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Addressing the Mental Health Needs of Healthcare Professionals: A Scoping Review of Workplace Interventions

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Abstract

Background: Healthcare professionals (HCPs) frequently work in high-stress environments, which can lead to significant mental health issues such as burnout, anxiety, psychological distress and depression. These challenges have been further intensified by global health crises, highlighting the urgent need for effective workplace intervention to support the wellbeing of healthcare workers and maintain robust healthcare system. This scoping review synthesizes data from various studies to provide a thorough overview of interventions designed to reduce mental health pressure in health care settings. Methodology: This review systemically analyzed 23 studies that focused on mental health interventions in healthcare workplaces. This methodology involved extracting key insights on intervention types, targeted mental health outcomes, reported effectiveness, limitations and recommendations for future practice and research. The studies spanned multiple healthcare settings, including hospitals, clinics, and community-based environments, and utilized a range of research designs such as randomized controlled trials, quasi-experimental methods, and pilot studies. Results: The interventions analyzed had varied effects on healthcare professionals' mental health. Several approaches proved beneficial, including organizational changes (such as enhanced communication and workflow improvements), skills-based training (focusing on time management and stress reduction), mindfulness practices, physical exercise programs, and therapeutic modalities like Acceptance and Commitment Therapy (ACT), chromotherapy, and laughter therapy. These intervention were found to reduce stress, anxiety, and emotional exhaustion while improving sleep quality and job satisfaction. However, some interventions showed limited or mixed results, often due to lack of long-term follow, poor participant engagement, or challenges in applying the intervention to diverse settings. Common limitations in the studies included small sample sizes, short study durations and difficulty controlling external influences. Conclusion: Effective workplace interventions are essential for addressing the mental health challenges faced by HCPs. While a variety intervention how promise, those that are multi-faceted, customized and implemented sustainably are most likely to produce meaningful positive outcomes. Future research should prioritize long-term, large-scale studies to validate the effectiveness of these interventions and assess their scalability and cost-effectiveness across different healthcare environments.

Keywords: *Healthcare professionals, mental health, workplace intervention, burnout, stress, anxiety, scoping review, well-being*

Introduction

HCPs are fundamental to public health, offering compassionate, evidence-based care to diagnose, treat, and prevent various illnesses and conditions. Health promotion, a core public health pillar, empowers individuals and communities to improve health by focusing on comprehensive social and environmental interventions, as outlined by initiatives like the Ottawa Charter, which expanded health promotion to settings including workplaces and healthcare services (WHO.INT, 2025; Keshavarz Mohammadi et al., 2024).

Since 2020, workplace mental health has ascended to a global priority for research and action (Kelloway et al., 2023; Staglin, 2025). "Mental health is a state of mental well-being that enables

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people to cope with the stress of life, to realise their abilities, to learn well and work well, to contribute to their communities" (WHO.INT, 2022 para.1). In the United States, mental health challenges contribute an estimated $225 billion annually in healthcare expenses and lost productivity (Smith, 2024; Abramson, 2024).

Healthcare workers (HCWs) experience considerably higher rates of burnout compared to the general population (West et al., 2020; Matsuo et al., 2022), with this issue being particularly pronounced in developing countries. Such burnout and mental health problems not only affect the individuals but also compromise professional performance and the quality of healthcare delivery (Anderson et al., 2021; Hodkinson et al., 2022). Hospital-based HCWs face intense occupational stressors, elevating their risks for depressive symptoms, anxiety, diminished job satisfaction, poor quality of life, and even suicidal ideation (Williams et al., 2020; Dutheil et al., 2019). These negative consequences extend to healthcare organizations, manifesting as increased staff turnover, absenteeism, more medical errors, and reduced patient satisfaction. Mental health is increasingly viewed as a vital form of human capital that warrants investment and nurturing (Hooker, 2021; Stein and Sridhar, 2019; Wang et al., 2021). During the pandemic, anxiety and depression rates among HCWs reached 41% and 34% respectively (Sialakis et al., 2023), yet only an estimated 20% seek mental health support (Papa, 2025), contributing significantly to workforce depletion. Strong evidence links to poor mental health outcomes to specific workplace factors within three domain (i) job factors, (ii) team factors, and (iii) policy factors (Figure 1)

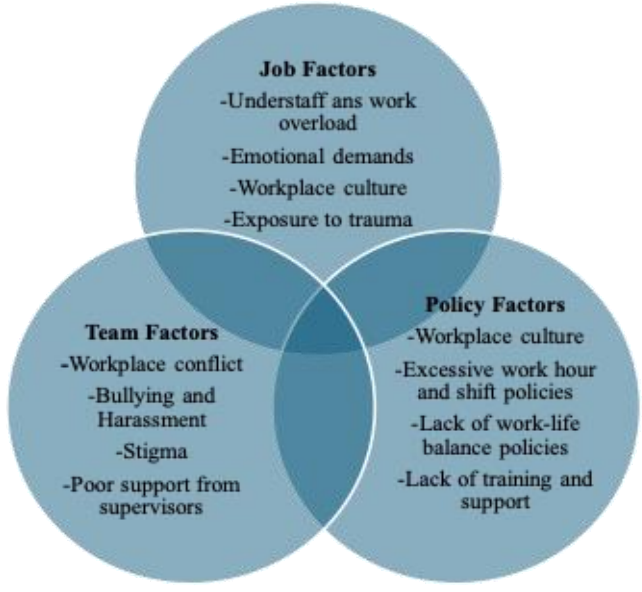

Figure 1. Risk factors affecting healthcare workers' mental health

Support for HCWs can be broadly categorized into individual-focused programs and organizational-level strategies (Verbeek et al., 2019). Individual interventions, such as stress

