SYSTEMATIC REVIEW

Effectiveness Of Mental Health Promotion Program for Health Workers During COVID-19 Pandemic: A Systematic Review

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ABSTRACT

Introduction: Stress and anxiety have increased significantly among healthcare workers throughout the world as a consequence of the COVID-19 pandemic. In light of the recent worldwide spread of the COVID-19 virus, this systematic article analyses the efficacy of programmes designed to improve healthcare workers' mental health. **Methods:** A comprehensive search of electronic databases was conducted using specific keywords to identify relevant studies. The data was extracted and analysed to determine the findings. **Results:** This systematic review included studies with sample sizes ranging from a few to hundreds of participants. The interventions used in the studies included mindfulness-based interventions, online-based interventions, and self-help psychological interventions. The findings showed that mental health promotion programmes effectively improved healthcare workers' mental health during the pandemic. The programs significantly reduced stress, anxiety, and depression among healthcare workers. Furthermore, online and mindfulness-based therapies were particularly effective in promoting mental well-being. **Conclusion:** The findings of this systematic review suggest that mental health promotion programmes may efficiently assist healthcare workers' mental health during challenging times. These programs can help healthcare workers manage stress and anxiety and improve their mental well-being.
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INTRODUCTION

With the emergence of the first case of COVID-19 or coronavirus disease 2019 in Wuhan City, China, all global nations became concerned about the pandemic of an acute respiratory disorder, which is transmitted through contact among individuals (1). On the advice of the Emergency Committee, the World Health Organization (WHO) designated the COVID-19 outbreak a Public Health Emergency (2). Globally, 636 million individuals have been infected since the 22nd of November 2022, with 600 million deaths globally (3).

With frequent waves of the COVID-19 pandemic from February 2020 to November 2022, the public and different populations suffered from mental illness, helplessness, anxiety, and social distancing. Similarly, the COVID-19 pandemic has negatively impacted the mental health of frontline health workers (4). Physiological health and well-being are impacted by mental health issues, which can also result in psychological problems and burnout and ultimately undermine the effectiveness and efficiency of healthcare services (5). HCWs with mental health issues can be neglected or disregarded. To reduce the pandemic's impact on HCWs, the mental health psychological support systems (MHPSSs) were launched in March 2020 (6).

Healthcare providers around the globe were in an unusual position due to the COVID-19 outbreak. Nevertheless, increasing data indicates that this public health emergency is disproportionately detrimental to the mental health of some groups, particularly health workers (HCWs). Mental health problems in the HCW community can have a poor impact on employee morale, the standard of care, attendance, and turnover, which has an adverse brake effect on health systems currently overburdened by the public health difficulties brought on by the COVID-19 outbreak (7). The probability of negative psychological consequences has been especially significant for health practitioners. Health professionals are more likely to experience sadness, anxiety, and fatigue because of the challenging working environment and limited resources they must deal with when caring for COVID-19 patients (8).

During the early stages of the COVID-19 pandemic,

healthcare professionals' ability to unwind and recoup has been curtailed, raising the risk of detrimental mental health consequences (9). Mental illness was linked to HCWs employed in high-risk and frontline COVID-19 departments and those with expertise in infectious diseases (10). The incidence of depression and anxiety as psychological impacts of COVID-19 was high among health workers, as 53.8% reported severe mental illness. According to Norhayati et al. (8), the prevalence rate of mental illness was 37% and 27% among non-frontline health workers and frontline workers during this pandemic. These studies underlined the significance of healthcare professionals' mental health in managing coronavirus-infected patients. Another study in Malaysia highlighted the mental illness issue among healthcare workers and reported an incidence rate of 56% to 58% of anxiety and depressive symptoms among workers. Studies suggested that medical practitioners are vulnerable to significant psychological pressure during outbreaks because of disease exposure, troubles about infecting relatives, a lack of personal protection equipment (PPE), longer workdays, and difficult choices concerning the distribution of resources to patient populations (11).

To cope with mental illness among HCWs, there is a need to evaluate the efficacy of psychological interventions such as mental health programmes by addressing different population groups (12). Multiple studies on the psychological health of hospital workers during disease outbreaks have been carried out. However, there has not been a thorough investigation to combine the findings of articles published on mental health programmes to determine their effectiveness in treating depression and anxiety (13-15). We conducted a systematic review and reported mental health programmes' efficacy for psychological impact among healthcare workers during the COVID-19 pandemic. This review's outcomes may provide essential information to support the allocation of psychosocial support for healthcare professionals and policymakers.

