Brazilian Journal of Psychiatry
bjp
Revista Brasileira de Psiquiatria
Brazilian Psychiatric Association
Fully open access
No APCs

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(article published as accepted)

Review Article

Mapping Workplace Mental Health Practices: A Scoping Review and Preliminary Conceptual Synthesis for the Brazilian Context

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http://doi.org/10.47626/1516-4446-2026-5059

Submitted: 04-Jun-2026

Accepted: 28-Aug-2026

This is a preliminary, unedited version of a manuscript that has been accepted for publication in the Brazilian Journal of Psychiatry. As a service to our readers, we are providing this early version of the manuscript. The manuscript will still undergo copyediting, typesetting, and review of the resulting proof before it is published in final form. The final version may present slight differences in relation to the present version.

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Mapping workplace mental health practices: a scoping review and preliminary conceptual synthesis for the Brazilian context

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ABSTRACT

Objective: To map evidence on workplace mental health practices for promotion, prevention, screening, and management of mental health and psychosocial risks, with attention to their potential relevance to the Brazilian occupational context.

Methods: A scoping review followed JBI guidance and was reported according to PRISMA-ScR. Searches were performed in PubMed/MEDLINE, Scopus, Web of Science, PsycINFO and Cochrane Library. Studies, protocols, and institutional documents published between 2020 and 2025 addressing workplace mental health practices in occupational settings were included.

Results: Sixty-eight records were included. Relatively stronger evidence for short-term psychological outcomes came from moderate-robustness randomized studies of ACT and resilience training. Mindfulness was more frequently studied but showed heterogeneous and mostly short-term effects. Evidence for exercise, CBT-based self-care, coaching, and leadership interventions was preliminary or mixed. Effect sizes, sustained benefits, and organizational outcomes were inconsistently reported.

Conclusion: The mapped literature was heterogeneous and concentrated on

individual-level approaches, with limited assessment of organizational outcomes. Five recurring domains were organized as a hypothesis-generating conceptual synthesis to support future consensus development, contextual adaptation, feasibility assessment, and implementation research in Brazil. This synthesis is not a validated model or recommendation for routine practice.

Keywords: Mental Health; occupational health; workplace; psychological stress; burnout, professional

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INTRODUCTION

Mental health has become a global public health priority, affecting individuals across age groups, social classes, cultural backgrounds, and economic sectors, with direct implications for productivity, social functioning, and macroeconomic stability[1]. Among the affected domains, the workplace stands out as a critical setting for the emergence, maintenance, or worsening of mental health problems, particularly due to psychosocial risks such as work overload, organizational insecurity, dysfunctional management practices, and insufficient institutional support[2].

Mental disorders remain among the leading contributors to disability worldwide. Recent Global Burden of Disease estimates indicate that 1.17 billion people were living with mental disorders globally in 2023, with mental disorders accounting for 6.1% of all-cause DALYs and representing the leading cause of years lived with disability (YLDs) globally[1]. Recent evidence indicates that this burden remains substantial despite advances in policies and treatment approaches, reflecting persistent gaps in prevention, access to care, and system-level responses[3]. This scenario is further intensified by regional inequalities, fragile mental health systems, and chronic underfunding, especially in low- and middle-income countries[1].

Within this broader context, workers' mental health has become a strategic public health and organizational priority[4]. The World Health Organization (WHO) recognizes work as a key determinant of well-being, productivity, and social

participation[5]. More than half of the world's population is currently engaged in the workforce, and approximately 15% of working-age adults live with some form of mental disorder[4]. Inadequate workplace support compromises productivity, increases absenteeism, limits retention, and hinders return-to-work processes[6-8]. Depression and anxiety alone are estimated to account for more than 12 billion lost workdays annually, resulting in global economic losses exceeding US$1 trillion[5]. In the GBD 2023 study, anxiety disorders and major depressive disorder were the two leading contributors to mental disorder-related DALYs globally, ranking 11th and 15th, respectively, among 304 diseases and injuries[1].

These findings suggest that workplace mental health cannot be addressed solely as an individual clinical issue[9, 10]. It must also be understood as an organizational, regulatory, and governance challenge. Precarious work relations, intensified psychological demands, weak psychosocial risk management, and limited institutional accountability contribute to mental suffering in occupational contexts[11]. In response, the WHO and the International Labour Organization (ILO) have issued joint guidelines for mental health at work, emphasizing evidence-based actions for protection, prevention, promotion, psychosocial support, and inclusive return to work[12]. Similarly, standards such as the Brazilian Regulatory Standard NR-01 and ISO 45003, which provide guidelines for managing psychosocial risks in occupational settings, represent important advances by requiring organizations to identify and address these risks[13,14]. However, a persistent implementation gap remains between regulatory requirements and routine workplace practices.

Although mental health is recognized as a strategic component of economic and social sustainability, its translation into integrated public policies and institutional routines remains limited, particularly in low- and middle-income countries[15]. The absence of intersectoral and evidence-informed plans undermines workers' well-being, weakens organizational resilience, and increases pressure on social security systems[15]. In Brazil, this challenge is amplified by the rise in medical leave due to psychological causes and by the fiscal implications of work disability related to mental disorders[7]. International organizations therefore reinforce the

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need for integrated strategies focused on early screening, evidence-based interventions, and inclusive return-to-work policies[16].

International guidance from WHO and ILO has established key directions for workplace mental health, including prevention, promotion, psychosocial support, and return-to-work[4,12]. Several systematic, umbrella, and scoping reviews have also examined workplace interventions, occupational risk factors, psychosocial risk management, screening, implementation tools, and workplace resources[9,10]. However, gaps remain regarding the contextual translation of this evidence to Brazilian occupational regulation. This review therefore does not claim the absence of previous reviews. Instead, it integrates contemporary heterogeneous evidence with the Brazilian regulatory context, particularly NR-01, ISO 45003, and national occupational health governance[13,17,18].

Therefore, this scoping review aims to map and synthesize contemporary evidence on practices for the promotion, prevention, screening, and management of mental health problems and psychosocial risks in occupational settings. By relating the mapped literature to the Brazilian regulatory and institutional context, the review also organizes recurring findings into a hypothesis-generating conceptual synthesis intended to inform future research. It does not aim to develop or validate a practice framework, clinical guideline, or implementation protocol. Advancing this agenda is not only a scientific priority, but also an ethical, regulatory, and economic imperative for strengthening worker well-being, organizational resilience, and sustainable occupational health governance.

Methods

Study Design

This scoping review was conducted using the methodological framework proposed by Arksey and O'Malley[19], later refined by Levac et al[20]. and JBI[21]. The review followed the core stages recommended for scoping reviews: (i) defining the research question; (ii) identifying relevant studies; (iii) selecting studies; (iv) extracting and organizing data; and (v) synthesizing and presenting the results. The report was prepared in accordance with PRISMA-ScR (Preferred Reporting

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Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews) guidelines[22]. The protocol was registered prospectively on the Open Science Framework (OSF) platform under the identifier DOI 10.17605/OSF.IO/E9Q3U.

Research Question

The formulation of the research question was guided by the PCC framework (Population, Concept, Context), as recommended for scoping reviews. The target population included workers from any economic sector engaged in formal organizational contexts. The concept comprised workplace mental health practices addressing promotion, prevention, screening, and intervention. The context encompassed contemporary occupational settings across different countries, considering organizational, regulatory, and sociocultural dimensions.

Based on this framework, the guiding research question was: which workplace mental health practices have been described for promoting, preventing, screening, and managing workers' mental distress, and what organizational, regulatory, and sociocultural factors may influence their adoption and potential relevance across contemporary occupational settings?

Search and Data Collection Strategy

Searches were conducted in July 2025 in PubMed/MEDLINE, Scopus, Web of Science, PsycINFO, and Cochrane Library. The strategy was intentionally broad to maximize retrieval of clinical, organizational, regulatory, and implementation evidence, although this may have reduced specificity. Controlled vocabulary, field tags, syntax, filters, and limits were adapted to each database, with complete reproducible strategies provided in Supplementary Table S3. Embase and PEDro were removed through a documented protocol amendment because reproducible database-specific searches could not be independently executed and verified using the available interfaces; PEDro also provided limited coverage of the multidisciplinary evidence targeted. Neither database contributed records to screening.

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The main search strategy included the following terms: (("occupational health"[MeSH] OR "workplace" OR "employees" OR "workers" OR "occupational health services"[MeSH] OR "employers" OR "private sector" OR "public sector" OR "occupational setting" OR "institution") AND ("mental health"[MeSH] OR "mental disorders"[MeSH] OR "psychological distress" OR "emotional well-being" OR "well-being" OR "psychosocial health" OR "burnout"[MeSH] OR "anxiety"[MeSH] OR "depression"[MeSH] OR "emotional exhaustion" OR "stress-related disorders" OR "occupational diseases"[MeSH]) AND ("evidence-based practice" OR "best practice" OR "intervention"[MeSH] OR "organizational intervention" OR "workplace intervention" OR "psychosocial intervention" OR "prevention" OR "screening"[MeSH] OR "promotion" OR "program" OR "protocol" OR "framework" OR "guideline" OR "policy" OR "organizational practice" OR "strategic intervention" OR "multidisciplinary approach" OR "therapeutics"[MeSH]) AND ("healthy workplace" OR "psychosocial safety climate" OR "psychological safety" OR "organizational policy" OR "workplace well-being" OR "regulation" OR "legislation" OR "cost-effectiveness" OR "economic impact")).

Searches were conducted in July 2025. Screening, full-text assessment, data extraction, and evidence synthesis were conducted between July and December 2025 by two independent reviewers. Before formal screening, reviewers conducted a calibration exercise using a sample of records to harmonize eligibility interpretation and reduce selection bias. Discrepancies were resolved by consensus or, when necessary, by a fifth researcher acting as study coordinator.

Inclusion and Exclusion Criteria

Empirical studies employing quantitative, qualitative, or mixed-methods designs, as well as clinical guidelines, technical protocols, and institutional documents issued by recognized national and international organizations, such as the ILO and WHO, were eligible for inclusion. Studies addressing practices of promotion, prevention, screening, intervention, or management of mental health in formal occupational settings involving public or private sector workers were considered eligible.

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Records published between July 2020 and July 2025, in English, Portuguese, or Spanish, were included. This timeframe was selected because it captures the post-2020 expansion of occupational mental health research, marked by intensified psychosocial work demands, increased use of digital interventions, and greater regulatory attention to psychosocial risks.

Reviews, studies focused exclusively on instrument development or validation, editorials, letters, commentaries, preprints, abstracts without full text, duplicate records, studies outside the occupational context, studies not directly addressing workers' mental health, and instrument-validation studies without demonstrated application to occupational mental health practice.

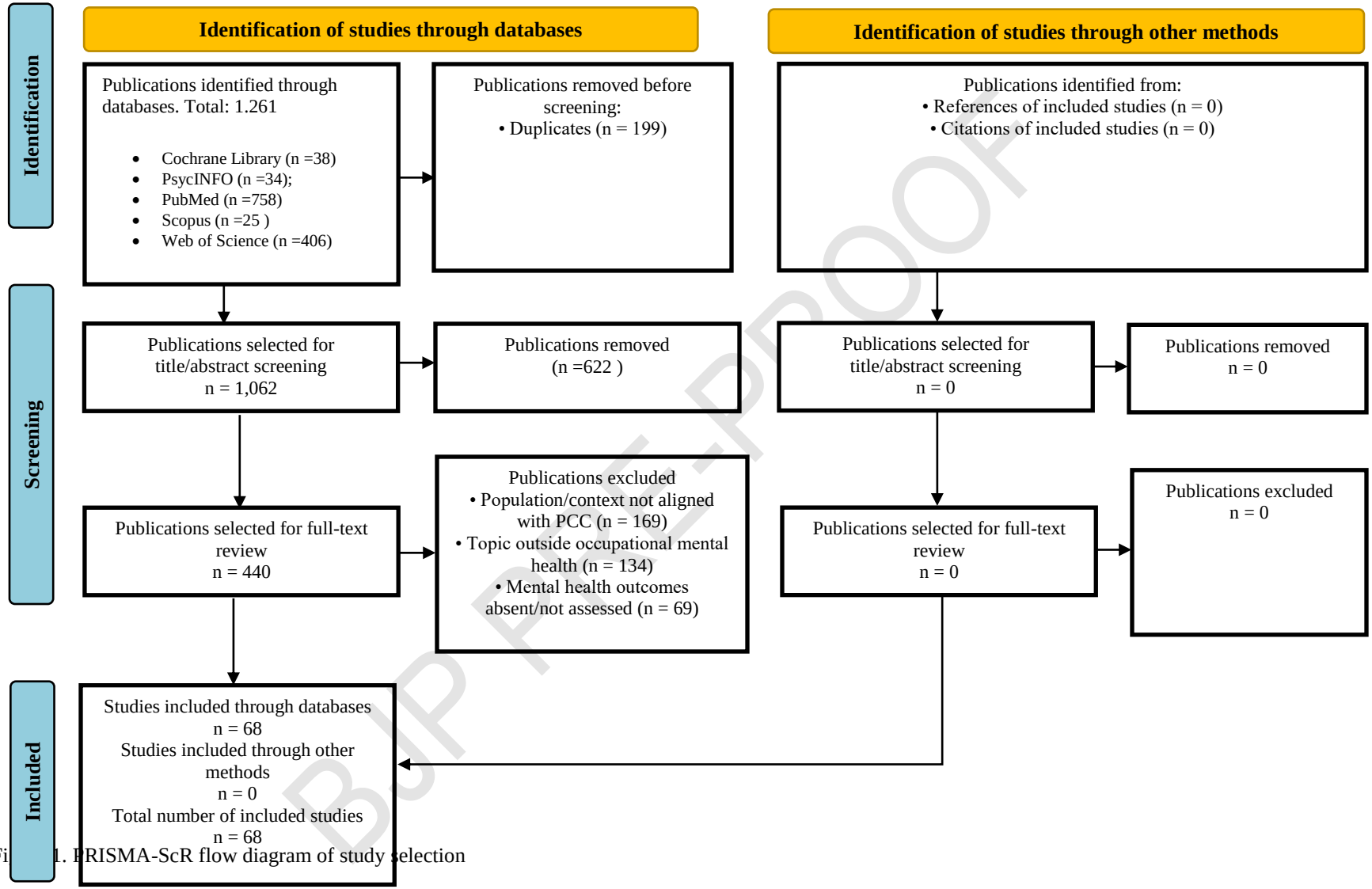
Study Selection and Data Extraction

The study selection process was conducted in three sequential stages: (i) removal of duplicate records; (ii) screening of titles and abstracts according to the eligibility criteria; and (iii) full-text review for inclusion confirmation. Duplicate records were identified using Microsoft Excel and manually verified based on author names, year of publication, title, and source.

All stages were performed independently by two reviewers. Discrepancies were resolved by consensus or, when necessary, with mediation by a third reviewer. Extracted information included author, year of publication, country, methodological design, sample size or target population, study objectives, type of intervention or practice analyzed, main outcomes, evidence status, and practical implications for the occupational context. Data were extracted using a standardized form developed by the research team and refined after pilot testing.

Data were organized into thematic analytical categories according to: type of action (promotion, prevention, screening, or intervention), level of application (individual, organizational, or systemic), and contextual factors (regulatory, cultural, and economic). This procedure aimed to maximize consistency, traceability, and analytical transparency across heterogeneous evidence sources. The study selection process is summarized in the PRISMA-ScR flow diagram (Figure 1).

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Fi 1. PRISMA-ScR flow diagram of study selection

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Methodological Quality Assessment

Although scoping reviews do not require methodological quality assessment as an exclusion criterion, included studies were critically appraised to provide a complementary interpretation of the robustness of the mapped evidence. Methodological appraisal was not used to exclude studies, in accordance with the inclusive purpose of scoping reviews.

The methodological robustness of included studies was assessed using design-appropriate critical appraisal tools. JBI Critical Appraisal Tools were used for qualitative, cross-sectional, cohort, quasi-experimental, and randomized studies[21], while the Mixed Methods Appraisal Tool (MMAT) was considered when studies included mixed-methods designs[23]. Studies with limited methodological robustness were retained in the synthesis but interpreted cautiously and flagged during evidence mapping.

