ACHSM Asia-Pacific Journal of Health Management

REVIEW ARTICLE

THE PREVALENCE AND FACTORS AFFECTING POST-TRAUMATIC STRESS DISORDER AMONGST HEALTHCARE PROFESSIONALS IN INDIA DURING THE COVID-19 PANDEMIC: NARRATIVE LITERATURE REVIEW

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ABSTRACT

BACKGROUND:

The COVID-19 pandemic resulted in a multitude of challenges for the healthcare fraternity which contributed to fatigue, burnout, stress, despair, anxiety, and psychological distress among healthcare professionals leading to Post Traumatic Stress Disorder (PTSD). This narrative review aims to determine the incidence of PTSD among healthcare professionals in India, identify its causes, and propose strategies to address this issue.

METHODS:

A comprehensive search of published and grey literature was conducted using search engines and databases, followed by the identification of relevant articles and a narrative synthesis of the gathered materials.

RESULTS:

The review reveals that healthcare professionals experienced significantly high levels of stress and were more likely to exhibit symptoms of probable or confirmed PTSD. Many healthcare professionals emphasized the urgent need for frequent counselling sessions during the pandemic.

CONCLUSION:

Our study emphasizes the importance of developing targeted educational interventions that include counselling services and treatment plans involving psychiatrists specifically focused on at-risk healthcare professionals.

KEYWORDS

Post Traumatic Stress Disorder (PTSD), Healthcare professional/worker, COVID-19, India, Mental Health

INTRODUCTION

The COVID-19 outbreak in December 2019 led to its rapid and exponential spread worldwide, prompting the World Health Organization (WHO) to declare it a global public health emergency. [1,2] In India, the first case of COVID-19 was reported on 30 January 2020, and by May 2020, the number of infections reached 100,000. [3] Health authorities around the world, including India, implemented precautionary measures such as social distancing, quarantine, and lockdowns. [4] These pandemic norms and measures, combined with the fear and uncertainty surrounding the unknown infection, have significantly impacted people's lifestyles and resulted in high levels of psychological distress, anxiety, and mood alterations. [1–5] While the entire population has been affected by this deadly infection, healthcare professionals (HCPs) have been particularly impacted as they face the unprecedented challenge of providing and restoring healthcare services.[6]

Reports indicate insufficient training on infection prevention and control, as well as widespread shortages of personal protective equipment (PPE), which resulted in high rates of COVID-19 infection among HCPs, especially in the early stages of the pandemic.[6,7] Fears for personal safety, heavy workloads, and a lack of personal time have contributed to fatigue, burnout, stress, depression, anxiety, and psychological distress among the healthcare fraternity.[2,3,6,8] These factors have triggered psychopathological conditions such as Post-Traumatic Stress Disorder (PTSD) and other mental disorders.[6] PTSD is a mental health condition that's caused by an extremely stressful or terrifying event-ether being part of it or witnessing it.[9]

Previous infectious disease outbreaks, such as severe acute respiratory syndrome (SARS), Middle East respiratory syndrome (MERS), and the 2009 new influenza A (H1N1) virus, have been linked to mental health difficulties among HCPs, particularly PTSD. [10,11] PTSD was triggered during the waves of COVID-19 as HCPs raced against time to save vital lives. [1,10] The majority of HCPs, including doctors, nurses, and paramedics in India, reported that they had never experienced such outbreaks before, making the situation particularly challenging. [6,12] The WHO estimates that approximately 3.6% of HCPs globally suffer from PTSD.[13] Previous studies have observed a clinical level of PTSD among 8-30% of emergency room HCPs, indicating the potential effects of pandemic-like situations on their mental health.[14] Clinical manifestations of PTSD include recurrent and intrusive memories, dreams or flashbacks of trauma, and avoidance of trauma-related cues. The presence of clinically significant PTSD symptoms, even without a full-threshold diagnosis, has been associated with a decline in the mental and physical health outcomes of HCPs, leading to a severe reduction in their quality of life .[15,16] While most individuals who have experienced traumatic events may have temporary difficulty adjusting and coping, with time and self-care, they usually improve. However, if symptoms worsen, it can last for months or even years, and the intensity of symptoms can vary over time.[15] Patients may experience PTSD symptoms when stressed in general or when they encounter reminders of the trauma they went through.[8,16]

