

# “Exploring Psychosocial Interventions to Improve Mental Health Outcomes Among Healthcare Workers”: Scoping Review

Indra Maulana , Iwan Shalahuddin , Theresia Eriyani, Sandra Pebrianti

Faculty of Nursin, Universitas Padjadjaran, Bandung, West Java, Indonesia

Correspondence: Indra Maulana, Email [indra.maulana@unpad.ac.id](mailto:indra.maulana@unpad.ac.id)

**Background:** Healthcare workers (HCWs) face heightened risks of stress, anxiety, depression, and burnout, particularly during and after the COVID-19 pandemic. Psychosocial interventions have been increasingly implemented, yet the evidence remains fragmented across diverse settings and modalities. This scoping review aimed to map current psychosocial interventions designed to improve mental health outcomes among HCWs.

**Methods:** Guided by the PRISMA-ScR framework, five databases (PubMed, Scopus, ScienceDirect, EBSCOhost, Google Scholar) were searched from January 2000 to September 2025. Eligible studies involved HCWs, assessed psychosocial interventions, and reported mental health outcomes. The Joanna Briggs Institute (JBI) appraisal tool was applied, and only studies scoring  $\geq 70\%$  were retained. Although multiple designs were eligible, only randomized controlled trials (RCTs) met the quality threshold and were included. Data were synthesized descriptively and thematically.

**Results:** Of 312 identified records, 15 RCTs (2021–2025) were included. Interventions were grouped into mindfulness and meditation programs ( $n=6$ ), digital and mHealth approaches ( $n=5$ ), and coaching or AI-assisted resilience training ( $n=4$ ). Specifically, mindfulness interventions reduced stress and anxiety by up to 30% and consistently improved well-being. Notably, digital modalities—including mobile apps and internet-delivered cognitive behavioral therapy (CBT)—were widely used during the pandemic and demonstrated benefits for burnout, sleep quality, and resilience. Across all studies, coaching and AI-assisted interventions improved work engagement and reduced exhaustion, particularly in non-pandemic contexts.

**Conclusion:** Psychosocial interventions demonstrate strong potential to improve HCWs' mental health. Digital programs offer scalable support, while resilience-based approaches promote long-term well-being. Future research should examine implementation in low-resource settings, compare digital versus in-person modalities, and explore organizational-level strategies to complement individual interventions.

**Keywords:** psychosocial interventions, mental health, burnout, resilience, healthcare workers

## Introduction

Healthcare workers (HCWs) experience substantial psychosocial burdens, including burnout, anxiety, depression, and post-traumatic stress disorder, which intensified during the COVID-19 pandemic. Global evidence shows that nearly 40% of HCWs reported burnout and around 30% experienced depression and anxiety during the pandemic, with higher rates among frontline staff and those working in high-demand clinical environments.<sup>1–3</sup> These mental health challenges negatively affect workforce well-being, patient safety, and organizational performance.<sup>4,5</sup>

Multiple psychosocial stressors contribute to these outcomes, such as limited social support, workplace incivility, stigma surrounding mental health help-seeking, resource shortages, and high workload demands.<sup>6,7</sup> Evidence from low- and middle-income countries (LMICs) further highlights disproportionate psychological distress among HCWs due to systemic constraints, limited infrastructure, and exposure to workplace violence.<sup>8</sup> In response to these challenges, the World Health Organization (WHO) has emphasized the need for comprehensive strategies to protect HCWs' mental

health and strengthen workforce resilience.<sup>9,10</sup> A wide range of psychosocial interventions—such as cognitive behavioral therapy (CBT), mindfulness-based stress reduction (MBSR), resilience training, psychoeducation, peer support, and technology-based programs—have been implemented to address mental health needs among HCWs.<sup>11–16</sup> However, the effectiveness of these interventions varies. For example, mindfulness-based programs have demonstrated significant reductions in burnout and stress,<sup>12–15</sup> whereas other approaches have shown mixed results depending on delivery mode, duration, and population characteristics.<sup>16</sup>

Previous reviews have offered valuable insights but often had limited scope: some focused only on nurses,<sup>17</sup> others prioritized specific modalities such as mindfulness or CBT,<sup>14</sup> and many were conducted before the rapid expansion of digital and AI-assisted interventions during the pandemic.<sup>11–16</sup> Despite these contributions, several important gaps remain. Existing reviews seldom examine how psychosocial interventions are designed, adapted, and implemented across diverse healthcare systems, including LMIC contexts.<sup>18–20</sup> There is also scarce evidence regarding emerging modalities such as digital mental health tools, AI-assisted support, or stepped-care approaches.<sup>21,22</sup> Moreover, organizational-level strategies—such as interventions targeting leadership, workload, and civility—remain underexplored despite their demonstrated influence on workforce well-being.<sup>21</sup> Understanding these gaps is essential to inform more comprehensive and context-sensitive strategies for HCWs. In response, this scoping review aims to map and synthesize psychosocial interventions for HCWs published between 2021 and 2025, covering diverse professional roles, delivery modes, and global contexts. By adopting a broad multidisciplinary scope, this review seeks to provide an updated evidence map that integrates traditional and emerging approaches and identifies key gaps to guide future research and practical implementation.<sup>23</sup>

Therefore, this scoping review aims to map and synthesize existing evidence on psychosocial interventions for healthcare workers, focusing on intervention types, delivery modes, practice settings, and reported mental health outcomes. By adopting a multidisciplinary perspective—including physicians, nurses, allied health professionals, and administrative staff—this review provides a comprehensive foundation for future research and strategies to support HCW mental health globally.