No formal certainty-of-evidence grading was conducted. Intervention evidence was comparatively interpreted according to study design, methodological robustness, consistency, replication, reported effect magnitude, and follow-up duration. The terms “relatively stronger,” “preliminary,” and “uncertain” therefore indicate comparative judgments within the mapped evidence, not formal certainty ratings.

Development of the Preliminary Conceptual Synthesis

The preliminary conceptual synthesis was developed as a hypothesis-generating product of the evidence-mapping process rather than through a formal framework-development methodology. Included records were stratified according to evidence status and study purpose, including tested interventions, observational studies, screening and assessment studies, qualitative and implementation studies, protocols, and conceptual or institutional sources. Intervention components, levels of application, potentially involved professional groups, outcomes, implementation conditions, and contextual factors were descriptively compared. Recurring patterns were subsequently organized into five analytical domains. This process did not rank intervention components, establish causal relationships, define professional responsibilities, or generate recommendations for practice.

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The preliminary conceptual synthesis was derived from descriptive analysis of the mapped evidence and contextualized in relation to occupational health guidance and the Brazilian regulatory environment, including NR-01, Occupational Risk Management, ISO 45003, and WHO/ILO guidance[4, 12, 13, 18]. No Delphi process, expert consensus, stakeholder or worker-representative consultation, co-design, implementation study, feasibility assessment, or empirical validation was conducted. Accordingly, the synthesis is intended to organize recurring patterns and guide future consensus development, contextual adaptation, feasibility testing, implementation research, and empirical evaluation. It is not a validated framework, clinical guideline, regulatory standard, implementation protocol, or recommendation for routine practice, and its applicability has not been established.

Results

Study selection and general characteristics

The database search identified 1,261 records: PubMed/MEDLINE (n = 758), Web of Science (n = 406), Cochrane Library (n = 38), PsycINFO (n = 34), Scopus (n = 25). After removal of 199 duplicates, 1,062 records were screened by title and abstract, of which 622 were excluded. Subsequently, 440 full-text records were assessed for eligibility, and 372 were excluded because the population or context was not aligned with the PCC framework (n = 169), the topic was outside occupational mental health (n = 134), or mental health outcomes or measurements were absent (n = 69). No additional studies were included through reference lists or citation searching. Overall, 68 records were included in the final synthesis (Table 1). The study selection process is summarized in the PRISMA-ScR flow diagram (Figure 1). The general characteristics of the included records are presented in Supplementary Material 1, Supplementary Table S1A.

Table 1 Summary of evidence status among included records (n = 68)

Evidence status		
Tested interventions with outcome data	8	1.2
Observational evidence on determinants	6	3.5

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Evidence status		
Qualitative / implementation evidence	2	7.6
Screening / assessment studies		.4
Protocols / planned interventions without outcome data		.4
Mixed evidence status		.9

Note. Evidence status was assigned according to the primary contribution of each record to the review synthesis. Mixed-status records refer to studies contributing to more than one evidence category.

Methodological robustness of included records

Methodological robustness varied across the included records. Of the 68 records, 59 underwent critical appraisal: 10 (16.9%) were classified as high robustness, 40 (67.8%) as moderate robustness, and 9 (15.3%) as low robustness. Nine records (13.2% of all included records) were not appraised for effectiveness because they were protocols, conceptual papers, programme descriptions, or non-outcome sources. The summary of methodological robustness is presented in Supplementary Table S4A, evidence-status routing and appraisal action in Supplementary Table S4B, and study-level appraisal results in Supplementary Table S4C. Overall, the mapped evidence was driven mainly by moderate-robustness studies, warranting cautious interpretation of intervention effects.

The records included were geographically concentrated in Europe (n = 30) and North America (n = 19), followed by Asia (n = 11) and Oceania (n = 5). Fewer records originated from Africa (n = 1) or explicitly global settings (n = 1), and one record did not report its geographical location. Detailed geographic distributions are provided in Supplementary Material 1, Supplementary Tables S1B and S1C.

Only one tested intervention was classified as high robustness; most intervention-effect estimates therefore originated from randomized or quasi-experimental studies of moderate or low robustness. High-robustness observational and qualitative records informed determinants and implementation conditions but did not establish intervention effectiveness.

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Characteristics of included studies

The included studies were published between 2020 and 2025 and addressed workplace mental health through intervention studies, screening and assessment approaches, observational analyses of determinants, qualitative and implementation studies, conceptual models, and study protocols. Studies were conducted across multiple geographical contexts, including Europe, Asia, North America, Oceania, the Middle East, Africa, and multicountry or global samples. Occupational settings included public, private, mixed, non-profit, and not-reported sectors.

Populations included healthcare professionals, nurses, physicians, residents, social workers, teachers, school employees, office workers, construction workers, aviation professionals, retail workers, home-care workers, public- and private-sector employees, and workers with reduced work ability or mental health-related functional impairment. Sample sizes ranged from small qualitative studies to large occupational and administrative datasets.

Methodological designs included randomized controlled trials, cluster randomized trials, quasi-experimental studies, pilot trials, cross-sectional and longitudinal observational studies, retrospective matched-cohort analyses, qualitative and mixed-methods studies, implementation studies, conceptual papers, and study protocols. This heterogeneity was consistent with the mapping purpose of the scoping review and justified stratification by study purpose and evidence status. The distribution of included records according to evidence status is presented in Table 1, and the general characteristics of the included records are provided in Supplementary Table S1A.

Evidence status and scope of the mapped evidence

The included records were classified as tested interventions with outcome data, protocols or planned interventions without outcome data, screening or assessment studies, observational evidence on determinants, and qualitative or implementation evidence. This classification prevented protocol papers, observational studies, and qualitative implementation studies from being interpreted as equivalent to tested interventions. Protocol-based records were retained for mapping purposes but were not synthesized as evidence of effectiveness.

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Tested interventions described individual, organizational, and multilevel practices, including self-care training, mindfulness-based interventions, yoga, resilience training, workplace exercise, acceptance and commitment therapy, gratitude practices, health coaching, participatory organizational interventions, and structural work-design strategies [24-36]. Planned-intervention studies described emerging models without outcome data, including perinatal workplace mental health interventions, multilevel workplace mental health toolboxes, smartphone-based mindfulness and self-compassion interventions, and organizational intervention protocols[37-40].

Screening and assessment approaches

Screening and assessment studies mapped tools and procedures used to identify mental health symptoms, psychosocial risks, work-related quality of life, substance-use risk, psychological distress, burnout, and work-disability risk[41-44]. Instruments included the GAD-7, PHQ-9, AUDIT, GHQ-12, PSS, Kessler Psychological Distress Scale, Maslach Burnout Inventory, Work-Related Quality of Life Scale, Psychosocial Safety Climate scales, and structured occupational health check-up records.

These studies showed that screening practices were heterogeneous and usually focused on individual symptoms rather than integrated psychosocial risk management. Some approaches included broader occupational dimensions, such as work-related quality of life, work-disability management, work-life balance, digital anxiety, burnout, emotional regulation, and psychosocial working conditions[42, 44-49].

Individual-level workplace mental health practices

Individual-level practices targeted perceived stress, anxiety, depression, burnout, resilience, coping, mindfulness, self-compassion, emotional regulation, sleep, work engagement, and subjective well-being. They were delivered through face-to-face programs, online formats, mobile applications, text messaging, telephone coaching, group workshops, and blended models[25, 27, 30-32, 34, 35, 39].

Mindfulness-based and contemplative interventions were recurrent across occupational groups, particularly among healthcare professionals,

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teachers, and social workers[25, 27-29, 32, 34, 35]. Other individual-level practices included resilience training, workplace exercise, gratitude interventions, coaching, acceptance and commitment therapy, meditation, nature exposure, and arts-based approaches[26, 30, 31, 33, 36, 50]. Overall, individual-level interventions were primarily directed toward symptom reduction and coping enhancement. They less frequently addressed work organization, job design, or direct psychosocial risk exposure.

Organizational, structural, and multilevel practices

Organizational, structural, and multilevel practices addressed psychosocial risk assessment, participatory organizational change, role clarification, leadership training, psychosocial safety climate, scheduling reform, Total Worker Health-oriented initiatives, reflective practice, peer coaching, and system-level well-being curricula[24, 38, 40, 51-56].

These practices were more closely aligned with occupational risk management because they targeted work design, leadership, organizational culture, psychological safety, and implementation conditions. However, several studies reported variable feasibility, partial implementation, or limited changes in stress-related outcomes, suggesting that organizational interventions require strong leadership engagement, adequate implementation support, and sustained institutional commitment[24, 28, 40, 43, 51].

Determinants and implementation conditions

Observational, qualitative, and implementation studies identified factors associated with adoption, feasibility, and perceived usefulness of workplace mental health practices. These included job demands, emotional workload, supervisor and colleague support, organizational culture, privacy concerns, perceived relevance, time constraints, scheduling barriers, implementation fidelity, digital usability, psychological safety, psychosocial safety climate, moral injury, racism, work-life conflict, and institutional support[46, 47, 57-62].

Implementation-focused studies reported variable adoption, feasibility, and engagement, particularly in digital, web-based, and organizational interventions. Common barriers included limited time, low organizational readiness, poor integration into work routines, concerns about confidentiality,

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and insufficient managerial support.

Facilitators included leadership commitment, participatory design, perceived relevance, psychological safety, and alignment between intervention goals and organizational priorities[43, 55, 61, 63-66].

Outcomes and measurement domains

Mapped outcome domains included psychological distress, perceived stress, depression, anxiety, burnout, emotional exhaustion, resilience, well-being, work-related quality of life, sleep, work engagement, psychological safety, psychosocial climate, presenteeism, absenteeism, productivity, sickness absence, work ability, return-to-work processes, and healthcare or employer-related costs.

The studies used validated instruments such as PHQ-9, PHQ-8, PHQ-4, GAD-7, AUDIT, GHQ-12, PSS, K6, K10, DASS-21, HADS, WHO-5, SWEMWBS, WEMWBS, Maslach Burnout Inventory, Copenhagen Burnout Inventory, Brief Resilience Scale, Connor-Davidson Resilience Scale, Work Ability Index, Work Limitations Questionnaire, Utrecht Work Engagement Scale, and Psychosocial Safety Climate scales[25, 28, 30, 32, 34, 35, 41, 67]. However, economic outcomes, return-to-work indicators, and organizational-level metrics were less consistently assessed than individual psychological outcomes[31, 55, 67].

Synthesis of mapped evidence

The mapped evidence was organized into four categories aligned with the review objective: promotion, prevention, screening, and intervention. These categories operated across individual, organizational, structural, and multilevel domains. Individual-level practices primarily addressed stress, burnout, resilience, coping, mindfulness, emotional regulation, anxiety, depression, and well-being[25, 27, 29, 30, 32, 34, 35]. Organizational and multilevel practices addressed leadership, psychosocial risk management, role clarity, work design, organizational culture, psychological safety, scheduling, and integrated health and safety systems[24, 38, 40, 51, 53, 54].

Overall, the evidence suggests that workplace mental health practices are better aligned when they combine individual support with organizational and systemic changes. Screening tools were widely used, but often remained focused on symptoms rather than comprehensive psychosocial risk

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management[41-44]. Qualitative and implementation studies highlighted that feasibility and sustainability depend on leadership engagement, organizational readiness, confidentiality, integration into work routines, and alignment with institutional priorities[43, 61, 63-65, 68]. Protocols and planned interventions described emerging models but did not contribute outcome-based evidence[37-40]. A detailed classification of workplace mental health practices, evidence sources, theoretical frameworks, instruments, and key findings is provided in Supplementary Material 2, Supplementary Table S2.

Evidence strength varied across intervention modalities. Randomized studies of ACT and resilience training provided the clearest short-term psychological findings, whereas mindfulness was more frequently studied but showed heterogeneous and generally short-term effects. Evidence for exercise, CBT-based self-care, coaching, and leadership interventions remained preliminary or mixed. Effect sizes, replication, sustained benefits, and organizational outcomes were inconsistently reported.

Conceptual Domains Identified Through Evidence Mapping

Five recurring conceptual domains were identified through descriptive comparison of the mapped evidence and organized into a hypothesis-generating conceptual synthesis. These domains summarize patterns identified across heterogeneous evidence sources and are not presented as recommended components of occupational practice. Table 2 describes their conceptual functions, potentially involved professional groups, outcomes represented in the mapped literature, and candidate indicators for future research.

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Table 2 Preliminary evidence-informed conceptual synthesis of workplace mental health domains

Conceptual domain	Objective	Potentially involved professional groups	Outcomes represented in the mapped literature	Candidate indicators for future research
Psychologically safe organizational climate and supportive leadership	Organizational support and psychosocial safety	Leadership, managers, HR, occupational health and safety teams	Perceived support, psychological safety, leadership engagement	Psychosocial safety climate, worker feedback, leadership indicators
Individual and collective	Mental health literacy,	Psychologists,	Mental health	Training completion,

Conceptual domain	Objective	Potentially involved professional groups	Outcomes represented in the mapped literature	Candidate indicators for future research
competencies	coping, and early support	occupational health teams, HR, trained managers	literacy, coping, help-seeking, early identification	literacy measures, referral uptake
Psychosocial risk prevention and screening	Identification of psychosocial risks and mental health needs	Occupational health teams, psychologists, safety professionals, managers	Risk identification, distress detection, referral planning	PHQ-9, GAD-7, stress scales, psychosocial risk tools
Integrated clinical, organizational, and systemic interventions	Care coordination, workplace adaptation, and organizational support	Occupational health teams, mental health professionals, HR, managers	Work adaptation, care coordination, return-to-work support	Referral pathways, work adjustments, return-to-work plans
Outcome monitoring and continuous improvement	Assessment of implementation, sustainability, and organizational outcomes	Occupational health governance team, HR, leadership, managers	Work ability, sickness absence, productivity, psychosocial well-being	Absenteeism, presenteeism, work ability, return-to-work, cost indicators

Note: This table summarizes recurring domains identified in the mapped literature. It is not a validated framework or recommendation for practice. The professional groups, outcomes, and indicators are illustrative and require consultation, contextual adaptation, feasibility testing, and empirical validation.

Discussion

This scoping review mapped contemporary workplace mental health practices across individual, organizational, and systemic levels and examined their potential relevance to the Brazilian regulatory context. The central finding is that the current literature remains strongly concentrated on individual-level interventions, including mindfulness-based programs, resilience training, self-care strategies, coaching, exercise-based interventions, and cognitive-behavioral approaches[25, 27, 30]. These interventions showed potential benefits for psychological distress, perceived stress, anxiety, depressive symptoms, burnout, coping capacity, and well-being[25, 29, 30]. Physical exercise and yoga may mitigate psychological distress through complementary mechanisms. Physical exercise may improve cardiorespiratory fitness and regulate hypothalamic–pituitary–adrenal axis activity, whereas yoga combines controlled postures, breathing, and proprioceptive awareness that may reduce physiological stress reactivity and inflammatory signaling. These mechanisms provide a rationale for further evaluation but do not replace organizational measures addressing psychosocial risks[69]. Sleep recovery may complement exercise-based occupational health programs. In a randomized crossover study

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of physically active university students, approximately 55 additional minutes of sleep improved next-day physical performance, fatigue resistance, reaction time, and selective attention, especially in the morning[70]. Although conducted outside the workplace, these findings support evaluating sleep optimization in occupational programs requiring sustained performance[70]. However, the evidence also indicates that individual strategies, when implemented in isolation, are insufficient to address the structural and organizational determinants of mental health at work[28, 43]. Workplace mental health should therefore be understood not only as a clinical or behavioral issue, but also as an occupational risk management, governance, and organizational design challenge[43, 60]. Recent GBD 2023 estimates further reinforce the scale of this challenge, showing that mental disorders were the leading cause of years lived with disability worldwide in 2023[1]. The geographic distribution of the included records also has implications for interpretation. Most studies were conducted in Europe and North America, with fewer records from Asia, Oceania, Africa, or global settings. This concentration indicates that the mapped evidence largely reflects high-income occupational contexts and cannot be directly transferred to Brazil. Implementation may be constrained by regional inequalities in access to occupational and mental health services, uneven social protection, institutional disparities, and limited financial, digital, and human resources[11]. Informal and precarious employment may further restrict employer-based screening, referral, follow-up, and monitoring. Future implementation research in Brazil should evaluate low-cost, culturally adapted strategies integrated with available services, worker participation, and feasible monitoring under NR-01[13,18].

