



Review Article

Mental health concerns of healthcare workers during the COVID-19 pandemic

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Date of Submission :

31 March 2021

Date of Acceptance :

30 May 2021

Keywords: Mental health challenges, COVID-19, Healthcare workers, Moral injury

Abstract

This critical literature review discusses the prevalence of mental health concerns in healthcare workers (HCWs) during the COVID-19 pandemic. It highlights the associated reasons and underlying risk factors studied in this context, along with the psychological interventions currently being used to help this population. This paper attempts to describe the experience of moral injury in HCWs and offers recommendations for mental health professionals. It also critically evaluates the existing literature for its strengths and limitations. Finally, the recommendations are provided based on the shortcoming of the literature and directions for future research.

Introduction

Mental health concerns of healthcare workers during the COVID-19 pandemic

The COVID-19 outbreak that started in December 2019 and was declared a pandemic in March 2020 (World Health Organization, 2020) has impacted almost all nations worldwide. While the number of cases may differ from country to country, the pandemic certainly brought an incredible

amount of pressure on the healthcare workers (HCW), putting them under high levels of stress (Taylor et al., 2020). This literature review assesses the variety and prevalence of mental health concerns faced by HCWs, the risk factors underlying it, the intervention, and the coping strategies that can be used by HCW to minimize the negative impact of the pandemic on their mental health. The search for this review was conducted using McGill University's online library to access databases like Science Direct. Google Scholar and PubMed were also used to search for open access articles. Search terms like *Mental Health Challenges*, *Healthcare Workers*, *COVID-19*, and *Pandemic* were used along with their variations to find scholarly articles relevant to the topic. The reference list of relevant studies was also used to locate other relevant articles.

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How to cite article: Dua, M. (2021). Mental Health Concerns of Healthcare Workers During The COVID-19 Pandemic. *Indian Journal of Health, Sexuality and Culture*, 7(Special), 19-27.

DOI: 10.5281/zenodo.5146398

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Mental health concerns

Prevalence

Healthcare workers who are diagnosing and treating COVID-19 patients are experiencing severe emotional distress (Chirico et al., 2020) and a variety of mental health issues (Chew et al., 2020; Chirico et al., 2020; Lai et al., 2020; Shechter et al., 2020; Tsamaki et al., 2020; Zhang et al., 2020b). Lai et al. (2020) conducted a cross-sectional study in a sample of 1257 healthcare workers in China and found that the participants experienced symptoms of depression (50.4%), anxiety (44.6%), insomnia (44.6%), and distress (71.5%). Additionally, they observed more distress in nurses than in physicians and highlighted that women experienced more severe symptoms of the above-mentioned conditions. Chen et al. (2020) had similar observations where they found that female healthcare workers reported higher levels of perceived stress, depression, and anxiety in comparison to males. In another study conducted by Chew et al. (2020) with HCWs from India and Singapore ($n=906$), it was found that 5.3% of the participants were experiencing 'moderate to very-severe depression', and 8.7% were experiencing 'moderate to extremely-severe anxiety'. Shechter et al. (2020) studied a sample of 657 healthcare workers in New York and found that they suffered from acute stress (7%), depressive symptoms (48%), and anxiety symptoms (33%).

On comparing the prevalence of mental health problems in HCWs and Non-HCWs, Zhang et al. (2020b) found that health care workers experienced higher rates of insomnia (38.4% vs. 30.5%), anxiety (13% vs. 8.5%), depression (12.2% vs. 9.5%) and, somatization (1.6 vs. 0.4%). While some studies suggested that healthcare workers are at a particularly higher risk of developing Post-Traumatic Stress Disorder (Carmassi et

al., 2020; Chirico et al., 2020), anxiety, depression (Lai et al., 2020) and, stress-related disorders (Chirico et al., 2020; Tsamaki et al., 2020); a study conducted by Taylor, et al., (2020) found that healthcare workers' score on COVID Stress Scale were similar to the scores of general populations. This indicates no significant difference in the experience of worry related to the dangerousness of COVID-19, which is a hallmark feature of the COVID Stress Syndrome (Taylor et al., 2020).

