

# Healthcare Workers Experiencing PTSD during the COVID-19 Pandemic

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## Abstract

Under the pressure of the COVID-19 pandemic, mental illnesses such as post-traumatic stress disorder (PTSD) became more prevalent, especially among healthcare workers (HCW). This article examines the impacts of PTSD on HCWs during COVID-19, analyzing the causes and risk factors, long term impacts, as well as existing coping methods. Specific stress factors from the pandemic include an increased workload and the fear of being infected. Other factors such as age and gender can also increase the risk of inflicting PTSD. Even though studies have reported that most PTSD symptoms persist for a lifetime, there are some helpful coping mechanisms already in use to help alleviate the symptoms. Through analyzing the causes, impacts, and coping methods of PTSD, it is probable that better treatments for this condition can be developed to help HCWs and many others who are struggling with similar situations.

*Keywords: Mental Health, PTSD, Healthcare Workers, COVID-19, Coping*

## 1. Introduction

In December 2019, the new and highly-contagious SARS-CoV2 or Coronavirus 2019 (COVID-19) first emerged in Wuhan, China, and quickly spread throughout the world (Carmassi et al., 2020). The outbreak was officially deemed a global pandemic on March 11, 2020, by the World Health Organization (WHO). The pandemic disrupted societies, economies, and healthcare systems worldwide (Froessl and Abdeen, 2021). By August 2020, the death toll in the United States exceeded 187,000, creating an immediate demand for an effective vaccine and more healthcare workers (HCW) (Bender et al., 2021). Because they were expected to step up at the most dangerous time of the COVID pandemic, HCWs were directly exposed to the virus and an increased workload.

Kelsey Ryan, a 28-year-old critical care nurse in Michigan, was summoned to the frontline with her colleagues to face countless patients suffering from the deadly virus. Due to a lack of treatment and technology, Ryan witnessed the loss of hundreds of lives in just two months and became a victim of post-traumatic stress disorder (PTSD). PTSD affects people who have experienced traumatic events such as military action, natural disasters, sexual violence, or serious illness or injury. The Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5), grouped symptoms of PTSD into four categories: intrusive memories, avoidance, negative mood, and hyperarousal (Johnson et al., 2020). "I still have nightmares every night," Ryan said after she woke up each night, choking and sweating (Wayland, 2020). Unfortunately, she is not alone. Many other HCWs suffered the same symptoms during the worst of the pandemic, and the continuous demand for work drained them of energy to recover from their mental struggles. Initial studies performed during the first wave of the pandemic indicate that more than 50% of the HCWs involved have experienced symptoms of depression, anxiety, and PTSD (Benham et al., 2020).

This paper examines the effects of the COVID-19 pandemic on the mental health of HCWs in the United States, especially focusing on the increased cases of PTSD. The National Comorbidity Survey Replication, a national representative community that holds surveys of the prevalence and correlations of mental disorders in the US,

“estimated the lifetime prevalence of PTSD among adults in the United States to be 6.8%.” However, the prevalence rate of PTSD in HCWs is significantly higher, ranging from 15% to 20%, depending on the location (Benham et al., 2020). By analyzing the psychological symptoms of HCWs during COVID- 19, this article aims to contribute to the finding of effective intervention methods for these symptoms to help HCWs prepare for future health crises. To ensure the validity of anticipated findings, this paper is developed after a thorough selection of past research and literature. A diverse range of texts focusing on the objectives of this paper have been studied to take into account multiple perspectives and provide a more accurate depiction of how HCWs develop PTSD from the COVID pandemic.

## 2. Causes and Risk Factors

During a pandemic, HCWs are expected to respond immediately to medical emergencies, creating high psychopathology rates (Amsalem et al., 2021). This is primarily due to the many stressors of a pandemic, such as a rapid increase in workload, lack of effective treatment and technology, and witnessing a significant number of deaths. HCWs also have to work overstraining long hours while worrying about their health and the health of their loved ones (Froessler and Abdeen, 2021). The various national public health membership associations distributed surveys to their members during the COVID– 19 pandemic crisis. From the 26, 174 responses received, 54.2% reported that they were working more than 60 hours per week, 51.5% could not take time off, and 47.0% spent more than 75% of their time on COVID– 19 response activities. As a result, they were exposed to a higher risk of PTSD (See Figure 1), and 36.8% of all respondents reported symptoms of PTSD (Bryant-Genevier et al., 2021). In addition, restrictive safeguards during the crisis exacerbated the situation by “limiting physical contact, social activities, religious services, and other traditional means of emotional connection,” creating another driving factor for mental health concerns (Bender et al., 2021).