These findings should be interpreted in light of the theoretical and regulatory foundations outlined in the Introduction. WHO/ILO guidance frames workplace mental health around protection, prevention, promotion, psychosocial support, and inclusive return-to-work[4,12]. NR-01 and ISO 45003 further emphasize psychosocial risk identification, organizational accountability, and occupational risk management[13,14]. Accordingly, the mapped literature indicates the potential value of examining multilevel approaches that combine individual support, organizational change, leadership engagement, psychosocial risk management, and outcome monitoring.

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A key contribution of this review is the differentiation of the mapped literature according to evidence status. Tested interventions with outcome data represented the most appropriate sources for discussing potential intervention effects, particularly when they assessed pre-post changes or included comparison groups[71]. Nevertheless, many studies focused primarily on short-term psychological outcomes and less frequently measured organizational indicators such as absenteeism, presenteeism, productivity, sickness absence, work ability, return-to-work, or cost-effectiveness[26, 67]. Observational studies contributed relevant information on determinants associated with mental health outcomes, including workload, emotional demands, work-life conflict, social support, leadership, organizational culture, job control, and psychosocial safety climate[47, 60]. Qualitative and implementation studies provided essential insight into acceptability, feasibility, perceived usefulness, and contextual barriers[43, 63]. Protocols and planned interventions were useful for identifying emerging approaches, but they should not be interpreted as evidence of effectiveness because they did not provide outcome data[38, 39].

The mapped literature indicates potential advantages of examining integrated multilevel approaches rather than isolated wellness initiatives. Individual-level interventions showed potential benefits, but they rarely modify the conditions that generate psychosocial risk[24, 72, 73]. Organizational and structural practices, including participatory work redesign, leadership training, role clarification, workload adjustment, psychosocial risk assessment, psychological safety initiatives, and return-to-work planning, are more consistent with contemporary occupational health frameworks. Comparable multilevel principles have been proposed for extreme high-stress settings. Dhahbi et al. linked sustained threat and acoustic sleep disruption to HPA-axis dysregulation, sympathetic hyperarousal, and impaired sleep architecture[74]. Although developed for conflict-zone athletes, the framework offers a theoretical parallel for integrated monitoring of stress, sleep, recovery, and organizational safeguards in high-stress occupations. However, the reported outcomes varied across studies, which suggests that intervention content alone may be insuficiente [51, 73, 75].

Organizational interventions depend heavily on implementation quality, leadership engagement, worker participation, institutional readiness, and

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alignment with existing occupational health systems[75]. Initial training in high-stress professions may represent a particularly vulnerable organizational period. Although Dhahbi et al. did not assess mental health outcomes, their retrospective cohort of police cadets showed intense physical and psychological demands and a concentration of injuries during the early weeks. These findings support progressive training, systematic monitoring, and coordinated prevention for cohorts entering high-demand professions[76]. Without these conditions, even theoretically sound interventions may produce limited or effects of limited durability[73].

Screening and assessment practices were also widely represented in the evidence base. Instruments such as PHQ-9, GAD-7, perceived stress scales, work-related quality-of-life scales, and psychosocial climate tools were used to identify symptoms, distress, occupational stressors, and risk profiles[41]. Although these instruments are valuable, the mapped evidence suggests that screening often remains clinically oriented and focused on individual symptoms. The mapped evidence indicates that screening may contribute more meaningfully to prevention when embedded within a structured occupational health process that includes confidentiality safeguards, referral pathways, risk stratification, intervention planning, workplace adaptation, and outcome monitoring[77, 78]. Otherwise, screening may identify suffering without generating organizational accountability or appropriate organizational response.

The review also identified a relevant implementation gap. Several studies reported barriers such as low adherence, lack of protected time, competing work demands, concerns about confidentiality, limited managerial support, low organizational readiness, and poor integration into routine work processes[43]. Digital and web-based interventions may increase access and scalability, but their observed impact may be limited when engagement is low or when platforms are not connected to broader organizational strategies[63, 79]. Digital delivery may also impose unintended cognitive costs through notification-driven interruptions, media multitasking, technostress, and increased information-processing demands. Drawing on Dhahbi et al., workplace platforms may benefit from distinguishing task-aligned tools from task-irrelevant digital streams and from incorporating protected, interruption-free periods, asynchronous communication, notification control, and organizational digital boundaries.

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These findings suggest that workplace mental health interventions should not be introduced as isolated, optional, or peripheral programs[51, 73]. Instead, they require governance structures, clear responsibilities, worker participation, manager training, communication strategies, monitoring indicators, and continuous quality improvement[60, 75].

The distinction between effectiveness evidence and implementation evidence is particularly important[43, 80]. Some interventions may show potential psychological benefits under controlled or semi-controlled conditions but may not translate into real-world workplaces because of low feasibility, limited fidelity, or insufficient organizational support[51]. Conversely, qualitative and implementation studies may not prove effectiveness, but they clarify how interventions are implemented, sustained, or limited[61]. For this reason, future workplace mental health research should combine effectiveness evaluation with implementation outcomes, including acceptability, adoption, fidelity, penetration, sustainability, equity, and cost[63, 81]. This is especially relevant for organizational interventions, where outcomes depend not only on participant behavior but also on managerial practices, work processes, and institutional culture[60, 73].

For Brazil, the findings are relevant to current regulatory and research discussions but do not establish implementation recommendations. The principles of ISO 45003 and the incorporation of psychosocial risks into occupational risk management under NR-01 provide an important context for evaluating workplace mental health practices[13, 18, 82]. The mapped literature identifies occupational health surveillance, psychosocial risk assessment, worker participation, employer accountability, and coordinated return-to-work processes as domains requiring contextual evaluation in Brazil[4, 18]. Because Brazilian institutions differ substantially in resources, organizational maturity, workforce arrangements, and access to occupational health services, international evidence cannot be transferred mechanically and requires sociocultural, regulatory, and operational adaptation[4, 17].

The preliminary conceptual synthesis should be interpreted as a hypothesis-generating organization of the mapped evidence, not as a validated intervention, clinical guideline, implementation protocol, or formally endorsed model[80, 83]. It was not developed through Delphi consensus, expert-panel procedures, stakeholder or worker-representative consultation, feasibility

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testing, implementation research, or empirical validation. Its purpose is to organize recurring domains related to promotion, prevention, screening, intervention, monitoring, and return-to-work[4, 73]. Its feasibility, acceptability, scalability, and potential effects in Brazil remain unknown and require empirical evaluation[51, 80]. Future studies should refine the synthesis through formal consensus methods, stakeholder and worker engagement, contextual adaptation, pragmatic and mixed-methods designs, and implementation research[80, 84]. Priority outcomes may include psychological distress, burnout, work ability, sickness absence, return-to-work, presenteeism, productivity, employee experience, psychosocial safety climate, and cost-effectiveness[4, 73].

Strengths and limitations

This review has several strengths. It addressed a timely occupational and public mental health issue using a scoping review approach suitable for mapping heterogeneous evidence. The synthesis distinguished tested interventions, observational studies, screening and assessment studies, qualitative and implementation studies, and protocols, reducing the risk of treating different evidence types as equivalent. The review also integrated international evidence with Brazilian regulatory requirements, particularly NR-01 and ISO 45003, thereby increasing contextual relevance for occupational health practice and future implementation research.

This review also has limitations. The restriction to studies published between 2020 and 2025 captured recent developments in workplace mental health, but may have excluded earlier foundational evidence. The high heterogeneity of study designs, populations, sectors, interventions, instruments, follow-up periods, and outcomes limited direct comparison across studies. As expected in a scoping review, no meta-analysis was conducted, and the findings should not be interpreted as pooled estimates of effectiveness[83]. Publication bias may have influenced the mapped evidence, particularly because positive intervention studies are more likely to be published. Protocols and planned interventions without outcome data were included for mapping purposes, but were not treated as evidence of effectiveness. Finally, although the review aimed to inform the Brazilian context, most available studies were conducted internationally. Therefore, direct transferability to Brazil requires

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contextual adaptation and empirical testing.

Conclusion

Workplace mental health is a multilevel field shaped by individual, organizational, occupational, and regulatory determinants. This scoping review mapped heterogeneous evidence suggesting that individual-level approaches alone may not address organizational psychosocial risks. Five recurring domains were organized into a preliminary conceptual synthesis with a hypothesis-generating purpose, rather than a validated model or recommendation for practice. Future research should refine and evaluate this synthesis through formal consensus procedures, stakeholder and worker participation, contextual adaptation, feasibility studies, implementation research, and empirical testing in Brazilian occupational settings.

Author contributions

JJO participated in all phases of the review and was responsible for conceptualization, methodology, investigation, data curation, formal analysis, writing – original draft, and writing – review & editing. LdV, MMMS, and PHCM contributed to project writing, investigation, data collection, data curation, formal analysis, writing – original draft, and writing – review & editing of the final manuscript. LMV was responsible for conceptualization, methodology, supervision, project administration, validation of data extraction and synthesis procedures and writing – review & editing. All authors have read and approved the final version submitted and take public responsibility for all aspects of the work.

Edited by: Thiago Fidalgo

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Supplementary Table S1A General characteristics of the included records (n = 68)

Author (year)	Country	Sector	Study Design	Population	Sample	Main Objective
Bernburg, Groneberg [1]	Germany	Public sector	Quasi-experimental study (quantitative)	Novice hospital nurses	Total n = 53 Intervention n = 25 Control n = 28 (F = 77%)	To evaluate the effect of a self-care training program on nurses' mental health and stress
Bonde, Mikkelsen [2]	Denmark	Mixed sector	Quasi-experimental study without a control group (quantitative)	Frontline employees and managers at baseline	Initial n = 213 (F = 50%) 3-month follow-up n = 139 (F = NR%) 12-month follow-up n = 86 (F = NR%)	To investigate the feasibility of a workplace-adapted mindfulness-based intervention at the organizational level To assess changes in mental health and organizational outcomes
Cedstrand, Augustsson [3]	Sweden	Private sector	Quasi-experimental study (quantitative)	Construction workers (laborers and professionals)	Total n = 634 Intervention n = 359 Control n = 275 (F = 20%)	To evaluate the effectiveness and implementation fidelity of a co-created organizational intervention targeting stress and psychosocial working conditions among construction workers
Chaiear, Sirisawasd [4]	Thailand	Public sector	Cross-sectional observational study (quantitative)	Healthcare workers	Total n = 290 (F = 86%)	To assess the adequacy of Thai online assessment tools for comprehensively identifying critical characteristics of work-related quality of life across diverse user profiles

Author (year)	Country	Sector	Study Design	Population	Sample	Main Objective
Costa, Santos [5]	Portugal	Mixed sector	Randomized controlled trial (quantitative)	Primiparous women with singleton pregnancies, 28–30 weeks' gestation	n_{Total} = 225 $n_{Intervention}$ = 150 $n_{Control}$ = 75 (F = 100%)	To evaluate the efficacy of a perinatal mental health promotion and prevention program based on cognitive-behavioral psychoeducation and mindfulness, with and without biofeedback, in the context of return to work, compared with usual care, among employed pregnant women
Dalgaard, Kirkegaard [6]	Denmark	Public sector	Quasi-experimental study without a control group (quantitative)	Municipal public sector workers (including employees and managers in daycare centers, schools, and administrative units)	n_{Total} = 130 (F = NR)	To evaluate the effectiveness of an organization-anchored multilevel organizational intervention in reducing work-related stress and improving the psychosocial work environment + To examine the extent of intervention implementation across municipal public sector units
Davis, Bailey [7]	United States	Public sector	Longitudinal observational study (quantitative)	Pathology residents	n = 17 (F = 53%)	To evaluate the impact of a well-being initiative on resilience and burnout among resident physicians

Author (year)	Country	Sector	Study Design	Population	Sample	Main Objective
De Angelis, Giusino [8]	European countries	Mixed sector	Quasi-experimental study (quantitative)	Employees and managers at multiple levels (senior, middle, and frontline)	$_{Total}$ n = ~1500 $_{Intervention}$ n = NR $_{Control}$ n = NR (F = NR)	To develop, implement, and evaluate multilevel interventions to promote mental health and well-being at work in small and medium-sized private enterprises and public organizations
de Bruin, Valentin [9]	Netherlands	Mixed sector	Quasi-experimental study without a control group (quantitative)	Adult workers with work-related stress (across various occupational sectors)	$_{Total}$ = 98 (F = 75%)	To evaluate the effectiveness of an integrated program of physical exercise, yoga, and mindfulness in reducing work-related stress and the risk of work disability, as well as in improving well-being and work functioning outcomes, with follow-up of up to one year
Deng, Huang [10]	China	Private sector (nonprofit)	Cross-sectional observational study (quantitative)	Employees of philanthropic foundations	$_{Total}$ n = 233 (F = 66%)	To investigate the association between job demands and resources and the well-being of workers in the Chinese nonprofit sector
Díaz-Benito, Barriopedro Moro [11]	Spain	Private sector	Randomized controlled pilot study, double-blind (quantitative)	Working-age office employees with sedentary occupations	$_{Total}$ n = 67 $_{Intervention}$ n = 40 $_{Control}$ n = 27 (F = 50,7%)	To evaluate the effect of a 12-week supervised workplace exercise intervention, based on aerobic capacity and strength, on workplace well-being and the ability to perform work tasks among sedentary office workers
Doyle Fosco, Schussler [12]	United States	Public sector	Quasi-experimental study without a control group (quantitative) Descriptive qualitative study (perception-focused)	School leaders (principals/assistant principals) and district leaders (supervisors/directors/ass	$_{Initial}$ n = 33 (F = 48%) $_{Follow-up}$ n = 13 (F = 69%)	To investigate how school and district leaders perceive and respond to an adapted version of the Cultivating Awareness and Resilience in Education (CARE)

Author (year)	Country	Sector	Study Design	Population	Sample	Main Objective
				istant superintendents)		program
Elder, Johnston [13]	Australia	Public sector	Cross-sectional study (qualitative)	Emergency department healthcare professionals (nurses and physicians)	Total n = 10 (F = 80%)	To identify, from the perspective of emergency clinicians, the core components of a workplace-based occupational well-being strategy to address occupational stressors in the emergency department
Elling, Almquist [14]	Sweden	Mixed sector	Cluster randomized controlled trial (quantitative)	Managers with responsibility for employees (supervisors, team leaders, and human resources professionals)	Total n = 187 Intervention n = 117 Control n = 70 (F = 30%)	To evaluate the effectiveness of the APMaT program in increasing managers' propensity to initiate early intervention in response to employees' risky alcohol use
Engels, Scheepers [15]	Germany	Mixed sector	Quasi-experimental study without a control group (quantitative) Exploratory study with semi-structured interviews (qualitative)	Managers and employees of micro and small enterprises in a formal organizational context	*Quantitative study* Initial n = 78 (F = 64%) Post-intervention n = 27 (F = NR) 6-month follow-up n = 27 (F = NR) *Qualitative study* Total n = 12 (F = 67%)	To evaluate the implementation process and success of an integrated web-based platform (System P) for occupational stress prevention in micro and small enterprises, and to identify barriers and facilitators to adoption, use, and feasibility

Author (year)	Country	Sector	Study Design	Population	Sample	Main Objective
Erby and Blustein [16]	United States	Mixed sector	Interpretative phenomenological study	Black graduates of elite universities in early career stages	$_{Total}$ n = 15 (F = 60%)	To explore experiences of workplace racism and the role of racial identity in well-being
Fatemi, Vagharseyyedin [17]	Iran	Public sector	Quasi-experimental study (non-randomized, with a control group) (quantitative)	Nurses	$_{Total}$ n = 60 $_{Intervention}$ n = 30 $_{Control}$ n = 30 (F = 100%)	To evaluate the effect of Mindfulness-Based Stress Reduction (MBSR) on workplace well-being and empathy levels among nurses
Fantus, Cole [18]	United States	Public sector	Phenomenological study (qualitative)	Social workers and physicians working in hospitals	$_{Total}$ n = 28 (F = 89%)	To explore experiences of moral injury and the factors impacting these professionals' well-being
Foster, Shochet [19]	Australia	Public sector	Partially cluster randomized controlled trial (quantitative)	Mental health nurses	n $_{Total}$ n = 122 $_{Intervention}$ n = 59 $_{Control}$ n = 63 (F = 72%)	To determine the effects of a resilience development program on mental health nurses' coping self-efficacy, as well as on their levels of psychological distress, well-being, resilience, post-traumatic growth, emotional intelligence behaviors, sense of workplace belonging, and turnover intention
Goetze [20]	Global	Mixed sector	Cross-sectional correlational study	Language teachers teaching adults across diverse contexts	n $_{Total}$ n = 286 (F = 84%)	To explore the relationship between self-efficacy, emotional intelligence, and work-related stress among teachers