Previous research on other pandemic-like situations has shown that a considerable number of HCPs experience significant emotional distress during the outbreak. [10,11,14] A study involving 1257 healthcare workers who treated SARS-infected patients found that feelings of uncertainty, threats to life, and significant vulnerability characterized by somatic and cognitive symptoms of anxiety were prevalent in the early stages of the epidemic.[17] Furthermore, even after the outbreak, symptoms including stress, anxiety, depression, traumatic stress, avoidance, and burnout resulted in a higher prevalence of PTSD. [10,14]

Major epidemic outbreaks place an increased demand on healthcare workers. [1,3,8] The constant increase in the number of infected cases, deaths, lack of specific medicines or vaccines, extensive media coverage, massive workload, and a sense of inadequate support can physically and mentally burden healthcare workers.[17] HCPs work long hours under overwhelming conditions, putting them at greater risk of infection while treating patients. In addition to their work environment, they are exposed to a considerable amount of fake news and rumors, which further escalate their stress levels. The restlessness of the general population in seeking medical help and the frustration caused by the pandemic itself have resulted in targeted violence towards doctors and other HCPs, contributing to PTSD among the healthcare fraternity. [8,13,14,17] During the COVID-19 pandemic, India has reported a high number of violent incidents against

doctors.[18] A study conducted by the Indian Medical Association (IMA) found that 75% of doctors experienced workplace violence during the pandemic, with most cases occurring in the emergency ward and ICU.[19]

While the exact number of such cases cannot be determined, there are several notable examples reported by the victims. [20,21] The assaults and violence occurred due to various reasons, including distrust in healthcare providers, refusal to admit COVID-19 patients to hospitals with limited beds, belief in conspiracy theories, patient deaths, and strict adherence to COVID-19 protocols by hospitals, among others.[19,21] Health care providers in India, as well as in many other countries, have always been subject to social stigma during the pandemic, which further contributes to the increased prevalence of PTSD.[22] Stigma has been highly prevalent in diseases such as Human Immunodeficiency Virus (HIV), Ebola Virus Disease (EVD), Tuberculosis (TB), and Severe Acute Respiratory Syndrome (SARS). [23]

People tend to fear the unknown, as was the case with COVID-19, a new disease with many uncertainties. The fear of infection, blame-game, stereotypes, social judgment, lack of awareness, fear of social ramifications, prejudice, fueled by the pandemic of misinformation and links to certain racial and ethnic groups, all contribute to the increase in social stigma.[1,22,23] Furthermore, inadequate and inconclusive research on COVID-19 transmission and preventive measures, along with the chaos resulting from sharing COVID-19 news and updates, have raised public apprehension and mistrust in healthcare services and workers. [24,25] The world has struggled to mitigate the impact of COVID-19 and its different variants, and will continue to do so if new variants emerge.

Therefore, preserving the mental health of the healthcare fraternity through early pharmacological and psychological interventions is vital to prevent the imminent collapse of the healthcare system during emergencies. [26] Although prior research and reviews have extensively focused on various mental health challenges and psychological distress, to the best of our knowledge, no study has comprehensively discussed PTSD. This narrative review aims to determine the prevalence of PTSD among HCPs in India during the COVID-19 pandemic, identify its determinants, and propose ways to address this challenge in such pandemics.

MATERIALS AND METHODS

LITERATURE SEARCH

Published Literature

A narrative literature review search was conducted on the electronic databases of Google Scholar and PubMed, covering the period from December 2019 to February 2022. The authors defined a set of keywords and refined them at various stages to achieve the desired number of articles. The final keywords used for the search included 'PTSD,' 'healthcare professionals,' 'healthcare worker,' 'COVID-19,' and 'India.'

Grey Literature

There was a lack of published literature on the topic, so we also included country-level grey literature in our review. The grey literature consisted of different categories such as newspaper articles, policy briefs, reports, blogs, etc. The aim of the grey literature review was to gather evidence and information on post-traumatic stress disorders during the COVID-19 pandemic. In studying PTSD during the COVID-19 pandemic, grey literature offered valuable insights and evidence from a national or regional level, filling in gaps left by peer-reviewed publications

INCLUSION AND EXCLUSION CRITERIA

We considered published articles and grey literature that evaluated PTSD or traumatic stress as an outcome measure in healthcare professionals and workers. This included doctors, nurses, paramedics, technicians, administrative task forces, frontline healthcare workers, and support staff deployed in hospitals or communities during the COVID-19 crisis. Inclusion criteria involved articles published in English, peer-reviewed journals that were freely available (open access) and had clearly defined objectives, methodology, and approach. We excluded systematic reviews and meta-analyses, narrative

reviews, umbrella reviews, scoping reviews, commentaries, and editorials. Articles or grey literature that did not include PTSD as an outcome or content, but instead evaluated other mental health outcomes, were also removed from the review, as there is a wide range of research already available on those topics in the healthcare fraternity.

