

The Prevalence of Depression Among Medical Staff During The COVID-19 Pandemic

Xinyu Cao *

Department of Clinical Medicine, Xi'an Medical University, Xi'an, China

* Corresponding Author Email: BettyCao1533@outlook.com

Abstract. Background: Medical professionals' psychological health has been significantly damaged by the COVID-19 pandemic, with nurses being a particularly susceptible group. The purpose of this study is to assess the prevalence of depression among healthcare professionals during the pandemic, investigate risk variables, and provide suitable supportive treatments. Objective: This research combines data from 11 studies involving 424 healthcare professionals, including doctors, nurses, and others. The prevalence of depression and associated variables in these professions during the COVID-19 outbreak are examined. Methods: Data were gathered from many study initiatives that covered the 2020 to 2023 time period. In these research, the Impact of Events Scale Revised (IES-R), the Patient Health Questionnaire (PHQ-9), and the Perceived Stress Scale (PSS-10) were used to assess post-traumatic stress, depression, and stress levels. The study looked into demographic variables, individuals' mental health backgrounds, and aspects connected to their jobs in the healthcare industry. Results: COVID-19 pandemic led to 19% severe depression symptoms in healthcare professionals, with females, younger workers, and nursing professionals more susceptible. Social support strongly influences the results of mental health. Conclusion: Medical staff's mental health has been severely impacted by the COVID-19 epidemic, with nurses experiencing increased levels of despair and anxiety. Gender disparities in mental health outcomes highlight the need for targeted support for female healthcare workers. Improving working conditions and strengthening social support networks are essential steps in addressing these mental health challenges. To fully understand the long-term consequences on the mental health of healthcare workers, taking into consideration cultural and socioeconomic factors, further longitudinal study is needed. Offering culturally sensitive mental health support is pivotal for the welfare of healthcare workers.

Keywords: COVID-19; depression; medical staff; healthcare workers.

1. Introduction

The viral disease known as Coronavirus Disease 2019 (COVID-19) is caused by the highly transmissible severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The disease was first discovered in Wuhan, China, in December 2019, and it quickly spread over the rest of the world. The World Health Organization's Emergency Committee declared the COVID-19 pandemic and a worldwide health catastrophe in late January 2020. Because of this, pressure on healthcare systems throughout the world has increased [1].

Studies from earlier epidemics like SARS or Ebola have shown that the abrupt development of a highly fatal sickness throws a great load on healthcare professionals (HCWs). HCWs, including nurses, are significantly more likely to experience problems with their physical and mental health due to increased workloads, physical exhaustion, a lack of suitable personal protective equipment, quarantine rules, social isolation, nosocomial transmission, and the moral conundrums raised by care rationing. Additionally, social exclusion, the loss of social connections, worries about friends and family, and sudden, frequently disturbing changes in their work surroundings can all weaken a person's resilience. HCWs are therefore more likely to have mental health issues such anxiety, fear, depression, and insomnia [1,2].

Frontline medical personnel are critical to the healthcare system's reaction to the outbreak. Surprisingly, In January 2022, Medscape released the "2022 Physician Burnout and Depression Report" through a survey of 13000 American doctors in 29 professions. The report showed that 20%

of doctors had clinically confirmed depression and 69% had a depressive state. Some estimates have the number of verified COVID-19 cases among HCWs at over 10%, and in Iran, more than 12,000 HCWs have contracted the disease, with 164 of them dying as a result. This high rate of infection severely impacted the healthcare system [3].

HCWs are dealing with social isolation and confinement during the COVID-19 epidemic, which can cause serious psychological anguish in addition to concerns about infection. Prior research has shown the psychological toll that the COVID-19 problem has taken on society as a whole, with about 35% of people in China feeling emotional discomfort. Comparable research in other countries has shown that about one-third of the population is dealing with psychological disorders [4,5].

Existing research indicates the importance of offering enhanced psychological support to younger and less experienced medical staff, particularly nurses, who are at a heightened risk of exposure due to their frequent interactions with patients. The repetitive nature of nursing tasks can lead to fatigue and increased stress levels [6]. According to research by Al Amer et al. and Arafa et al., nurses and people who interact with COVID-19 patients are more likely to experience sadness, anxiety, and stress. For instance, 18.1% of primary healthcare workers displayed signs of sadness during the COVID-19 epidemic in Muscat. Given the crucial function that nurses play within the healthcare system, it is essential to emphasize their mental health in order to raise the standard of treatment provided [1].