Author (year)	Country	Sector	Study Design	Population	Sample	Main Objective
Goodwyn, Beech [21]	Not reported	Mixed sector	Phenomenological study (qualitative)	Military and civilian pilots involved in peer coaching programs in the aviation industry and industry stakeholders	$_{Total}$ n = 39 $_{Interviews}$ n = 12 $_{Questionnairess}$ n = 27 (F = NR%)	To explore how peer coaching can promote pilots' occupational well-being and mitigate hazardous attitudes, contributing to flight safety and a positive psychosocial climate in the aviation industry
Guido, Peruzzi [22]	Italy	Private sector (nonprofit)	Quasi-experimental, longitudinal study (quantitative)	Nurses	$_{Total}$ n = 13 (F = 92%)	To evaluate the impact of a team training course incorporating art therapy and clay therapy on promoting healthcare professionals' well-being and reducing burnout levels
Hale, Lim [23]	United States	Public sector	Cross-sectional observational study (quantitative)	Acute care hospital nurses	$_{Total}$ n = 227 (F = 94%)	To identify individual and organizational factors that contribute to nurses' well-being
Rose, Smith [24]	United States	Mixed sector	Prospective longitudinal single-group intervention study with a randomized maintenance component (quantitative)	University and affiliated hospital employees	Total n = 50 (F = 90%)	To evaluate a 12-week integrative health and wellness coaching program, followed by a text-message maintenance strategy, for improving perceived stress and self-reported physical and mental health
Harris, Amano [25]	United States	Public sector	Phenomenological study (qualitative)	Healthcare leaders (managers, administrators, and supervisors)	$_{Total}$ n = 28 (F = 61%)	To explore whether a trauma-informed care approach was reflected in healthcare leaders' qualitative perspectives on their experiences during the COVID-19 pandemic (2020–2021)

Author (year)	Country	Sector	Study Design	Population	Sample	Main Objective
Heredia, Ventura [26]	Spain	Mixed sector	Randomized controlled trial (quantitative)	Primary and secondary school teachers	n_{Total} = 61 $n_{Intervention}$ = 32 $n_{Control}$ = 29 (F = 82%)	To evaluate the impact of an eight-week mindfulness program on teachers' stress and well-being
Jacobson, Westein [27]	United States	Public sector	Observational study (qualitative)	Emergency department professionals (attending and resident physicians, nurses, technicians, social workers, pharmacists, administrative and support staff)	n_{Total} = 149 (F = not reported)	To identify occupational motivators among emergency department professionals through a well-being initiative based on gratitude and meaning in work
Jiang, Song [28]	China	Public sector	Cross-sectional observational study (quantitative)	Social workers active during the pandemic	n_{Total} = 811 (F = 71%)	To analyze how COVID-19 workload affected mental health through work–family conflict
Kaur, Arora [29]	India	Public sector	Cross-sectional observational study (quantitative)	Healthcare professionals (physicians and nurses)	n_{Total} = 345 (F = 61%)	To identify factors affecting work–life balance during the COVID-19 pandemic
Klasen, van Amelsvoort [30]	Netherlands	Mixed sector	Exploratory-descriptive qualitative study with semi-structured interviews and thematic analysis	Workers in formal organizations (employers and employees) recruited from large organizations	n_{Total} = 20 (F = not reported)	To explore expected and perceived facilitators and barriers to the adoption and implementation of an indicated prevention strategy to prevent future long-term sickness absence, from the perspectives of employers and employees (both familiar and unfamiliar with the indicated prevention strategy)

Author (year)	Country	Sector	Study Design	Population	Sample	Main Objective
Kuronen, Winell [31]	Finland	Mixed sector	Cross-sectional observational study (quantitative)	Employees with reduced work ability monitored by occupational health services	n_{Total} = 1.092 (F = not reported)	To evaluate whether the initiation, process, and outcomes of health check-ups for work disability management comply with national legislation and recommendations, and how supervisors and occupational health services manage work disability
Kurosawa, Adachi [32]	Japan	Not reported	Study protocol for a randomized controlled trial (quantitative)	Young to middle-aged workers	n_{Total} = 200 (F = NR)	To present a study protocol for an intervention designed to examine whether brief guided mindfulness meditation and self-compassion meditation, delivered via a smartphone application, are effective for mental health and work-related outcomes
Lanfranchi, Zambetti [33]	Italy	Public sector	Cross-sectional observational study (quantitative)	Mental health professionals (nurses, psychologists, physicians, educators, psychiatric rehabilitation therapists, social workers)	n_{Total} = 167 $n_{Intervention}$ = 83 $n_{Control}$ = 84 (F = 73%)	To investigate the association between participation in mountain therapy activities and levels of well-being, psychological stress, burnout, work engagement, resilience, and psychological safety among mental health professionals
Lebares, Greenberg [34]	United States	Public sector	Cross-sectional observational study (qualitative and quantitative)	Surgical residents and fellows	n_{Total} = 64 (F = 55%)	To explore individual and organizational factors associated with surgical residents' well-being, gender differences, and user perceptions of well-being initiatives

Author (year)	Country	Sector	Study Design	Population	Sample	Main Objective
Lerner, Adler [35]	United States	Mixed sector	Cross-sectional observational study + Randomized controlled trial + Quasi-experimental study (quantitative)	Adult workers with major depression, dysthymia, or persistent depressive disorder with occupational functional impairment	Study sample sizes = 25 a 431 Quantitative (n=64) Qualitative - focus group (n=9) Qualitative - Respondents (n=30–36)	To describe and evaluate the effectiveness of the Tufts Be Well at Work program in improving occupational functioning and reducing depressive symptoms among workers, including its clinical, productivity, and economic impacts
Locklear, Taylor [36]	China	Mixed sector	Randomized controlled trial (quantitative)	Full-time employees	F = 50% a 88% $_{Total}$ n = 271 $_{Intervention}$ n = 135 $_{Control}$ n = 136 (F = 52%)	To evaluate how a gratitude intervention influences workplace mistreatment and well-being
Madden, Blewitt [37]	Australia	Private sector (nonprofit)	Descriptive, exploratory study with purposive sampling (qualitative)	Working women of reproductive age and organizational executives	$_{Total}$ n = 28 (F = 89%)	To explore facilitators and barriers to healthy lifestyle practices and well-being among women of reproductive age in an Australian community services organization, capturing perspectives from both the women and workplace executives
Maddock, McGuigan [38]	Northern Ireland	Mixed sector	Randomized controlled trial (quantitative)	Social workers	$_{Total}$ n = 93 $_{Intervention}$ n = 44 $_{Control}$ n = 49 (F = not reported)	To evaluate the efficacy of a structured social work program based on mindfulness and self-care in reducing occupational stress and improving mental health outcomes among social workers in the workplace context
Maddock [39]	Northern Ireland	Not reported	Randomized controlled trial (quantitative)	Social service professionals (social workers, senior practitioners, and service	$_{Total}$ n = 94 $_{Intervention}$ n = 56 $_{Control}$ n = 38	To examine how mindfulness-based programs reduce stress and burnout among social workers

Author (year)	Country	Sector	Study Design	Population	Sample	Main Objective
				managers)	(F = 88%)	
Maddock [40]	Northern Ireland	Public sector	Cross-sectional observational study (quantitative)	Social workers	$_{Total}$ n = 121 (F = 89%)	To identify and examine potential psychological protective and risk factors explaining variations in stress and burnout levels, using a clinically modified Buddhist psychological model as the theoretical and statistical framework to assess direct and mediated pathways of influence
Mediavilla, McGreevy [41]	Spain	Public sector	Multicenter parallel-group randomized controlled trial with 1:1 allocation (quantitative)	Healthcare professionals (physicians, psychologists, nurses, nursing technicians, administrative staff)	$_{Total}$ n = 212 $_{Intervention}$ n = 106 $_{Control}$ n = 106 (F = not reported)	To evaluate the effectiveness of a stepped-care program consisting of evidence-based, low-cost psychological interventions delivered digitally in reducing symptoms of anxiety and depression among healthcare professionals with psychological distress
Melloy, Sayre [42]	United States	Mixed sector	Cross-sectional cohort quantitative study with latent profile analysis (LPA)	Full-time workers who interact with clients/public	$_{Total}$ n = 114 (F = 54%)	To examine how different emotional regulation profiles affect performance and well-being in hostile interactions
Mixafenti, Karagkouni [43]	Greece	Private sector	Cross-sectional observational study (quantitative)	Professionals directly involved in occupational health and safety, affiliated with formal companies in the construction sector	$_{Total}$ n = 35 (F = not reported)	To systematically evaluate the integration of ethical principles into occupational health and safety practices, proposing and testing an assessment framework for sustainable risk management in the workplace

Author (year)	Country	Sector	Study Design	Population	Sample	Main Objective
Mulfinger, Jarczok [44]	Germany	Mixed sector	Cluster randomized controlled trial (quantitative)	Hospital workers providing patient care	$_{Total}$ n = 462 $_{Intervention}$ n = 219 $_{Control}$ n = 243 (F = 72%)	To evaluate the effectiveness of a multilevel intervention to reduce psychosocial stress and promote mental well-being among hospital workers
Munn, Liu [45]	United States	Not reported	Cross-sectional observational study (quantitative)	Healthcare workers (nurses, healthcare technicians, advanced practice providers, anesthetists, respiratory therapists, occupational/physical/speech therapists)	$_{Total}$ n = 2459 (F = not reported)	To examine well-being and resilience among healthcare professionals during the COVID-19 pandemic
Newell, Cutrona [46]	United States	Public sector	Observational study (qualitative)	Healthcare sector workers (clinical and non-clinical professionals, innovation specialists, institutional leaders)	$_{Total}$ n = 49 (F = not reported)	To evaluate how an organizational innovation training program impacted employees' work experience and organizational support for innovation
O´Connor-Pérez, Eugenia Carballo-López [47]	Spain	Public sector	Cross-sectional study (quantitative)	Active hospital workers who participated in occupational health surveillance consultations.	n = 178 (F = 93,3%)	To evaluate the use of brief, validated screening instruments for depression and anxiety during routine occupational health surveillance, and specifically to assess the association between chronic diseases and symptoms of depression and anxiety among workers at a tertiary public hospital

Author (year)	Country	Sector	Study Design	Population	Sample	Main Objective
Penev, Zhao [48]	United States	Private sector	Retrospective matched cohort study based on administrative/claims data (quantitative)	Workers eligible for employer-sponsored health benefits	$_{Total}$ n = 13.348 (F = NR)	To evaluate the impact of a workplace mental health program based on evidence-based therapeutic practices on employer health plan expenditures, comparing program users with non-users in terms of medical and pharmaceutical costs and patterns of mental health service utilization
Pignatiello, Cuccia [49]	United States	Private sector	Cross-sectional observational study (quantitative)	Nurses	$_{Total}$ n = 2.166 (F = 94%)	To examine the association between affiliation with a partner organization of the Healthy Nurse, Healthy Nation program of the American Nurses Association and registered nurses' perceptions of their work systems and health-related quality of life
Priede, López-Álvarez [50]	Spain	Public sector	Cross-sectional observational study (quantitative)	Healthcare workers in hospital settings (physicians, nurses, nursing assistants, and other professionals)	$_{Total}$ n = 36 (F = not reported)	To describe the main characteristics and components of psychological intervention programs in mental health implemented in Spanish hospitals for healthcare workers during the first wave of COVID-19
Prudenzi, Graham [51]	England	Public sector	Randomized controlled trial (quantitative)	National Health Service healthcare professionals (general practitioners, nurses, mental health professionals, managers, administrative staff, and others)	$_{Total}$ n = 98 $_{Intervention}$ n = 52 $_{Control}$ n = 46 (F = 93%)	To evaluate the effectiveness of a workplace Acceptance and Commitment Therapy (ACT) intervention in reducing psychological stress and burnout among healthcare professionals, and to examine mediating processes of change

Author (year)	Country	Sector	Study Design	Population	Sample	Main Objective
Puschner, Stiawa [52]	Germany	Mixed sector	Cluster randomized controlled trial (quantitative)	Hospital workers	$_{Total}$ n = 415 $_{Intervention}$ n = 199 $_{Control}$ n = 216 (F = not reported)	To evaluate the implementation process of the SEEGEN intervention, analyzing dose, fidelity, and mechanisms of mediation and moderation
Radheshyam, Ramani [53]	India	Private sector	Quasi-experimental study (quantitative)	Employees aged >18 years	$_{Total}$ n = 220 $_{Intervention}$ n = 146 $_{Control}$ n = 74 (F = not reported)	To evaluate the effectiveness of a three-week meditation intervention on stress, quality of life, and well-being indices among employees enrolled in the Star Health wellness program
Rattray, Dawber [54]	Australia	Public sector	Cross-sectional observational study (qualitative and quantitative)	Nurses	$_{Total}$ n = 190 (F = 88%)	To examine the influence of participation frequency and individual attendance preferences on the perceived effectiveness of reflective practice groups and their association with professional quality of life, secondary traumatic stress, and other psychosocial outcomes
Reeves, Dyer [55]	United States	Mixed sector	Exploratory qualitative study with individual semi-structured interviews and directed content analysis	Adult professionals in high-stress environments who participated in the RISE retreat	$_{Total}$ n = 17 (F = 94%)	To explore participants' experiences in the RISE program and the perceived medium-term impact on resilience, psychological well-being, and stress management in the workplace context
Rödlund, Toropova [56]	Sweden	Public sector	Cluster randomized controlled trial (quantitative)	School workers (e.g., teachers and administrators)	$_{Total}$ n = 2276 $_{Intervention}$ n = 1206 $_{Control}$ n = 1070 (F = NR)	To evaluate the effects of different implementation strategies (single-component vs. multifaceted) on guideline fidelity among school workers, examining mechanisms of change through mediation by COM-

Author (year)	Country	Sector	Study Design	Population	Sample	Main Objective
						B model variables (Capability, Opportunity, and Motivation) and domains of the Theoretical Domains Framework (TDF)
Sanetti, Pierce [57]	United States	Public sector	Single-group intervention (pre–post design) (quantitative) Descriptive qualitative study (based on interviews and focus groups)	Teachers and public school staff	$_{Total}$ n = 39 (F = 79%)	To evaluate the feasibility and acceptability of a "Total Worker Health" approach to reducing teacher stress
Schubert, Zeschke [58]	Germany	Mixed sector	Theoretical-conceptual study (qualitative)	Adult workers in formal organizational contexts	$_{Total}$ n = 20 (F = 65%)	To develop an integrative conceptual model to understand involuntary idle time at work, explaining its antecedents (work constraints), its consequences for occupational well-being and task performance, and the role of proactive (prevention) and adaptive (coping) strategies used by workers to prevent or manage this experience
Shaw, Butcher [59]	England	Public sector	Non-experimental study (qualitative and quantitative)	Healthcare professionals working in a pediatric intensive care unit, including a multidisciplinary team	$_{Total}$ n = 163 (F = not reported)	To develop evidence-based, theoretically informed interventions to improve the well-being of professionals working in pediatric intensive care, suitable for large-scale feasibility testing

