress disorder [64]. Surviving a critical illness is known to induce PTSD symptoms [65]. Data suggests that as many as 43% of COVID-19 patients suffered posttraumatic stress symptoms [66], 'not though true prevalence of PTSD' prevalence. The severity of COVID-19 poses a significant risk factor for PTSD, supported by evidence of higher incidence among ICU patients juxtaposed to non-ICU patients [67, 68]. Even measures of quarantine and isolation, which help to contain the infection from the spread, can have psychological consequences leading to PTSD [2]. Healthcare workers, too, experience significant PTS symptoms. Emotional fatigue, depersonalization, working in a hospital, being highly concerned that someone they live with may become infected, and believing that becoming infected with COVID-19 is very likely are all positively and substantially associated with posttraumatic stress symptoms in the HCW population [56].

Aside from PTSD, COVID-19 infection survivors are more likely to experience depression and anxiety, similar to the acute phase of the disease [64]. The incidence of these disorders is linked to the severity of the disease and the length of hospitalization [69–71]. The baseline systemic inflammation index (SII) is strongly correlated with anxiety and depression [45, 59]. At follow-up, the prevalence of baseline comorbidities, such as mental disorders and female sex, is also linked to depression and anxiety [71, 72]. Although anxiety and depression symptoms generally go away within 1-3 months after infection, their presence increases the risk of developing PTSD later on [61].

7. Preventive interventions

7.1 Routine screening of patients and their HCWs

Worldwide epidemiological research is urgently needed to evaluate the amount of anxiety, worry, and helplessness and other mental health concerns related to COVID-19. This would aid in developing tailored mental health initiatives (e.g., those who live in villages). Experiences from past pandemics point out the urgent need for screening for mental health problems, monitoring its trend, referral of cases, and providing suitable interventions has to be routine practice during the pandemic period [73, 74]. The target groups of such screening strategies must include COVID-19 infected patients, their high risk contacts, and healthcare workers, as well as those with past history of mental health illnesses. The following questionnaires may be utilized for routine screening:

- a. COVID-19 stress scale [75]
- b. Perceived Stress Scale modified for COVID-19 (PSS-10-C) [76]
- c. COVID-19 Peritraumatic Distress Index (CPDI) [1]

- d. Anxiety of COVID Scale (CAS) [77]
- e. Fear of COVID-19 Scale (FC-19S) [78]
- f. COVID-19 Pandemic Mental Health Questionnaire [79]

The abovementioned questionnaires were newly developed or modified versions of existing mental health screening questionnaires. It is therefore emphasized that the pre-existing validated survey tools such as GAD-65, PSS-10, PHQ-9 and DASS-21 can be also utilized for routine screening purposes and have been validated for the same.

7.2 Provision for health services during the pandemic period

- During the pandemic, marginalized groups such as those with chronic health conditions, mental health issues, and the elderly must continue to get health care. Provisions such as telemedicine and clinics independent from COVID-designated facilities should be guaranteed for optimal healthcare delivery in a continuum.
- The mental health and emergency management communities should collaborate to seek, develop, and disseminate evidence-based resources on disaster mental health, mental health triage and referral, unique populations' requirements, and death communication and bereavement support.
- Health care professionals should help patients manage stress and cope (by organizing activities and sticking to routines), introduce patients to social and mental health resources, and encourage them to seek professional mental health help if necessary.
- While most psychological health services can be provided in primary care settings, a few patients will require comprehensive mental health assessment and care, while others might benefit from supportive interventions targeted at enhancing wellbeing and coping such as psychoeducation or cognitive behavioral therapy.
- Patients with suicidal ideation shall necessitate immediate referral, hospitalization, and therapeutic intervention by a psychiatrist.
- Tele-psychiatry services are vital to maintain the continuum of care in the COVID pandemic era. Certain modifications are warranted to enhance the delivery of tele-health services – **video consultations** may be employed for triaging, screening, and providing first consultation services, **home visits** by a locally available nurse/ health care workers/ social workers augmented with video consultations with the psychiatrist, especially in cases of emergencies, and **construction of telemedicine practice guidelines** to enable physicians in better providing healthcare services telephonically.