reduction workshops, mindfulness practices, or physical exercise, are self-initiated. Recent reviews have highlighted the benefits of these individual-based interventions, especially mindfulness, in enhancing overall well-being in healthcare settings (Lomas et al., 2019; Kriakous et al., 2021). Organizational interventions focus on creating systemic changes by addressing policies and operational factors, such as increasing sick leave or modifying shift patterns. However, implementing and evaluating large-scale organizational changes is complex, leading most studies to focus on individual-level approaches (Pollock et al., 2020). Organizational interventions remain underexplored (Harvey et al., 2021; Fox et al., 2022; Rugulies et al., 2023), partly because individual-level strategies are easier to implement and assess (Xu et al., 2020). Evidence on the effectiveness of organizational interventions in improving mental well-being is limited (Gray et al., 2019). Interdisciplinary, workplace-based approaches go beyond harm prevention, fostering a healthier environment and boosting productivity (Hudson et al., 2019).

This scoping review aims to examine the existing literature on workplace interventions that address the mental health needs of HCPs. Synthesizing current evidence, this report provides an overview of effective practices, highlights innovative approaches, and identifies gaps for future research. The review will provide practical insights for healthcare organizations, policymakers, and practitioners, while exploring contextual factors such as organizational culture, resource availability, and specific challenges faced by various healthcare professions and specialties. It will also consider the role of emerging technologies, peer support networks, mindfulness programs, and interdisciplinary collaboration in promoting well-being. Ultimately, the findings will support the development of comprehensive, evidence-based strategies to enhance the mental health of HCPs and strengthen healthcare systems.

Methodology

The main question guiding this review is "What workplace interventions (organizational and individual level) have been implemented or evaluated to support the mental health of HCPs?" To conduct a more nuanced analysis, several sub-questions are addressed. These sub-questions delve into specific aspects of intervention types (e.g., individual, organizational, hybrid approaches), mental health outcomes targeted and achieved, the implementation factors influencing intervention success (e.g., facilitators, barriers), and variations in intervention across different HCPs, settings, and geographical regions. What types of research gaps can be identified based on this review?

This scoping review employed a rigorous methodological framework based on Arksey and O'Malley, further refined by the Joanna Briggs Institute (JBI) (McLeod, 2024). Adhering to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA-ScR) checklist (Tricco et al., 2018; Peters et al., 2021) ensured transparency and methodological rigour. This approach facilitated the mapping of key concepts, identification of literature gaps, and synthesis of evidence regarding interventions across diverse contexts, populations, and types. The integrated model particularly emphasizes interventions addressing both organizational factors and individual coping mechanisms within the high-stress healthcare environment.

Eligibility criteria were meticulously developed using the JBI-recommended PCC (population, concept, concept, context) framework (Pollock et al., 2023). The Population includes all HCPs, such as physicians, nurses, and other clinical staff. The Concept focuses on workplace-based mental health interventions for prevention, support, and promotion of well-being. The Context encompasses all healthcare settings across any geographic location, acknowledging varying challenges and opportunities.

Inclusion and Exclusion Criteria

To ensure the relevance and quality of selected studies, clear inclusion and exclusion criteria were established and followed.

Inclusion criteria: studies addressing healthcare workers (HCWs), including nurses, physicians, general practitioners, and other allied health or community care workers across various settings such as hospitals, primary care clinics, and community organizations; both individual-level interventions (e.g., training programs, time management, mobile wellness initiatives) and organizational-level interventions (e.g., management strategies, improvements in work conditions). Eligible studies had to report on mental health outcomes like burnout, depression, anxiety, or overall well-being, specifically assessing the impact of interventions. Only peer-reviewed studies published in English between 2014 and 2025 that presented primary data were included to ensure methodological transparency and relevant insight into outcomes.

Exclusion criteria: Studies that did not focus on HCPs (e.g., students, retirees, or individuals not directly involved in patient care) (Onieva-Zafra et al., 2020). Other exclusions included studies addressing non-workplace-related mental health issues, those lacking sufficient detail about interventions, conference abstracts, grey literature, and non-English publications, ensuring the review's clarity, quality, and applicability to healthcare settings.