## Methods

### Study Design

This scoping review was conducted to systematically map the existing literature on psychosocial interventions aimed at improving mental health outcomes among healthcare workers (HCWs). Scoping reviews are appropriate for broad or emerging topics where the goal is to identify key concepts, variations in practice, and evidence gaps rather than to synthesize effect sizes through meta-analysis.<sup>24,25</sup> The review followed the methodological framework outlined by Arksey and O'Malley,<sup>24</sup> with refinements by Levac et al,<sup>25</sup> to ensure a structured yet flexible approach.

Reporting adhered to the PRISMA-ScR (Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews) checklist. Although various study designs were eligible, only randomized controlled trials (RCTs) met the methodological quality threshold after appraisal using the JBI checklist. This outcome does not alter the rationale for employing a scoping review approach, which is intended to map the breadth of available evidence.

### Search Strategy

A comprehensive search was performed by two independent reviewers across five major electronic databases: PubMed, ScienceDirect, Scopus, and EBSCOhost, with supplementary searches conducted via Google Scholar. Boolean operators (“AND” and “OR”) were used to combine keywords and Medical Subject Headings (MeSH). The primary search string included: (“psychosocial intervention\*” OR “psychological intervention\*” OR “counseling” OR “therapy” OR “support program\*” OR “mental health promotion” OR “psychoeducation”) AND (“mental health” OR “anxiety” OR “depression” OR “stress” OR “burnout” OR “wellbeing” OR “psychological distress”) AND (“healthcare worker\*” OR “health personnel” OR “nurs\*” OR “physician\*” OR “doctor\*” OR “medical staff” OR “allied health professional\*”). The search covered the period from January 1, 2000 to September 2025 to capture both pre- and post-pandemic developments, as the

COVID-19 pandemic significantly intensified mental health challenges among HCWs. No language filters were applied during initial searching; however, only English-language publications were included due to feasibility constraints.

## Eligibility Criteria

Eligibility criteria were structured using the Population, Concept, and Context (PCC) framework recommended by the Joanna Briggs Institute:

Population (P): Healthcare workers, including nurses, physicians, allied health professionals, and administrative staff.

Concept (C): Psychosocial interventions intended to improve mental health, such as cognitive-behavioral therapy (CBT), mindfulness-based interventions, resilience training, psychoeducation, or peer support.

Context (C): Global healthcare settings evaluating outcomes such as stress, burnout, depression, anxiety, PTSD, and psychological well-being.

## Inclusion Criteria

Peer-reviewed primary studies (eg, RCTs, quasi-experimental, observational, qualitative, or mixed-methods) published in English within the specified timeframe.

## Exclusion Criteria

Non-English publications, secondary sources (reviews, editorials, commentaries), study protocols without empirical data, and studies not directly assessing psychosocial interventions among HCWs.

## Study Selection and Quality Appraisal

All retrieved records were imported into Mendeley Reference Manager for deduplication. Two reviewers independently screened titles and abstracts, followed by full-text assessment according to the predefined criteria. Discrepancies were resolved through discussion; no third reviewer was needed. Methodological quality was assessed using the Joanna Briggs Institute (JBI) Critical Appraisal Checklist for RCTs (2022 version). Each “Yes” response received a score of 1, and “No/Unclear” received 0. Studies with scores  $\geq 70\%$  were considered to have adequate methodological quality for inclusion. To address the potential for publication bias, we also searched clinical trial registries (eg, ClinicalTrials.gov, WHO ICTRP) for any relevant unpublished or ongoing trials. However, no additional unpublished studies that met our inclusion criteria were identified through this search.

## Data Extraction and Synthesis

Data were extracted into a standardized charting form capturing authorship, publication year, country/setting, study design, participant characteristics, intervention type, duration, delivery mode, outcomes measured, and key findings. Data synthesis followed a descriptive and thematic approach, mapping intervention types, delivery modalities, outcome categories, and contextual influences (eg, COVID-19 vs non-pandemic periods). Results were summarized narratively and presented in tables to illustrate the distribution of evidence, common themes, and research gaps. Consistent with scoping review methodology, no meta-analysis was conducted. The search terms and MeSH terms applied in this review are summarized in [Table 1](#).

## Results

### Study Selection

A total of 312 records were identified through database searching. After removing duplicates, 250 records were screened by title and abstract, resulting in 190 exclusions due to irrelevance. Sixty full-text articles were assessed for eligibility, of which 45 were excluded (due to not meeting PCC criteria or inappropriate study design). Finally, 15 studies were included in this scoping review. The study selection process with PRISMA flow diagram is illustrated in [Figure 1](#).

**Table 1** Keywords and MeSH Terms

PCC	Keyword	MeSH Terms
P (Population)	General public/healthcare worker/bystander/non-medical	Health Personnel, Emergency Responders
C (Concept)	Psychosocial intervention/mental health outcome/emergency response knowledge	Psychotherapy, Mental Health, Psychological Stress
C (Context)	Healthcare setting/training and learning/mental health support	Burnout, Professional; Anxiety; Depression; Post-Traumatic Stress Disorders