7.3 Support for healthcare workers

- At each institution, teams of expert psychologists should be accessible for healthcare professionals to call at any time, and quick treatment and follow-ups should be given.

- Peer support and group talks should be promoted as well. HCWs must be provided with stress management training.
- During pandemic conditions, vacations from work are required to reduce psychological distress among healthcare professionals, resulting in decreased levels of despair, fear, worry, and stress. Therefore, healthcare professionals are urged to take vacations from work to help them relax, which helps reduce stress.
- In regions where infrastructure is lacking, the government and health authorities must work together to provide PPEs and the essential infrastructure for HCWs to safely administer healthcare to their patients.
- Health-care systems are required to address the stress on individual providers and overall operations by monitoring reactions and performance indicators, modifying assignments and timetables, moderating expectations, and developing effective mechanisms to deliver psychological support as required.
- HCWs should be encouraged to self-monitor their own stress reactions and seek appropriate assistance. Systems must be in place to quickly identify HCWs who require psychological assistance, send them to a professional, and provide access to specialized consultations as well as intervention, if necessary. Setting up of grievance redressal system will be of great use for all the HCWs to raise any issue pertaining to their current work and prompt resolution and solutions can be offered.
- The process of testing, quarantine and re-joining work should be streamlined and communicated to everyone working in the establishment.
- A rotational basis in the work from highly stressful to low stressful duties can be considered.
- Encouragement and establishment of a buddy system with buddies being aware of need for confidentiality and available resources to help the person in distress.
- All HCWs should be encouraged to follow a healthy lifestyle such as having a daily routine, pursuing their hobbies and stress management and relaxation techniques such as yoga and breathing exercises.

7.4 Amendments in quarantine and isolation measures

Isolation and quarantine restrict one's activities severely, causing worry and concern over not fulfilling one's professional and familial obligations. While the methods and processes for mental health support and monitoring in quarantine accommodation differ by jurisdiction, there are several critical areas that should be included in national mental health screening, evaluation, and support protocols. These include:

- It is necessary to set up telephonic/digital contact between the patients and their family members.
- Psychological counseling should be offered in quarantine centers.

- Provision of a clear rationale for quarantine and information about protocols
- Prior to departure, throughout travel, upon arrival, and during the quarantine period, accurate and timely information is critical.
- The provision of a structured day with meaningful activities and opportunities for social connection is critical to preserving mental health. From the start, active participation is required, as well as the availability of a variety of individual and group activities from which to pick. COVID-19-compliant group activities must be delivered, if necessary using virtual methods.
- Every person in quarantine should ideally have access to fresh air through windows or a balcony, space to exercise, and healthy and culturally appropriate food options.
- People should be actively and assertively engaged in activities, well-being checks, and information.
- Effective governance necessitates that all providers involved in assisting persons under quarantine have clear lines of communication, information exchange, and complaint handling.

7.5 Role of media

COVID-19 news, as previously discussed, has a positive linkage with depression, anxiety, and stress levels. It can be caused by erroneous statistics data and rumors that circulate through the internet. To avoid misleading information and public health statistics, the government and health authorities must offer accurate and up-to-date information. In this context, the research found that having access to current and accurate health information is linked to less stress. Up-to-date and exact data on the number of new and improved cases, available treatment methods, and transmission routes must be used to reduce the illness's psychological and mental health effects. The psychological impact of misinformation/rumor on the mental health of HCWs and the general public might be greatly reduced if a public health information system that is accurate and updated is widely disseminated.

8. Conclusions

COVID-19 is linked to a range of psychiatric problems in addition to physical health issues. The spread of the novel coronavirus may have an influence on people's mental health in many communities. Patients with COVID-19 have a significant rate of negative psychological occurrences. Frontline healthcare professionals caring for COVID-19 patients have a high rate of stress, anxiety, and depression. As a result, health policymakers should take steps to regulate and prevent mental illnesses among hospital employees. During the COVID-19 epidemic, the mental health of HCWs is a major issue. Psychological interventions that detect and target persons with varying degrees of psychological distress are desperately required.

Conflict of interest

The authors declare no conflict of interest.

Notes/thanks/other declarations

None.

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