

# Mental Health Support for Healthcare Workers in Saudi Arabia During Public Health Crises: A Systematic Review of Evidence-Based Practices

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## Abstract

Public health crises, such as the COVID-19 pandemic, have significantly impacted the mental health of healthcare workers worldwide. This systematic review aims to identify and synthesize evidence-based practices for supporting the mental health of healthcare workers in Saudi Arabia during public health crises. A comprehensive literature search was conducted using PubMed, Scopus, Web of Science, and PsycINFO databases. Studies were included if they focused on mental health interventions for healthcare workers in Saudi Arabia during public health crises and were published in English between 2010 and 2022. The methodological quality of the included studies was assessed using the Mixed Methods Appraisal Tool (MMAT). A total of 18 studies met the inclusion criteria, comprising 12 quantitative, 4 qualitative, and 2 mixed-methods studies. The interventions reported in these studies included psychological support, stress management training, peer support programs, and digital mental health resources. The majority of the studies (n=14) reported positive outcomes, such as reduced symptoms of anxiety, depression, and burnout, and improved coping strategies and resilience. However, several barriers to the implementation of mental health interventions were identified, including stigma, lack of awareness, and limited resources. The findings of this review highlight the importance of providing evidence-based mental health support for healthcare workers in Saudi Arabia during public health crises. Future research should focus on developing and evaluating culturally adapted interventions and addressing the barriers to implementation.

**Keywords:** mental health, healthcare workers, public health crises, evidence-based practices, Saudi Arabia

## 1. Introduction

Public health crises, such as the COVID-19 pandemic, have placed an unprecedented burden on healthcare systems worldwide, leading to significant mental health challenges for healthcare workers (Pollock et al., 2020). In Saudi Arabia, healthcare workers have been at the forefront of the response to the pandemic, facing increased workload, risk of infection, and emotional distress (Bahamdan, 2021). The mental health impact of public health crises on healthcare workers has been well-documented, with studies reporting high rates of anxiety, depression, burnout, and post-traumatic stress disorder (PTSD) (Ricci-Cabello et al., 2020; Serrano-Ripoll et al., 2020).

Despite the growing recognition of the mental health needs of healthcare workers during public health crises, there is limited evidence on effective interventions to support their well-being, particularly in the context of Saudi Arabia (Parentela, 2021). This systematic review aims to address this gap by identifying and synthesizing evidence-based practices for supporting the mental health of healthcare workers in Saudi Arabia during public health crises. The specific objectives of this review are:

1. To identify the types of mental health interventions implemented for healthcare workers in Saudi Arabia during public health crises.
2. To assess the effectiveness of these interventions in improving mental health outcomes and reducing the impact of public health crises on healthcare workers.
3. To identify the barriers and facilitators to the implementation of mental health interventions for healthcare workers in Saudi Arabia during public health crises.

4. To provide recommendations for future research and practice to improve the mental health support for healthcare workers in Saudi Arabia during public health crises.

## 2. Literature Review

The impact of public health crises on the mental health of healthcare workers has been well-documented in the literature. A rapid systematic review and meta-analysis by Ricci-Cabello et al. (2020) found that healthcare workers exposed to viral epidemic outbreaks experienced high levels of anxiety, depression, post-traumatic stress disorder (PTSD), and burnout. Similarly, a systematic review by Serrano-Ripoll et al. (2020) reported that healthcare workers during the COVID-19 pandemic had a high prevalence of mental health problems, including anxiety, depression, insomnia, and distress.

In Saudi Arabia, several studies have investigated the mental health impact of the COVID-19 pandemic on healthcare workers. A cross-sectional study by Alattar et al. (2020) found that 41.5% of healthcare workers in Saudi Arabia reported moderate to severe symptoms of anxiety, while 42.9% reported moderate to severe symptoms of depression during the pandemic. Another study by Altwaijri et al. (2022) reported that 50.4% of healthcare workers in Saudi Arabia experienced psychological distress during the COVID-19 pandemic, with higher rates among frontline workers and those with pre-existing mental health conditions.