DATA EXTRACTION AND ANALYSIS

Published Literature

After importing the articles into a Microsoft Excel spreadsheet, the authors, PG and AK, independently extracted data into an evidence table. This table included the serial number, title of the article, first name of the first author, year of publication, study design, study setting, sample size, PTSD outcome, any other mental health-related exposure, conclusion/future implications, limitations mentioned by authors, and remarks found during the review. PM and AC, the two senior authors, provided feedback on the final evidence table and critically edited the generated evidence. For research studies that met the inclusion criteria, a narrative synthesis of key findings was performed, organized into four themes.

Grey Literature

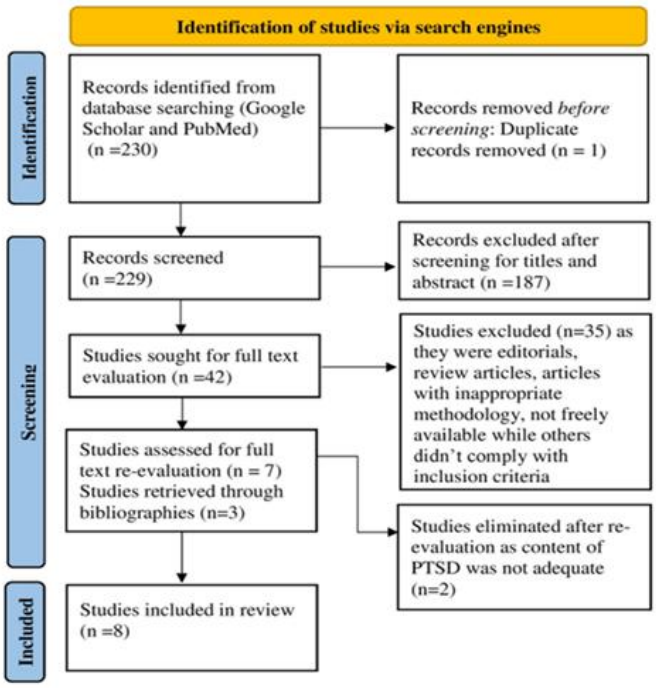
A spreadsheet was used to store the relevant links obtained through the electronic search for grey literature. AK and PG evaluated the title, source, and summary of the links to determine their eligibility for inclusion in the review. The senior authors, PM and AC, then conducted a critical evaluation of the selected links.

SELECTION OF STUDIES

Published Literature

The process of study selection is illustrated in Figure 1 using a PRISMA flow diagram.. Any disputes among the authors were resolved through a round table discussion led by the senior authors. All the selected articles were cross-sectional in nature, with sample sizes ranging from 50 to 2008 individuals. This narrative review included various healthcare professionals, such as doctors, nurses, paramedical staff, clinicians, hospital administrators, support staff, and medical interns. Two of the screened articles used the General Health Questionnaire-12 (GHQ-12) to measure the outcome indicators, while others utilized structured questionnaires. [27–34] A summary of the characteristics included in the review is presented in Table 1 (see Appendix).

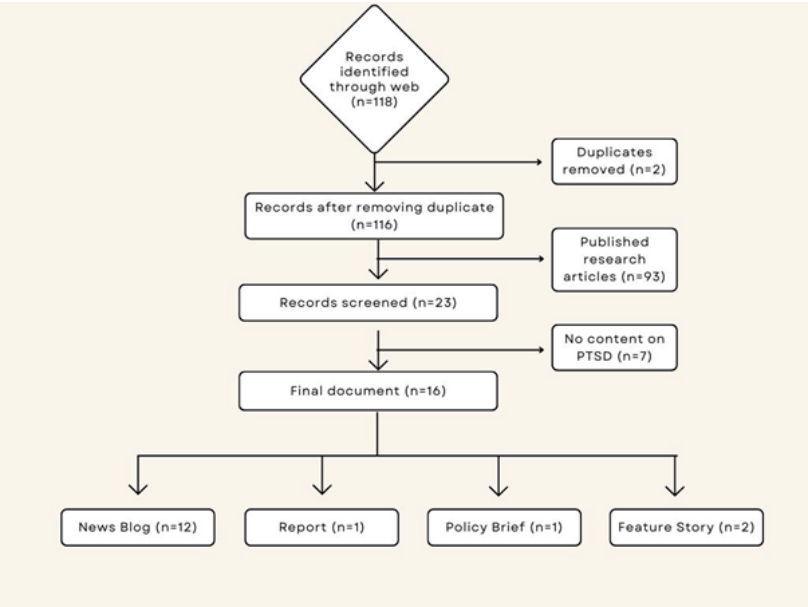
FIGURE 1: PRISMA FLOWCHART OF THE REVIEW