Author (year)	Country	Sector	Study Design	Population	Sample	Main Objective
Singh, Oke [60]	Nigeria	Private sector	Cross-sectional observational study (quantitative)	Workers/professionals and non-professionals (artisans)	$_{Total}$ n = 121 (F = 10%)	To identify, categorize, and empirically validate effective strategies to mitigate substance abuse in the construction industry, aiming to inform occupational health and safety practices and policies
Smith, Barratt [61]	Australia	Private sector	Cross-sectional observational study (quantitative)	Adult workers across various sectors	$_{Total}$ n = 431 (F = 61%)	To investigate how self-regulatory personality profiles influence burnout and work engagement
Tenney, Dexter [62]	United States	Mixed sector	Longitudinal observational/quasi-experimental study (quantitative)	Organizations/companies (organizational unit of analysis)	$_{Companies}$ n = 200 (F = not reported)	To evaluate the impact of the counseling component of the Health Links™ program, based on the Total Worker Health model, on the implementation of organizational practices related to health, safety, and well-being in the workplace
Turunen, Karhula [63]	Finland	Public sector	Quasi-experimental study (quantitative)	Healthcare workers (nursing and other categories)	$_{Total\ baseline}$ n = 22.329 $_{Intervention}$ n > 20.500 $_{Control}$ n > 1.700 (F = not reported)	To evaluate changes in quick returns following the 2020 reform of the Finnish Working Time Act and their association with sickness absence among public healthcare employees

Author (year)	Country	Sector	Study Design	Population	Sample	Main Objective
van Duijnhoven, de Vries [64]	Netherlands	Mixed sector	Quasi-experimental study (quantitative)	Physicians employed in healthcare services	n_{Total} = 650 $_{Intervention}$ n = 650 $_{Control}$ n = not applicable (F = NR)	To analyze the effects of an organizational intervention on physicians' sustainable employability, examining the mediating role of Psychosocial Safety Climate and process factors in the success of the intervention
Xiang, Cheng [65]	United States	Private sector	Mixed-methods study with a convergent parallel design, combining a quantitative survey and semi-structured qualitative interviews (quantitative and qualitative)	Caregivers from private home care agencies	<u>Quantitative study</u> $_{Total}$ n = 114 (F = 91%) <u>Qualitative study</u> $_{Total}$ n = 18 (F = 100%)	To examine caregivers' knowledge, beliefs, and attitudes toward late-life depression and to describe experiences and practice behaviors in caring for older adults with depressive symptoms
Yang, Huang [66]	China	Mixed sector	Cross-sectional observational study (quantitative)	Workers/employees in organizational settings (employed adults)	$_{Total}$ n = 300 (F = not reported)	To evaluate how workplace digitalization influences employees' well-being at work, examining the mediating roles of job demands and digital anxiety in this relationship
Yap, Zainal [67]	Singapore	Public sector	Quasi-experimental study without a control group (quantitative) Descriptive qualitative study (with thematic analysis)	Healthcare professionals (physiotherapists, occupational therapists)	$_{Total}$ n = 14 Completed burnout questionnaires/scales (n=14) Participated in in-depth interviews (n = 10) (F = 86%)	To explore the use of mindfulness for burnout prevention among healthcare professionals in Singapore

Author (year)	Country	Sector	Study Design	Population	Sample	Main Objective
Zhang, Huang [68]	China	Public sector	Observational study (qualitative)	Healthcare professionals (hospital managers, department directors, physicians, nurses, and occupational health management professionals)	$_{Total}$ n = 10 (F = 70%)	To document experiences, organizational changes, and lessons learned from the implementation of HealthWISE in a Chinese public hospital over more than five years, including the COVID-19 pandemic period

NR: not reported; SEEGEN: Seelische Gesundheit am Arbeitsplatz; RISE: Resilience, Inegration, Self-Awareness, Engagement

BJP PRE-PRO

Supplementary Table S1B Geographic distribution of included records by continent or region

Continent	n
Europe	30
North America	19
Asia	11
Oceania	5
Africa	1
Global	1
Not reported	1

Note. Country and regional classifications were based on the location reported for each included record in Supplementary Material S1A.

Supplementary Table S1C Most frequent countries among included records

Country	n
United States	19
Germany	5
China	5
Spain	5
Australia	5
United Kingdom / regions	5
Sweden	3
Netherlands	3

BJP PRE-PROOF

Supplementary Table S2 Types of workplace mental health practices and evidence sources identified (n = 68)

Study (Author, year)	Evidence status	Study description	Classification (Promotion, Prevention, Screening, Intervention)	Level (Individual, Organizational, Structural)	Theoretical Framework	Instruments Used	Key Findings
Bernburg, Groneberg [1]	Tested intervention with outcome data	Delivery of a mental self-care training program consisting of three in-person modules of 180 minutes each	Prevention Intervention	Individual	Job Demands–Resources Model Cognitive Behavioral Theory	General Health Questionnaire (GHQ-12) Perceived Stress Scale (PSS-10)	A significant reduction in perceived stress and improvement in mental health were observed in the intervention group
Bonde, Mikkelsen [2]	Tested intervention with outcome data	Mandatory introductory session (2 hours) on mental health and mindfulness during working hours + Mindfulness course (10 weeks), delivered live online, with weekly 90-minute sessions and weekly instructor supervision + Implementation workshop (2 hours) for managers and employee representatives (planning / barriers / facilitators)	Promotion Prevention Intervention	Organizational	-	Perceived Stress Scale (PSS-10) Hopkins Symptom Checklist-5 (SCL-5) Short Warwick–Edinburgh Mental Well-Being Scale (SWEMWBS) Brief Resilience Scale (BRS) Experiences Questionnaire (EQ) – Decentering subscale Adapted version of the Karolinska Sleep Questionnaire Danish Workplace Social Capital Questionnaire Short Negative Acts Questionnaire (S-NAQ) Edmondson's Psychological Safety Scale Attendance at the introductory session, course adherence, and	Cognitive decentering showed significant improvement at 12 months compared with baseline Perceived stress, symptoms of depression/anxiety, well-being, and resilience showed no sustained significant changes at 3 or 12 months No consistent improvements in sleep indicators were observed throughout follow-up A reduced likelihood of occasional experiences involving negative acts/bullying was observed at 3 months Workplace social capital and psychological safety showed mixed results, including a significant decline in the linking–immediate management domain at 12 months

Study (Author, year)	Evidence status	Study description	Classification (Promotion, Prevention, Screening, Intervention)	Level (Individual, Organizational, Structural)	Theoretical Framework	Instruments Used	Key Findings
						participation in the organizational workshop	
Cedstrand, Augustsson [3]	Tested intervention with outcome data	The organizational intervention integrated role clarity (duties clarification), involving the definition and ongoing review of responsibilities, and structured roundmaking, focused on planning and monitoring activities. Its implementation was supported by the Production Academy, a structured training program with management and leadership modules, using workshops, follow-ups, and workplace-based practical learning.	Promotion Prevention Intervention	Organizational	Behavior Change Wheel	Copenhagen Psychosocial Questionnaire – Version III	Implementation fidelity was considered reasonably high No significant between-group effect on stress was observed over time All variables, except "role clarity," worsened in both groups during the study period (pandemic) A clinically meaningful improvement in "role clarity" was observed in the intervention group, particularly among professionals and frontline managers

Study (Author, year)	Evidence status	Study description	Classification (Promotion, Prevention, Screening, Intervention)	Level (Individual, Organizational, Structural)	Theoretical Framework	Instruments Used	Key Findings
Chaiear, Sirisawasd [4]	Screening / assessment study	Screening / assessment of work-related quality of life using the Thai Work-Related Quality of Life Scale-2, administered via the web.	Screening	Individual	-	Web-based version of the Thai Work-Related Quality of Life Scale-2 (Thai WRQLS-2)	The Thai web-based version of the Work-Related Quality of Life Scale-2 is a valid and reliable alternative to the paper-based version for assessing work-related quality of life, including dimensions relevant to occupational mental health
Costa, Santos [5]	Protocol / planned intervention without outcome data	Study protocol describing a brief group-based intervention encompassing psychoeducation based on cognitive behavioral therapy, mindfulness e-training, an additional arm with biofeedback (wearables) + a private area on a website/app, and access to e-mental health literacy materials.	Promotion Prevention	Individual	Cognitive Behavioral Therapy	Hospital Anxiety and Depression Scale (HADS) Edinburgh Postnatal Depression Scale (EPDS) Mental Health Literacy Scale (MHLS) Brief COPE Inventory (Brief COPE) Self-Report of Happiness (SRH)	Not applicable; study protocol without outcome data
Dalgaard, Kirkegaard [6]	Tested intervention with outcome data	The intervention consists of a participatory, multilevel organizational	Promotion Intervention	Individual	Occupational Stress Model	Danish Psychosocial Questionnaire (DPQ) Perceived Stress Scale (PSS-10) Psychosocial Safety	Small improvements in the psychosocial work environment, with reduced demands and improvements in psychosocial climate and leadership

Study (Author, year)	Evidence status	Study description	Classification (Promotion, Prevention, Screening, Intervention)	Level (Individual, Organizational, Structural)	Theoretical Framework	Instruments Used	Key Findings
		approach. The strategy is operationalized through a train-the-trainer model, in which external consultants train internal facilitators to conduct risk assessment workshops across all levels of the organization. In these workshops, teams develop local action plans to mitigate psychosocial risks; issues that cannot be resolved at the group level are escalated to higher management levels for decision-making and institutional action planning.				Climate Questionnaire (PSC-4) Empowering Leadership Questionnaire (ELQ) Process/implementation evaluation questionnaire	A slight increase in job satisfaction, with no significant effect on stress Partial and variable implementation of the intervention across units
Davis, Bailey [7]	Observational evidence on determinants	Multicomponent wellness initiative (social activities, workshops, and healthy snacks)	Promotion	Individual Organizational	Well-being Models in Medical Education	ACGME Well-Being Survey Brief Resilience Scale	Increased self-reported resilience among residents, although burnout levels remained stable

Study (Author, year)	Evidence status	Study description	Classification (Promotion, Prevention, Screening, Intervention)	Level (Individual, Organizational, Structural)	Theoretical Framework	Instruments Used	Key Findings
De Angelis, Giusino [8]	Protocol / planned intervention without outcome data	Study protocol describing multilevel workplace mental health promotion interventions integrated into an intervention package (H-WORK Intervention Toolbox), a structured portfolio of practical actions selected according to the needs identified within the organization. The interventions are predominantly psychoeducational, organizational, and behavioral, and may be delivered in person or digitally.	Promotion Prevention	Individual Organizational	Job Demands–Resources Model Positive Psychology IGLO Model (individual, group, leader, organization)	Standardized questionnaires (psychometric scales) Online questionnaire developed for the study (H-WORK survey) Semi-structured interviews Focus groups WISH questionnaire (Workplace Integrated Safety and Health Assessment) Psychosocial Safety Climate Scale Participant self-assessments Organizational reports / administrative data (HR): absenteeism; presenteeism; productivity; healthcare costs	Not applicable; study protocol without outcome data
de Bruin, Valentin [9]	Tested intervention with outcome data	Mindful2Work program: 6 weeks of mindful physical activity, restorative yoga, and mindfulness meditations, with a follow-up session	Promotion Prevention Intervention	Individual Organizational	-	Perceived Stress Scale (PSS) Checklist Individual Strength (CIS) Depression Anxiety Stress Scales (DASS-21) Positive and Negative Affect Schedule (PANAS) Happiness and Subjective	Significant and sustained reductions in stress and risk of work absenteeism after the intervention, maintained for up to one year Moderate to large improvements in depression, anxiety, positive affect, happiness, and job satisfaction Reduction in negative affect, sleep

Study (Author, year)	Evidence status	Study description	Classification (Promotion, Prevention, Screening, Intervention)	Level (Individual, Organizational, Structural)	Theoretical Framework	Instruments Used	Key Findings
						Well-Being Questionnaire (HSDQ) Four-Dimensional Symptom Questionnaire (4-DSQ) Work Ability Index Five Facet Mindfulness Questionnaire – Short Form Self-Compassion Scale – Short Form Cognitive Emotion Regulation Questionnaire Personal Goal Scales	problems, and somatization Increased mental and physical work ability Improvement in mindfulness, self-compassion, and adaptive emotion regulation strategies Personal goals showed large to very large effects Interviews indicated gains in well-being and skill acquisition (awareness, slowing down, acceptance, compassion)
Deng, Huang [10]	Observational evidence on determinants	Not applicable Identification of organizational strategies aimed at reducing emotional demands and strengthening workplace resources	Promotion Prevention	Organizaational	Job Demands–Resources Model	Employee Well-Being Scale Questionnaire on Occupational Resources and Constraints	Job resources had a strong positive effect on overall well-being and across all its domains Job demands did not affect overall well-being but had a negative impact on work-related well-being Emotional workload was the main negative predictor of well-being Relationships with supervisors and colleagues were the resources most strongly associated with well-being
Díaz-Benito, Barriopedro Moro [11]	Tested intervention with outcome data	PRODET®: A supervised group exercise program lasting 12 weeks, delivered in the	Promotion Prevention Intervention	Individual	-	SF-36v2 (Short Form 36 Health Survey, version 2) iMTA Productivity Cost Questionnaire (iPCQ) 2-km Walk Test (or UKK	A 12-week supervised workplace exercise program had an impact on strength, endurance, reduction in body fat percentage, and quality of life as measures of workplace well-

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		workplace twice weekly, with 50-minute sessions during working hours. The program focuses on aerobic endurance and strength training, and also provides 12 online cards on health promotion, nutrition, and healthy lifestyle.				protocol) for estimated VO_2max, Sit-and-Reach Test, Handgrip Dynamometry, Vertical Jump, Standing Long Jump, Abdominal Test, Plate Tapping Test, Flamingo Balance Test, anthropometry, and body fat percentage.	being. No significant effects on presenteeism were observed between the intervention and control groups. Absences over the previous year were higher in the control group after the intervention program.
Doyle Fosco, Schussler [12]	Tested intervention with outcome data	CARE program (Cultivating Awareness and Resilience in Education): an intensive training program totaling 30 hours (delivered over 4 to 5 days), with daily 15–20-minute practices and an 8-week follow-up with booster sessions	Promotion Intervention	Individual	-	Single-Item Acceptability Scale (for the "single item") Patient Health Questionnaire-4 (PHQ-4) Maslach Burnout Inventory – Educators Survey (MBI-ES) Five Facet Mindfulness Questionnaire-15 (FFMQ-15) Emotion Regulation Questionnaire (ERQ) Retrospective Post-Program Survey (Likert scale)	Variable acceptability among educational leaders Dissatisfaction related to the duration/intensive format of the program Few leaders reported a perceived reduction in occupational stress All follow-up participants reported weekly use of at least two skills/practices learned

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Elder, Johnston [13]	Qualitative / implementation evidence	Identification, based on emergency clinicians' reports, of core components for developing an occupational well-being promotion strategy in emergency departments.	Promotion Prevention	Individual Organizational	-	Nominal Group Technique	Proposed strategies: group psychological support, formal and informal debriefings, team-building activities, yoga, soft-skills training, use of a positive mobile application, social activities, and initiatives to strengthen team cohesion.