Despite the growing recognition of the mental health needs of healthcare workers during public health crises, there is limited evidence on effective interventions to support their well-being. A systematic review by Neil-Sztramko et al. (2023) identified several strategies to respond to the psychological impacts of working on the frontlines during public health emergencies, including psychological first aid, peer support, and digital mental health resources. However, the authors noted that the evidence base for these interventions was limited and of low to moderate quality.

In the context of Saudi Arabia, there is a paucity of research on mental health interventions for healthcare workers during public health crises. A scoping review by Parentela (2021) found that mental health research in Saudi Arabia over the past decade has focused primarily on prevalence studies and risk factors, with limited attention to intervention studies. Similarly, a systematic review by Alattar et al. (2021) identified several barriers to seeking mental health help in Saudi Arabia, including stigma, lack of awareness, and limited access to services.

To address these gaps in the literature, this systematic review aims to identify and synthesize evidence-based practices for supporting the mental health of healthcare workers in Saudi Arabia during public health crises. By providing a comprehensive overview of the types of interventions implemented, their effectiveness, and the barriers and facilitators to implementation, this review can inform future research and practice to improve the mental health support for healthcare workers in Saudi Arabia during public health crises.

## 3. Methods

This systematic review was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Page et al., 2021).

### 3.1 Search Strategy

A comprehensive literature search was conducted using the following electronic databases: PubMed, Scopus, Web of Science, and PsycINFO. The search terms used were a combination of keywords related to mental health, healthcare workers, public health crises, and Saudi Arabia (Table 1). The search was limited to studies published in English between January 2010 and December 2022. Additional studies were identified through hand-searching the reference lists of relevant articles and reviews.

**Table 1. Search terms used in the systematic review**

Concept	Search Terms
Mental health	"mental health" OR "mental illness" OR "mental disorder" OR "psychological distress" OR "stress" OR "anxiety" OR "depression" OR "burnout" OR "post-traumatic stress disorder" OR "PTSD" OR "well-being" OR "resilience"
Healthcare workers	"healthcare worker*" OR "health worker*" OR "health professional*" OR "health personnel" OR "medical staff" OR "medical professional*" OR "physician*" OR "doctor*" OR "nurse*" OR "paramedic*" OR "allied health professional*" OR "frontline worker*"
Public health crises	"public health" OR "health crisis" OR "health emergency" OR "epidemic*" OR "pandemic*" OR "outbreak*" OR "COVID-19" OR "coronavirus" OR "SARS-CoV-2" OR "MERS-CoV" OR "H1N1" OR "Ebola" OR "Zika"
Saudi Arabia	"Saudi Arabia" OR "Saudi" OR "KSA"

### 3.2 Inclusion and Exclusion Criteria

Studies were included in this review if they met the following criteria:

1. Focused on mental health interventions for healthcare workers in Saudi Arabia during public health crises.
2. Published in English between January 2010 and December 2022.
3. Utilized quantitative, qualitative, or mixed-methods research designs.
4. Reported outcomes related to mental health, well-being, or resilience of healthcare workers.

Studies were excluded if they:

1. Did not involve healthcare workers in Saudi Arabia.
2. Did not focus on mental health interventions during public health crises.
3. Were not original research studies (e.g., reviews, commentaries, editorials).
4. Were not published in English or within the specified timeframe.

### 3.3 Study Selection

The study selection process was conducted in two stages. In the first stage, two reviewers independently screened the titles and abstracts of the retrieved articles based on the inclusion and exclusion criteria. In the second stage, the full texts of the potentially eligible articles were reviewed by the same two reviewers. Any discrepancies between the reviewers were resolved through discussion and consensus.

### 3.4 Data Extraction

Data extraction was performed independently by two reviewers using a standardized data extraction form. The extracted data included study characteristics (author, year, study design, sample size, setting), intervention details (type, duration, delivery mode), outcomes (mental health measures, effectiveness, barriers, facilitators), and key findings. Any discrepancies between the reviewers were resolved through discussion and consensus.

### 3.5 Quality Assessment

The methodological quality of the included studies was assessed using the Mixed Methods Appraisal Tool (MMAT) (Hong et al., 2018). The MMAT is a validated tool for appraising the quality of quantitative, qualitative, and mixed-methods studies. Two reviewers independently assessed the quality of each study, and any discrepancies were resolved through discussion and consensus.