Grey Literature

A total of 18 links were retrieved, out of which two were rejected as they did not contain any content on PTSD. Sixteen titles were considered relevant, with 12 articles coming from news blogs, and the remaining four titles consisting of a policy brief, institutional report, feature stories, and research brief, respectively (Figure 2). The findings from the grey literature support the published literature and indicate the presence of chronic stress and poor mental health among healthcare professionals during the COVID-19 pandemic, along with an increased incidence of PTSD among them. These findings are summarized in Table 2 (see Appendix).

FIGURE 2. STRATEGY USED TO SELECT THE GREY LITERATURE



DISCUSSION

NARRATIVE

Prevalence of PTSD among HCPs

The prevalence of PTSD was found to be 2.1% (sample size = 384, mean age = 27.7 years, s.d. = 5.7), which was the lowest compared to other Asia-Pacific countries.[27] Conversely, Manohar et al. reported the highest prevalence at 77% (sample size = 2,008, mean age = 35.7 years, s.d. = 11.9). [31] The prevalence of PTSD varied across studies, influenced by factors such as sample size and the age of participants.

Gender Specific PTSD

We observed that female healthcare professionals, including doctors, female nurses, paramedics, and those working in the emergency unit, had a higher proportion of workplace anxiety (70.7% vs. 56%) and sleep disorders (52% vs. 39%) compared to males, thus increasing the burden of PTSD among female healthcare professionals. [28,32,34] It was evident that female participants had a higher fear of getting infected or spreading the infection to others compared to their male counterparts. [28,33,34] While younger female participants (21-30 years) had higher psychiatric morbidity, the studies did not report significant gender differences in psychiatric morbidity and post-traumatic stress. [34] However, female participants with higher psychiatric morbidity were more prone to experiencing higher levels of post-traumatic stress. [28] During the COVID-19 pandemic, as well as other pandemics, female healthcare workers have faced difficulties in managing their anxiety levels, particularly due to a lack of supply of personal protective equipment (PPE) and patient overload. Previous research on infectious disease outbreaks has indicated that female healthcare workers had significantly higher rates of severe anxiety (8%) compared to male healthcare workers ($p<0.01$). [35,36]

Domain Specific PTSD

Pandemics like COVID-19 place a high demand on healthcare professionals (HCPs) to care for their patients, putting their own lives at risk. During such times, HCPs experience fear and guilt about transmitting the infectious disease to their family members and also face social stigma from the community. [21,28] Our findings reveal that doctors have the highest psychiatric morbidity and post-traumatic stress compared to other occupational groups. The PTSD scores in doctors increased from 23.42 to 26.32, indicating an increase in traumatic stress. The lowest levels of PTSD were observed in administrative and security staff. [30,33] Some studies also reported that pharmacists and technicians had the highest levels of PTSD, followed by nurses and housekeeping staff. [28,33]

A study conducted by Raj Rachna showed that anxiety levels among physicians, nursing staff, technicians, and the general population were 55.65%, 48.54%, 52.34%, and 56%, respectively. Depression was reported in 55.65%, 48.54%, 52.34%, and 56%, respectively, of the mentioned categories. Insomnia was found in 47%, 38.2%, 39.4%, and 43%, respectively. [14] Prior evidence suggests that frontline healthcare professionals experienced moral distress due to COVID-19, and it was their moral and social responsibility to deliver care, allocate resources, and fulfill their duties during the pandemic. [6,14] We found that acute stress reaction and PTSD were common among frontline healthcare professionals. [36] A study from China reported that among nurses working in SARS ICU or SARS regular care units, acute stress reaction and PTSD were observed in 33% and 29.5%, respectively. [37] We also found several studies reporting the highest prevalence of definitive PTSD among junior physicians and senior residents. [28,30,34] For nurses, predictors of PTSD severity included high anxiety levels, being diagnosed with COVID-19, working 24-hour shifts, high depression levels, low years of work experience, low monthly income, and the presence of other chronic diseases. [38]