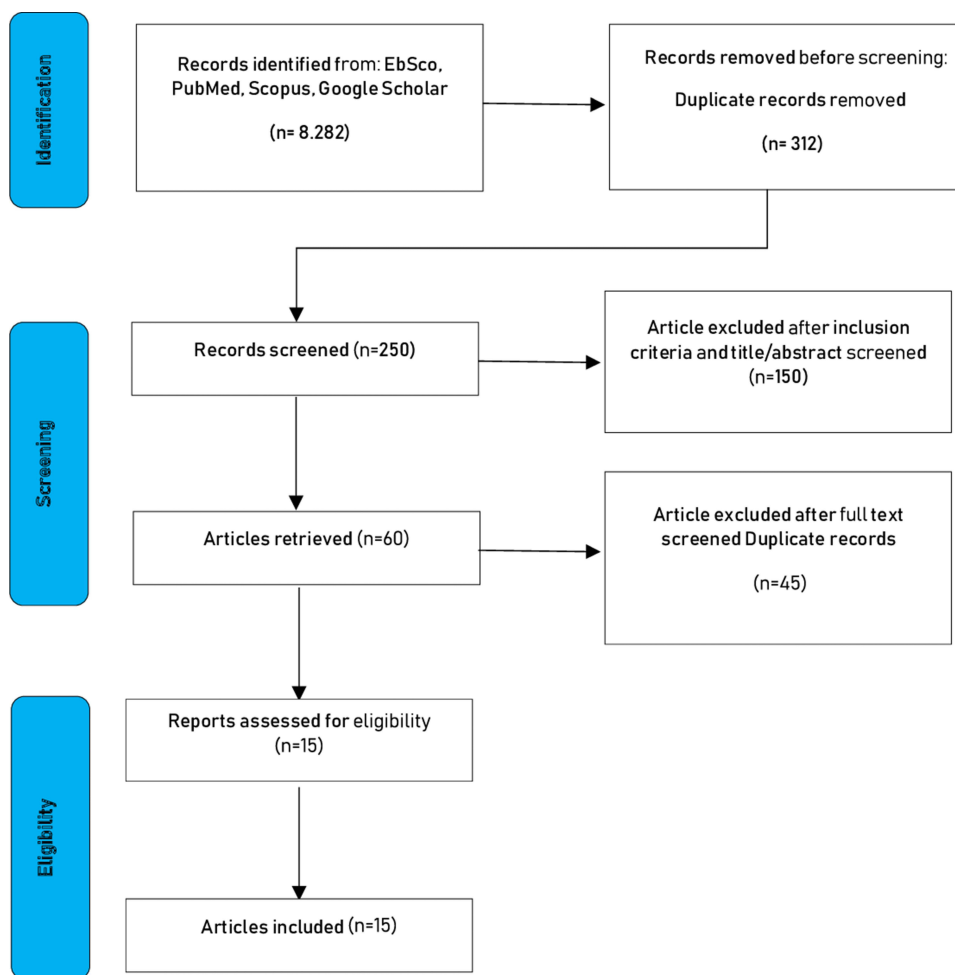
## Study Characteristics

The 15 included studies were predominantly randomized controlled trials (RCTs) conducted among healthcare workers, primarily nurses and physicians. Publication years ranged from 2021 to 2025, reflecting a growing interest in psychosocial interventions following the COVID-19 pandemic. The characteristics of the included studies are summarized in Table 2.

### Types of Psychosocial Interventions

Three main categories of psychosocial interventions were identified:

Mindfulness-Based and Meditation Interventions (n = 6)



**Figure 1** PRISMA flow diagram of study selection. The diagram illustrates the process of study identification, screening, eligibility assessment, and final inclusion in the scoping review.

**Table 2** Study Characteristics of Included Studies

No	Author and Years	Topic	Design	Population	Intervention	Outcomes
1	[26]	Mindfulness-Based Intervention for Nurse Caregivers of Dementia Patients	RCT	Nurse caregivers	Mindfulness	Significantly reduces levels of compassion fatigue and burnout, and increases the capacity for emotional regulation in providing care.
2	[27]	Emotional Freedom Techniques on Nurses' Stress, Anxiety, Burnout	RCT	Nurses	EFT (tapping)	EFT interventions have been shown to be effective in reducing levels of stress, anxiety, and work burnout, especially during the COVID-19 pandemic.
3	[28]	WISER Intervention to Reduce Burnout	RCT	Healthcare workers (perinatal units)	Web-based resilience training	The WISER program is able to reduce emotional burnout and work fatigue by increasing the psychological resilience of healthcare workers.
4	[29]	mHealth Meditation & Breath Intervention	RCT	Health care providers (India)	mHealth + meditation	A mobile-based application for meditation and breathing exercises improves the quality of life of professionals and reduces burnout in healthcare providers.
5	[30]	Mindfulness Breathing & Music Therapy for Nurses	RCT	Nurses (COVID-19)	Breathing + music therapy	Mindfulness-based breathing practices and music therapy reduce work stress and improve nurses' psychological well-being.
6	[31]	Digital Mindfulness App for Healthcare Workers	RCT	Healthcare workers	Unguided mindfulness app	Independent use of the Headspace digital app reduces work stress, improves emotional balance, and provides practical support for HCWs.
7	[32]	AI-Assisted Intervention for Nurse Burnout	RCT	Nurses	AI-tailored burnout support	AI-based interventions can reduce burnout, increase self-efficacy, and provide personalized support for nurse well-being.
8	[33]	Online Coaching Program for Female Resident Physicians	RCT	Physicians (residents)	Group coaching	An online group coaching program reduces emotional burnout, strengthens social support, and increases job satisfaction among resident physicians.
9	[34]	Web-Based Resilience Training for Nurses	Pilot RCT	Nurses	Online resilience training	Web-based resilience training helps improve nurses' mental health, strengthen coping skills, and reduce the risk of psychological distress.
10	[35]	Smartphone Stress Management for Nurses (COVID-19)	RCT	Nurses (Vietnam & Thailand)	Mobile stress management	A smartphone-based stress management program effectively reduced depressive symptoms and improved nurses' general mental health during the pandemic.
11	[36]	CBT vs Mindfulness for Nurses with Insomnia	RCT	Nurses	CBT & MBSR (internet)	Online CBT and mindfulness-based stress reduction have been shown to improve sleep quality, reduce psychological stress, and enhance emotional functioning.
12	[37]	Med-Stress Internet Intervention for Medical Professionals	RCT	Medical professionals	Resource-based stress management	Internet-based interventions improve well-being, reduce emotional exhaustion, and strengthen medical personnel's coping strategies.
13	[38]	"Three Good Things" Digital Intervention	RCT	Healthcare workers	Gratitude journaling	The "Three Good Things" digital exercise reduced mild depressive symptoms, increased daily happiness, and improved psychological resilience in HCWs.
14	[39]	Heartfulness Meditation for Healthcare Professionals	RCT	HC professionals	Meditation	Heartfulness meditation has been shown to improve psychological well-being and work engagement, as well as reduce symptoms of mental fatigue.
15	[40]	Stepped-Care Mental Health Programme for HCWs	RCT	Healthcare workers (crisis settings)	Stepped-care psychosocial	Multicomponent stepped-care programs are effective in reducing psychological distress, improving mental health, and supporting adaptive recovery.