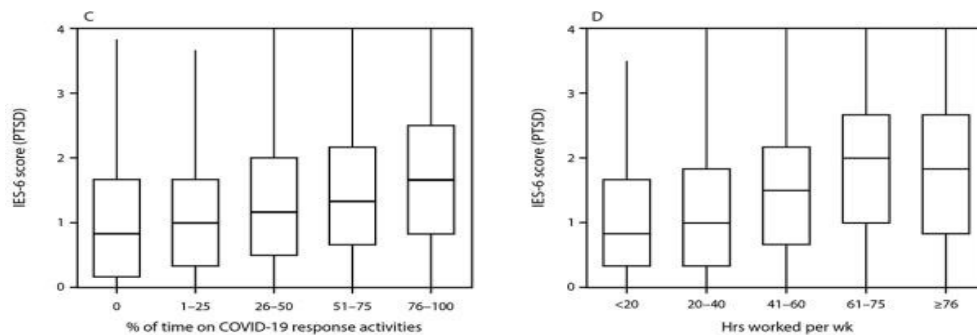


Figure 1. Distribution of 6-item Impact of Event Scale scores for post-traumatic stress disorder among state, tribal, local, and territorial public health worker respondents, by percentage of work time spent directly on COVID- 19 response activities for the majority of 2020 (panel C), and hours worked in a typical week since March 2020 (panels D) (Bryant-Genevier et al., 2021)

\*IES-6 = 6-item Impact of Event Scale; PTSD = post-traumatic stress disorder

Although the COVID- 19 outbreak caused a general increase in PTSD among HCWs, independent risk factors can influence the prevalence and severity of psychological symptoms. These factors include age, gender, occupation, and specialization. Being young, female, and a nurse were significant risk factors for mental health issues like PTSD. For instance, a survey of 1, 132 HCW participants revealed that women had over double the odds of developing PTSD compared to men (Hennein et al., 2020). Another study with 657 HCWs in New York City indicated that among those who screened positive for PTSD, 64% were nurses, which was significantly higher than the 40% of attending physicians with PTSD (Shechter et al., 2020). Moreover, during the global pandemic, many governments carried out lockdowns, which shifted schooling, parenting, and household duties to parents, and these responsibilities ultimately landed on women (Froessler and Abdeen, 2021). As a result, the pandemic indirectly imposed additional contributing factors for women to get PTSD.

### 3. Long Term and Health Impacts

Besides the direct symptoms of PTSD, the disorder can lead to detrimental long-term impacts on the lives of HCWs, creating lasting memories and stress from the pandemic. In a recent study of 350 HCWs, 35% reported symptoms suggesting probable PTSD, with 28% reporting symptoms that lasted 30 days and 24% 90 days (See Table 1) (Amsalem et al., 2021). These HCWs will regularly be jarred into a world of painful flashbacks. As a result, they often feel disconnected from families and friends. They have lower morale, lower productivity, and prolonged absences, which might also negatively affect healthcare organizations during emergencies like the pandemic (Bryant-Genevier et al., 2021).

Table 1. Longitudinal Presentation of the Percentage of Positive Cases for Self-Report Anxiety (GAD-7  $\geq 5$ ), Depression (PHQ-9  $\geq 5$ ), Suicidal Ideation (PHQ9, Item 9), and PTSD (PC-PTSD $\geq 3$ ) (Amsalem et al., 2021)

Items	Baseline n = 350	Day 30 n = 280	Day 90 n = 267	p-value
	n (%)	n (%)	n (%)	
<b>Severity level of anxiety (GAD)</b>				
Mild	100 (29)	76 (27)	72 (27)	
Moderate	66 (19)	44 (16)	46 (17)	
Severe	49 (14)	26 (9)	27 (10)	
Total	215 (62)	146 (52)	145 (54)	.007
<b>Severity level of depression (PHQ)</b>				
Mild	88 (25)	68 (24)	68 (26)	
Moderate	60 (17)	42 (15)	39 (15)	
Moderately severe	34 (10)	27 (10)	27 (10)	
Severe	20 (6)	9 (3)	12 (5)	
Total	202 (58)	146 (52)	148 (55)	.091
Suicidal ideation	65 (19)	38 (14)	49 (18)	.149
PC-PTSD	121 (35)	79 (28)	65 (24)	.000