PTSD among various areas of hospital

Our review found that among those suffering from absolute PTSD, 31.3% worked in the screening area, 27.7% in the isolation ward, 18.8% in the high-risk ward, and 4.5% in the ICU. [28,30,32–34] Previous studies report that before the pandemic, 28.50% ± 20.21 of all cases were emergencies, while during the pandemic, this figure increased to 57.91% ± 38.11.39 We found that healthcare workers who worked in medical or surgical units reported more severe mental health issues than those who worked in the ICU. [28,30]

In contrast, another study conducted in India reported that 21.6% of doctors and nurses had PTSD, 88.6% had a moderate to a high level of stress, 16.3% had anxiety, and 59.5% had poor sleep while working in an emergency room and ICU. [40] Doctors and nurses working in the emergency room experienced significantly higher stress compared to those working in an ICU. It was found that HCPs who came into direct contact with patients had more severe mental health issues compared to those who were not in direct contact with patients. [30,33] Nurses working in the emergency department during the pandemic, who previously worked in psychiatric units, showed significantly higher levels of distress. Approximately 63.3% of nurses who worked in the National Designated Isolation Unit (NDIU) ward, 30.2% of those who worked in the general ward, 39.6% of those who worked in the ICU, and 21.1% of those who worked in other departments experienced higher levels of panic and PTSD. [28,30,32–34]

Strategies to preserve the mental health of HCPs

The mental health of healthcare professionals (HCPs) has been a silent but widespread public health crisis even before the onset of COVID-19. This was primarily due to the lack of evidence-based treatments for sudden infectious diseases, which HCPs continued to fight against. Research from various parts of the world has reported the use of different coping strategies during COVID-19 to combat mental health issues and challenges. Individuals with moderate to severe depression used humor and emotional support, while those with somatic symptoms turned to acceptance and religion. [26] Policy makers and global health strategists have documented various approaches that HCPs have employed to address their mental health issues. [3,8,14,36]

Many hospitals provided dedicated spaces for rest, allowing HCPs to isolate themselves from their families. Additionally, arrangements were made for food and other necessary supplies, new staff members were trained to handle aggressive

patients and learn relaxation techniques, and written guidelines were established for the use of personal protective equipment. Moreover, counselors were embedded in the workplace to provide support. [26] In addition to these measures, HCPs adopted self-care strategies such as yoga and meditation to cope with distress and anxiety during the COVID-19 pandemic. [26]

Based on the available data, it is recommended to provide customized continuous education programs for various groups of HCPs to better equip them to handle outbreaks of infectious diseases and global health emergencies. Healthcare departments should also focus on investing in medical students so that they can become a valuable resource during crises when there is a shortage of healthcare professionals to meet the needs of the population. Sensitization and education of community members about various infectious and non-infectious diseases, including basic training in first-line management, would help alleviate the unnecessary burden on hospitals caused by preventable diseases.

Strength & Limitations

The presented review has several strengths. Firstly, it provides a comprehensive overview of PTSD and its various determinants, contributing to the existing body of literature across various domains. Secondly, the review includes content from grey literature sources, offering a wider and more inclusive perspective on the available articles. Thirdly, despite using a narrative approach, the review explicitly states the criteria used to select the studies and articles.

However, the study does have certain limitations. Firstly, it did not include a quality check for the included studies, which could impact the reliability of the findings. Secondly, the search strategy employed may have missed out on a few potential articles. Additionally, some studies may not fully specify the prevention and organization measures implemented in the workplace, making it challenging to analyze the correlation between these measures and the level of post-traumatic stress, which is also a limitation of the study.

The included studies may not fully represent the diversity of populations, interventions, or outcomes related to PTSD prevalence and associated factors, limiting the applicability of our conclusions to broader context. Also, some of the studies might have over presented prevalence or the strength of associations for certain risk factors given the design of cross-sectional design studies included in the review. This bias could have implications for decision making in clinical practice or policy development. By explicitly acknowledging these limitations and their implications we highlight areas for improvement in future research.

SUMMARY

COVID-19 has significantly increased the workload and reduced the recovery opportunities for healthcare professionals (HCPs) globally, including in India, affecting them both physically and psychologically. Our findings indicate that HCPs experienced a notable increase in perceived stress and a higher prevalence of probable and definite PTSD. Notably, the sub-symptom of avoidance emerged as a significant indicator of existing PTSD. Many HCPs expressed an urgent need for regular counseling sessions during the pandemic.