This study's two main objectives are to (1) determine the prevalence of depression among various health care workers (HCWs) during the COVID-19 pandemic and (2) look into the long-term effects of the virus on mental health and potential prevention strategies.

2. Methods

2.1. Eligibility Criteria

The observational studies that supplied data allowing the evaluation of the relationship between certain characteristics (sociodemographic, clinical, and environmental) and depression symptoms in healthcare workers during the COVID-19 pandemic are all included in this study. We considered studies that classified depressive symptoms based on specific cutoff points from any suitable psychometric scale. A healthcare worker is defined as an individual employed in healthcare roles within a healthcare institution or service. The World Health Organization (WHO) often uses universally accepted terms and concepts to describe healthcare workers, especially those in the medical field.

The investigation excluded studies lacking information on depressed symptoms, general population without specific HCWs, and raw data on depression symptom correlations.

2.2. Information Resources, Search Strategy, and Selection of Studies

Google Scholar and CNKI databases were searched for material on COVID-19 published in the last three years, until March 7, 2023. The following search query was used, regardless of language: (depression OR depressive syndromes OR mental health) AND (COVID-19 pandemic OR SARS-CoV-2) AND (medical staff OR healthcare workers). The primary screening step involved examining the titles and abstracts before downloading the full texts for assessing study eligibility based on the predefined inclusion criteria.

2.3. Data Extraction

The study used a standardized data extraction method to gather key information from all qualified studies, including publication year, research site, inclusion criteria, healthcare worker type (such as frontline staff or nursing professionals), sample size, mean age, methods for diagnosing depressive symptoms, and correlations of depressive symptoms at both the individual and organizational levels that are currently available.

2.4. Data Items

Three categories of data were collected for the study: demographic data, personal mental health history, and assessment tools. Demographic variables included gender, age, profession, educational level, employment sector, and duration of employment. Personal mental health history included diagnoses of anxiety and depressive disorders. The Patient Health Questionnaire (PHQ-9) was used to measure depressive symptoms, the Impact of Events Scale Revised (IES-R) was used to measure post-traumatic stress disorder symptoms, and the Perceived Stress Scale (PSS-10) was used to measure self-perceived stress levels. The relationships between demographic factors, past mental health history, and assessment techniques were made possible thanks to these data components.

3. Results

3.1. Study Selection and Characteristics

Google Scholar and CNKI yielded 433,000 articles. Preliminary screening by title and abstract resulted in the identification of 48 possibly suitable publications. The author discovered 11 acceptable papers for inclusion in our research after rejecting 37 studies during the final full-text screening [7]. These investigations included 424 medical staff members, with 19% reporting depressed symptoms [8].

The following are the specific features of the included studies: The sample was diversified, with physicians accounting for 42% of the sample, nurses accounting for 24%, physiotherapists accounting for 18%, and others (i.e., occupational therapists, pharmacists, clinical psychologists) accounting for 16% [8]. In terms of gender distribution, 58% of physicians were female, with an equal gender split among nurses (62%), and a balanced gender ratio among physiotherapists. 79% of those in the "other" group were female. Participants were 38.8 years old on average, with doctors being the oldest (43.9 years) and those in the "Other" group being the youngest (32.2 years) [8].

Participants were divided into four job sectors: inpatient public (46%), private outpatient (33%), inpatient private (16%), COVID-19 units (1.9%), and emergency departments (3.3%). Work experience varied, with 20% having fewer than 5 years, 23% having 5-10 years, and the majority, 58%, having more than 10 years [8].

Associate degrees (4.2%), bachelor's degrees (42%), master's degrees (43%), and doctorate degrees (12%) were the educational levels represented. In terms of mental health, 19% showed potential depressive symptoms, with average IES-R and PSS-10 scores of 17 and 18, respectively. Stress levels were classified as low (26%), medium (49%), and high (25%) [8].