Approaches such as mindfulness training, breathing techniques, gratitude journaling, and heartfulness meditation were widely implemented. These interventions consistently demonstrated improvements in emotional regulation, reduction of stress and anxiety, decreased burnout, and enhanced psychological well-being.

#### Digital and mHealth Interventions (n = 5)

Mobile applications, internet-delivered CBT, and resource-based online stress management programs were developed to enhance accessibility. Digital interventions proved particularly effective during the COVID-19 pandemic, addressing challenges of limited face-to-face interactions while improving sleep quality, resilience, and mental health outcomes.

#### Coaching, AI, and Resilience Programs (n = 4)

Online coaching, web-based resilience training, AI-assisted interventions, and stepped-care programs targeted burnout and resilience. These interventions were more frequently applied in non-COVID healthcare settings and showed positive effects on work engagement, self-efficacy, and social support. The distribution of psychosocial intervention themes is presented in [Figure 2](#).

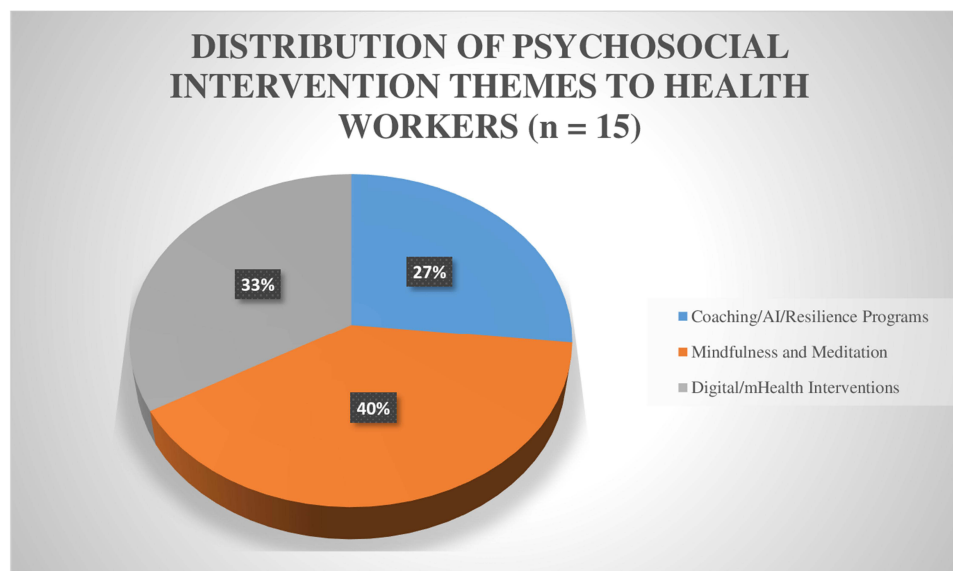
To strengthen the descriptive mapping of the evidence base, we added a summary table outlining the authors, publication years, countries, and institutional affiliations of all included studies ([Table 3](#)). As shown in the table, the interventions originated from a wide range of geographic and institutional contexts, including high-income countries such as the United States and the United Kingdom, upper-middle-income settings such as Turkey and China, and several Asian countries undergoing rapid health system transitions. This distribution highlights the global interest in psychosocial interventions for healthcare workers and reinforces the methodological breadth of the scoping review. The inclusion of diverse institutional affiliations—from university-based clinical settings to large public hospitals and multidisciplinary training programs—further demonstrates the applicability of these interventions across different health system structures.

## Outcomes Reported

The outcomes most frequently reported across the studies were:

Burnout and emotional exhaustion – assessed in 7 studies, with significant reductions observed following interventions.

Stress, anxiety, and depression – reported in 10 studies, with strong evidence of improvement across interventions.