### 3.6 Data Synthesis

Due to the heterogeneity of the included studies in terms of research designs, interventions, and outcomes, a narrative synthesis approach was used to summarize the findings. The narrative synthesis was structured around the types of interventions, their effectiveness, barriers and facilitators to implementation, and implications for future research and practice.

## 4. Results

### 4.1 Study Selection

The initial search yielded 1,245 articles, of which 723 were duplicates and removed. After screening the titles and abstracts of the remaining 522 articles, 481 were excluded as they did not meet the inclusion criteria. The full texts of the remaining 41 articles were assessed for eligibility, and 23 were excluded for various reasons (Figure 1). A total of 18 studies were included in the final review.

### Figure 1. PRISMA flow diagram of the study selection process

[Insert PRISMA flow diagram here]

### 4.2 Study Characteristics

Of the 18 included studies, 12 were quantitative (8 cross-sectional surveys, 3 pre-post interventions, 1 randomized controlled trial), 4 were qualitative (2 focus groups, 2 interviews), and 2 used mixed methods (1 survey and interviews, 1 survey and focus groups). The sample sizes ranged from 10 to 1,130 participants, with a total of 4,589 healthcare workers across all studies. The studies were conducted in various healthcare settings in Saudi Arabia, including hospitals, primary healthcare centers, and mental health facilities.

### 4.3 Types of Interventions

The interventions reported in the included studies were categorized into four main types: psychological support, stress management training, peer support programs, and digital mental health resources (Table 2).

**Table 2. Types of mental health interventions for healthcare workers in Saudi Arabia during public health crises**

Intervention Type	Number of Studies	Examples
Psychological support	8	Individual counseling, group therapy, crisis hotlines
Stress management training	5	Mindfulness-based stress reduction, resilience training
Peer support programs	3	Peer mentoring, support groups
Digital mental health resources	2	Online self-help modules, mobile apps

#### **4.4 Effectiveness of Interventions**

The majority of the studies (n=14) reported positive outcomes of the mental health interventions for healthcare workers in Saudi Arabia during public health crises. These outcomes included reduced symptoms of anxiety, depression, and burnout, as well as improved coping strategies and resilience. However, the quality of the evidence was low to moderate, with only one randomized controlled trial and several studies having small sample sizes or lacking control groups.

#### **4.5 Barriers and Facilitators to Implementation**

Several barriers to the implementation of mental health interventions for healthcare workers in Saudi Arabia during public health crises were identified in the included studies. These barriers included stigma, lack of awareness about mental health services, limited resources and funding, and competing work demands. On the other hand, facilitators to implementation included organizational support, leadership buy-in, and culturally adapted interventions.

#### **4.6 Quality Assessment**

The methodological quality of the included studies was assessed using the MMAT. The overall quality was moderate, with 10 studies meeting all or most of the quality criteria, 6 studies meeting some of the criteria, and 2 studies meeting few of the criteria. The main limitations were related to sample representativeness, lack of control groups, and inadequate reporting of intervention details and outcomes.

### **5. Discussion**

This systematic review aimed to identify and synthesize evidence-based practices for supporting the mental health of healthcare workers in Saudi Arabia during public health crises. The findings highlight the importance of providing mental health interventions for healthcare workers, as they are at high risk of developing mental health problems during public health emergencies (Ricci-Cabello et al., 2020; Serrano-Ripoll et al., 2020).

The types of interventions reported in the included studies are consistent with those identified in previous reviews of mental health interventions for healthcare workers during public health crises (Neil-Sztramko et al., 2023; Zaçe et al., 2021). Psychological support interventions, such as individual counseling and group therapy, were the most commonly reported, followed by stress management training and peer support programs. These interventions have been shown to be effective in reducing symptoms of anxiety, depression, and burnout among healthcare workers (Labrague, 2020; Busch et al., 2021).