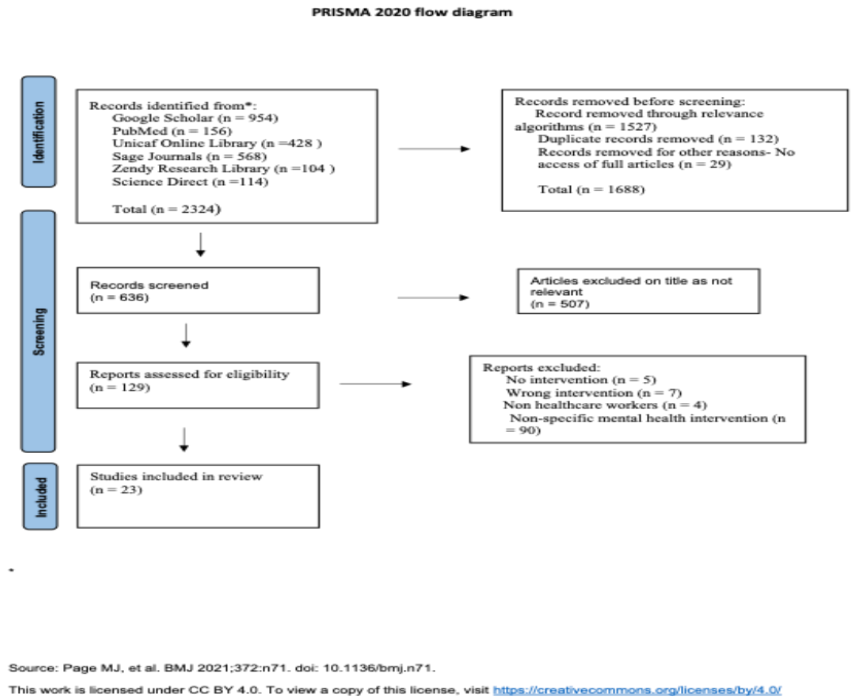

Figure 2. PRISMA flow diagram

To ensure a comprehensive yet focused search of relevant literature, a structured search strategy was developed using Boolean operators to ensure a comprehensive and focused search across multiple databases (MacFarlane et al., 2022). The strategy centered on three key concepts HCPs, mental health, and workplace intervention. By strategically using the "OR" operator to capture a broad range of synonyms and related terms, and the "AND" operator to combine core concepts. Searches were conducted in key databases including "Google Scholar, PubMed, ScienceDirect, UNICAF Online Library, Zendy Research Library, and SAGE Journals". To maximize search accuracy and relevance, we employed Medical Subjects Headings (MeSH) and database-specific controlled vocabularies where available. Additionally, peer-reviewed articles were identified through review of reference lists from relevant systematic and scoping reviews. These reviews were located by screening the reference lists of studies included during the abstract screening phase. Filters were applied to limit results to peer-reviewed articles published in the English language only due to limited resources for translation between 2014 and 2025.

Results

Overview of included studies- Twenty-three studies were included in the final review, as shown. Most studies have been frequently published in recent years, reflecting an increasing interest in mental health promotion among HCWs. Among included studies, ten studies were randomized controlled trials (RCT), eight cluster-randomized controlled trials, two mixed methods (quantitative and qualitative), one retrospective observational study, and two quasi-experimental studies (participants or study sites were randomized to receive either the intervention or comparative treatment).

Target in group studies: In total 8 studies, the target group were solely nurses, such as ICU nurses, nurse leaders etc., one study the target group was care workers at a community-based organization, one of the study target group was first year resident physician and remaining other studies consisted different several profession such as HCWs, nurses, physicians and general practitioners.

Table 1. Overview of workplace mental health studies for healthcare workers

Authors	**Study Title**	**Aim of Studies**	**Study Design**	**Sample Size**	**Category of Health care Professionals** ***Facility Level of Workplace***	**Key Findings**	**Intervention types**	**Mental health problem - outcome**	**Limitations**	**Recommendation**
(Barcons et al., 2019a)	Effectiveness of a multimodal training progra	Assess whether an intensive multimodal	Quasi-experimental study	38 GPs	General Practitioners *Public Primar*	Multimodal training reduced burnout and improv	Individual and organizational	Burnout, job satisfaction,	Small sample, self-report data risks, treatment	Future research with robust methodology should

	m to improve general practitioners' burnout, job satisfaction and psychological well-being	training program improves general practitioners' (GPs) burnout and job satisfaction			*y Care Units*	ed job satisfaction for general practitioners.			integrity not assessed	evaluate well-being integration within GP training.
(Bolier et al., 2014a)	Workplace mental health promotion online to enhance well-being of nurses and allied health professionals: A cluster-randomized controlled trial	Assess online intervention for improving mental health and well-being of HCWs	Cluster-Randomized controlled trial	1140 nurses and allied health professionals.	Nurse and allied health professionals such as physiotherapist, radiotherapist etc *Tertiary Hospital*	Online self-guided programs successfully improved mental health and well-being for nurses and allied health professionals.	Individual	Positive mental health, depression, aniety	High attrition, low adherence, no personal contact during online interventions	Improve screening, use persuasive tech, individual guidance; focus on organizational factors.
(Chesak et al., 2020a)	Authentic Connections Groups: A Pilot Test of an Intervention Aimed at Enhanci	Aimed to assess the feasibility and impact of Authentication Connection groups	Randomized controlled trial	36 nurse leader mothers	Nurse leaders *Mayo clinic*	Authentic Connections Groups improved depression, self-compassion, and reduced	Individual	Psychological distress, depression, stress and burnout	Small sample, limited diversity, work-related participant dropouts	Larger studies with longer follow-ups, adding stress biomarkers, and evaluating Authentic

	ng Resilience Among Nurse Leader Mothers	on resilience and well-being.				perceived stress in nurse leaders.				Connection groups
(Csipke et al., 2019a)	Changing nurses' views of the therapeutic environment: randomized controlled trial	Examine nurses' perceptions of the ward environment	Cluster-Randomized controlled trial	560 nurses	Nurses *16 wards within two mental health trust*	Training nurses in therapeutic activities did not significantly alter their perceptions of the ward environment or reduce burnout	Organizational	Job satisfaction, burnout	Unstable conditions, inconsistent training, self-report data reliance	More consistent training, larger sample, and controlled environment.
(d'Ettorre and Greco, 2015a)	Healthcare work and organizational interventions to prevent work-related stress in Brindsi, Italy	Analyze work related stress among hospital and district care workers	Retrospective observational study	212 department	Head physician and head nurses *Acute care hospital and rehabilitation*	Organizational changes were effective in reducing work-related stress.	Organization	Work related stress	Lacked subjective input, relied solely on objective measures	Future studies should incorporate subjective worker input alongside objective measures.
(Emani et al., 2020a)	Impact of chromotherapy on professi	Evaluate whether chromotherapy improv	Randomized controlled trial	80 Intensive care unit (ICU) nurses	ICU nurses *Tertiary Hospita*	Chromotherapy intervention improved	Individual and organizational	Professional quality of life (ProQOL)	Small ICU-specific sample, cross-sectional	Consider chromotherapy for burnout prevention