METHOD

A systematic review following "Preferred Reporting Items for Systematic Reviews and Meta-Analyses" (PRISMA) standards (16) was used. This review followed the PRISMA criteria for identifying and screening collected scientific papers, as seen in Figure 1 of the PRISMA flowchart (17).

Search Strategy

In accordance with the objectives and title of a recent systematic review, a complete search strategy was developed for data collection and extraction. PubMed, MEDLINE, EMBSE, Cochrane Library, and PsycINFO databases were used for data search, collection, and extraction. We used MeSH keywords related to mental health programmes ("Mental Health promotion,"

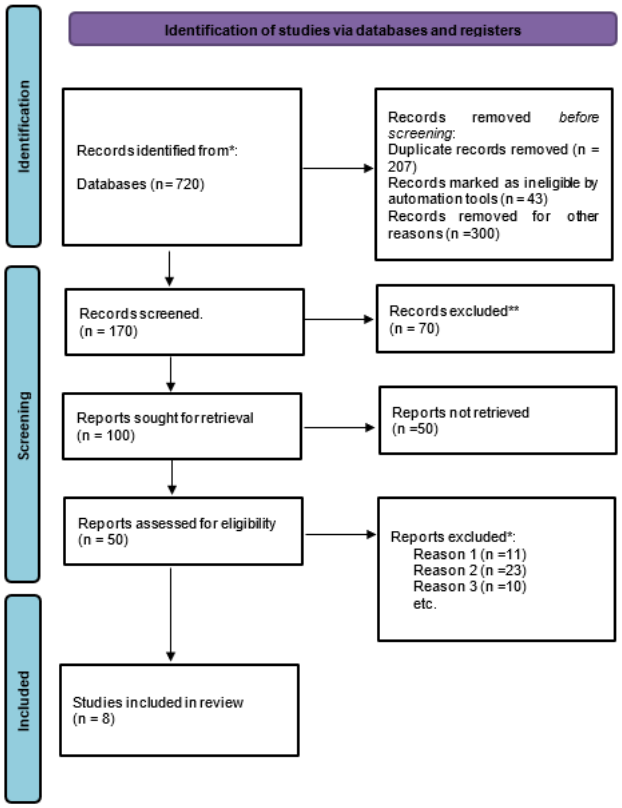

Figure 1: PRISMA Flowchart

"promotion programmes," "psychological intervention," and "mental well-being programmes"), setting ("COVID-19", "pandemic," and "outbreaks"), and workers ("healthcare personnel," "healthcare provider," "medical staff," "healthcare worker"). The keywords were combined using advanced field code searching (TITLE–ABS–KEY), phrase searching, truncation, and the Boolean operators "OR" and "AND". Only those articles published between March 2020 and October 2022 were extracted to contextualise the COVID-19 pandemic.

After that, we constructed a PICO model for choosing research articles according to the objectives of the systematic review. A good PICO question identifies the research population (P), the involved strategy or intervention (I), the comparison between experimental and control groups (C), and the results/ outcomes (O). In this systematic review, we devised the following PICO question for data selection:

P—Healthcare Workers
I— Mental Health Promotion programmes
C—Experimental vs. control group
O—Health and cost benefits

Study Selection

The research selection criteria (inclusion and exclusion criteria) were developed for screening and choosing the obtained data in this systematic review. The PRISMA

flowchart was utilised to filter and select gathered journal articles following PRISMA standards. According to the PICO question, the identified papers were correlated with study objectives, such as the Mental Health Promotion programmes' health and cost benefits for healthcare professionals during the COVID-19 pandemic.

All selected studies were original articles written in English and published between 2018–2023 (keep COVID-19 pandemic in context) on optimal sources or current literature (Table I). The articles were selected based on the following criteria:
The inclusion criteria include publications on (1) cohort studies and randomised controlled trials, (2) the study population are healthcare workers, (3) evaluation or assessment of the mental health promotion programmes as an intervention, and (4) assessing outcomes of the programmes as health and cost benefits.