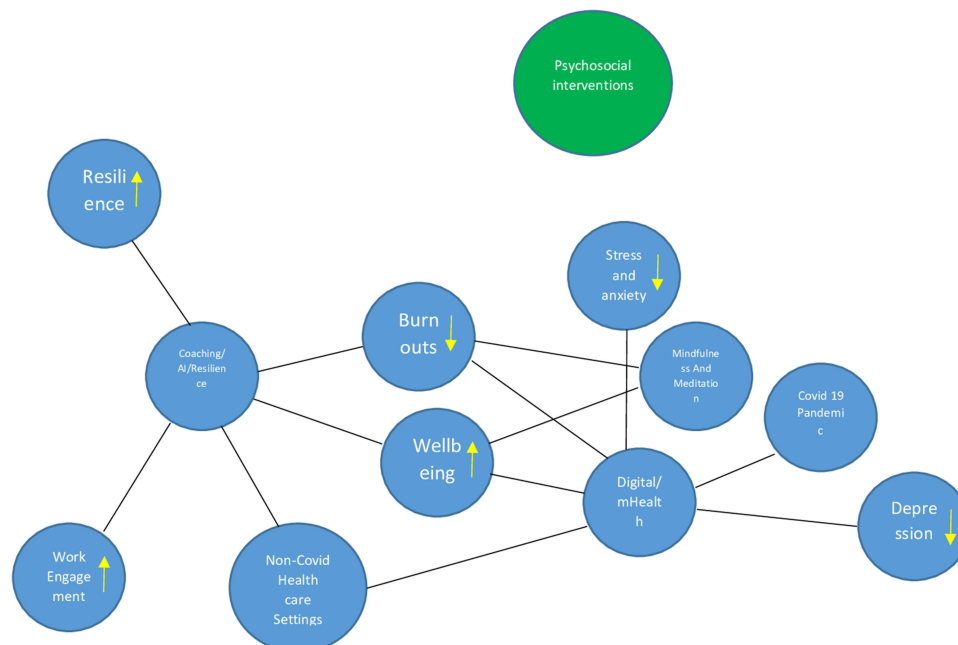


**Figure 2** Distribution of psychosocial intervention themes. This figure shows the proportion of included randomized controlled trials (RCTs) falling into each of the three main intervention categories: Mindfulness-Based and Meditation Interventions (n=6), Digital and mHealth Interventions (n=5), and Coaching, AI, and Resilience Programs (n=4).

**Table 3** Summary of Included Studies by Authors, Year, Country, and Institutional Affiliations

No	Authors (Year)	Country	Institutional Affiliation/Setting
1	Pérez et al (2022) <sup>26</sup>	Spain	University Nursing Homes & Dementia Care Institutions
2	Dincer and Inangil (2021) <sup>27</sup>	Turkey	Istanbul Medeniyet University; Nursing Units in COVID-19 Hospitals
3	Profit et al (2021) <sup>28</sup>	USA	Stanford University School of Medicine; Perinatal Care Units
4	Bhardwaj et al (2023) <sup>29</sup>	India	Government Medical Colleges in Northern India
5	Yıldırım D, Çiriş Yıldız C (2022) <sup>30</sup>	Turkey	Holistic Nursing Practice Units; COVID-19 Hospital Settings
6	Taylor et al (2022) <sup>31</sup>	UK	NHS Hospitals; Multi-site Healthcare Settings
7	Baek and Cha (2025) <sup>32</sup>	South Korea	Seoul Women's College of Nursing; Clinical Hospital Networks
8	Fainstad et al (2022) <sup>33</sup>	USA	University of Colorado School of Medicine; Residency Training Programs
9	Henshall et al (2023) <sup>34</sup>	UK	University of Oxford; Online Nursing Resilience Training Program
10	Watanabe et al (2024) <sup>35</sup>	Vietnam & Thailand	VinUniversity Vietnam; Walailak University Thailand
11	Guo et al (2024) <sup>36</sup>	China & Iran	Medical University Hospitals; Sleep Medicine Clinics
12	Smoktunowicz et al (2021) <sup>37</sup>	Poland	SWPS University of Social Sciences & Humanities
13	Gold et al (2023) <sup>38</sup>	USA	University of Michigan; Family Medicine Departments
14	Desai et al (2024) <sup>39</sup>	USA	Johns Hopkins Health System; Wellness and Engagement Units
15	Mediavilla et al (2023) <sup>40</sup>	Spain	University Hospital La Paz Madrid; Crisis Mental Health Units

Psychological well-being, resilience, and work engagement – frequently reported as positive gains, highlighting the role of psychosocial support in enhancing professional quality of life. The relationships between interventions, outcomes, and contexts are mapped in Figure 3.



**Figure 3** Theme map linking interventions, outcomes, and contexts. This map visualizes the relationships between the three intervention categories, the primary outcomes they target, and the contexts in which they were most commonly applied. [Upward arrows] indicate a positive effect on the outcome, while [downward arrows] indicate a reduction in negative symptoms.

## Context of Interventions

**COVID-19 Pandemic:** Eight studies were conducted in the context of the pandemic, focusing on reducing acute stressors faced by nurses and frontline healthcare workers. Digital and mindfulness interventions were dominant in this setting.

**Non-COVID Healthcare Settings:** The remaining seven studies examined long-term strategies such as resilience training, AI-driven support, and coaching, emphasizing sustainable improvements in mental health.

## Discussions

This scoping review synthesized evidence from 15 randomized controlled trials published between 2021 and 2025 examining psychosocial interventions aimed at improving mental health among healthcare workers. Three main categories of interventions were identified: mindfulness and meditation-based programs, digital and mHealth interventions, and resilience or coaching approaches.

