
SHORT COMMUNICATION

Meta-analysis of depression and anxiety among doctors during the covid-19 pandemic

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ABSTRACT

Based on findings from the first year of the COVID-19 pandemic, this research estimates the global prevalence of depression and anxiety symptoms among doctors. The Coronavirus Disease 2019 (COVID-19) outbreak was declared a Public Health Emergency of International Concern by the World Health Organization (WHO) on January 30, 2020, the highest level of alarm. Local and national 'lockdowns,' quarantines, travel restrictions, and physical distancing measures were implemented in an unprecedented worldwide response to try to reduce transmission rates. There have been approximately 114 million confirmed cases and over 2.5 million recorded COVID-related deaths as of this writing (WHO, 2021).

As a result of the unprecedented strain on global health systems, there has been a greater emphasis on the mental health of healthcare workers. The Lancet published a position paper in April 2020 stating their potential pandemic research priorities:

"The immediate research priority is to track and report rates of anxiety, depression, self-harm, suicide, and other mental health problems to better understand processes and, most importantly, to inform interventions." This should be implemented for the general public as well as vulnerable groups, such as front-line workers."

Key Words: *Doctors; Physicians; Covid – 19; Coronavirus; Depression; Anxiety*

INTRODUCTION

In addition to financial expenses, productivity losses, and direct effects on the person, poor mental health and wellbeing among healthcare workers has organizational implications for patient safety, experience, and satisfaction. High-stress workplaces, heavy workloads, long hours, limited resources, organizational restructuring, and a blame-and-fear culture have all been identified as contributing factors, all of which have become increasingly important in the context of the current global crisis [1].

The JD-R model of occupational stress provides a framework for understanding these issues. According to the model, as job expectations rise, so does emotional strain, which harms performance. Greater access to job resources, on the other hand, is linked to higher levels of engagement and performance [2]. The physical, psychological, social, and organizational aspects of a job that require prolonged physical and/or psychological effort are referred to

as job demands. High workloads or emotionally taxing contacts with patients are examples of occupational expectations. Job resources are the physical, psychological, social, and organizational characteristics of a job that help employees achieve work-related goals, lessen job pressures, and encourage personal growth, learning, and development [3].

Performance feedback, autonomy, and skill variety are examples of job resources. According to the hypothesis, job demands are linked to health issues (e.g., poor mental or physical health), but job resources are linked to employee engagement and motivation. The current epidemic might be viewed as a universal job demand on global healthcare systems. There will, however, be further regional variation in employment demands and resources. Inadequate staffing levels and underfunded services, for example, may put an additional burden on healthcare employees [4].

Medics are an important part of the global pandemic response on the front lines. Medical students and doctors are already at a higher risk

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of psychological discomfort, depression, anxiety, burnout, and suicidality than the general population, according to studies conducted outside of global crises. As a result, there have been requests to improve the medical community's conceptual definition and assessment of well-being [5].

During the 2003 epidemic of Severe Acute Respiratory Syndrome (SARS), studies found that 18% to 57 percent of healthcare employees had substantial psychological distress. Burnout, psychological discomfort, and posttraumatic stress were all shown to be high among healthcare personnel in research done one to two years after the SARS outbreak. However, it was reported that two years after the epidemic, the frequency of new episodes of psychiatric disorders in community populations was equivalent to, if not higher than, that observed in health care professionals. Even though several researchers have focused on the prevalence of mental health outcomes in doctors during the present COVID-19 epidemic, the author is unaware of any systematic reviews that have been undertaken to examine and synthesize data specific to doctors. Doctors have been included in certain meta-analyses of healthcare workers of various professions, and sub-group analyses show significant levels of psychological distress among medics. However, review design (e.g., quick reviews) and weak sub-group meta-analysis for doctors limit the results of these analyses. Furthermore, considering the rapid rate of publication during the epidemic, a current evaluation is required [4,5]. The present study will look at how common depression and anxiety symptoms were during the COVID-19 epidemic. Previous meta-analyses put the global prevalence of major depressive disorder and anxiety disorders at 4.7 percent (4.4–5.0 percent) and 7.3 percent (4.8–10.9 percent), respectively. Depression is characterized by a persistently negative mood and anhedonia, as well as psychomotor agitation or retardation, hunger changes, sleep problems, exhaustion, feelings of low self-worth, impaired attention, and suicidal ideas, among other symptoms (American Psychiatric Association 2013). Autonomic arousal (palpitations, sweating, shaking, dry mouth, difficulty breathing, chest discomfort, nausea), restlessness, weariness, difficulty concentrating, irritability, and sleep problems are among the psychological and physical symptoms of anxiety (American Psychiatric Association 2013). Depression and anxiety are linked to cognitive dysfunction, such as poor performance on memory, attention, executive function, and motor function tests. Given the possible implications for professional competence and patient safety, as well as personal welfare, these cognitive, physiological, and behavioral repercussions may be of special concern to medical doctors [6].