The exclusion criteria for this study were as follows: (1) other than primary articles such as narrative reviews, case studies, and previously completed meta-analyses; and (2) scientific papers describing interventions other than mental health promotion programmes (do not meet study objectives).

Data Extraction
Following the PRISMA standards for screening and selection, we retrieved the essential data, including author, publication year, study type, research objective, sample size, research area, and primary results. Health and cost benefits were shown as results of the Mental Health Promotion Program for healthcare workers.

Assessment of study quality
All members of the review panel were involved in assessing the titles and abstracts of all articles for inclusion and exclusion criteria. All potentially acceptable articles were preserved for full-text evaluation, which was carried out alternately by two teams of two members. Differences in opinion were resolved with the research team leader's input. Before the data extraction and analysis, the methodological quality of the finalised article was assessed using the Mixed-Methods Appraisal Tool (MMAT) (18). MMAT techniques were

Table I: Description of included studies

Author & Year	Title	Type of intervention	Findings
Riboldi et al., 2022 [37]	"Digital mental health interventions for anxiety and depressive symptoms in university students during the COVID-19 pandemic: A systematic review of randomised controlled trials."	"Digital mental health interventions"	The study found that digital mental health interventions effectively reduced anxiety and depressive symptoms in university students during the COVID-19 pandemic.
Galante et al., 2021 [38]	"Mindfulness-based programs for mental health promotion in adults in nonclinical settings: A systematic review and meta-analysis of randomised controlled trials"	"Mindfulness-based programs"	It was concluded that mindfulness-based programs were effective in promoting mental health in adults in nonclinical settings.
Kurniawan et al., 2022 [39]	"Efficacy of Online-Based Intervention for Anxiety during COVID-19: A Systematic Review and Meta-Analysis of Randomized Controlled Trials"	"Online-based intervention"	Findings explained that online-based interventions effectively reduced anxiety in individuals during the COVID-19 pandemic.
Park et al., 2022 [40]	"The effectiveness of e-healthcare interventions for the mental health of nurses: A PRISMA-compliant systematic review of randomised controlled trials"	"E-healthcare interventions"	It was established from the findings that e-healthcare interventions effectively improve nurses' mental health.
Acarturk et al., 2022 [35]	"Effectiveness of a WHO self-help psychological intervention for preventing mental disorders among Syrian refugees in Turkey: a randomised controlled trial."	"WHO self-help intervention."	The study established that the WHO self-help intervention effectively prevented mental disorders among Syrian refugees in Turkey.
O'Daffer et al., 2022 [41] .	"Efficacy and Conflicts of Interest in Randomized Controlled Trials Evaluating Headspace and Calm Apps: Systematic Review"	"Evaluation of Headspace and Calm Apps"	The study explained that the efficacy and conflicts of interest in randomised controlled trials evaluating Headspace and Calm apps were essential considerations for their use in mental health interventions.
Dong et al., 2022 [42]	"Protecting the mental and physical well-being of frontline health care workers during COVID-19: Study protocol of a cluster randomised controlled trial."	"Mental and physical well-being intervention for frontline healthcare workers"	The study aims to protect frontline HCWs' mental and physical well-being during the COVID-19 pandemic through a cluster RCT.
Witarto et al., 2022 [43]	"Effectiveness of online mindfulness-based interventions in improving mental health during the COVID-19 pandemic: A systematic review and meta-analysis of randomised controlled trials"	"Online mindfulness-based interventions"	The research study revealed that online mindfulness-based interventions effectively improve mental health during the COVID-19 pandemic, based on a systematic review and meta-analysis of randomised controlled trials.

recommended for studies that were both qualitative and quantitative. However, this approach cannot be used to evaluate review papers or theoretical studies. Instead of a numerical score, the quality of included studies was judged by scoring against five criteria based on 'Yes,' 'No,' or 'Not added, and not determined' instead of a numerical score. Each research would ultimately be graded as Low (three or fewer criteria satisfied), medium (four criteria met), or high (all five criteria met) (19).

Data synthesis and analysis

In this systematic review, we synthesised data to integrate, interpret, and analyse the data from qualitative, quantitative, and mixed studies. Studies with several attributes were categorised to each designated intervention area depending on the reliability of the study, resulting in the inclusion of some of them multiple times in the findings section. It is recommended that this way of categorising treatments based on similarities, as opposed to considering the numerous components of the therapy as a whole, be used to evaluate the efficacy of specific programmes.