Mindfulness-based strategies—including breathing techniques, gratitude journaling, and heartfulness meditation—were the most frequently implemented, demonstrating consistent improvements in burnout, stress, anxiety, and psychological well-being.<sup>26,30,31,36</sup> Digital and mobile health interventions were particularly prominent during the COVID-19 pandemic and proved effective in improving resilience, coping, and quality of life.<sup>29,35,37</sup> Coaching, AI-assisted, and resilience-enhancing programs were less frequent but showed strong potential in reducing burnout and enhancing work engagement in non-pandemic contexts.<sup>32,33,40</sup> Overall, psychosocial interventions consistently yielded positive effects on burnout, stress, anxiety, depression, and overall well-being, suggesting their critical role in supporting healthcare workers' mental health across diverse settings.

Previous reviews have documented the effectiveness of psychosocial interventions in healthcare professionals, with a predominant focus on mindfulness-based stress reduction (MBSR) and cognitive-behavioral therapy (CBT).<sup>14</sup> Our findings extend this evidence by demonstrating the emergence of digital and AI-supported interventions, which were less prominent in earlier literature but are now gaining relevance due to the increased reliance on technology during the pandemic.

Unlike earlier systematic reviews that concentrated primarily on nurses or single professional groups,<sup>17</sup> this scoping review captured a broader range of healthcare providers, including physicians and allied professionals. Furthermore, while prior reviews emphasized stress reduction as the primary outcome, our synthesis highlights the importance of well-being, resilience, and work engagement as equally relevant indicators.

Despite growing evidence, several gaps remain. First, the majority of included studies were conducted in high-income countries, limiting generalizability to low- and middle-income settings where healthcare workers face different systemic challenges. Second, most interventions were short-term (4–12 weeks) with limited follow-up, leaving questions about long-term sustainability. Third, although digital solutions show promise, few studies compared them directly with traditional face-to-face interventions. Finally, there was limited exploration of organizational-level interventions (eg, workload adjustments, leadership support), which may have stronger systemic impacts compared to individual-focused programs.

This review has several methodological strengths, including a comprehensive and systematic search across multiple databases, a transparent screening and selection process, and the use of a standardized tool for quality appraisal. By focusing on recent RCTs, we provide a synthesis of high-quality, current evidence. However, several limitations must be acknowledged. First, as with any review based on published literature, there is a risk of publication bias. Although we attempted to mitigate this by searching clinical trial registries for unpublished studies, our findings are primarily drawn from peer-reviewed journals, which tend to favor the publication of studies with positive results. This may lead to an overestimation of the true effectiveness of the interventions discussed. Second, the generalizability of our findings is limited by the geographical distribution of the included studies, which were predominantly conducted in high-income countries. Third, the inherent heterogeneity in the types of interventions, outcome measures, and follow-up periods across the included RCTs precluded a meta-analysis and limited our ability to directly compare the magnitude of effects between different intervention types.

The findings underscore the urgent need to integrate psychosocial interventions into occupational health programs for healthcare workers. Hospitals and healthcare systems should consider adopting scalable digital and mHealth interventions that can provide accessible, cost-effective, and personalized support, particularly during crises such as pandemics. At the same time, policies should encourage investment in resilience-building and coaching initiatives to sustain healthcare workforce well-being beyond crisis contexts. Policymakers and healthcare leaders must also address structural barriers, such as stigma surrounding mental health support and limited organizational resources, to ensure psychosocial interventions are effectively implemented. A blended model—combining evidence-based individual interventions (eg, mindfulness, CBT, coaching) with organizational changes (eg, workload management, team-based resilience training)—is recommended to achieve lasting improvements in workforce mental health.

## Conclusion

This scoping review highlights that psychosocial interventions provide meaningful benefits for healthcare workers, particularly in reducing stress, anxiety, and burnout while enhancing resilience and overall well-being. Mindfulness-based, cognitive-behavioral, resilience-focused, and digital approaches all demonstrated positive outcomes, although the strength of these effects varied according to intervention type, duration, delivery format, and contextual factors. Despite these encouraging results, important gaps remain, including the limited representation of studies from low- and middle-income countries, the scarcity of long-term follow-up data, and the minimal integration of organizational-level strategies.

The findings emphasize the need for more comprehensive and context-sensitive interventions that combine individual coping skills with supportive workplace environments. Future research should focus on larger, multi-setting trials, innovative digital and AI-assisted tools, and hybrid models that integrate both individual and system-level components. Strengthening these areas may help health systems design more sustainable, scalable, and equitable solutions to support the mental health and well-being of healthcare worker.

## Acknowledgments

All authors thank you to Universitas Padjadjaran who has facilitating us to make this research.

## Funding

This research and publication were supported by Universitas Padjadjaran. The funder had no role in the study design, data collection, analysis, interpretation of data, writing of the report, or in the decision to submit the article for publication.

## Disclosure

The authors declare no conflicts of interest in this research.