	onal quality of life in intensive care unit nurses: a randomized controlled trial	es nurses' quality of life			*l – Intensive Care Unit*	nurses' quality of life and reduced professional stress.			design limits understanding of fluctuating quality of life	programs.
(Errazuriz et al., 2020a)	Effects of mindfulness-based stress reduction on psychological distress in health workers: A three-arm parallel randomized controlled trial	Aimed to assess the effect of Mindfulness-Based Stress Reduction (MBSR) on health workers' stress and well-being.	Randomized controlled trial	105health workers	Non physician healthcare workers *Tertiary Hospital – Outpatient Department*	MBSR reduced psychological distress short-term, but long-term effects were not sustained.	Individual	Psychological distress	Small, homogenous sample, high attrition reducing reliability, lack of demographic exploration	To sustain long-term efficacy, MBSR may require supplemental retreats and strategies for ongoing maintenance.
(Fiol-DeRoque et al., 2021a)	A Mobile Phone–Based Intervention to Reduce Mental Health Problems in Health Care Worker	Evaluate effectiveness of a mobile App to reduce burnout and mental health problems	Randomized controlled trial	482 healthcare workers	Nurses, Physician, Nurse assistant *Hospital not specified*	The app reduced anxiety, depression, and burnout among healthcare workers during COVID-19.	Individual	Depression, anxiety, stress, insomnia	Short follow-up, no clinical diagnosis, lacked true control group, pandemic-specific context	Further research needed for mHealth efficacy in non-pandemic contexts.

	s During the COVID-19 Pandemic (PsyCovidApp): Randomized Controlled Trial	during COVID-19								
(Ha et al., 2022a)	Effectiveness of a Mobile Wellness Program for Nurses with Rotating Shifts during COVID-19 Pandemic: A Pilot Cluster-Randomized Trial	Develop and test mobile wellness program for shift-working nurses.	Cluster-Randomized trial	60 nurses	Nurses *Tertiary Hospital*	Mobile wellness program enhanced well-being, physical activity, and sleep quality for shift-working nurses.	Individual	Sleep quality, exercise self-efficacy, intrinsic motivation for exercise, wellness	Small, homogenous sample, non-significant findings, short study duration	Focus on sleep during naps, investigate timing, optimize exercise programs for shift schedules.
(Hatzipapas et al., 2017a)	Laughter therapy as an intervention to promote psychological well-being of	Explore laughter therapy as a stress reducing intervention for community care	Mixed methods design (quantitative and qualitative)	7 community care workers	Care worker at a community-based organization *Primary Hospita*	Laughter therapy significantly promoted psychological well-being and	Individual	Anxiety, depression, stress	Small sample, no control group, qualitative nature limits effectiveness, language barrier	Laughter therapy is a low-cost intervention to reduce anxiety and depression in care workers,

	volunteer community care workers working with HIV-affected families	worker			*l*	reduced stress in community care workers.				but should be supplemented with emotional support and self-care training to sustain long-term benefits.
(Havermans et al., 2018a)	Effectiveness of a digital platform-based implementation strategy to prevent work stress in a healthcare organization: a 12-month follow-up-controlled trial	Assess digital platform intervention to reduce work stress	Cluster-control study design	473 healthcare workers)	Healthcare workers *Tertiary Hospital*	A digital platform-based strategy showed modest effects in preventing work stress.	Individual and organizational	Stress	Insufficient follow-up, mismatched skills for users, computer literacy issues	Improve skills matching, focus on long-term outcomes, and comprehensive training..
(Huang et al., 2020a)	A Randomized Controlled Trial of Balint Groups to Prevent Burnout Among Residen	To evaluate the feasibility of Balint groups and their impact on burnout and job	Randomized controlled trial	36 participants	First year resident physicians *Tertiary Hospital*	Balint groups proved effective in reducing burnout and improving job satisfaction	Individual	Burnout	Small sample size, gender imbalance, short intervention duration, training and cultural limitation	Combine burnout prevention with organizational measures, involve larger studies with qualitative

	ts in China	satisfaction				among residents.			s	measures.
(Jakobsen et al., 2017a)	Psychosocial benefits of workplace physical exercise: cluster randomized controlled trial	Compare workplace-based and home-based physical exercise for healthcare workers.	Cluster-Randomized controlled trial	200 healthcare workers	Healthcare workers *18 departments from 3 different hospitals*	Workplace physical exercise provided psychosocial benefits, increasing vitality and reducing pain concerns.	Individual and organizational	Mental health, vitality, psychosocial work environment	Short duration, unequal training adherence, workpace implications	Address organizational and individual aspects, with longer and larger studies.
(Ledikwe et al., 2018a)	Association between healthcare worker participation in workplace wellness, activities and job satisfaction, occupational stress and burnout: a cross-	Explore link between wellness participation and stress, burnout	Sequential, Explanatory, Mixed methods	1856 healthcare workers	Healthcare workers *134 public health facilities*	Higher participation in workplace wellness activities correlates with lower occupational stress and burnout in healthcare workers.	Organization	Stress, psychological well-being, burnout	Cross-sectional design limits causal conclusions	Prioritise workplace wellness program, address barriers to participation and improve working condition.