Reasons and risk factors

Several researchers have studied the underlying reasons for the psychological distress that the HCWs are facing. Chirico et al. (2020) pointed out an overwhelming increase in the workload and lack of preparedness as the main reasons for experiencing burnout. This included a shortage of protective equipment, insufficient training, and a dearth of HCWs. Shechter et al. (2020) studied psychological distress in healthcare workers of New York ($n=657$) and found that HCWs reported their reasons of distress as being fear of transmitting COVID-19 to their family (74%), lack of control (70%), lack of testing (68%), lack of PPE (68%), lack of treatment guidelines (58%), and triage decisions (53%). Other suggested reason was the fervent media coverage and scrutiny that the pandemic has received, which puts additional pressure on the HCWs to 'act timely' (Lai et al., 2020; Tsamaki et al., 2020). This can be particularly frustrating because there is no specific drug to treat COVID-19, and HCWs may themselves experience a lack of support from the hospital administration (Lai et al., 2020).

Another reason pertains to the working conditions. Healthcare workers must remain in personal protective equipment, which makes it difficult to breathe, eat, drink, or use

the washroom, eventually leading them to experience mental and physical exhaustion (Tsamaki et al., 2020). Additionally, working with uncooperative patients was also reported as a reason for an increase in stress experience (Chen et al., 2020; Tsamaki et al., 2020). In a study by Zhang et al. (2020a), perceived stress of the healthcare worker was seen as an independent risk factor in the development of depression and anxiety.

Healthcare workers' internal thoughts and emotions can also be a reason for deteriorating mental health. With an increased risk of exposure to the corona virus, the HCWs fear that they might infect their family members (Ng et al., 2020; Tsamaki et al., 2020), leading them to self-isolate, which can cause feelings of loneliness (Sani et al., 2020). Additionally, experiencing the death of a co-worker can also be a source of distress and trauma (Greenberg, 2020).

In terms of demographic factors, research suggests that gender can be a risk factor in developing mental health issues, making a female healthcare worker more prone to psychological distress related to COVID-19. (Chen et al., 2020; Lai et al., 2020; Muller et al., 2020; Pappa et al., 2020; Zhang et al., 2020a). Zhang et al. (2020a) found that female HCWs scored higher on perceived stress, depression, anxiety and suggested an underlying predisposition to the conditions mentioned above, indicating that female sex hormones or other psychosocial factors may have a role to play (Parker et al., 2010).

In a study conducted by Lai et al., (2020), several other demographic risk factors were associated with more severe symptoms. These included working in a secondary hospital instead of a tertiary hospital, working as a front line healthcare worker as opposed to a second-line worker, and working in the epicenter of the pandemic as opposed to an outside province.

Moral injury and ethical dilemma

Moral injury is defined as “the psychological distress that results from actions, or the lack of them, which violate someone's moral or ethical code” (Litz et al., 2009). Moral injury can lead one to have negative thoughts about oneself and experience intense feelings of shame or guilt, which can subsequently cause symptoms of depression, suicidal thoughts, and PTSD (Williamson et al., 2020).

Rosenbaum (2020) eloquently explains how the HCWs are experiencing moral injuries and ethical dilemmas during the COVID-19 pandemic as they have to rapidly make difficult decisions; the most important being the question of ‘who must die’. He gives an example of a 65-year-old man and an 85-year-old man, both requiring to be intubated but having only one available ventilator. As the patients require to be on ventilator support for several days in the case of COVID-19, it becomes nearly impossible to ween off one patient to offer ventilation support to another. Being a decision-maker in such a critical situation with limited knowledge about prognosis can be anxiety-provoking. Williamson et al., (2020) highlight a few risk factors of moral injuries that mental health professionals can look for. These include the death of a vulnerable person, lack of support from supervisors at the workplace, lack of social support, lack of preparedness for emotional consequences of decisions, and co-occurring traumatic events. Other researchers suggest that feelings of helplessness in treating critically ill patients (Tsamaki et al., 2020), anger, and the complex grief associated with witnessing several deaths are contributing factors to the deteriorating mental health of the HCWs (Chirico et al., 2020).

Intervention and coping strategies

Given the crucial role that the healthcare workers are playing and the complex nature

of mental health problems that they are experiencing, many researchers have highlighted the need for an urgent and accessible psychological intervention plan to be put in place (Chen et al., 2020; Chirico et al., 2020; Greenberg et al., 2020; Pollock et al., 2020).