Additionally, the immense workloads and pressure from the pandemic increased burnout among HCWs, causing physical and emotional exhaustion, depersonalization, and a decreased sense of personal accomplishment (Restauri and Sheridan, 2020). There is also an association between PTSD and burnout, as 98% of those meeting the diagnostic criteria for PTSD were positive for burnout syndrome (Mealer et al., 2009). Burnouts often create a lack of purpose and motivation in HCWs, causing the formation of suicidal thoughts and substance abuse. For example, a study of 1354

respondents showed that burnout increased the odds of suicidal ideation by 85% (Menon et al., 2020). However, the healthcare industry cannot risk losing a single worker during an urgent crisis.

In addition, another study showed that 8% of plastic surgeons with burnout syndromes were positive for alcohol abuse, and 5% were positive for substance abuse (Khansa and Janis, 2019). Through the use of alcohol and drugs, though, HCWs are only seeking temporary relief from mental stress at the cost of physical health damage. Some of the health impacts of PTSD include lower sleep quality and the potential development of obesity (DeLucia et al., 2019). HCWs with PTSD constantly live in a miserable state, and they might not even be able to distinguish delusions from reality. This dramatically exacerbates their quality of life and ruins their careers. However, HCWs are in the healthcare system because people rely on them to respond during emergencies and save lives, making it necessary for HCWs to cope with psychological difficulties and develop resilience.

### 4. Coping with PTSD

While PTSD can have chronic symptoms and is very hard to recover from, studies have found helpful coping mechanisms that can be implemented effectively to help prevent and minimize the effects of the disorder in HCWs. For instance, six specific psychological intervention programs are identified across 12 studies: psychological first aid (PFA); eye movement desensitization and reprocessing (EMDR); anticipate, plan, and deter (APD); resilience at work (RAW); resilience and coping for the healthcare community (RCHC) and trauma risk management (TRiM) (Hooper et al., 2021). Although further research is needed to test the effectiveness of these programs, initial evaluations have found that each program reduced the psychological impact of PTSD to a certain extent. APD and RCHC might be the most suitable for HCWs as they are newly designed and intended for the HCW population (Hooper et al., 2021).

APD is a model that helps HCWs learn to anticipate, plan, and deter potential problems, which emotionally prepares them for the specific stressors they will be facing. A qualitative study that implemented APD in two responder teams during Africa's 2014–2015 Ebola epidemic found that APD effectively reduced psychological problems in 90% of the high-risk HCWs (Schreiber et al., 2019). Likewise, RCHC is a 3 to 5- hour interactive workshop facilitated by trained social workers, counselors, and psychologists who hold either a master's degree or a Ph.D. It covers many topics, including common types of stress, reactions to severe stress and trauma, and individual and collective strategies to cope with stress and traumatic events (Yuma et al., 2019). Even though more research is needed, APD and RCHC are helpful tools to educate HCWs to deal with stress, allowing them to develop resilience in difficult circumstances and maintain a positive mindset at work.

Other more convenient and immediately accessible interventions have also proven effective. Some individual strategies are “micro-practices,” which require only a few seconds and are readily available for healthcare individuals to manage stress. These include mindfulness practices, breathing exercises, and limiting exposure to social media (Restauri and Sheridan, 2020). System-based interventions can also be used, in which hospitals can enhance working conditions and medical technologies, expand staffing size, and implement flexible schedules with sufficient breaks to provide a safe and comfortable working environment and reduce overwork (Bryant-Genevier et al., 2021). While HCWs can receive facilitated help to cope with PTSD, communal coping is another mechanism that allows people to connect emotionally with others and support each other in a shared, stressful situation. For example, a qualitative study on intensive care unit nurses, who are known to experience high levels of work-related post-traumatic stress, indicates the importance of a positive social network to develop resilience because it acts as a primary source of support and encouragement during challenging times (Bender et al., 2021). In a following study, a sample of 89 former HCWs in the US provided insights on how they perceive the quality, structure, and strategies for emotional connection, demonstrating how emotional connection has been a crucial part of their coping routines during intense work times (Bender et al., 2021).