Ethical Considerations

The latest systematic review does not need ethical clearance. The publishers of the retrieved and analysed studies got informed permission from their study subjects. However, this review was registered under PROSPERO (CRD42023396831).

RESULTS

The COVID-19 pandemic has placed enormous stress and demand on HCWs. This has led to an increased need for mental health promotion programmes to support the well-being of these workers. The mental state of healthcare professionals at the front lines of this pandemic has been examined. Fifty articles were potentially eligible for further consideration, but only 8 articles provided information that answered the research questions. The studies mainly concluded that mental health interventions programmes effectively reduced psychological symptoms in HCWs during the COVID-19 pandemic. Findings from previous literature on the efficacy of mental health promotion programmes for HCWs during the COVID-19 are summarised as follows: **Participant Characteristics:** HCWs in various settings and roles, including physicians, nurses, and support staff, were the primary participants in the studies reviewed.

Intervention Characteristics: The interventions reviewed were primarily digital and included mindfulness-based programmes, psychological resilience programmes, e-healthcare interventions, and self-help psychological interventions. Some studies involved video consultations, while others used online platforms or self-help resources.

Outcomes: The studies showed that mental health promotion programmes could positively impact HCWs' well-being during the COVID-19 pandemic. Outcomes included reduced symptoms of anxiety and depression, improved psychological resilience, and enhanced overall well-being (20). However, despite the positive findings, the studies had limitations such as small sample sizes, lack of generalisability to other populations and settings, and limited long-term follow-up.

Multiple studies have examined the efficacy of psychological health promotion initiatives for HCWs during the pandemic. These programs have included psychological resilience interventions, mindfulness-based programmes, and e-health interventions (21). Previous studies indicate that mental health promotion programmes effectively improve HCWs' well-being during the COVID-19 pandemic. These programmes have been shown to lower anxiety and depression symptoms and enhance resilience and mindfulness. E-health interventions are particularly effective in improving mental health due to their accessibility and convenience (22). Furthermore, there is evidence that mental health promotion programmes are also beneficial in preventing mental health disorders among HCWs during the pandemic. A randomised controlled trial by WHO concluded that a self-help psychological interventional programmes effectively prevented mental disorders (23).

This pandemic has profoundly impacted the mental health of HCWs, who have been at the forefront of responding to the pandemic. Studies have shown that HCWs are at a greater risk of acquiring mental health issues, such as anxiety, depression, and post-traumatic stress disorder (PTSD) (24). As a result, several mental health promotion programmes have been implemented for HCWs (24, 25). A literature review on the efficiency of these initiatives showed that various interventions had been used, including mindfulness-based programmes, self-help, and online-based interventions. These interventions effectively improve the mental health of HCWs, including decreasing anxiety, depression, and PTSD symptoms (26).

In addition, the analysis indicated that online-based therapies are particularly effective in enhancing the mental health of HCWs, as they allow for easy access to mental health resources and can be delivered at scale. Moreover, online-based interventions also offer HCWs greater anonymity and privacy, which is vital for those concerned about stigma and its impact on their careers (27). WHO self-help psychotherapy prevented mental disorders among Syrian refugees in Turkey. Another study found that mindfulness-based interventions effectively improved HCWs' mental health during the COVID-19 (28).

Finally, the current evidence supports effectiveness of mental health promotion programmes for healthcare workers during the pandemic. These programs effectively

improve the well-being of HCWs and can help prevent mental health disorders. Therefore, organisations and governments must prioritise the mental health of HCWs and provide access to effective mental health promotion programmes (27, 29). Overall, the findings of this systematic review suggest that mental health promotional programs for HCWs during the pandemic can effectively enhance the mental well-being of HCWs. However, further research is needed to determine the most effective strategies for implementing these programmes and to understand how they can be scaled up to reach a more significant number of HCWs.

DISCUSSION

The COVID-19 pandemic has resulted in a worldwide health catastrophe that has had a substantial effect on the mental health of HCWs. According to extensive demographic research and relevant community samples, the COVID-19 outbreak was linked to a higher incidence of mental health issues in the overall population. The stress and emotional strain of dealing with the pandemic have increased anxiety, depression, and burnout among HCWs. To address this issue, mental health promotion programmes have been implemented to support the well-being of HCWs during this difficult time. A systematic review was conducted to assess the effectiveness of these programmes (30).