The goal of this systematic review and meta-analysis is to examine the evidence that has emerged during the first year of the COVID-19 epidemic to respond to the following research questions:

- How common are sadness and anxiety symptoms among doctors worldwide during the COVID-19 pandemic?
- What causes can explain why doctors experienced different levels of sadness and anxiety symptoms during the COVID-19 pandemic?

For prevalence and incidence reviews, the CoCoPop framework (Condition, Context, and Population) was utilized to construct the following inclusion criteria: (i) a standardized and validated measure of depression and/or general anxiety symptoms; (ii) undertaken during

the COVID-19 pandemic; (iii) practicing medical physicians in any specialty, anywhere in the world. The following criteria were used to eliminate studies: (i) studies conducted outside of the pandemic timeframe; (ii) studies using non-standardised or unvalidated measures; (iii) studies that do not report prevalence for the target population or do not provide sufficient information to calculate prevalence; (iv) studies that do not report prevalence for the target population or do not provide sufficient information to calculate prevalence; (v) studies including just medical students, non-practicing doctors, or non-medical doctors; (vi) studies involving only medical students, non-practicing doctors, or non-medical doctors; (vii) pre-prints or studies not published in a peer-reviewed journal; (viii) studies with a sample size of 139 (calculated using the minimum expected prevalence from previous literature); (ix) qualitative studies; (x) studies not reporting original research (e.g., literature review, article, commentary); (xi) studies focusing on mental health outcomes other than depression (e.g., stress, burnout, specific anxiety disorders) [7].

Three studies had a 1% effect on the overall prevalence of anxiety, with the highest effect being a 1.5 percent shift. Pooled prevalence was 21.8 percent (95 percent CI 17.3–26.7 percent) after removing the three greatest impacting studies. Only a subgroup of 10 investigations.

The goal of this systematic review and meta-analysis was to figure out how common depression and anxiety symptoms were among doctors worldwide during the COVID-19 epidemic. The overall pooled prevalence of depression was 20.5 percent (95 percent CI 16.0–25.3 percent), based on 26 studies and 31,447 participants. The overall pooled prevalence of anxiety was 25.8% (95 percent CI 20.4–31.5 percent), based on 30 research and 33,281 people.

The findings are similar to earlier doctor estimates conducted in the first three to six months of the pandemic. Up until mid-April 2020, Pappa et al. (2020) conducted a meta-analysis of health care professionals. Their subgroup analysis of six studies that specifically included anxiety data for doctors found a pooled prevalence of 21.7 percent (95 percent CI 15.3–29.0 percent), whereas five studies reported depression data with a pooled prevalence of 25.4 percent. A subgroup analysis of 13 studies of doctors revealed a more modest pooled prevalence of anxiety of 17 percent (95 percent CI 12.0–22.0 percent) in Santabárbara et al (2021).S meta-analysis of anxiety in health care workers, conducted up until mid-September 2020. Furthermore, because many of these studies focused on healthcare workers in general rather than doctors, a direct comparison is impossible [8].