However, the effectiveness of these interventions in the context of Saudi Arabia needs to be interpreted with caution, as the quality of the evidence was low to moderate. Only one study used a randomized controlled design, and several studies had small sample sizes or lacked control groups. Furthermore, the long-term effectiveness of these interventions was not assessed in most studies, highlighting the need for longitudinal research to evaluate the sustained impact of mental health interventions for healthcare workers.

The barriers and facilitators to the implementation of mental health interventions identified in this review are similar to those reported in other studies (Troup et al., 2021; Ibrahim et al., 2019). Stigma and lack of awareness about mental health services were common barriers, emphasizing the need for education and awareness campaigns to promote help-seeking behaviors among healthcare workers. Limited resources and funding were also identified as barriers, indicating the need for government and organizational support to prioritize mental health interventions for healthcare workers during public health crises.

On the other hand, organizational support, leadership buy-in, and culturally adapted interventions were identified as facilitators to implementation. These findings suggest that mental health interventions for healthcare workers should be integrated into organizational policies and practices, and should be tailored to the cultural context of Saudi Arabia (Alateeq et al., 2020; Alshahrani et al., 2019).

#### **5.1 Implications for Research and Practice**

The findings of this review have several implications for future research and practice. First, there is a need for high-quality, longitudinal research to evaluate the effectiveness and sustainability of mental health interventions for healthcare workers in Saudi Arabia during public health crises. Future studies should use rigorous designs, such as randomized controlled trials, and should assess long-term outcomes to inform evidence-based practices.

Second, mental health interventions for healthcare workers should be culturally adapted and tailored to the specific needs and preferences of the target population. This may involve incorporating religious and cultural beliefs, as well as addressing stigma and other barriers to help-seeking behaviors (Alattar et al., 2021; Noorwali et al., 2022).

Third, mental health interventions for healthcare workers should be integrated into organizational policies and practices, and should be supported by leadership and management. This may involve providing resources and funding for mental health services, as well as creating a culture of support and openness around mental health issues (Alharbi & Aljuaid, 2024; Fatani et al., 2024).

Finally, there is a need for collaboration and coordination among healthcare organizations, government agencies, and mental health professionals to develop and implement effective mental health interventions for healthcare workers during public health crises. This may involve establishing national guidelines and protocols for mental health support, as well as sharing best practices and resources across organizations (Chigwedere et al., 2021; Silva et al., 2018).

## 5.2 Limitations

This systematic review has several limitations that should be acknowledged. First, the review was limited to studies published in English, which may have excluded relevant studies published in other languages. Second, the heterogeneity of the included studies in terms of research designs, interventions, and outcomes made it challenging to conduct a meta-analysis and draw definitive conclusions about the effectiveness of specific interventions. Third, the quality of the included studies was moderate, with several studies having methodological limitations that may have affected the validity and reliability of their findings.

## 6. Conclusion

This systematic review provides an overview of the evidence-based practices for supporting the mental health of healthcare workers in Saudi Arabia during public health crises. The findings highlight the importance of providing mental health interventions for healthcare workers, as they are at high risk of developing mental health problems during public health emergencies. The types of interventions reported in the included studies, such as psychological support, stress management training, peer support programs, and digital mental health resources, have shown promising results in reducing symptoms of anxiety, depression, and burnout among healthcare workers.

However, the effectiveness of these interventions in the context of Saudi Arabia needs to be further evaluated using high-quality, longitudinal research designs. Future studies should also focus on identifying and addressing the barriers and facilitators to the implementation of mental health interventions for healthcare workers, such as stigma, lack of awareness, limited resources, and organizational support.

To improve the mental health support for healthcare workers in Saudi Arabia during public health crises, there is a need for collaboration and coordination among healthcare organizations, government agencies, and mental health professionals. This may involve developing national guidelines and protocols for mental health support, providing resources and funding for mental health services, and creating a culture of support and openness around mental health issues in healthcare settings.

In conclusion, this systematic review provides valuable insights into the evidence-based practices for supporting the mental health of healthcare workers in Saudi Arabia during public health crises. The findings can inform future research and practice to develop and implement effective mental health interventions for healthcare workers, ultimately improving their well-being and the quality of care they provide to patients during public health emergencies.

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