Recommendation for treating moral injuries

With respect to reducing the negative impact of moral injuries, Williamson et al. (2020) have proposed a few recommendations. These include preparing healthcare workers in advance by increasing awareness about potential morally injurious events and their impact on mental health. Williamson et al. (2020) also suggest that supervisors have an important role in acknowledging their distress, supporting them, and encouraging them to seek informal support. If the distress disturbs the workers' daily functioning, they should be referred to a mental health professional as soon as possible, and a list of sources that provide confidential help should be readily available. Greenberg et al., (2020) also suggested similar interventions that emphasize the need for leaders and supervisors to be supportive engage in frequent check-in, and promote the idea of seeking help. Additionally, they also recommended that counselors pay attention to the emotional needs of the medical professionals who may be experiencing shame and guilt due to moral injury whilst also encouraging practical coping strategies to reduce anxiety (e.g., limiting the use of social media).

Intervention plans in hospitals

Providing sufficient information and increasing psychological support for HCWs are two main components of an intervention plan in hospitals (Chirico et al., 2020). Chen et al. (2020) suggested a customized plan

based on the needs of the healthcare workers in a hospital in China. This included providing healthcare workers with a resting area along with food supplies to ensure uninterrupted rest. It also included asking the healthcare professionals to video record themselves and send it to their families to reduce worry and apprehension whilst self-isolating. This resting area was regularly visited by counsellors to ensure that healthcare workers can share their fears and worries. Another important aspect of training the HCWs is handling the psychological problems of COVID-19 in-patients (e.g., anxiety, panic) and providing security personnel to deal with uncooperative patients. Finally, it involved laying out detailed rules regarding personal protective equipment and arranging for leisure activities to help de-stress the HCWs. In a study conducted in India, it was also suggested that ensuring efficient communication, reducing incidents of rumours, and providing legal help in case of any violence against HCWs can be practical measures to reduce mental distress (Gupta & Sahoo, 2020).

Coping behaviours and strategies

Shechter et al., (2020) studied coping behaviours in healthcare workers of New York and found physical activity and exercise (59%) to be the most commonly used coping strategy, followed by online counselling with individual therapists (33%). In general, the presence of social support was correlated to a decrease in mental health issues, and it was suggested that any type of intervention plan should focus on the perceived needs of the HCWs, which can be different based on the individual preferences (Muller et al., 2020).

Critical evaluation of the existing literature

Strengths

The currently existing literature discussing

the mental health of the HCWs has highlighted the problems they are facing, and the need for appropriate intervention plans to be put in place. Research work that uses both quantitative and qualitative approaches in assessing the problem can be especially useful in identifying any mismatches in demands or loopholes in the delivery of the psychological interventions (Muller et al., 2020).

Current research has also helped in laying out the potential risk factors for developing various psychological problems (Chen et al., 2020; Chirico et al., 2020; Lai et al., 2020) that can guide the development of effective intervention plans. For example, the knowledge that HCWs are troubled by their family members' thoughts guided a creative idea of encouraging HCWs to video-record their routine activities and send it to their family as HCWs isolate themselves (Chen et al., 2020).

On a societal level, scientifically recognizing the impact of COVID-19 on the mental health of the medical professional facilitates dialogue in the community and can help in destigmatizing mental health issues. We have some understanding of the development of PTSD in healthcare workers from the research conducted during the outbreak of SARS in 2003 and MERS in 2012 (Carmassi et al., 2020); likewise, the ongoing research on the impact of COVID-19 on HCWs can provide us with ground knowledge in the face of a future pandemic and can allow us to prepare in a better manner.

Limitations

Impact of gendered-challenges on mental health

Several studies included in this literature review indicated that gender could be a risk

factor, and that women healthcare workers are experiencing more psychological distress (Chen et al., 2020; Lai et al., 2020; Muller et al., 2020; Pappa et al., 2020; Zhang et al., 2020a). However, the underlying reasons are not clear. Whether this is because of the working of female sex hormones (Parker et al., 2010) or because of other unspecified reasons like experiencing an additional ethical dilemma of leaving behind their children as they treat COVID-19 patients unanswered. Given the society's stereotypical norms where women are generally met with a higher expectation to manage both household work and occupational work than men, more research is required to study whether the experience of this work-family conflict could be a potential reason for the higher rate of distress. If this is the case, then whether the experience of distress experienced by female healthcare workers differs between cultures (e.g., collective culture vs individualistic culture) also needs to be explored. It is to be highlighted that several of the included studies were conducted in China, so there can be a cultural bias in play. The NDTV World News (2020) also published an article from a syndicated feed that pointed out additional problems being faced by female healthcare workers in China, which included being asked to delay their menstrual cycle by taking an oral contraceptive pill, experiencing difficulties with ill-fitting protective suits, and shaving their heads for hygiene purposes. These are factors that can play a role in deteriorating one's mental health. However, the existing literature is not focused on studying the stigmatization experienced by female health care workers.