## References

- Franklin P, Gkiouleka A. A Scoping Review of Psychosocial Risks to Health Workers during the Covid-19 Pandemic. *Int J Environ Res Public Health*. 2021;18(5):2453. doi:10.3390/ijerph18052453
- Pappa S, Ntella V, Giannakas T, Giannakoulis VG, Papoutsis E, Katsaounou P. Prevalence of depression, anxiety, and insomnia among healthcare workers during the COVID-19 pandemic: a systematic review and meta-analysis. *Brain Behav Immun*. 2020;88:901–907. doi:10.1016/j.bbi.2020.05.026
- Spoorthy MS, Pratapa SK, Mahant S. Mental health problems faced by healthcare workers due to the COVID-19 pandemic—A review. *Asian J Psychiatr*. 2020;51:102119. doi:10.1016/j.ajp.2020.102119
- Hall LH, Johnson J, Watt I, Tsipa A, O'Connor DB. Healthcare staff wellbeing, burnout, and patient safety: a systematic review. *PLoS One*. 2016;11(7):e0159015. doi:10.1371/journal.pone.0159015
- Anger WK, Dimoff JK, Alley L. Addressing health care workers' mental health: a systematic review of evidence-based interventions and current resources. *Am J Public Health*. 2024;114:S213–26. doi:10.2105/AJPH.2023.307556
- Buselli R, Corsi M, Veltri A, et al. Mental health of Health Care Workers (HCWs): a review of organizational interventions put in place by local institutions to cope with new psychosocial challenges resulting from COVID-19. *Psychiatry Res*. 2021;299:113847. doi:10.1016/j.psychres.2021.113847
- Brooks SK, Webster RK, Smith LE, et al. The psychological impact of quarantine and how to reduce it: rapid review of the evidence. *Lancet*. 2020;395(10227):912–920. doi:10.1016/S0140-6736(20)30460-8

8. Dong F, Liu H, Yang M, et al. Immediate psychosocial impact on healthcare workers during COVID-19 pandemic in China: a systematic review and meta-analysis. *Front Psychol.* 2021;12. doi:10.3389/fpsyg.2021.645460
9. World Health Organization. Mental health at work. 2022. Available from: <https://www.who.int/news-room/fact-sheets/detail/mental-health-at-work>. Accessed December 26, 2025.
10. Frias CE, Samarasinghe N, Cuzco C, et al. Strategies to support the mental health and well-being of health and care workforce: a rapid review of reviews. *Front Med.* 2025;12. doi:10.3389/fmed.2025.1530287
11. Peanchanan L, Riewpaiboon W, Sirirungruang I, Visuttipun P. Feasibility of online psychosocial interventions to promote mental health recovery and well-being. *Int J Soc Psychiatry.* 2024;70(7):1311–1324. doi:10.1177/00207640241264656
12. Heath C, Sommerfield A, von Ungern-Sternberg BS. Resilience strategies to manage psychological distress among healthcare workers during the COVID-19 pandemic: a narrative review. *Anaesthesia.* 2020;75(10):1364–1371. doi:10.1111/anae.15180
13. Craigie M, Slatyer S, Hegney D, et al. A pilot evaluation of a Mindful Self-care and Resiliency (MSCR) intervention for nurses. *Mindfulness.* 2016;7(3):764–774. doi:10.1007/s12671-016-0516-x
14. Pollock A, Campbell P, Cheyne J, et al. Interventions to support the resilience and mental health of frontline health and social care professionals during and after a disease outbreak, epidemic or pandemic: a mixed methods systematic review. *Cochrane Database Syst Rev.* 2020;(11). doi:10.1002/14651858.CD013779
15. Lin L, He G, Yan J, Gu C, Xie J. The effects of a modified mindfulness-based stress reduction program for nurses: a randomized controlled trial. *Workplace Health Saf.* 2018;67(3):111–122. doi:10.1177/2165079918801633
16. Kunzler AM, Stoffers-Winterling J, Stoll M, et al. Mental health and psychosocial support strategies in highly contagious emerging disease outbreaks of substantial public concern: a systematic scoping review. *PLoS One.* 2021;16(2):e0244748. doi:10.1371/journal.pone.0244748
17. Liu J, Reyes Serrano T, Nguyen T, Newcomer CA, Wagner JP, Comulada WS. Evaluating the feasibility and acceptability of surgery prep, a virtual reality perioperative walkthrough designed to help pediatric patients psychologically prepare for surgery. *J Child Life Psychosoc Theory Pract.* 2024;5(2):1–11.
18. Varker T, Fredrickson J, Agathos J, Howlett P, Howard A, O'Donnell ML. A scoping review of psychosocial interventions delivered by non-mental health workers following disaster events. *J Trauma Stress.* 2025;38(2):208–221. doi:10.1002/jts.23127
19. Yosep I, Hikmat R, Mardhiyah A, Zamroni AH, Pranata Y, Saputra RL. Nursing interventions to reduce mental health problems in nursing students: a scoping review. *BMC Nurs.* 2025;24(1):780. doi:10.1186/s12912-025-03329-w
20. Mahanjana SK, Pitso LA, Ncube MV. Mapping intervention strategies and mental health support journeys in addressing mental health challenges among healthcare professionals – a scoping review. *BMC Psychol.* 2025;13(1):651. doi:10.1186/s40359-025-02981-w
21. Leiter MP, Laschinger HKS, Day A, Oore DG. The impact of civility interventions on employee social behavior, distress, and attitudes. *J Appl Psychol.* 2011;96:1258–1274. doi:10.1037/a0024442
22. Mackenzie CS, Poulin PA, Seidman-Carlson R. A brief mindfulness-based stress reduction intervention for nurses and nurse aides. *Appl Nurs Res.* 2006;19(2):105–109. doi:10.1016/j.apnr.2005.08.002
23. Medauskaite A, Kamau C. Reducing burnout and anxiety among doctors: randomized controlled trial. *Psychiatry Res.* 2019;274:383–390. doi:10.1016/j.psychres.2019.02.075
24. Arksey H, O'Malley L. Scoping studies: towards a methodological framework. *Int J Soc Res Methodol Theory Pract.* 2005;8(1):19–32. doi:10.1080/1364557032000119616
25. Levac D, Colquhoun H, O'Brien KK. Scoping studies: advancing the methodology. *Implement Sci.* 2010;5(1). doi:10.1186/1748-5908-5-69
26. Pérez V, Menéndez-Crispín EJ, Sarabia-Cobo C, de Lorena P, Fernández-Rodríguez A, González-Vaca J. Mindfulness-based intervention for the reduction of compassion fatigue and burnout in nurse caregivers of institutionalized older persons with dementia: a randomized controlled trial. *Int J Environ Res Public Health.* 2022;19:11441. doi:10.3390/ijerph191811441
27. Dincer B, Inangil D. The effect of emotional freedom techniques on nurses' stress, anxiety, and burnout levels during the COVID-19 pandemic: a randomized controlled trial. *EXPLORE.* 2021;17(2):109–114. doi:10.1016/j.explore.2020.11.012
28. Profit J, Adair KC, Cui X, et al. Randomized controlled trial of the “WISER” intervention to reduce healthcare worker burnout. *J Perinatol.* 2021;41(9):2225–2234. doi:10.1038/s41372-021-01100-y
29. Bhardwaj P, Pathania M, Bahurupi Y, Kanchibhotla D, Harsora P, Rathaur VK. Efficacy of mHealth aided 12-week meditation and breath intervention on change in burnout and professional quality of life among health care providers of a tertiary care hospital in north India: a randomized waitlist-controlled trial. *Front Public Health.* 2023;11:1258330. doi:10.3389/fpubh.2023.1258330
30. Yıldırım D, Çiriş Yıldız C. The effect of mindfulness-based breathing and music therapy practice on nurses' stress, work-related strain, and psychological well-being during the COVID-19 pandemic: a randomized controlled trial. *Holist Nurs Pract.* 2022;36(3):156–165. doi:10.1097/HNP.0000000000000511
31. Taylor H, Cavanagh K, Field AP, Strauss C. Health care workers' need for headspace: findings from a multisite definitive randomized controlled trial of an unguided digital mindfulness-based self-help app to reduce healthcare worker stress. *JMIR Mhealth Uhealth.* 2022;10(8):e31744. doi:10.2196/31744
32. Baek G, Cha C. AI-assisted tailored intervention for nurse burnout: a three-group randomized controlled trial. *Worldviews Evidence-Based Nurs.* 2025;22(1):e70003. doi:10.1111/wvn.70003
33. Fainstad T, Mann A, Suresh K, et al. Effect of a novel online group-coaching program to reduce burnout in female resident physicians: a randomized clinical trial. *JAMA Network Open.* 2022;5(5):e2210752. doi:10.1001/jamanetworkopen.2022.10752
34. Henshall C, Davey Z, Srikesavan C, Hart L, Butcher D, Cipriani A. Implementation of a Web-Based Resilience Enhancement Training for Nurses: pilot Randomized Controlled Trial. *J Med Internet Res.* 2023;25:e43771. doi:10.2196/43771
35. Watanabe K, Tran TTT, Sripo N, et al. Effectiveness of a smartphone-based stress management program for depression in hospital nurses during COVID-19 in Vietnam and Thailand: 2-arm parallel-group randomized controlled trial. *J Med Internet Res.* 2024;26:e50071. doi:10.2196/50071
36. Guo W, Nazari N, Sadeghi M. Cognitive-behavioral treatment for insomnia and mindfulness-based stress reduction in nurses with insomnia: a non-inferiority internet delivered randomized controlled trial. *PeerJ.* 2024;12:e17491. doi:10.7717/peerj.17491
37. Smoktunowicz E, Lesnierowska M, Carlbring P, Andersson G, Cieslak R. Resource-based internet intervention (Med-Stress) to improve well-being among medical professionals: randomized controlled trial. *J Med Internet Res.* 2021;23(1):e21445. doi:10.2196/21445