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Elling, Almquist [14]	Tested intervention with outcome data	APMaT (Alcohol Policy and Manager Training): development and implementation of an organizational alcohol policy with an operational plan Skills training for managers (in-person workshops, two 3.5-hour sessions) focused on early identification and conducting dialogue	Prevention Intervention	Individual Organizational	-	Inclination to Initiate Early Alcohol Intervention Scale (developed by the authors) Alcohol Use Disorders Identification Test	Managers in the intervention group showed a significant increase in confidence to initiate conversations about alcohol and a reduced need for prior confirmation of risky drinking before intervening An increased perceived need for employee recognition of the problem was observed (an unintended effect); the effects remained significant after adjustment for policy knowledge, previous actions, and number of subordinates APMaT is effective in modifying managerial attitudes, although it does not assess direct employee outcomes
Engels, Scheepers [15]	Screening / assessment study	System P: an integrated web-based platform comprising a simplified psychosocial risk assessment (organizational structural intervention) and online stress management training	Prevention	Individual Organizational	Occupational Stress Models Implementation Science using the Consolidated Framework for Implementation Research (CFIR) and the implementation outcomes framework	Implementation outcomes: adoption, reach, penetration, fidelity/dose, acceptability, and costs Psychosocial Safety Climate Questionnaire – 4 items Patient Health Questionnaire – 8 items Affinity for Technology Interaction – Short Scale Readiness-for-change	Very low adoption (<1% of contacted MSEs) MSEs that adopted the intervention already had a strong psychosocial culture and prior experience Limited penetration (15% of employees) Low fidelity (no MSE completed the full psychosocial risk assessment cycle) The online stress management training was initiated by 25 users,

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		(individual behavioral intervention), in addition to educational components (lexicon, FAQ, videos, and forum)				scales Objective platform use metrics	but only 8 completed it Acceptability and usability were rated as good; however, perceived indirect costs (time) and complexity were key barriers The intervention was considered appropriate but not feasible without additional external support
Erby and Blustein [16]	Qualitative / implementation evidence	Explores experiences of workplace racism and the role of racial identity in well-being.	Screening	Individual Organizational	Work Psychology Critical Race Theory	Semi-structured interviews	Systemic workplace racism severely affects the mental health and career progression of Black individuals.
Fatemi, Vagharseyyedin [17]	Tested intervention with outcome data	Mindfulness-Based Stress Reduction program, delivered over 8 weekly sessions of 120 minutes each, for 8 weeks.	Promotion Intervention	Individual	-	Workplace Well-Being Questionnaire (WWQ) Jefferson Scale of Empathy	Significant increase in nurses' workplace well-being and clinical empathy.
Fantus, Cole [18]	Qualitative / implementation evidence	Explores experiences of moral injury and factors affecting the well-being of social workers and physicians.	Screening	Individual Organizational	Moral Injury Theory Ethics of Care	Semi-structured interviews	Ethical conflicts and lack of systemic support lead to moral injury Clinical supervision is a key protective resource

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Foster, Shochet [19]	Tested intervention with outcome data	In-person group-based workplace program delivered through two full-day face-to-face workshops, three weeks apart, with booster activities.	Promotion Intervention	Individual	Cognitive Behavioral Theory Interpersonal Theory Post-Traumatic Growth Theory	Coping Self-Efficacy Scale – Short Form (CSES-13) Kessler Psychological Distress Scale (K10) Mental Health Continuum – Short Form (MHC-SF) Brief Resilience Scale (BRS) Posttraumatic Growth Inventory (PTGI) Genos Emotional Intelligence Inventory – Short (GENOS-EI) Psychological Sense of Organizational Membership – Sense of Belonging subscale (PSOM) Turnover Intention Scale (TIS)	Coping self-efficacy showed a significant increase post-intervention, which was maintained at three months Psychological distress showed a significant and sustained reduction over follow-up Psychological well-being showed a significant increase post-intervention and at three months Resilience showed significant immediate and sustained improvement, with a greater effect at follow-up Post-traumatic growth showed a significant increase at both time points Emotional intelligence showed a significant improvement only at immediate post-intervention Organizational belonging showed a significant improvement only at the three-month follow-up Turnover intention showed no statistically significant effect

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Goetze [20]	Observational evidence on determinants	Explores the relationship between self-efficacy, emotional intelligence, and occupational stress among teachers	Screening	Individual	Social Cognitive Theory Emotional Intelligence Theory	Teacher Self-Efficacy Scale Trait Emotional Intelligence Questionnaire	Self-efficacy and emotional intelligence act as significant predictors of lower occupational stress
Goodwyn, Beech [21]	Qualitative / implementation evidence	Explores the experience of air force pilots involved in peer coaching programs	Promotion	Individual	-	Semi-structured interviews Anonymous questionnaires with open-ended questions	Peer coaching is perceived as a valuable strategy to strengthen mental well-being, promote the mitigation of hazardous attitudes and dysfunctional behaviors, and reinforce the psychosocial safety climate, as well as to positively impact operational safety
Guido, Peruzzi [22]	Tested intervention with outcome data	Team-building course integrated with clay therapy	Promotion Prevention Intervention	Organizational	-	Maslach Burnout Inventory Toronto Alexithymia Scale Difficulties in Emotion Regulation Scale	Significant reductions in burnout, emotional exhaustion, depersonalization, and alexithymia Significant improvement in emotion regulation
Hale, Lim [23]	Observational evidence on determinants	Explores individual and organizational factors that contribute to nurses' well-being	Screening	Organizational Individual	Lazarus and Folkman's Stress and Coping Model	World Health Organization Well-Being Index (WHO-5) Copenhagen Burnout Inventory	Management support and sense of coherence were the strongest predictors of high well-being and low burnout

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Rose, Smith [24]	Tested intervention with outcome data	Twelve-week integrative health and wellness coaching program comprising six group sessions and six individual sessions, followed by a randomized text-message maintenance strategy between weeks 12 and 18	Promotion Intervention	Individual	Motivational Interviewing Positive Psychology Transtheoretical Model of Behavior Change Self-Determination Theory	Perceived Stress Scale (PSS-10) Patient-Reported Outcomes Measurement Information System Global Health Scale (PROMIS-10)	Mental health, physical health, and perceived stress improved significantly from baseline to 12 weeks. Improvements in physical health and stress remained significant at 18 and 24 weeks, whereas the text-message maintenance strategy did not enhance outcomes. The uncontrolled primary intervention design limits causal inference.
Harris, Amano [25]	Qualitative / implementation evidence	Explores leader-reported practices related to trauma-informed care during the pandemic	Promotion	Organiational	-	Semi-structured interviews	Leadership practices used by healthcare leaders during the COVID-19 pandemic were associated with the promotion of psychological safety, trust, and emotional support within teams Strategies highlighted included frequent and transparent communication, active listening, regular well-being check-ins, validation of workers' emotional experiences, and modeling of healthy behaviors, which contributed to reducing stress, psychological distress, and risk of burnout However, insufficient support for leaders themselves was also reported, along with limited availability of institutional spaces for collective emotional processing

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							and insufficient attention to cultural, historical, and gender-related factors
Heredia, Ventura [26]	Tested intervention with outcome data	Mindfulness training program: 90 minutes per session; 1 session per week; 8 weeks	Promotion Prevention Intervention	Individual	-	Perceived Stress Scale (PSS) Five Facet Mindfulness Questionnaire (FFMQ)	Significant reduction in perceived stress and increase in mindfulness levels
Jacobson, Westein [27]	Qualitative / implementation evidence	Participatory and ongoing strategy for sharing professional motivations in the workplace, using written notes displayed in a common area	Promotion	Individual Organizational	Positive Psychology	Qualitative data collection through open-ended responses	Nine motivational themes, consolidated into three categories: team-centered motivators (51%), patient-centered (24.8%), and personal reward-centered (24.2%) The most frequent motivator was teamwork Professional relationships, sense of belonging, and shared purpose are central to well-being in emergency settings

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Jiang, Song [28]	Observational evidence on determinants	Explores how COVID-19 workload affected mental health through work–family conflict	Prevention Screening	Individual Organizational	Conservation of Resources Theory	Kessler Psychological Distress Scale (K10) Work–Family Conflict Scale	Excessive workload increased mental distress via work–family conflict, but social support mitigated the effect
Kaur, Arora [29]	Observational evidence on determinants	Explores factors that affected work–life balance during COVID-19	Screening	Organizational	Social Exchange Theory	Adapted Work–Life Balance (WLB) Scale	Workload and stress were the main barriers to work–life balance Organizational support was crucial for employee well-being
Klasen, van Amelsvoort [30]	Qualitative / implementation evidence	Explores facilitators and barriers to the adoption of an indicated prevention strategy in occupational mental health (screening + early consultation + early treatment)	Prevention	Individual	-	Balansmeter (BM) – screening questionnaire Semi-structured interview	Facilitators/barriers to the adoption/implementation of the Indicated Prevention Strategy (IPS) are related to values (responsibility for health/absenteeism) and the organization's health culture Fear of privacy violations is an important barrier, along with practical barriers (time required to complete, communication, low frequency)
Kuronen, Winell [31]	Screening / assessment study	Health Check-Ups (HCUs) constitute a structured intervention in disability	Prevetion Intervention	Individual Organizational	-	Structured Health Check-Up (HCU) records from Occupational Health Care (OHC)	Supervisors and OHC largely adhered to legal recommendations Employees initiated Health Check-Ups for early support more frequently than supervisors

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		management, involving the assessment of disability risk, the development of a health promotion plan, return-to-work planning, and tripartite negotiation among the worker, employer, and occupational health team, with the aim of adapting working conditions and restoring or maintaining the individual's functional capacity.					OHC initiated Health Check-Ups more frequently for prolonged sick leave and musculoskeletal disorders, and less frequently for mental disorders Rehabilitation was recommended more frequently for musculoskeletal disorders than for mental disorders The likelihood of recommending rehabilitation increased with the duration of sick leave (≥90 days)
Kurosawa, Adachi [32]	Protocol / planned intervention without outcome data	Study protocol of a digital intervention with brief guided meditations (approximately 6–12 minutes/day) over 4 weeks	Promotion Prevention	Individual	-	Kessler Psychological Distress Scale (K6) Perceived Stress Scale (PSS-14) Positive and Negative Affect Schedule (PANAS) World Health Organization Health and Work Performance Questionnaire (WHO-	Not applicable; study protocol without outcome data

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						HPQ) Stanford Presenteeism Scale Utrecht Work Engagement Scale (UWES-9) Self-Compassion Scale Rosenberg Self-Esteem Scale Cognitive Flexibility Scale Heart rate Heart rate variability	
Lanfranchi, Zambetti [33]	Tested intervention with outcome data	Group activities in a natural/mountain environment (primarily hiking), integrating physical exercise, group reflection, and social interaction	Promotion Prevention Intervention	Individual Organizational	Demand–Control–Support Model Well-Being Psychology Attention Restoration Theory	General Health Questionnaire – 12 items Maslach Burnout Inventory Utrecht Work Engagement Scale – 9 items Resilience Scale – 14 items Edmondson's Psychological Safety Scale	Professionals who participated in mountain therapy activities showed lower overall psychological distress and lower general dysphoria compared with non-participants No significant overall differences were observed in burnout, resilience, or psychological safety between groups Higher participation frequency (>1×/month) was associated with lower distress, lower depersonalization, higher vigor, and greater resilience Within the mountain therapy group, during the activities, significantly higher levels of engagement (vigor, dedication, involvement) and greater psychological safety (overall and self-expression) were observed compared with usual

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							work activities
Lebares, Greenberg [34]	Tested intervention with outcome data	Multicomponent well-being program: individual interventions (enhanced stress resilience training, mindfulness/affective self-regulation) + organizational interventions (advance scheduling of days off, "wellness half-days," a resident-led well-being committee, administrative improvements)	Promtion Prevention Intervention	Individual Organizational	Broaden-and-Build Theory Job Demands–Resources Model	Maslach Burnout Inventory Perceived Stress Scale Patient Health Questionnaire – 2 items Alcohol Use Disorders Identification Test State–Trait Anxiety Inventory Cognitive and Affective Mindfulness Scale – Revised Mental Health Continuum–Short Form Demand–Control–Support Questionnaire Focus group	Women showed a higher prevalence of depersonalization and lower mindfulness compared with men Time constraints and scheduling conflicts were the main barriers to using the initiatives Participants valued training in affective self-regulation, advance scheduling of days off, quality of work (rather than quantity), and responsive organizational systems
Lerner, Adler [35]	Tested intervention with outcome data	Tufts Be Well at Work: a structured telephone-based program (8 biweekly sessions of approximately 50 minutes over 16 weeks), integrating electronic screening, coaching, and work modification, work-focused cognitive	Intervention	Individual Organiza	Cognitive Behavioral Therapy	Patient Health Questionnaire (PHQ-9) Work Limitations Questionnaire (WLQ) Work Limitations Questionnaire – Time Loss Module (WLQ-TLM) Cost–benefit analysis (health and productivity costs)	Randomized clinical trials demonstrated that the Be Well at Work intervention produced significant reductions in depressive symptoms and consistent improvements in productivity and occupational functioning compared with usual care; observational and pilot studies showed similar improvements, although without comparative control, while quasi-experimental (pre–post) studies

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		behavioral therapy, psychoeducation, and care coordination					confirmed clinically and functionally meaningful gains, including reduced productivity losses and positive economic return
Locklear, Taylor [36]	Tested intervention with outcome data	Gratitude intervention: listing three good things at the end of each day for 10 days	Promotion Prevention Intervention	Individual	Positive Psychology	Gratitude Scale Workplace Mistreatment Scale	The intervention increased gratitude, which reduced both perpetrated and experienced workplace mistreatment among employees
Madden, Blewitt [37]	Qualitative / implementation evidence	Explores facilitators and barriers to a healthy lifestyle and well-being among women in community services of reproductive age, based on the perspectives of both the women and workplace executives	Promotion Prevention	Organizational	Socioecological and organizational perspective on occupational mental health	Semi-structured interview guides Focus groups Demographic questionnaire	The health and well-being of working women during the preconception, pregnancy, and postpartum periods are strongly determined by organizational and structural factors, rather than by individual lifestyle choices
Maddock, McGuigan [38]	Tested intervention with outcome data	Structured psychosocial mindfulness-based intervention, preventive/therapeutic, delivered in an occupational context, 90 minutes per session, once weekly	Intervention	Individual	Clinically modified Buddhist psychological model	Perceived Stress Scale (PSS) Maslach Burnout Inventory (MBI) Hospital Anxiety and Depression Scale (HADS) Warwick–Edinburgh Mental Well-being Scale (WEMWBS)	The Mindfulness-Based Social Work and Self-Care program was significantly more effective than the active mindfulness/self-compassion control in reducing occupational stress, emotional exhaustion (burnout), anxiety, depression, and worry among social workers, with moderate effect sizes

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		for 6 weeks, conducted online and led by trained facilitators				Southampton Mindfulness Questionnaire (SMQ) Experiences Questionnaire – Decentering (EQ-D) Philadelphia Mindfulness Scale (PHLMS)	
Maddock [39]	Tested intervention with outcome data	Group-based, online mindfulness programs delivered for 20–30 minutes per session, 6 days per week, for 6 weeks	Intervention	Individual	Modelo psicológico budista clinicamente modificado	Perceived Stress Scale – 10 items (PSS-10) Maslach Burnout Inventory (MBI) Southampton Mindfulness Questionnaire (SMQ) Experiences Questionnaire – Decentering (EQ-D) Philadelphia Mindfulness Scale – Acceptance Subscale (PHLMS-A) Self-Compassion Scale – Short Form (SCS-SF) Penn State Worry Questionnaire (PSWQ) Rumination Reflection Questionnaire (RRQ)	Mindfulness programs demonstrated direct and indirect effects in reducing stress and burnout, with different psychological domains (mindfulness, self-compassion, attentional regulation, and non-aversion) operating through multiple pathways, particularly via reductions in worry and rumination, indicating complex and interdependent mechanisms of change
Maddock [40]	Observational evidence on determinants	Guidance for structured programs (e.g., mindfulness-based programs, cognitive behavioral therapy) in the workplace	Promotion Prevention	Individual Organizational	Clinically modified Buddhist psychological model	Perceived Stress Scale (PSS-10) Maslach Burnout Inventory (MBI) Southampton Mindfulness Questionnaire (SMQ) Philadelphia Mindfulness	The study identified worry and rumination as the primary psychological risk factors for stress and occupational burnout, whereas mindfulness domains (acceptance, self-compassion, decentering, non-attachment, and non-aversion)

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						Scale – Acceptance Subscale (PHLMS-A) Experiences Questionnaire – Decentering (EQ-D) Self-Compassion Scale – Short Form Rumination Reflection Questionnaire (RRQ)	function as key protective factors, operating through both direct pathways and pathways mediated by reductions in repetitive negative thinking. These findings support the clinically modified Buddhist psychological model as an effective framework for mitigating emotional exhaustion and depersonalization, and for promoting personal accomplishment among professionals exposed to high occupational demands
Mediavilla, McGreevy [41]	Protocol / planned intervention without outcome data	Study protocol of a stepped-care program: a single telephone session (~15 minutes); a guided stress management course delivered via a mobile website, consisting of 5 modules over 5 weeks + support from a "helper" via phone/messages; Problem Management (PM) + 5 weekly sessions via videoconference (~60	Prevention Intervention	Individual	Congnitive Behavioral Therapy (CBT)	Kessler Psychological Distress Scale (K10) Patient Health Questionnaire–Anxiety and Depression Scale (PHQ-ADS) Patient Health Questionnaire-9 (PHQ-9) Generalized Anxiety Disorder-7 (GAD-7) Post-traumatic Stress	Not applicable; study protocol without outcome data