	sectional study in Botswana									
(Linzer et al., 2015a)	A Cluster Randomized Trial of Interventions to Improve Work Conditions and Clinician Burnout in Primary Care: Results from the Healthy Workplace (HWP) Study	Examine whether improving work condition could reduce stress and burnout	Cluster-Randomized trial	166 clinicians	General internist, family physicians, nurses and physician assistant *Primary Care Clinics*	Improving primary care work conditions can reduce clinician burnout and improve job satisfaction.	Organization	Burnout	Heterogeneous interventions, inconsistent implementation, short follow-up.	Prioritise Organizational interventions, including improved communication and relevant QI projects, more effectively reduce burnout than individual strategies.
(Marino et al., 2016a)	The effects of a cluster randomized controlled workplace intervention on sleep and work-family conflict outcom	Test workplace intervention on sleep and work-family outcomes	Cluster Randomized trial	1708 participants	Healthcare workers *Extended care (nursing) facilities*	A workplace intervention improving control and supervisor support reduced work-family conflict and improv	Organization	Sleep, work-family conflict	Excluded night workers, self-report bias, short follow-up duration, missed short-term effects	Use daily diaries and tailored behavioral strategies to identify intervention efficacy conditions; organizations must restructure work to

	es in an extended care setting					ed sleep.				protect sleep and reduce stress.
(Mulfinger et al., 2025a)	Effectiveness of a multilevel intervention to improve mental health of hospital workers: The SEEGEN multicenter cluster randomized controlled trial	Evaluate changes in psychological strain mental well being	Cluster-Randomized controlled trial	415 Healthcare worker	Employee from Medical service, Medical technical service, nursing service, functioning service, secretaries and other *Hospital (not specified)*	Multilevel intervention improved psychological strain and mental well-being among hospital workers.	Individual and organizational	Psychological strain,	Smaller sample size,\high missing data, short duration, pandemic impact, organizational instability	Expand with more participants, stabilize staffing, and focus on pandemic-related factors.
(Prudenzi et al., 2022a)	A workplace Acceptance and Commitment Therapy (ACT) intervention for improving healthcare staff psychological distress:	Evaluate ACT program for reducing psychological distress in healthcare staff.	Randomized controlled trial	98 National Health Service (NHS) staff	Nurses, mental health professionals, managers, administration staff consultants, dieticians, other HCPs, technicians, other	ACT significantly reduced psychological distress and improved psychological flexibility.	Individual	Psychological distress, Burnout, Work related worry	High attrition, data issues, no effect on work-related worry, cognitive weariness only	Future research with larger trials, examining barriers to ACT training in healthcare staff.

	A randomized controlled trial				staff *NHS employee outside their specific work site*					
(Saffari et al., 2021a)	Effect of a Multistage Educational Skill-Based Program on Nurse's Stress and Anxiety in the Intensive Care Setting: A Randomized Controlled Trial	Evaluate the effect of educational program of ICU nurse stress and anxiety.	Randomized controlled trial	160 ICU nurses	ICU nurses *Tertiary Hospital*	A multistage educational program significantly reduced stress and anxiety in ICU nurses.	Individual	Stress and anxiety	Narrow intervention focus, unmeasured psychological outcomes, no impact on trial anxiety	To sustain benefits and support ICU nurses' mental health, integrate ongoing training, combine intervention approaches, and expand research to broader healthcare populations.
(Sun, 2021a)	Intervention effect of time management training on nurses' mental health during the COVID	Evaluate effectiveness of time management intervention during COVID-19	Randomized controlled trial	66 nurses	Nurses *Tertiary Hospital*	Time management training improved mental health and reduced stress among nurses.	Individual	Omatization, compulsion, interpersonal sensitivity, depression, anxiety, hostility, terror, paranoia,	No control group, homogenous psychological profiles, excluded severely affected individuals	Further research on treatment comparisons and more inclusive samples.

	-19 epidemic							and psychosis		
(Wei et al., 2017a)	Active intervention can decrease burnout in ED nurses	Assess impact of active interventions on burnout and performance among emergency department (ED) nurses	Randomized controlled trial	102 ED nurses	Registered emergency department nurses *Tertiary Hospital*	Active interventions effectively decreased burnout and enhanced performance among emergency department nurses.	Organization	Job burnout	Small sample, short study duration, lack of improvement in personal accomplishment	Improve working environment & nurses' education .Larger studies with longer durations to assess effectiveness.
(Woerkom, 2021a)	A quasi-experimental study into the effects of naps and therapy glasses on fatigue and well-being	Aimed to evaluate effects of naps and therapy glasses on nurse fatigue and well-being.	Quasi-experimental study	95 nurses	Nurses *Hospital (not specified)*	Napping facilities and, more effectively, therapy glasses improved alertness and reduced fatigue in night shift nurses.	Individual	Psychological well-being	Lack of direct causal attribution, low power, self-reported data, nap time not recorded	Larger studies with objective data, ensuring proper nap recording.
(Zhan et al., 2022a)	The Sleep Quality of the Frontline Healthcare	Evaluate the effect of Tai Chi on Sleep quality and	Randomized controlled trial	50 frontline HCWs	Nurse, Doctor, Hospital assistant	Tai Chi training improved sleep quality and reduced anxiety	Individual	Sleep quality and anxiety symptoms	Unbalanced gender sample (93%), small sample size, no long-term	Future research with long follow-ups, comparing Tai-Chi styles,

	Workers and the Improving Effect of Tai Chi	anxiety in frontline HCWs			*Tertiary Hospital*	in frontline healthcare workers			follow-up	larger samples to examine demographic factors.

Intervention Types: Workplace mental health was classified into main categories: Organizational-level and Individual-level approaches, each comprising multiple subcategories and strategies.

At the organizational level, three main types of interventions have been identified. The first, work context improvement, focuses on structural and relational changes within the workplace, including team development, safety and ethics training, employee's participation in decision-making, and enhanced communication with management. These strategies aim to reduce workplace stress, strengthen teamwork and create a more supportive work environment (d'Ettorre and Greco, 2015b). The second type of workplace wellness program (WWP) includes health screenings, occupational safety, stress workshops, team-building exercises, and recreational activities. These programs can enhance job satisfaction, well-being, and professional efficacy, while reducing stress and exhaustion; however, their effectiveness may vary depending on contextual factors (Ledikwe et al., 2018b). The last category is work-family conflict reduction interventions, which involve family-supportive supervision, flexible scheduling, and results-oriented work systems. These approaches are associated with improved sleep and exercise self-efficacy, though findings on their effectiveness in reducing fatigue and sleep disorders have been inconsistent (Marino et al., 2016b; Ha et al., 2022b).