Based on our review, we strongly advocate the formulation of specific educational interventions that include counseling services and treatment strategies involving psychiatrists, with a focus on vulnerable HCPs. These interventions should be incorporated into healthcare planning to effectively address unforeseen pandemic situations in the country. A well-designed work roster and rationalization of HCPs are crucial considerations. Furthermore, there is an urgent need to augment human resources and physical infrastructure in the healthcare sector. Policymakers should also develop effective strategies that prioritize mental health issues and include resilience training for public health emergencies. Enhancing preparedness for foreseeable stressful circumstances among healthcare workers through regular psychological interventions can play a vital role in building resilience and positively impact the mental health and well-being of healthcare professionals.

KEY MESSAGE

The COVID-19 pandemic has had a significant impact on the mental health of healthcare professionals, leading to an increased prevalence of Post-Traumatic Stress Disorder (PTSD) among them. Safeguarding the mental well-being of the healthcare fraternity is crucial, as failure to do so could potentially result in the collapse of the healthcare system during emergency situations.

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APPENDIX

TABLE 1: CHARACTERISTICS OF THE SELECTED PUBLISHED LITERATURE

Sl. no	Title	Publication Year	First Author	Study Design and Setting	Sample Size	Study Population	Conclusion	Limitations
1	Postexposure psychological sequelae in frontline health workers to COVID-19 in Andhra Pradesh, India [27]	2021	Das Keya	Cross sectional observational study, Andhra Pradesh, India	321	Doctors, Interns, Nurses involved in Covid 19 duties	Psychological impact was significantly related to the place of posting.	Not able to describe the reasons for attrition rate in the middle of the study. Also, the authors could not reach frontline workers lacking internet facilities
2	Estimation of Prevalence and Comparing the Levels of Stress, Anxiety, Depression, and Psychological Impact Before and After COVID-19 Lockdown Among Front Line Health Care Workers [28]	2022	Latha Sri Lakshmi	Cross sectional, Hyderabad India	345	Health care employees - doctors, nurses, and other hospital staffs	There was a worsening of the psychological impact of the pandemic and an increase in PTSD, stress, anxiety, and depression among HCWs from lockdown to post lockdown. Females' pharmacists, and technicians were the most vulnerable group to develop psychiatric comorbidities.	Lack of longitudinal follow-up
3	Impact of Covid-19 Pandemic on Wellbeing of Doctors in Kashmir [29]	2021	Wasim Rafiq	Cross-sectional study	50	Allopathic doctors, Indian part of Kashmir	COVID 19 has increased the workload and decreased the recovery opportunities of the doctors across the globe which affected doctors physically and psychologically. The impact has been more severe on the doctors of Kashmir. The doctors expressed the urgent need of organizing regular counselling sessions for them during the pandemic. A well thought out work roster and rationalization of the	Lack of representative sample.

							healthcare practitioners was greatly felt during the study.	
4	Mental health outcome and professional quality of life among healthcare workers during COVID-19 pandemic: a frontline-COVID survey [30]	2020	TomarBalvier Singh	Cross-sectional study\	418	Nurse, doctor, paramedics, or non-clinicians	Female nurses, and doctors working in emergency unit had a greater proportion of psychological distress. Working as frontline was moral and social responsibility. The resilience and QoL were important predictors for negative mental health outcome	Self-reported format has lesser disparity than face-to-face interviews. Cross-sectional study. Need to manifest association of social support to mental health in future studies.
5	Psychological impact, coping strategies used and the effect of 'brief psychological intervention 'on mental health of healthcare workers during the COVID-19 pandemic [31]	2021	Vasavanda Disha A	Interventional study	175	Healthcare workers	Fear of getting infected or spreading it to others was higher among females and nursing staff participants. Younger participants (21-30 years) had higher psychiatric morbidity, no significant gender differences in psychiatric morbidity and posttraumatic stress were found. Overall, doctors had the highest psychiatric morbidity and posttraumatic stress as compared to other occupational groups. Moreover, participants with higher psychiatric morbidity were prone to have higher posttraumatic stress. Use of approach coping strategies was the highest among supportive staff participants who also had the least PTSD, suggesting a positive role in stress reduction. The interventional module was effective in alleviating the psychological stress among healthcare workers due to the	There was lack of control group in the study and only one follows up after the interventional session. The interventional module did not include any debriefing or other one-to-one brief therapeutic sessions.