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		minutes), offered only if no reduction in distress is observed after the telephone session					
Melloy, Sayre [42]	Observational evidence on determinants	Not applicable Explores how different emotional regulation profiles affect performance and well-being in hostile interactions	Prevention	Individual	Process Model of Emotion Regulation	Emotion Regulation Questionnaire (ERQ), Positive and Negative Affect Schedule (PANAS), and Ecological Momentary Assessment (EMA) via smartphone	Profiles that adaptively combine cognitive reappraisal and expressive suppression optimize performance in hostile events
Mixafenti, Karagkouni [43]	Observational evidence on determinants	Evaluates the integration of ethical principles into occupational health and safety practices, proposing and testing an evaluation framework for the sustainable management of workplace risks	Promotion Prevention	Organizational	-	Structured questionnaire developed by the authors, including items on demographic and professional characteristics; OHS compliance; health and safety performance; and proactive OHS and well-being measures	Lower absenteeism Ethical leadership was associated with better OHS practices Systematic OHS training improved organizational readiness Well-being and motivation initiatives reduced long-term absences Greater implementation of safety measures improved health surveillance
Mulfinger, Jarczok [44]	Tested intervention with outcome data	Five modules: [AS1.1] senior management training; management of dilemmas; promotion of relational	Promotion Prevention Intervention	Individual Organizational	IGLO Model (individual, group, leader, and organization)	Irritation Scale (IRR) WHO-5 Well-Being Index (WHO-5) Psychosocial Safety Climate Questionnaire (PSC-12)	The intervention did not show a significant effect on mental health outcomes (irritation, well-being, and psychosocial safety climate) compared with the control group

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		leadership competencies for stress prevention; work–family balance; maintenance of health at work + Roundtable discussions with stakeholders to synthesize feedback and formulate/refine proposals for organizational improvements					

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Munn, Liu [45]	Observational evidence on determinants	Evaluates existing organizational strategies and practices (modifiable environmental factors), such as organizational emotional support, leadership, psychological safety, workload, availability of PPE, institutional policies, and educational resources	Promotion Prevention	Organizational	National Academy of Medicine conceptual model	Well-Being Index (WBI) Connor–Davidson Resilience Scale (CD-RISC-10) Psychological Safety Scale (adapted version) Study-specific items for assessing the work environment during the pandemic (leadership, workload, PPE, policies, emotional support), developed by the authors	A substantial proportion of healthcare professionals experienced compromised well-being during the COVID-19 pandemic, with a high risk of burnout Organizational factors, such as supportive leadership, psychological safety, institutional emotional support, appropriate workload, and resource availability, were strongly associated with greater resilience and better well-being Work overload, low psychological safety, and perceived insufficient support were associated with poorer mental health outcomes
Newell, Cutrona [46]	Qualitative / implementation evidence	Veterans Health Administration Innovators Network (iNET) organizational innovation training program: training in human-centered design, lean management, and project management;	Promotion	Organizational	Organizational Innovation Support Domains Model	Semi-structured interviews	Workers reported re-energization, higher job satisfaction, increased engagement, a stronger sense of purpose and recognition, improved relationships with leadership, and a perception of a safer environment for taking risks and innovating Negative experiences were rare and primarily related to a lack of protected time, as well as bureaucratic and logistical barriers

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		staged funding (spark–seed–spread); mentorship, coaching, and facilitation; creation of collaborative networks and centralized administrative support (core components)					iNET strengthens an organizational culture supportive of innovation, expands formal channels for ideas, promotes catalytic leadership, and enhances interprofessional collaboration
O´Connor-Pérez, Carballo-López [47]	Screening / assessment study	Psychosocial screening of hospital professionals	Screening	Individual	Occupational Mental Health / Psychosocial Risk Framework	(GAD-7) Generalized Anxiety Disorder Scale (PHQ-9) Patient Health Questionnaire (for depression)	Professionals with chronic illnesses reported 197% higher rates of depression and 159% higher rates of anxiety .
Penev, Zhao [48]	Tested intervention with outcome data	Lyra Health Workforce Mental Health Program (WMHP): online portal–based access to curated providers delivering evidence-based psychotherapy; rapid scheduling; employer-covered costs (no copayment)	Intervention	Individual	-	Administrative claims data (medical and pharmacy) (costs, service utilization, and diagnoses via ICD-10)	Lower costs for Workforce Mental Health Program users and per person per year (PPPY) Lower mental health and prescription expenditures 50% of the reduction was attributable to the shift of therapy from the medical plan to the Workforce Mental Health Program Users had more total mental health visits, but fewer visits under the medical benefit

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							Lower mental health–related emergency department utilization (per 1,000 members) in both years
Pignatiello, Cuccia [49]	Observational evidence on determinants	Multicomponent intervention based on the Healthy Nurse, Healthy Nation program. At the individual level, it provides a digital platform with health content, challenges, and support. At the organizational level, it involves institutional engagement with actions to improve the work environment. It focuses on reducing job demands and increasing resources and well-being among nurses.	Promotion	Organizational	Job Demands–Resources Model	Job Demands based on the National Survey of the Work and Health of Nurses Job Resources Scale (developed by the authors) General health – single-item CDC self-rated health measure Mental health – dichotomous item on the presence of depressive symptoms for ≥ 2 weeks in the past year, aligned with DSM-5 criteria for major depressive episode Social health – number of days in the past 30 days in which health problems limited usual activities, derived from a question used by the Centers for Disease Control and Prevention (CDC) in the Health-Related Quality of Life (HRQOL) system	Nurses affiliated with Healthy Nurse, Healthy Nation partner organizations reported lower job demands and higher job resources compared with non-affiliated nurses No significant direct effects of affiliation with Healthy Nurse, Healthy Nation were observed on health-related quality of life (general, mental, and social) Significant indirect effects were identified, whereby affiliation with HNHN improves job demands and resources, which in turn enhances work-related quality of life (general, mental, and social)

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Priede, López-Álvarez [50]	Observational evidence on determinants	Explores the main characteristics and components of psychological intervention programs for mental health implemented in Spanish hospitals during the first wave of COVID-19	Promotion Prevention Intervention	Individual	-	Ad hoc questionnaire, developed specifically for the study	The intervention consisted of emergency (ad hoc) psychological support programs delivered in a hybrid format, including in-person, online, and telephone modalities. The actions comprised individual and group sessions incorporating components such as psychoeducation, Cognitive Behavioral Therapy (CBT) techniques, mindfulness, and relaxation. Additionally, some initiatives integrated the use of pharmacotherapy and multimedia resources to support professionals.
Prudenzi, Graham [51]	Tested intervention with outcome data	Workplace Acceptance and Commitment Therapy: four in-person group sessions (2 hours each over 4 weeks), including mindfulness, values-based exercises, cognitive defusion, acceptance, and home practice	Intervention	Individual Organizational	Conservation of Resources Theory	General Health Questionnaire – 12 items Shirom–Melamed Burnout Measure Affective Rumination Scale Perseverative Cognition Scale Safe Practitioner Measure Five Facet Mindfulness Questionnaire – Short Form (FFMQ-SF) Valuing Questionnaire	Acceptance and Commitment Therapy resulted in a significantly greater reduction in psychological distress in the intervention group compared with the control (small to moderate effect) Forty-eight percent of participants in Acceptance and Commitment Therapy showed reliable change, of which 46.15% was clinically significant at post-intervention There was a significant reduction in the cognitive wear component of

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Study (Author, year)	Evidence status	Study description	Classification (Promotion, Prevention, Screening, Intervention)	Level (Individual, Organizational, Structural)	Theoretical Framework	Instruments Used	Key Findings
						(VQ) Self-Compassion Scale (SCS) Multidimensional Experiential Avoidance Questionnaire (MEAQ)	burnout, but not in emotional exhaustion or physical fatigue Mindfulness, values, and self-compassion mediated the reduction in psychological distress and cognitive wear Effects were moderated by baseline distress levels (greater benefit among more symptomatic participants) There was no direct effect of Acceptance and Commitment Therapy on patient safety, but an indirect effect was observed via reduction in psychological distress
Puschner, Stiawa [52]	Tested intervention with outcome data	Participatory organizational workplace intervention based on workshops and the development of action plans to improve mental health and working conditions .	Prevention Promotion Intervention	Organizational Structural	Occupational stress and workplace mental health promotion and well-being models	Irritation Scale (IRR) WHO-5 Well-Being Index (WHO-5) Psychosocial Safety Climate Scale (PSC-12) Occupational Self-Efficacy Scale – short version (SOSES) SEEGEN Fidelity Scale (SEEGEN-FS) Single-item COVID-19 stress measure (simple measurement instrument used)	Implementation fidelity was the primary factor associated with intervention effects, mediating the reduction in occupational stress and the improvement in well-being at post-intervention Intervention dose and occupational self-efficacy showed independent but more modest effects

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Study (Author, year)	Evidence status	Study description	Classification (Promotion, Prevention, Screening, Intervention)	Level (Individual, Organizational, Structural)	Theoretical Framework	Instruments Used	Key Findings
Radheshyam, Ramani [53]	Tested intervention with outcome data	Meditation for three weeks (1-hour sessions per day on weekdays with online tutoring by a master trainer; no session on Sundays) Types of meditation: Buddha CEO (breath-focused mindfulness) Heartfulness (heartfulness meditation)	Promotion Prevetion Intervention	Individual	-	Depression Anxiety Stress Scales (DASS-21) World Health Organization Quality of Life (WHOQOL) Satisfaction with Life Scale (SWLS)	The corporate meditation intervention led to significant improvements in quality of life, life satisfaction, and psychological well-being among workers No statistically significant reduction in stress was observed No differences were observed between the types of meditation evaluated
Rattray, Dawber [54]	Observational evidence on determinants + Qualitative / implementation evidence	Group reflective practices: group clinical supervision with 60-minute sessions, held biweekly or monthly, led by trained facilitators, focused on reflecting on clinical experiences, conducted over a period of up to 10 years	Promotion Prevention	Individual Organizational	Job Demands–Resources Model Schön's Reflective Practice	Professional Quality of Life Scale – Version 5 (ProQOL-5) Clinical Supervision Evaluation Questionnaire Kessler 6 Single-item job satisfaction measure	Greater participation in reflective groups was associated with a reduction in secondary traumatic stress (STS), while other outcomes were not significant. The groups were perceived as useful for support and sharing, but barriers included lack of time and workload overload

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Study (Author, year)	Evidence status	Study description	Classification (Promotion, Prevention, Screening, Intervention)	Level (Individual, Organizational, Structural)	Theoretical Framework	Instruments Used	Key Findings
Reeves, Dyer [55]	Qualitative / implementation evidence	Retreat program incorporating yoga and mindfulness practices, aimed at strengthening resilience and well-being among workers in high-stress environments	Promotion Prevention	Individual	-	Semi-structured interviews	Increased emotional self-regulation and resilience Reduction in perceived stress Greater self-care/self-compassion and use of mindfulness practices in the workplace, with sharing of strategies with colleagues
Rödlund, Toropova [56]	Tested intervention with outcome data	Multifaceted implementation strategy based on the COM-B model, including leader training, facilitated workshops to identify psychosocial risks, use of structured occupational guidelines, and feedback sessions to monitor guideline fidelity	Prevention Intervention	Organizational	Capability, Opportunity, Motivation–Behavior (COM-B) Model Theoretical Domains Framework	Guideline Fidelity Scale Determinants of Implementation Behavior Questionnaire (DIBQ) Theoretical Domains Framework–based Measures (TDF) COM-B Model–based Measures (COM-B)	The multifaceted implementation strategy increased fidelity to the workplace mental health prevention guideline compared with the discrete strategy, and this effect was partially mediated by capability, motivation, and opportunity

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Study (Author, year)	Evidence status	Study description	Classification (Promotion, Prevention, Screening, Intervention)	Level (Individual, Organizational, Structural)	Theoretical Framework	Instruments Used	Key Findings
Sanetti, Pierce [57]	Tested intervention with outcome data	IDEAS program: participatory design workshops to develop well-being solutions	Prevention Intervention	Organizational Structural	Total Worker Health	Process surveys Feasibility focus groups	The approach was considered feasible and effective for identifying organizational causes of stress and generating local solutions
Schubert, Zeschke [58]	Screening / assessment study	Develops an integrative conceptual model for understanding involuntary idle time at work	Promotion Prevention	Individual Organizational	Action Regulation Theory	Semi-structured interviews Supplementary sociodemographic questionnaire	Involuntary idle time at work is a negative experience, associated with frustration, exhaustion, and poorer psychological well-being, primarily arising from organizational constraints such as information failures or lack of demand Idle time also impairs task performance
Shaw, Butcher [59]	Screening / assessment study + Qualitative / implementation evidence	Development and theoretical grounding of the Staff Wellbeing (SWell) intervention package, composed of two group-based interventions: anger–sadness–joy (retrospective reflective exercise) and well-being images with	Promotion Prevention	Individual Organizational	Behavior Change Wheel Capability, Opportunity, Motivation–Behavior (COM-B) Model Self-Determination Theory, Self-Efficacy Theory, and Psychological Safety	-	Development of two psychologically informed, feasible, and low-cost interventions centered on social support, self-efficacy, feedback, and self-regulation Identification of core behavior change techniques (social support, self-confidence, feedback, and monitoring) as active ingredients Evidence of high potential acceptability, suitability for high-pressure environments, and alignment with the needs of the

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Study (Author, year)	Evidence status	Study description	Classification (Promotion, Prevention, Screening, Intervention)	Level (Individual, Organizational, Structural)	Theoretical Framework	Instruments Used	Key Findings
		appreciative inquiry					PCC context
Singh, Oke [60]	Observational evidence on determinants	Evaluation and categorization of substance use mitigation strategies in the construction industry (e.g., zero-tolerance policies, employee assistance programs, random testing, training programs, and access to treatment)	Prevention	Organizational	-	Structured questionnaire developed by the authors (5-point Likert scale) to evaluate 18 mitigation strategies	Structural policies, particularly random testing, showed a significant association with the mitigation of substance use
Smith, Barratt [61]	Observational evidence on determinants	Explores how self-regulatory personality profiles influence burnout and work engagement	Prevention Screening	Individual	Self-Regulatory Personality Theory	Oldenburg Burnout Inventory Utrecht Work Engagement Scale (UWES)	Individuals with high conscientiousness and emotional stability profiles show a lower risk of burnout and higher vigor
Tenney, Dexter [62]	Observational evidence on determinants	Intervention based on organizational consulting and comparative analysis of organizations that	Promotion	Organizational	Total Worker Health Model	Health Links™ Healthy Workplace Assessment, based on six indicators: • Organizational	Structured organizational consulting, as a workplace health promotion strategy, facilitates the adoption and consolidation of Total Worker Health model practices,

Study (Author, year)	Evidence status	Study description	Classification (Promotion, Prevention, Screening, Intervention)	Level (Individual, Organizational, Structural)	Theoretical Framework	Instruments Used	Key Findings
		received consulting versus those that did not				support • Workplace assessment • Health policies and programs • Safety policies and programs • Engagement • Evaluation	particularly when sustained over time, although initial effects may be modest
Turunen, Karhula [63]	Tested intervention with outcome data	Legal restriction of "quick returns" (reduction of shifts with <11 hours of rest between shifts)	Prevention Intervention	Structural	-	Administrative records of working hours Administrative records of sickness absenteeism	Reduction in "quick returns" following the regulatory change Positive impact on sickness absenteeism Preventive effect on occupational health Evidence of a moderate causal effect of reducing quick returns on sickness absenteeism

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Study (Author, year)	Evidence status	Study description	Classification (Promotion, Prevention, Screening, Intervention)	Level (Individual, Organizational, Structural)	Theoretical Framework	Instruments Used	Key Findings
van Duijnhoven, de Vries [64]	Protocol / planned intervention without outcome data	Two-year organizational intervention based on Participatory Action Research: three phases with facilitator support; initiated with a feedback (kick-off) meeting; workers identify priority problems, form working groups, and develop action plans.	Promotion Prevention	Organizational	Psychosocial Safety Climate Theory Job Demands–Resources Model	Burnout Assessment Tool (BAT) Utrecht Work Engagement Scale (UWES-S) Leiden Quality of Work Questionnaire (LQWQ)	Not applicable; study protocol without outcome data
Xiang, Cheng [65]	Qualitative / implementation evidence	Explores the knowledge, beliefs, and attitudes of caregivers of older adults, as well as their experiences and caregiving practices in relation to older adults with depressive symptoms	Promotion Screening	Organizational	-	Late-Life Depression Knowledge Quiz Modified Depression Attitude Questionnaire Patient Health Questionnaire-2 (PHQ-2)	High accuracy in recognizing depression Preferences for psychotherapy over medication Self-reported practices aligned with evidence-based principles (particularly behavioral activation), despite knowledge gaps