At the individual level, interventions are primarily divided into stress management programs and physical activity/exercise-based strategies. Stress management interventions include cognitive-behavioral therapy (CBT), mindfulness practices, skill-building workshops, laughter therapy, Tai Chi, and Balint groups. These interventions effectively reduce stress, anxiety, and emotional exhaustion, while also improving coping abilities, interpersonal relationships, and overall psychological well-being (Errazuriz et al., 2020b; Sun, 2021b). However, their effects on depression and job satisfaction have been limited in some contexts (Chesak et al., 2020b; Huang et al., 2020b). Exercise-based strategies, including supervised workplace workouts, scheduled naps, and light therapy glasses, have demonstrated benefits for vitality, mental well-being, and fatigue reduction, but have minimal influence on broader perceptions of the work environment (Jakobsen et al., 2017b; Woerkom, 2020b).

Table 2. Intervention types and their reported positive effects with country of origin

Intervention Main Category	**Intervention Subcategory**	**Intervention Subtypes**	**Interventions Reported to Have a Positive Effect**	**Source ID(s)**	**Country of Origin**
Individual	Psychological Skills/Coping	Mindfulness-Based Stress Reduction	Reduced psychological distress	(Errazuriz et al., 2022)	Chile
		Laughter Therapy	Promoted	(Hatzipapas et	South Africa

			psychological well-being, reduced stress, anxiety, and depression	al., 2017b)	
		Acceptance and Commitment Therapy	Decreased psychological distress, improved mindfulness and self-compassion	(Prudenzi et al., 2022b)	UK
		Tai Chi training	Improved sleep quality and reduced anxiety symptoms	(Zhan et al., 2022b)	China
		Time Management Training	Significant decrease in total mental health score, decreased total work stress reaction score	(Sun, 2021c)	China
	Burnout Prevention	Balint Groups	Delayed burnout progression improved empathy, communication skills,	(Huang et al., 2020c)	China
	Mental Health Support	Mobile Phone–Based Intervention	Reduced symptoms of anxiety, stress, posttraumatic stress, and insomnia	(Fiol-deRoque et al., 2021b)	Spain
	Multimodal Training	Multimodal Training Programme for General Practitioners	Statistically significant pre-post change in factors of the Opinion about Mental Illness questionnaire	(Barcons et al., 2019c)	Spain
	Resilience Enhancement	Authentic Connections Groups	Decreased depression, anxiety, emotional exhaustion; increased levels of feeling loved, self-compassion, and personal accomplishment	(Chesak et al., 2020c)	United States
	Skill-Based Training	Multistage Educational Skill-Based Program	Decreased perceived stress, state anxiety, and ICU working stress	(Saffari et al., 2021b)	Iran
	Wellness Programs	Mobile Wellness Program	Improved subjective sleep quality, daytime dysfunction, exercise self-efficacy, intrinsic motivation for exercise, and wellness	(Ha et al., 2022c)	South Korea
Organizational	Work Environment Improvement	Organizational and Managerial Interventions	Reduced work-related stress levels	(d'Ettorre & Greco, 2014c)	Italy

		Workplace Wellness Programme	Improved job satisfaction, reduced occupational stress and burnout	(Ledikwe et al., 2018c)	Botswana
	Work-Family Conflict	Workplace Intervention	Increased sleep duration for younger employees (ages 18-34)	(Marino et al., 2016c)	United States
	Work Conditions, Burnout Prevention	Interventions to Improve Work Conditions	Reduced clinician burnout, improved job satisfaction	(Linzer et al., 2015b)	United States
	Therapeutic Environment	Staff Training Intervention	Increased average number of activities provided; staff feedback on training was positive	(Csipke et al., 2019b)	UK
	Comprehensive Management	Comprehensive Management	Decreased emotional exhaustion and depersonalization	(Wei et al., 2017b)	China
Multilevel	Digital/Online Platforms	Online Platform	Enhanced positive mental health, well-being, reduced anxiety symptoms, work engagement	(Bolier et al., 2014b)	Netherlands
		Digital Platform-based Implementation Strategy	Prevented increase in stress, reduced stress	(Havermans et al., 2018b)	Netherlands
	Integrated Interventions	Individual modules + organizational changes	Increased self-efficacy, reduced stress (from specific modules)	(Mulfinger et al., 2025b)	Germany
	Environmental & Physical	Chromotherapy	Improved professional quality of life, reduced burnout and secondary post-traumatic stress	(Emani et al., 2020b)	Iran
		Naps and Therapy Glasses	Reduced fatigue, positive effect on psychological well-being	(Woerkom, 2020c)	Netherlands
		Workplace Physical Exercise	Improved vitality, pain control, improved work pace, reduced leisure disability	(Jakobsen et al., 2017c)	Denmark

Reported Effectiveness of the Intervention: The effectiveness of various interventions in improving the mental health and well-being of HCPs shows varied results. A multistage

educational program for ICU nurses effectively reduced perceived stress, especially when combined delivery methods like booklets, oral presentation, clinical teaching (Saffari et al., 2021c). A two-week Tai chi program significantly improved sleep quality and reduced anxiety among frontline HCWs (Zhan et al., 2022c). ACT training significantly reduced psychological distress, with 46% of participants demonstrating clinical improvement (Prudenzi et al., 2022c), though these benefits were not always sustained. For example, Mindfulness- Based Stress Reduction (MBSR) reduced psychological distress; however, these benefits were not sustained at the four-month follow-up (Errazuriz et al., 2020d). Despite its small scale, daily laughter therapy helped care workers improve positivity, interpersonal relationships, and manage anxiety and depression (Hatzipapas et al., 2017c). Time management training combined with Balint training group session significantly improved nurses' well-being and reduced work stress (Sun, 2021d). Access to napping facilities and light therapy glasses was reduced fatigue and boosted psychological well-being (Woerkom, 2021d, Marino et al., 2016d). A mobile-phone-based intervention improved anxiety and stress but had no significant effect on overall mental health (Fiol-DeRoque et al., 2021c).