Role of diversity in research

The 'COVID Stress Syndrome' is understood to be associated with the experience of xenophobia (Chirico et al., 2020) and has

been studied in the general population, but the literature on xenophobia experienced by HCWs is limited. Greenberg (2020) suggests that healthcare workers who have a Black, Asian, Minority, Ethnic (BAME) background are at high risk of facing psychological distress and deserve special attention from supervisors. The current literature does not evaluate mental health outcomes from a multicultural lens which can be a big setback given that one's culture can play a significant role when discussing mental health. This hints towards the idea that psychological interventions for healthcare workers from a BAME background need to be adapted to their unique individual needs, and future research is required to study their subjective experience of challenges.

It is important to note that COVID-19 is also an economic problem. Countries may vary in their capability to procure PPE and testing kits as well as in their ability to contain the spread of the virus. The differential access to PPE among HCWs in different countries (e.g., a first-world country and a third-world country) can be a factor that may play a mediating role in the experience of psychological distress. Mahalmani et al. (2020) also highlighted that false results generated on Reverse Transcription Polymerase Chain Reaction (RT-PCR) test and asymptomatic cases are two concerning issues for countries like India. Therefore, investing time and energy in the cross-cultural assessment of the impact of COVID-19 on the mental health of HCWs can also be a good direction for future researches.

Research methodology

Some of the studies included in this literature review collected data using a cross-sectional survey studying a specific population at a specific time (Lai et al., 2020). However, the pandemic has affected some regions more

than others, and the result cannot be generalized across different regions. Lai et al. (2020) suggested that studies should be conducted with a comparison group so that the mental health outcome can be strictly understood as coming from the occupational role and not from simply living in a region with an increasing number of cases.

These studies also do not provide us with information about the long-term implications of the pandemic on the mental health of HCWs. Therefore, it can be suggested that there is a need for longitudinal follow-up studies to rectify this limitation. In addition, Pollock et al. (2020) suggest that future research should also transparently report the research protocols used, unlike some of the existing data published in an apparent rush.

Another potential source of bias in the research can be the use of self-rating scales to report the experience of anxiety, distress, and other conditions (Chen et al., 2020). It is also to be noted that there is a risk of selection bias in surveys that use non-probability sampling techniques like purposive sampling or snowball sampling which can limit a researcher's ability to generalize the results of the study (Acharya et al., 2013). Additionally, findings should be interpreted as a whole, as all of them do not distinguish between different roles within the medical field (e.g., nurses, doctors in urgent care, doctors in out-patient units, specialists, and other paramedical workers).

Direction for future research

Apart from the recommendations mentioned above for future research, efforts can be directed in investigating the motivational levels of HCWs towards remaining in their field of work and their perception of the impact of the pandemic on their overall career development. Additionally, there were only limited studies that identified and

discussed the role of protective factors like self-efficacy in mediating the experience of perceived stress (Zhang et al., 2020a), and more research can be focused on this area to guide professionals in developing interventions that can equip healthcare workers to cope in a better manner.

Shortcomings of the critical literature review

This critical literature review is one of the few existing articles that highlights the prevalence of mental health concerns and moral injuries in frontline healthcare workers and provides its readers with a critical multicultural lens to evaluate the existing data for its strengths and limitations. However, this literature review itself has a few shortcomings. First, this review is not exhaustive and included only the most relevant studies available. Second, the studies included in this review are cross-sectional and cannot be generalized with a guarantee. Third, even though an attempt has been made to include studies from different countries, most of the studies included in this review are from China, limiting its global representativeness. Fourth, all of the studies included in this review draw from quantitative data alone. It can be argued that including studies that draw results from both quantitative as well as qualitative data would have added to the richness of this review. Nevertheless, this critical literature review provides researchers with useful directions for future studies and highlights the mental health needs of the healthcare workers in the ongoing COVID-19 pandemic.

Conclusion

This literature review discusses the prevalence of mental health concerns in healthcare workers during the COVID-19 pandemic and explains some of the coping behaviors and psychological interventions

used to help this population. It also provides direction for future research after critically evaluating the current literature.

Acknowledgments: None

Declaration of interests: None

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