							unprecedented circumstances of the COVID-19 pandemic.	
6.	Asian-Pacific perspective on the psychological well-being of healthcare workers during the evolution of the COVID-19 pandemic [32]	2020	Nicholas W.S. Chew	Multi-Country Cross Sectional	277 (from India)	Healthcare workers	The prevalence of PTSD was 2.1 % which was lowest when compared with other Asian-Pacific countries. Non-medical trained person was independent predictors for stress and anxiety.	Assessment of casualty of various outcomes was not possible considering the cross-sectional design of study.
7.	Prevalence and severity of secondary traumatic stress and optimism in Indian healthcare professionals during COVID-19 lockdown [33]	2021	Manohar K.N.	Cross-Sectional Study	2008	Doctors, Nurses, and Allied Health Professionals	Post-traumatic stress was experienced by 77% of the healthcare professionals. The doctors and nurses showed more stress than other HCPs. Female staffs had more intrusive thoughts compared to male counterparts. Rampant spread, lack of preparedness, uncertain management guidelines beside risk for self and families were the risk factors for increased PTSD.	There was lack of homogeneity in the study at various levels and over representation of particular group among HCPs.
8.	Association of Sociodemographic parameters with depression, anxiety, stress, sleep quality, psychological trauma, mental well-being, and resilience during the second wave of COVID-19 pandemic: A cross-sectional survey from India [34]	2021	Tanveer Kaur	Cross-Sectional Study	1109 (n=299, healthcare workers)	General population including healthcare workers	Around 25.25% of the participants showed severe PTSD symptoms while 44.18% exhibited mild PTSD. Only one-third of the population were healthcare workers (frontline workers, paramedics, etc.).and 4.60% had clinically diagnosed psychiatric illnesses	No separate data of prevalence of PTSD in healthcare workers was available and therefore the prevalence cannot be extrapolated to healthcare workers in a similar proportion.

APPENDIX

TABLE 2: SUMMARY OF THE SELECTED GREY LITERATURE

Sl. No	Title	Source	Published Date	Author Name	Type of Grey Literature	Electronic Copies Availability	Article Summary
1.	Coronavirus lockdown, Rise in post-traumatic stress disorder: survey	https://www.thehindu.com/sci-tech/health/rise-in-post-traumatic-stress-disorder-survey/article61689652.ece	November, 2021	Bindu ShajanPerappadn	News Blog	The Hindu	Physicians should brace themselves for increased number of consultations for PTSD and should be able to manage them properly.
2.	Frontline health workers battle anxiety, burnout, PTSD, and other issues in pandemic	https://indianexpress.com/article/lifestyle/health/covid-healthcare-workers-mental-health-anxiety-stress-consultation-7358636/	June, 2021	Disha Roy Choudhary	News Blog	The Indian Express	Doctors reaching out for help for mental health concerns was much less owing to busy schedule, long working hours and stigma attached to seeking help and the expectation that physicians must be strong.
3.	PTSD, Emotional Burnout: One Year of COVID-19 has taken Toll on Minds of Frontline Health Workers	https://www.news18.com/news/buzz/ptsd-emotional-burnout-one-year-of-covid-19-has-taken-toll-on-minds-of-frontline-health-workers-3616862.html	April, 2021	Zirak Marker	News Blog	News 18	Frontline healthcare workers need to find healthy ways and coping mechanisms during distressful time likes COVID like consulting a counsellor and find ways of "letting go" as they are human beings and not superhumans or gods.
4.	Mental Health & The Frontline: Healthcare Workers on COVID Trauma	https://www.thequint.com/fit/coronavirus/mental-health-healthcare-frontline-workers-doctors-on-covid-trauma#read-more	July, 2021	Abhishek Tandon et.al	News Blog	The Quint	The panic pandemic may have abated in urban areas, but the trauma of working in frontline triggers. The everyday losses and grief have become etched onto the memories of doctors.
5.	Covid 19: Burnout and depression spiral among traumatized doctors across India	https://timesofindia.indiatimes.com/india/covid-19-burnout-and-depression-spiral-among-traumatized-doctors-across-india/articleshow/82963237.cms	May, 2021	Institutional Report, Bloomberg	News Blog	The Times of India	Healthcare professionals were pushed into physical and mental exhaustion as they fought to keep their patients alive.
6.	Covid impact: PTSD, depression higher in non-medical staffers	https://www.newindianexpress.com/cities/hyderabad/2022/jan/27/covid-impact-ptsd-depression-higher-in-non-medical-staffers-2411784.html	January, 2022	Donita Jose	News Blog	The New Indian Express	More than 50% of the participants endorsed PTSD with worsening symptoms from lockdown to post lockdown. This was because of increased workload and constant