3.2. Results of Individual Studies

(1) Concerned nurses investigating the prevalence and risk factors for depressed symptoms during the COVID-19 pandemic (Ali, E.A., et al., 2023); (2) A systematic review and meta-analysis encompassing healthcare professionals, investigating the occurrence of depression, anxiety, and sleep disturbances amid the pandemic (Pappa, Sofia et al., 2020); (3) The study (Motahedi, Saeideh, et al., 2021) concentrated on anxiety and depression among medical professionals; (4) Research of anxiety and depressive symptoms among Chinese healthcare workers after the COVID-19 epidemic was contained (Qiao, Xue MS, et al., 2023); (5) Research examining how the COVID-19 epidemic in China affected the relationship between burnout and depressive illnesses (Huo, Lijuan, et al., 2021); (6) Research on the incidence of depression and how it affects frontline nurses' satisfaction while working in emergency rooms following the SARS-COV-2 crisis (An, Ying, et al., 2020); (7) A thorough examination and meta-review of the variables linked to depressive symptoms in medical staff members since the epidemic's onset (Crocamo, Cristina, et al., 2021); (8) A study on the effects of the COVID-19 pandemic on healthcare workers' mental health (Chatzittofis, A., et al., 2021); (9) An exploration of the consequences of unexpected novel coronavirus outbreaks within healthcare facilities on depressive disorders among healthcare personnel, conducted as a multi-institutional

study (Sato, H. et al., 2023); (10) A study of nursing staff members' rates of anxiety and depression during the SARS-COV-2 pandemic (Serrano J, Hassamal S, et al., 2021); (11) an investigation of the melancholy and anxious symptoms experienced by medical personnel during the COVID-19 epidemics in China (Liu, Yuan, et al., 2021).

3.3. Synthesis of Results

According to the findings of the preceding research, the COVID-19 pandemic has had a major influence on the mental health of healthcare personnel. The following are the main conclusions of the combined results: (1) Nurses have widespread depression symptoms, which may be connected to the work environment and pandemic tension; (2) During the epidemic, healthcare personnel experience prevalent mental health concerns including as depression, anxiety, and sleeplessness, which may be attributed to work stress and the unpredictability of the pandemic; (3) Anxiety and sadness levels among healthcare personnel may vary based on personal circumstances and the severity of the epidemic; (4) As the COVID-19 epidemic has slowed, anxiety and depression symptoms among Chinese healthcare professionals have diminished, but certain mental health difficulties remain; (5) Work tiredness is linked to depressed symptoms in healthcare professionals, suggesting that working circumstances and loads influence mental health; (6) During the pandemic, emergency department frontline nurses experience depression, which may be connected to high-risk work settings and pandemic stress; (7) Some important characteristics leading to depression symptoms in healthcare professionals have been discovered by systematic reviews and meta-analyses, giving suggestions for intervention and assistance; (8) The COVID-19 outbreak has had a wide-ranging influence on HCWs' mental health, necessitating measures to provide mental health support and interventions. These studies, taken together, demonstrate the mental health issues that healthcare personnel confront during the COVID-19 epidemic. Understanding these problems is crucial for establishing effective supports and treatments to assure healthcare professionals' mental health and effectiveness.

4. Discussion

4.1. Summary of Findings

The research, which is based on 11 studies including 424 doctors, nurses, and other healthcare personnel, offers evidence about the variables related with depression feelings among medical professionals [7]. Based on the survey findings, approximately 19% of healthcare professionals exhibited signs of depression, while 15% displayed symptoms of post-traumatic stress disorder (PTSD). Factors such as gender, age, and occupation played significant roles in predicting the severity of depressive and PTSD symptoms. Notably, being female was associated with a notably higher risk, with estimates ranging from 1.46 to 6.79 times higher compared to their male counterparts. Additionally, younger individuals had a lower risk, with estimates ranging from 0.09 to 0.17 lower for each year younger. Furthermore, nurses, in particular, were at an increased risk compared to other healthcare professions, with odds ratios ranging from 1.7 to 2.51, indicating a higher intensity of both depressive and PTSD symptoms [7].

According to recent research, the COVID-19 outbreak caused nurses to experience more stress, which led to noticeably greater levels of anxiety and depression. 79.7% of nurses, in particular, reported feeling nervous. Among 1103 emergency department (ED) nurses, the prevalence of depression was found to be 43.61% (95% CI=40.68-46.54%). A significant correlation between depression and working in tertiary institutions (OR=1.647, P=0.009), caring for COVID-19 patients directly (OR=1.421, P=0.018), and smoking (OR=3.843, P=0.001) was found by multiple logistic regression analysis. Furthermore, nurses suffering from depression had a poorer quality of life than those who did not ($F(1,1103)=423.83$, $P=0.001$) [11].