Organizational-level interventions demonstrated mixed effectiveness across different settings. Balint group participants showed non-significant reductions in emotional exhaustion and depersonalization, their outcomes were significantly better than the control group, indicating a protective effect against burnout progression, though no improvements in job satisfaction or personal accomplishment were noted (Huang et al., 2020d). Participation in WWP was associated with increased job satisfaction, professional efficacy, and reduced stress (Ledikwe et al., 2018d). Furthermore, interventions aimed at improving work conditions—like workflows in primary care settings—significantly reduced burnout rates (21.8% vs. 7.1%) and increased clinician satisfaction (23.1% vs. 10.0%) (Linzer et al., 2015c). However, some multilevel programs lacked significant impact, often due to low participation or insufficient intervention dosage (Csipke et al., 2019c).

Instruments and methods: Selected studies employed a variety of psychometric instruments to assess outcomes, including stress, burnout, well-being, sleep, and quality of life. The Maslach Burnout Inventory (MBI) is the most widely employed tool, applied in both its Human Service Survey and General Survey formats (Huang et al., 2020e, Wei et al., 2017c) to measure burnout assessing depersonalization, personal accomplishment, and emotional exhaustion. The General Health Questionnaire-12 (GHQ-12) has been extensively used to screen for psychological (Errázuriz et al., 2020c; Prudenzi et al., 2022d).

Perceived stress was most frequently assessed using the Perceived Stress Scale (PSS) (Errázuriz et al., 2020d; Hatzipapas et al., 2017d). Anxiety was commonly measured using the Beck Anxiety Inventory (BAI) (Zhan et al., 2022d) and the anxiety subscale of the Hospital Anxiety and Depression Scale (HADS), which is specifically validated for medical populations (Hatzipapas et al., 2017e). Similarly, depression was measured with the Self-Rating Depression Scale (SDS) (Chesak et al., 2020d) and the depression subscale of the Depression Anxiety Stress Scales (DASS-21) (Fiol-deRoque et al., 2021d).

The assessment of well-being employed concise, validated scales such as the WHO-5 Well-Being Index (Mulfinger et al., 2025c) and the Campbell Index of Well-Being (Sun, 2021e), which captured dimensions of psychological and emotional functioning. Sleep disturbances were evaluated using the self-reported Pittsburgh Sleep Quality Index (PSQI) (Ha et al., 2022d; Zhan et al., 2022e), while objective sleep–wake metrics were obtained through actigraphy in several studies (Marino et al., 2016e). Trauma-specific symptomatology was measured using the

Davidson Trauma Scale to assess post-traumatic stress outcomes (Fiol-deRoque et al., 2021e). Workplace-related measures include the Minnesota Satisfaction Questionnaire (MSQ) (Huang et al., 2020f) and the Job Descriptive Index (JDI) (Ledikwe et al., 2018e), both of which provide structured evaluations of satisfaction with different aspects of work.

A review of 23 studies found that mental health assessment tools differ significantly in their ability to detect changes related to interventions. The Maslach Burnout Inventory (MBI) was most widely used and consistently detected improvement in burnout. The PSQI was highly effective for determining sleep outcomes, while the General Health Questionnaire-12 (GHQ-12) showed moderate sensitivity. In contrast, other tools demonstrated limited or inconsistent effectiveness. The findings emphasize the importance of selecting well-validated, outcome-specific instruments, such as the MBI or PSQI, to reliably measure change.

Discussion

The primary objective of this review was to classify these interventions into three categories: individual-level, organizational-level, and multilevel (a combination of organizational and individual-level interventions). The review also aimed to highlight key characteristics of these interventions, evaluate their reported effectiveness, and identify areas where further research is necessary.

The review highlights prevalence of individual-level interventions focused on enhancing personal coping strategies, resilience, and stress management among HCPs. Examples include mindfulness-based stress reduction, laughter therapy, ACT, time management training, tai chi, and mobile phone-based mental health support and such interventions showed positive short-term effects in reducing stress, anxiety, and burnout, while improving psychological well-being and job satisfaction (table 2). For instance, multimodal training program improved burnout and job satisfaction among General Practitioners (Barcons et al., 2019b), while mindfulness-based stress reduction reduced psychological distress (Errazuriz et al., 2020e). In contrast, organizational-level intervention, though less frequent, focused on modifying workplace conditions, policies, or culture to create healthier environments for HCWs. These included workflow redesign and enhanced communication (Linzer et al., 2015d), and wellness activities (Ledikwe et al., 2018f). These interventions, targeting systemic changes such as better work-life balance (Marino et al., 2016f), demonstrated potential for improving work conditions and reducing stress. Multilevel interventions offer a comprehensive approach to addressing mental health from both personal and systemic perspectives. These interventions include digital platforms that offer both individual support and organizational changes (Havermans et al., 2018c) and the SEEGEN multilevel intervention, which combines individual modules with organizational changes such as participatory roundtables and management training (Mulfinger et al., 2025d). Overall, the effectiveness of these interventions varied across studies. Individual-level intervention showed positive outcomes in terms of psychological improvements, while organizational interventions demonstrated potential for broader systemic impact. Multilevel interventions, addressing both individual resilience and organizational support, were often the most effective in producing sustained outcomes.