38. Gold KJ, Dobson ML, Sen A. “Three Good Things” digital intervention among health care workers: a randomized controlled trial. *Ann Fam Med*. 2023;21(3):220LP–226. doi:10.1370/afm.2963
39. Desai K, O’Malley P, Van Culin E. Impact of heartfulness meditation practice compared to the gratitude practices on wellbeing and work engagement among healthcare professionals: randomized trial. *PLoS One*. 2024;19(6):e0304093. doi:10.1371/journal.pone.0304093
40. Mediavilla R, Felez-Nobrega M, McGreevy KR, et al. Effectiveness of a mental health stepped-care programme for healthcare workers with psychological distress in crisis settings: a multicentre randomised controlled trial. *BMJ Ment Heal*. 2023;26(1):e300697. doi:10.1136/bmjment-2023-300697

### Journal of Multidisciplinary Healthcare

### Publish your work in this journal

The Journal of Multidisciplinary Healthcare is an international, peer-reviewed open-access journal that aims to represent and publish research in healthcare areas delivered by practitioners of different disciplines. This includes studies and reviews conducted by multidisciplinary teams as well as research which evaluates the results or conduct of such teams or healthcare processes in general. The journal covers a very wide range of areas and welcomes submissions from practitioners at all levels, from all over the world. The manuscript management system is completely online and includes a very quick and fair peer-review system. Visit <http://www.dovepress.com/testimonials.php> to read real quotes from published authors.

Submit your manuscript here: <https://www.dovepress.com/journal-of-multidisciplinary-healthcare-journal>

**Dovepress**  
Taylor & Francis Group