## **5. Discussion**

The COVID-19 pandemic created a global outbreak of anxiety and hysteria as people faced a deadly virus. There was a high demand for HCWs who stood at the frontlines and put themselves at risk of contracting this deadly virus; by doing so, they also put themselves at risk for major mental health disorders like PTSD. They experienced a dramatic increase in workload and constantly faced a fear of infecting themselves or their loved ones. Although this study has focused on HCWs in the United States, there seems to be consistent data and similar findings in research from other countries. For example, similar risk factors may exist globally, influencing the severity of psychological symptoms, and similar coping mechanisms can be applied to HCWs worldwide. However, due to the recency of the pandemic, there might be limitations in sample selections and research methods during data collection, as well as insufficient data to cover all aspects of the pandemic and its effects on mental health. Therefore, more studies about PTSD on HCWs should be conducted in the next few years to answer more questions. Overall, this study emphasizes how the pandemic has led to mental health issues like PTSD, its long-term impacts, and the importance of coping strategies for HCWs to ensure accurate medical decision-making and continued professional performance.

## **6. Conclusion**

The COVID-19 pandemic has left permanent scars in the minds of many HCWs. The mountainous workload and the innumerable lives on their shoulders contributed to increased psychological difficulties for HCWs. Also, they constantly feared death and worried about their families and friends. However, studies have shown that women are more susceptible to mental problems like PTSD, increasing the prevalence rate among nurses because it is a more female-dominated specialization. The pandemic significantly increased the number of responsibilities placed on women as they have to take care of both their critically-ill patients and their families at home. Burnouts caused by stress and workloads in HCWs can also lead to suicide risks and physical health problems. Fortunately, many HCWs are able to cope with their symptoms through emotional connection and some coping mechanisms that are proven

effective for PTSD. Nurses like Kelsey Ryan are recovering, but the debilitating COVID- 19 experience will stick with them forever.

In this paper, the HCWs examined are those who weren't directly infected by the COVID- 19 virus itself. Still, they suffered all the same from the extreme stress and pressure of taking care of the patients and witnessing countless deaths. Even though the analysis of how the pandemic increased the risk of PTSD in HCWs is valuable information about PTSD and other related mental illnesses, that's not enough to improve on existing coping mechanisms. Therefore, it is suggested that more research should be done on behaviors of HCWs who either already had PTSD from past experiences or directly suffered from the COVID- 19 virus. Data from studies conducted on various aspects of the topic will allow comparisons to be made between those who have slightly different circumstances. This will eventually help in the development of better treatments for a wide range of victims in the future. By then, not only will HCWs be benefitted, but those who work in other dangerous and highly stressful professions will also suffer less.

## References

Amsalem, D., et al. (2021, November 5). Psychiatric symptoms and moral injury among us healthcare workers in the COVID- 19 ERA - BMC psychiatry. BioMed Central. Retrieved January 5, 2023, from <https://0-bmcpsychiatry-biomedcentral-com.brum.beds.ac.uk/articles/10.1186/s12888-021-03565-9>

Bender, A. E., et al. (2021). "Making Sure We Are All Okay": Healthcare Workers' Strategies for Emotional Connectedness During the COVID- 19 Pandemic. Europe PMC. Retrieved January 5, 2023, from <https://europepmc.org/article/MED/33456094>

Benham, T. L., et al. (2020, October 13). Preparing for the second surge: Preventing posttraumatic stress disorder and building resilience for health care workers in the face of covid- 19: Disaster medicine and public health preparedness. Cambridge Core. Retrieved January 5, 2023, from <https://www.cambridge.org/core/journals/disaster-medicine-and-public-health-preparedness/article/preparing-for-the-second-surge-preventing-posttraumatic-stress-disorder-and-building-resilience-for-health-care-workers-in-the-face-of-covid19/2020C7548677260B51F8C1311D397B0F>

Bryant-Genevier, J., et al. (2021, July 1). Symptoms of depression, anxiety, post-traumatic stress disorder, and suicidal ideation among state, tribal, local, and territorial public health workers during the COVID- 19 pandemic - United States, March–April 2021. Centers for Disease Control and Prevention. Retrieved January 5, 2023, from <https://www.cdc.gov/mmwr/volumes/70/wr/mm7026e1.htm>