In this review, the results align with existing literature, which consistently identifies individual and organizational factors as significant contributors to the mental health of HCWs. The predominance of individual-level interventions included in studies is consistent with broader trends in workplace mental health research. These interventions are often perceived as easier to implement, require fewer organizational changes, and are relatively simple to deploy, making

them an accessible first response to stress and burnout. Programs like mindfulness-based stress reduction, which offer a direct approach to managing stress among HCWs (Errazuriz et al., 2020f). However, a reliance on individual intervention can inadvertently shift the responsibility for managing mental health onto the individual rather than addressing systemic issues within the work environment. On the other hand, organizational-level interventions are potentially more impactful in addressing the root cause of stress and burnout, and inherently more complex to implement. They require significant organizational commitment, resources, and sustained effort to make meaningful changes to work environments, policies, and organizational culture. Initiatives such as improving work conditions to combat clinician burnout require long-term, Organization-wide changes, which can be difficult to achieve (Linzer et al., 2015e). Despite the challenges in implementation, organizational and multilevel interventions appear to be more promising in addressing the long-term mental health needs of HCPs. Multilevel interventions are particularly effective in fostering long-term mental well-being. For example, the SEEGEN intervention demonstrated how integrating individual support with organizational changes can lead to sustainable improvement in both personal residence and work environment (Mulfinger et al., 2025e).

Despite the growing body of research on workplace interventions for HCWs, several gaps remain. One notable gap is the lack of research focused on low- and middle-income countries (LMICs). Most studies in this review originated from high-income countries (Table 2), and there is a clear need for more context-specific research in LMICs (Sweetland et al., 2014), where healthcare systems and resource availability differ. Addressing the unique challenges faced by healthcare workers in LMICs will require tailored interventions that consider local resource constraints, cultural contexts, and healthcare infrastructure. Additionally, there is a significant underrepresentation of non-nurse healthcare workers in the literature. Most studies frequently include nurses, while other essential HCWs, such as paramedics and support staff, are often overlooked. These groups face unique stressors and mental health challenges (Alruwaili and Alanazy, 2024); therefore, dedicated research is needed to develop interventions specifically tailored to their needs. Another critical gap noted was the lack of long-term follow-up in most of the studies. Many interventions report short-term improvements, but their long-term sustainability and impact on healthcare workers remain unclear. Future research should focus on longitudinal studies to examine whether the benefits of interventions persist over time and if booster sessions or ongoing support are necessary. Furthermore, there remains a need for more high-quality studies, particularly for organizational and multilevel interventions.

The strength of this scoping review lies in its comprehensive overview of workplace interventions for HCWs, categorizing various intervention types and their subcategories. By synthesizing findings from diverse study designs, it provides a nuanced understanding of strategies addressing HCWs' mental health.

However, several limitations exist. The review included only English-language articles, potentially excluding relevant studies in other languages. Focusing on RCTs may have omitted valuable organizational intervention typically in non-randomized settings. The review did not assess the methodological quality or risk bias, limiting conclusions about intervention effectiveness. Additionally, unpublished or grey literature was excluded, and the review focused on studies published between 2014 to 2025, possibly overlooking earlier relevant research.

This study yields several critical implications for practice and policy. Primarily it underscores the necessity of multifaceted strategies that integrate individual-level support with systemic,

organizational changes. Policies must therefore prioritize multilevel interventions that address foundational issues such as workflow optimization, communication, and work-life balance, moving beyond reliance on standalone resilience training. Concurrently, healthcare institutions should implement preventive mechanisms for routinely identifying and monitoring workforce stress, utilizing this data to collaboratively develop tailored, culturally appropriate support programs with frontline staff.

For future research, this review highlights the need for more methodologically rigorous RCTs with long term follow-ups, particularly in LMICs. Developing standardized outcome measures is essential to enable cross-study comparisons and strengthen the evidence base. Additionally, investigation should seek to interpret the active mechanism if effective interventions and conduct robust cost-effectiveness analyses to guide resource allocation and policy decisions.

Conclusions

The scoping review highlights the complexity of addressing the mental health needs of HCWs. While individual interventions offer valuable support, they must be complemented by organizational and multilevel interventions that tackle the root causes of stress and burnout. A holistic approach, which integrates both personal and systemic strategies, is essential for fostering sustainable improvements in HCWs' mental well-being. Future research should focus on long-term outcomes, cost-effectiveness, and the development of tailored interventions for diverse healthcare contexts.

Appendix 1

List of Abbreviations

HCWs – Healthcare Workers
JBI – Joanna Briggs Institute
PRISMA-ScR – Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews
PCC – Population, Concept, Context
RCT – Randomized Controlled Trials
MBI – Maslach Burnout Inventory
GHQ-12 – General Health Questionnaire-12
PSS – Perceived Stress Scale
HADS – Hospital Anxiety and Depression Scale
SDS – Self-rating Depression Scale
PSQI – Pittsburgh Sleep Quality Index
MSQ – Minnesota Satisfaction Questionnaire
LMICs – Low- and Middle-Income Countries
STAR – Support, Transform, Achieve, Results
ED – Emergency Department
HWP – Healthy Workplace
ACT – Acceptance and Commitment Therapy
GPs – General Practitioners
MBSR – Mindfulness- Based Stress Reduction
ProQOL – Professional Quality of Life

WWP – Workplace Wellness Program

Appendix 2

Most Used Search Strategy

("mental health" OR "psychological well-being" OR "mental health needs") AND ("healthcare professionals" OR "healthcare workers" OR "HCWs") AND ("workplace interventions" OR "workplace support" OR "workplace programs").

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