The review found that various interventions were used to promote mental health among HCWs, including mindfulness-based programmes, digital mental health interventions, and self-help psychological interventions. Many of these strategies were shown to be beneficial in minimising anxiety and depression symptoms and enhancing mental health among HCWs (31).

The stress and anxiety related to exposure to the virus, long work hours, and the added pressure of providing care in unprecedented circumstances have led to increased mental health problems among HCWs. In most contexts, psychiatrists mainly offer psychological therapies to other HCWs and the general public. Psychiatrists as HCWs may be susceptible to mental health conditions, given the emotional impacts of the outbreak and the rising need for mental health services. (9, 32) The state of psychiatric HCWs' psychological health is poorly understood. This is perhaps because psychiatric HCWs are thought to be mentally solid individuals who must have the required skills and knowledge to manage the pandemic's psychological consequences. The abilities of psychiatric HCWs to address the growing number of individuals experiencing psychological distress due to the outbreak will be significantly impacted by a high degree of undiagnosed anxiety and despair (33).

In the context of mental health issues severity, the psychological programmes for healthcare professionals address the demands of mental health services and help employees deal with anxiety and depression during the pandemic. (34) Because HCWs are still a core part of the staff assisting the public health approach to the COVID-19 pandemic, accurate and varied actions are required to help this population's mental health. The development and implementation of initiatives to meet the mental health requirements of HCWs throughout this highly dynamic health crisis involve available evidence that gives a detailed knowledge of determinants of health (15). This indication must also be used to make effective interventions and priority-setting decisions (35).

Various mental health promotion programmes have been implemented to address these issues to support the well-being of h HCWs during the pandemic (36). A review found that various interventions, such as psychological support, mindfulness-based programs, and digital mental health interventions, improved HCWs' mental health during the pandemic. The interventions significantly improved in reducing stress, anxiety, and depression and promoting well-being among HCWs (37 – 39).

The present study is a preliminary systematic review that explored evidence of mental health programmes' effectiveness towards HCWs in empirical studies worldwide. The comprehensive nature of the evaluation was accomplished by the inclusion of a multitude of high-quality, peer-reviewed papers, which facilitated the formation of a dependable conclusion. The strategy was predicated on the authors' prior understanding of the subject of the study, the conventional method of review, and specialised keywords.

However, it is essential to note that there were some limitations to the studies included in this systematic review. Many research, for example, had a limited number of participants, and some of the studies had a significant risk of bias. Meta-analysis was not conducted since the majority of the included studies had small sample sizes, and a few studies with weak response rates limited the generalizability of the findings. Variability in the instrument used, data collection and analysis methods, the notion of the effectiveness of mental health programmes, and the general study objective might account for the heterogeneity across studies, which limited comparisons. There is a mix of comparisons of different outcomes of the studies, which we considered not to combine too diverse outcomes. Nevertheless, despite these limitations, the systematic review findings suggest that mental health promotion programmes can effectively support HCWs' well-being during the COVID-19 pandemic.

CONCLUSION

The COVID-19 pandemic has significantly influenced the mental health of HCWs worldwide. The increased stress and workload, along with the fear of contracting the virus, have resulted in high burnout and mental

distress among this population. In response, mental health promotion programmes have been introduced to support the well-being of HCWs.

The systematic review's findings indicate that mental health promotion initiatives may successfully enhance the mental well-being of HCWs during the pandemic. The most commonly used interventions were mindfulness-based programmes, online-based interventions, and self-help psychological interventions. The programmes showed a positive effect on reducing anxiety and depression symptoms and improving overall well-being. However, it is essential to note that the findings were based on limited studies, and further research is needed to fully understand these programs' effectiveness. The systematic review also highlighted the importance of considering conflict of interest in evaluating certain apps and programmes.

In conclusion, mental health promotion initiatives may play an essential part in supporting the well-being of HCWs during the COVID-19 pandemic. Therefore, organisations and policymakers must invest in and implement such programmes to ensure the mental well-being of HCWs at the forefront of responding to the pandemic. However, further research is needed to fully understand these programmes' effectiveness and ensure they are based on best practices and evidence.

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