Carmassi, C., et al. (2020, October). PTSD symptoms in healthcare workers facing the three coronavirus outbreaks: What can we expect after the COVID- 19 pandemic. Psychiatry research. Retrieved January 5, 2023, from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7370915/>

DeLucia, J. A., et al. (2019, February 5). Prevalence of post-traumatic stress disorder in emergency physicians in the United States. Western Journal of Emergency Medicine: Integrating Emergency Care with Population Health. Retrieved January 5, 2023, from <https://escholarship.org/uc/item/3b02x51n>

Froessler, L. J., & Abdeen, Y. (2021, September 30). The silent pandemic: The psychological burden on frontline healthcare workers during COVID-19. Psychiatry journal. Retrieved January 5, 2023, from <https://pubmed.ncbi.nlm.nih.gov/34631873/>

Hennein, R., Mew, E. J., & Lowe, S. R. (2020). Socio-ecological predictors of mental health outcomes among healthcare workers during the COVID-19 pandemic in the United States. PLOS ONE. Retrieved January 7, 2023, from <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0246602>

Hooper, J. J., et al. (2021, May 1). Addressing the psychological impact of covid-19 on Healthcare Workers: Learning from a systematic review of early interventions for Frontline Responders. BMJ Open. Retrieved January 5, 2023, from <https://bmjopen.bmj.com/content/11/5/e044134>

- Khansa, I., & Janis, J. E. (2019). A growing epidemic: Plastic Surgeons and Burnout – a literature review ... Special Topic. Retrieved January 11, 2023, from [https://www.researchgate.net/publication/333721073\\_A\\_Growing\\_Epidemic\\_Plastic\\_Surgeons\\_and\\_Burnout\\_-\\_A\\_Literature\\_Review](https://www.researchgate.net/publication/333721073_A_Growing_Epidemic_Plastic_Surgeons_and_Burnout_-_A_Literature_Review)
- Mealer, M., et al. (14 November 2009). The prevalence and impact of post traumatic stress disorder and burnout syndrome in nurses. Wiley Online Library. <https://onlinelibrary.wiley.com/doi/10.1002/da.20631>. Retrieved: February 4, 2023
- Menon, N. K., et al. (2020, December 9). Association of Physician Burnout with suicidal ideation and medical errors. JAMA Network Open. Retrieved January 11, 2023, from <https://jamanetwork.com/journals/jamanetworkopen/article-abstract/2773831>
- Restauri, N., & Sheridan, A. D. (2020, May 27). Burnout and posttraumatic stress disorder in the coronavirus disease 2019 (covid-19) pandemic: Intersection, impact, and interventions. Journal of the American College of Radiology. Retrieved January 5, 2023, from <https://www.sciencedirect.com/science/article/pii/S1546144020305469>
- Schreiber, M., et al. (2019). Maximizing the Resilience of Healthcare Workers in Multi-hazard Events: Lessons from the 2014–2015 Ebola Response in Africa. Academic.oup.com. Retrieved January 12, 2023, from [https://academic.oup.com/milmed/article/184/Supplement\\_1/114/5418686](https://academic.oup.com/milmed/article/184/Supplement_1/114/5418686)
- Shechter, A., et al. (2020, June 16). Psychological distress, coping behaviors, and preferences for support among New York healthcare workers during the COVID-19 pandemic. General Hospital Psychiatry. Retrieved January 7, 2023, from <https://www.sciencedirect.com/science/article/abs/pii/S0163834320300839>
- Wayland, M. (2020, June 27). 'I still have nightmares every night' - health workers struggle with PTSD symptoms as coronavirus takes toll. CNBC. Retrieved January 7, 2023, from <https://www.cnbc.com/2020/06/27/coronavirus-takes-emotional-toll-health-workers-suffer-ptsd.html>
- Yuma, P., et al. (2019). Resilience and coping for the Healthcare Community: A post-disaster group work intervention for healthcare and Social Service Providers. DigitalCommons@TMC. Retrieved January 12, 2023, from <https://digitalcommons.library.tmc.edu/jfs/vol19/iss1/8/>