							contact with COVID-19 patients.
7.	Covid-19 pandemic had psychosocial impact on health workers: ICMR study	https://timesofindia.indiatimes.com/india/covid-19-pandemic-had-psychosocial-impact-on-healthcare-workers-icmr-study/articleshow/86284158.cms	September, 2021	Institutional Report, ICMR	News Blog	The Times of India	Different expressions of stigma that healthcare professionals face with experiences of verbal and physical abuse lead to increase in traumatic stress among them.
8.	Mental health and psychosocial considerations during the COVID-19 outbreak	https://www.who.int/docs/default-source/coronaviruse/mental-health-considerations.pdf	March, 2020	Institutional Report, WHO	Report	WHO Official Website	Keeping staff protected from chronic stress and poor mental health during pandemics is vital to restore the better capacity of healthcare professionals. Basic emotional and psychological support should be made essential.
9.	Caring for Health Care Warriors: Mental Health Support During COVID-19	https://www.mohfw.gov.in/pdf/HCWMentalHealthSupportGuidanceJuly20201.pdf	July, 2020	Institutional, Department of Health & Family Welfare, Government of Karnataka	Policy Brief	MoHFW Website	Worries about getting infected, taking infection to others, to their families, adequacy to protection, and the widespread social and economic disruption had triggered PTSD in healthcare professionals. Conducting team meetings, promoting awareness about mental health, and having a clear protocol for treatment and procedures will enhance mental health status of healthcare professionals.
10.	The impact of COVID-19 on mental health cannot be made light of	https://www.who.int/news-room/feature-stories/detail/the-impact-of-covid-19-on-mental-health-cannot-be-made-light-of	June, 2022	Institutional, WHO	Feature stories	Newsroom, WHO Official Website	Applying a whole society approach to promote, protect, and care for mental health among healthcare professionals is vital among such pandemics to restore their mental health status.

11.	COVID-19 health workers at increased risk of mental health disorders such as anxiety, depression	https://www.timesnownews.com/health/article/covid-19-healthcare-workers-at-increased-risk-of-mental-health-disorders-such-as-anxiety-depression/707130	January, 2021	Anushree Gupta	News Blog	TIMESNOWNEWS.COM	Healthcare professionals involved in COVID care had multiple risk of mental health problems. Majority of them suffered from Insomnia and acute PTSD. The report suggested that studying resilient and pathological trajectories can build a scaffold for constructing evidenced based interventions for managing mental health status of healthcare professionals.
12.	How doctors are coping with the impact of Covid on their mental health	https://timesofindia.indiatimes.com/india/how-doctors-are-coping-with-the-impact-of-covid-on-their-mental-health/articleshow/77143311.cms	July, 2020	Shobita Dhar	News Blog	The Times of India	Doctors and nurses have been the last persons to be with patients on their death beds holding their hands as they gasp for the last few breaths remaining in them. These experiences provided acute and post-traumatic stress among the healthcare cadre.
13.	Absorbing the COVID-19 gloom like a sponge: Doctors on the trauma of second wave	https://www.thehindu.com/sci-tech/health/mental-health-of-doctors-with-covid-trauma/article34725866.ece	June, 2021	Kinshuk Gupta	News Blog	The Hindu	High levels of post-traumatic stress were revealed among the junior and young doctors as compared to older ones. Adequate rest hours and counselling should be incorporated in between duty hours to reduce the stress of clinicians saving lives of people in the frontline.
14.	COVID-19 impacting mental health of doctors, finds study	https://indianexpress.com/article/cities/chandigarh/chandigarh-frontline-doctors-dealing-with-anxiety-rising-mental-health-issues-amid-the-pandemic/	June, 2021	Times News Network	News Blog	The Times of India	Stress Management should be an integral curriculum of healthcare professionals so that they can serve humanity efficiently and effectively during the pandemic and in the future.
15.	Panchkula: Frontline doctors dealing with anxiety, rising mental health issues amid the pandemic	https://indianexpress.com/article/cities/chandigarh/chandigarh-frontline-doctors-dealing-with-anxiety-rising-mental-health-issues-amid-the-pandemic/	September, 2020	Pallavi Singhal	News Blog	The Indian Express	The severity of the pandemic accompanied by feeling of helplessness due to shrinking resources and less than required paramedical staff had left doctors impaired and led to high prevalence of PTSD among frontline healthcare fraternity.

16.	Impact of COVID-19 Pandemic on Medical Healthcare Workers in Mumbai City, India	https://sambodhi.co.in/	July, 2021		Research Brief	Sambodhi Website	The medical health workers were overburdened, and resource constrained during COVID-19 pandemic. Prevalence of PTSD and similar symptoms were common among the healthcare workers. Need for sensitization sessions within healthcare facilities should be formulated for staff during emergency response situations.