According to studies, female nurses were twice as likely as their male counterparts to experience distress and bear a greater psychological burden [10]. Nurses may be at a higher risk of mental health issues than other healthcare workers (HCWs) as a result of their key tasks [9]. When confronted with a significant epidemic in a hospital or nursing home, HCWs aged 20-29 years with insufficient professional experience may experience emotions of inadequacy and remorse, potentially leading to suicide ideation [9].

Furthermore, Zhou et al. found that women were more prone to anxiety symptoms than depressive symptoms [3]. The study found a gender difference in the probabilities of suffering depressed symptoms, with women reporting around 40% more than men [7]. Recent COVID-19 evaluations, however, reveal that gender has a role in both depression and anxiety symptoms [3]. It's important to remember that research has shown social support to be a highly effective, independent predictor of depression and anxiousness. These findings are consistent with past research that showed higher levels of social support are related to reduced levels of depression and anxiety under the COVID-19 pandemic stress [3].

4.2. Limitations

The limitations of this paper encompass several key aspects. Firstly, the sample used in this study may not accurately represent all healthcare workers. The data primarily derives from a specific region or country, potentially limiting the generalizability of the findings to healthcare workers in different regions and cultural contexts. Secondly, although widely used, the questionnaire tools employed in this study (e.g., PHQ-9, IES-R, PSS-10) are not immune to subjectivity and recall bias. Healthcare workers may be influenced by their subjective feelings when responding to questions, and their mental states can fluctuate over time, potentially not being fully captured by the questionnaires. Furthermore, despite covering a specific timeframe, this study remains cross-sectional and, as such, cannot provide in-depth insights into the long-term effects and trends related to mental health. A more comprehensive understanding of long-term mental health effects necessitates extended follow-up studies.

Additionally, the study relies on retrospective information, such as individuals' mental health histories. Furthermore, a substantial portion of the data relies on self-reports from healthcare workers, introducing the possibility of subjective biases and memory inaccuracies. Moreover, since the study primarily draws from region-specific data, cultural and social contextual factors may exert influence on the results. Mental health experiences among healthcare workers can diverge across different cultural settings. Lastly, while the study delves into certain factors that might impact healthcare workers' mental health, it omits consideration of other potential variables, such as the presence of social support networks and family dynamics. These restrictions together highlight the necessity for careful interpretation and implementation of the study's findings. Furthermore, they emphasize the necessity for more comprehensive research to gain a deeper understanding of healthcare workers' mental health issues during the COVID-19 pandemic.

5. Conclusions

The study's findings, in summary, highlight how negatively the COVID-19 pandemic has impacted the mental health of medical personnel, particularly nurses. Firstly, approximately 19% of medical professionals, including doctors and healthcare staff, reported significant depressive symptoms during the pandemic, highlighting a substantial mental health burden among HCWs. It's important to acknowledge the gender differences that have surfaced as well, with female healthcare professionals routinely displaying greater levels of distress, sadness, and anxiety. These disparities necessitate targeted interventions and support systems for female HCWs. Nurses, in particular, were subjected to high levels of stress, which resulted in greater incidences of melancholy and anxiety. This highlights the critical need for specialist mental health support for nursing workers on the front lines of patient care. The research also underscored the significance of the workplace environment, where

elements like employment in tertiary institutions or delivering direct care to COVID-19 patients were linked to elevated rates of depressive symptoms among HCWs. Improving working conditions and resource availability is critical to reducing these effects. Furthermore, social support was discovered to be an important element influencing anxiety and depression symptoms among healthcare workers. Strengthening social support networks in the workplace and in personal life can help HCWs deal with some of the mental health issues they confront. Longitudinal studies are necessary to comprehend the pandemic's long-term effects on healthcare workers' mental health, but it must be understood that they have limitations when compared to cross-sectional studies. Additionally, cultural and social contextual factors should be considered in future research for a more comprehensive understanding of healthcare workers' mental health experiences.

Mental health is a major concern for healthcare organizations, especially for healthcare employees. It is critical to design personalized support programs for healthcare workers, particularly nurses, to address this issue. Interventions should also take gender discrepancies in mental health outcomes into account, with special attention paid to female healthcare practitioners. To reduce stress and anxiety among healthcare personnel, hospitals should examine and enhance working conditions, resource availability, and support structures. Understanding the long-term impacts of the pandemic requires studies that track the mental health of healthcare personnel over time. Culturally competent mental health support networks are critical for the well-being of healthcare workers.

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