The present study's findings are also in line with previous research conducted before the pandemic, which found a significant frequency of sadness and anxiety among doctors. However, there is no indication of a significant rise as compared to pre-pandemic estimations. As previously said, clear comparisons are difficult to make because much of the pre-pandemic literature focuses on the prevalence of psychological distress and/or burnout in this demographic rather than depression and anxiety. Before the pandemic, the author is aware of only one systematic review of depression and anxiety incompetent doctors; however, due to the considerable range in point prevalence, the pooled prevalence was not computed. According to the narrative summary, depression rates ranged from 14% to 60%, and anxiety rates ranged from 18 to 55 percent. Following that, a cross-sectional study conducted in the

Netherlands found that doctors suffer from depression and anxiety at rates of 29% and 24%, respectively. In 2017, a study in Ireland found 16.6% and 14.4% of doctors with moderate or severe depression and anxiety symptoms, respectively; while these figures are lower (especially about anxiety symptoms) than those found in the current study, they are still significantly higher than rates in the general population. Higher levels of job expectations have also been linked to lower levels of happiness in doctors, according to previous studies. The lack of a clear increase in the prevalence of depression and anxiety among doctors during the COVID-19 pandemic, compared to previous estimates, could indicate either a job demand ceiling has been reached, or that more job resources have been made available during the pandemic to offset the increased demands [7,8]. Surprisingly, a meta-analysis conducted for the general population up to June 2020 projected the global prevalence of depression at 28.0 percent (95 percent CI 25.0–31.2 percent) and anxiety at 26.9 percent (95 percent CI 24.0–30.0 percent) for depression and anxiety, respectively. These rates are much higher than pre-pandemic global estimates for depression and anxiety in the general population of 4.7 percent (4.4–5.0 percent) for depression and 7.3 percent (4.8–10.9 percent) for anxiety. These results could be explained by the general population's presumed higher levels of inactivity as a result of lockdown limitations. Doctors, on the other hand, as essential workers, may have encountered a less severe disruption in their routine. It's also worth noting that the pre-pandemic Ferrari and Baxter meta-analyses relied on research that evaluated prevalence using "gold standard" diagnostic interview procedures rather than self-report, which could explain part of the disparity in prevalence estimates. This study's findings imply that doctors remain a high-risk group for depression and anxiety, but the evidence does not support a substantial rise in symptoms when compared to pre-pandemic levels. Given the significant prevalence of depression and anxiety symptoms among doctors around the world, healthcare providers should consider multi-level ways to assist. To begin, organizational and structural adjustments are required to ensure that doctors have access to the most basic resources, such as time to sleep, eat, exercise, and socialize. Efforts should be made to de-stigmatize discussions about mental health in the future. Peer support networks, both formal and informal, can help enable these discussions and should be encouraged. Schwartz rounds are becoming more popular, are highly accepted by employees, and can help to mainstream and de-stigmatize conversations about the emotional burden of work. In the same way, formal and informal psychology input should be incorporated into healthcare services. A more longitudinal study is needed to track long-term outcomes and look into whether there are any disparities in the trajectory of mental health outcomes for doctors compared to other groups. Individual, social, and organizational demands and resources may be taken into account more in the future study. Research methodology improvements would help improve the overall quality of the evidence base and allow for more trust in results. Adoption of random probability sampling methods, in particular, is required. Measurement needs to be more consistent as well. Future studies would benefit from using 'gold standard' diagnostic interview methods, only using measures with the strongest psychometric properties, using cut-offs that maximize sensitivity and specificity in identifying clinically relevant symptoms, and reporting on a broader

range range of cut-offs to allow for better comparisons with studies using alternative measures.

CONCLUSION

During the first twelve months of the COVID-19 pandemic, this systematic review and meta-analysis provide a detailed overview of the global prevalence of depression and anxiety symptoms among doctors. Depression and anxiety symptoms are higher among doctors than in the general population, but not conclusively higher than pre-pandemic levels among doctors, according to past studies. Some of the observed heterogeneity could be explained by differences in research design and job demands. The findings may aid in quantifying this population's requirements and guiding healthcare systems in planning support as we recover from the pandemic and prepare for future national or global crises.

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