Study (Author, year)	Evidence status	Study description	Classification (Promotion, Prevention, Screening, Intervention)	Level (Individual, Organizational, Structural)	Theoretical Framework	Instruments Used	Key Findings
Yang, Huang [66]	Observational evidence on determinants	Evaluates how workplace digitalization influences well-being at work	Promotion	Organizational	Job Demands–Resources Model	Workplace Digitization Scale (WDS) Job Demands Scale (JDS) Digital Anxiety Scale (DAS) Workplace Well-Being Scale (WWB)	Workplace digitalization is associated with higher levels of employee well-being More highly digitalized environments tend to reduce job demands and digital anxiety, which in turn contribute to higher levels of well-being in the occupational context
Yap, Zainal [67]	Tested intervention with outcome data	Adapted mindfulness course (4 sessions of 2 hours focused on meditation)	Prevention Intervention	Individual	-	Maslach Burnout Inventory (MBI) Five Facet Mindfulness Questionnaire (FFMQ)	Improvement in depersonalization Trend toward improvement in emotional exhaustion
Zhang, Huang [68]	Observational evidence on determinants + Qualitative / implementation evidence	HealthWISE: includes train-the-trainer workshops, risk assessment, and ergonomic, organizational, and psychosocial changes	Promotion Prevention	Individual Organizational	-	Semi-structured interviews Systematic observation Use of documentary and photographic evidence	HealthWISE resulted in systematic improvements in workers' occupational health, including the establishment of an occupational health and safety management system, structural ergonomic improvements, progressive reduction in occupational exposure to bloodborne pathogens, strengthening of psychological safety, reduction of fear and anxiety at work, and increased engagement

Study (Author, year)	Evidence status	Study description	Classification (Promotion, Prevention, Screening, Intervention)	Level (Individual, Organizational, Structural)	Theoretical Framework	Instruments Used	Key Findings
							and solidarity among teams The hospital reported no occupational COVID-19 infections among workers during the pandemic Institutional leadership, active worker participation, and organizational culture were highlighted as key factors for success

Legend: ED – Emergency Department; PPPY – Per Person Per Year.

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Supplementary Material S3 Complete search strategies

Database/source	Search date	Full search string	Filters/limits	Records retrieved
PubMed/MEDLINE	[27/07/2025]	(("Occupational Health"[Mesh] OR "Occupational Health Services"[Mesh] OR workplace[tiab] OR employees[tiab] OR workers[tiab] OR employers[tiab] OR "private sector"[tiab] OR "public sector"[tiab] OR "occupational setting"[tiab] OR institution*[tiab]) AND ("Mental Health"[Mesh] OR "Mental Disorders"[Mesh] OR "Burnout, Professional"[Mesh] OR "Anxiety"[Mesh] OR "Depression"[Mesh] OR psychological distress[tiab] OR emotional well-being[tiab] OR well being[tiab] OR psychosocial health[tiab] OR emotional exhaustion[tiab] OR stress-related disorders[tiab]) AND ("Intervention Studies"[Mesh] OR "Evidence-Based Practice"[Mesh] OR "Primary Prevention"[Mesh] OR "Mass Screening"[Mesh] OR intervention*[tiab] OR organizational intervention*[tiab] OR workplace intervention*[tiab] OR psychosocial intervention*[tiab] OR prevention[tiab] OR promotion[tiab] OR program*[tiab] OR protocol*[tiab] OR framework*[tiab] OR guideline*[tiab] OR polic*[tiab]) AND (healthy workplace[tiab] OR psychosocial safety climate[tiab] OR psychological safety[tiab] OR organizational policy[tiab] OR workplace well-being[tiab] OR regulation*[tiab] OR legislation[tiab] OR cost-effectiveness[tiab] OR economic impact[tiab]))	[Publications between July 2020 and July 2025, in English, Portuguese, or Spanish]	758
Web of Science	[29/07/2025]	TS=(("occupational health" OR "occupational health service*" OR workplace* OR employee* OR worker* OR employer* OR "private sector" OR "public sector" OR "occupational setting*" OR institution*) AND ("mental health" OR "mental disorder*" OR burnout OR "burnout syndrome" OR anxiety OR depression OR "psychological distress" OR "emotional well-being" OR wellbeing OR "well-being" OR "psychosocial health" OR "emotional exhaustion" OR "stress-related disorder*") AND ("evidence-based practice" OR "best practice" OR intervention* OR "organizational intervention*" OR "workplace intervention*" OR "psychosocial intervention*" OR prevention OR screening OR promotion OR program* OR protocol* OR framework* OR guideline* OR policy OR policies OR "organizational practice*" OR "strategic intervention*" OR "multidisciplinary approach" OR therapeutic*) AND ("healthy workplace" OR "psychosocial safety climate" OR "psychological safety" OR "organizational policy" OR "workplace well-being" OR regulation* OR legislation OR "cost-effectiveness" OR "economic impact"))	[Publications between July 2020 and July 2025, in English, Portuguese, or Spanish]	406

Pre-Proof

Database/source	Search date	Full search string	Filters/limits	Records retrieved
Cochrane Library	[30/07/2025]	(("occupational health" OR "workplace" OR "employees" OR "workers" OR "occupational health services" OR "employers" OR "private sector" OR "public sector" OR "occupational setting" OR "institution") AND ("mental health" OR "mental disorders" OR "psychological distress" OR "emotional well-being" OR "well-being" OR "psychosocial health" OR "burnout" OR "anxiety" OR "depression" OR "emotional exhaustion" OR "stress-related disorders" OR "occupational diseases") AND ("evidence-based practice" OR "best practice" OR "intervention" OR "organizational intervention" OR "workplace intervention" OR "psychosocial intervention" OR "prevention" OR "screening" OR "promotion" OR "program" OR "protocol" OR "framework" OR "guideline" OR "policy" OR "organizational practice" OR "strategic intervention" OR "multidisciplinary approach" OR "therapeutics") AND ("healthy workplace" OR "psychosocial safety climate" OR "psychological safety" OR "organizational policy" OR "workplace well-being" OR "regulation" OR "legislation" OR "cost-effectiveness" OR "economic impact"))	[Publications between July 2020 and July 2025, in English, Portuguese, or Spanish]	38
PsycINFO	[28/07/2025]	((exp Occupational Health/ OR "occupational health" OR "occupational health service*" OR workplace* OR employee* OR worker* OR employer* OR "private sector" OR "public sector" OR "occupational setting*" OR organization* OR organisation*). ti,ab,kf. AND (exp Mental Health/ OR exp Mental Disorders/ OR "mental health" OR "mental disorder*" OR burnout OR anxiety OR depression OR "psychological distress" OR "emotional well-being" OR wellbeing OR "well-being" OR "psychosocial health" OR "emotional exhaustion" OR "stress-related disorder*"). ti,ab,kf. AND ("evidence-based practice" OR "best practice" OR intervention* OR "organizational intervention*" OR "workplace intervention*" OR "psychosocial intervention*" OR prevention OR screening OR promotion OR program* OR protocol* OR framework* OR guideline* OR polic* OR "organizational practice*" OR "strategic intervention*" OR "multidisciplinary approach" OR therapeutic*).ti,ab,kf. AND ("healthy workplace" OR "psychosocial safety climate" OR "psychological safety" OR "organizational policy" OR "workplace well-being" OR regulation* OR legislation OR "cost-effectiveness" OR "economic impact").ti,ab,kf.)	[Publications between July 2020 and July 2025, in English, Portuguese, or Spanish]	34

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Database/source	Search date	Full search string	Filters/limits	Records retrieved
Scopus	[29/07/2025]	TITLE-ABS-KEY (("occupational health" OR "occupational health service*" OR workplace* OR employee* OR worker* OR employer* OR "private sector" OR "public sector" OR "occupational setting*" OR institution*) AND ("mental health" OR "mental disorder*" OR burnout OR "burnout syndrome" OR anxiety OR depression OR "psychological distress" OR "emotional well-being" OR wellbeing OR "well-being" OR "psychosocial health" OR "emotional exhaustion" OR "stress-related disorder*") AND ("evidence-based practice" OR "best practice" OR intervention* OR "organizational intervention*" OR "workplace intervention*" OR "psychosocial intervention*" OR prevention OR screening OR promotion OR program* OR protocol* OR framework* OR guideline* OR policy OR policies OR "organizational practice*" OR "strategic intervention*" OR "multidisciplinary approach" OR therapeutic*) AND ("healthy workplace" OR "psychosocial safety climate" OR "psychological safety" OR "organizational policy" OR "workplace well-being" OR regulation* OR legislation OR "cost-effectiveness" OR "economic impact"))	[Publications between July 2020 and July 2025, in English, Portuguese, or Spanish]	25

Supplementary Table S4A Summary of methodological appraisal status

Final methodological appraisal status	n
High robustness	10
Moderate robustness	40
Low robustness	9
Not appraised for effectiveness	9
Total	68

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Supplementary Table S4B Evidence-status routing and appraisal action

ID	Author (year)	Country	Sector	Study design (verbatim)	Evidence-status category aligned with 04.1	Appraisal action aligned with 04.1	Final appraisal tool/action	04.1 appraisal status
1	Bernburg, Groneberg (2020)	Germany	Public sector	Randomized Controlled Trial (pilot RCT)	Tested intervention with outcome data	Appraised with design-appropriate JBI/MMAT tool	JBI Critical Appraisal Checklist for Randomized Controlled Trials (13 applicable criteria)	Moderate robustness
2	Bonde, Mikkelsen (2024)	Denmark	Mixed sector	Quasi-experimental study without a control group (quantitative)	Empirical intervention study with outcome data	Appraised with design-appropriate JBI/MMAT tool	JBI Critical Appraisal Checklist for Quasi-Experimental Studies (9 applicable criteria)	Moderate robustness
3	Cedstrand, Augustsson (2022)	Sweden	Private sector	Quasi-experimental study (quantitative)	Empirical intervention study with outcome data	Appraised with design-appropriate JBI/MMAT tool	JBI Critical Appraisal Checklist for Quasi-Experimental Studies (9 applicable criteria)	Low robustness
4	Chaiear, Sirisawasd (2026)	Thailand	Public sector	Cross-sectional observational study (quantitative)	Observational empirical evidence; not intervention effectiveness evidence	Appraised with design-appropriate JBI/MMAT tool	JBI Critical Appraisal Checklist for Analytical Cross-Sectional Studies (8 applicable criteria)	Moderate robustness

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ID	Author (year)	Country	Sector	Study design (verbatim)	Evidence-status category aligned with 04.1	Appraisal action aligned with 04.1	Final appraisal tool/action	04.1 appraisal status
5	Costa, Santos (2021)	Portugal	Mixed sector	Randomized controlled trial (quantitative)	Protocol/planned intervention; not evidence of effectiveness	Not appraised for effectiveness	Not appraised for effectiveness: study protocol for a planned three-arm randomized controlled trial; no JBI/MMAT effectiveness criteria applicable	Not appraised for effectiveness
6	Dalgaard, Kirkegaard (2025)	Denmark	Public sector	Quasi-experimental study without a control group (quantitative)	Empirical intervention study with outcome data	Appraised with design-appropriate JBI/MMAT tool	JBI Critical Appraisal Checklist for Quasi-Experimental Studies (9 applicable criteria)	Low robustness
7	Davis, Bailey (2025)	United States	Public sector	Longitudinal observational study (quantitative)	Observational empirical evidence; not intervention effectiveness evidence	Appraised with design-appropriate JBI/MMAT tool	JBI Critical Appraisal Checklist for Quasi-Experimental Studies (9 applicable criteria)	Low robustness
8	De Angelis, Giusino (2020)	European countries	Mixed sector	Quasi-experimental study (quantitative)	Protocol/planned intervention; not evidence of effectiveness	Not appraised for effectiveness	Not appraised for effectiveness (Concept Paper / Study Protocol)	Not appraised for effectiveness
9	de Bruin, Valentin (2020)	Netherlands	Mixed sector	Quasi-experimental study without a	Empirical intervention study with outcome data	Appraised with design-	MMAT: 5 qualitative criteria,	Moderate robustness

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ID	Author (year)	Country	Sector	Study design (verbatim)	Evidence-status category aligned with 04.1	Appraisal action aligned with 04.1	Final appraisal tool/action	04.1 appraisal status
				control group (quantitative)		appropriate JBI/MMAT tool	5 quantitative non-randomized criteria, and 5 mixed-methods criteria; screening questions excluded from scoring	
10	Deng, Huang (2021)	China	Private sector (nonprofit)	Cross-sectional observational study (quantitative)	Observational empirical evidence; not intervention effectiveness evidence	Appraised with design-appropriate JBI/MMAT tool	JBI Critical Appraisal Checklist for Analytical Cross-Sectional Studies (8 applicable criteria)	High robustness
11	Díaz-Benito, Barriopedro Moro (2022)	Spain	Private sector	Randomized controlled pilot study, double-blind (quantitative)	Empirical intervention study with outcome data	Appraised with design-appropriate JBI/MMAT tool	JBI Critical Appraisal Checklist for Randomized Controlled Trials (13 applicable criteria)	Moderate robustness
12	Doyle Fosco, Schussler (2023)	United States	Public sector	Quasi-experimental study without a control group (quantitative) Descriptive qualitative study (perception-focused)	Mixed/combined empirical design; appraised with design-appropriate tool	Appraised with design-appropriate JBI/MMAT tool	MMAT mixed-methods criteria (5 applicable criteria)	Moderate robustness
13	Elder, Johnston	Australia	Public	Cross-sectional study	Observational empirical	Appraised	JBI Critical	Moderate

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ID	Author (year)	Country	Sector	Study design (verbatim)	Evidence-status category aligned with 04.1	Appraisal action aligned with 04.1	Final appraisal tool/action	04.1 appraisal status
	(2021)		sector	(qualitative)	evidence; not intervention effectiveness evidence	with design-appropriate JBI/MMAT tool	Appraisal Checklist for Qualitative Research (10 applicable criteria)	robustness
14	Elling, Almquist (2022)	Sweden	Mixed sector	Cluster randomized controlled trial (quantitative)	Empirical intervention study with outcome data	Appraised with design-appropriate JBI/MMAT tool	JBI Critical Appraisal Checklist for Randomized Controlled Trials (13 applicable criteria)	Low robustness
15	Engels, Scheepers (2024)	Germany	Mixed sector	Quasi-experimental study without a control group (quantitative) Exploratory study with semi-structured interviews (qualitative)	Mixed/combined empirical design; appraised with design-appropriate tool	Appraised with design-appropriate JBI/MMAT tool	MMAT mixed-methods criteria: 5 qualitative criteria, 5 quantitative non-randomized criteria, and 5 mixed-methods criteria; screening questions excluded from scoring	Moderate robustness
16	Erby and Blustein (2026)	United States	Mixed sector	Cross-sectional study (qualitative)	Observational empirical evidence; not intervention effectiveness evidence	Appraised with design-appropriate JBI/MMAT tool	JBI Critical Appraisal Checklist for Analytical Cross-Sectional Studies (8 applicable criteria)	Moderate robustness

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ID	Author (year)	Country	Sector	Study design (verbatim)	Evidence-status category aligned with 04.1	Appraisal action aligned with 04.1	Final appraisal tool/action	04.1 appraisal status
17	Fatemi, Vagharseyyedin (2024)	Iran	Public sector	Randomized, controlled trial using a before-after design	Empirical intervention study with outcome data	Appraised with design-appropriate JBI/MMAT tool	JBI Critical Appraisal Checklist for Randomized Controlled Trials (13 applicable criteria)	Moderate robustness
18	Fantus, Cole (2024)	United States	Public sector	Phenomenological study (qualitative)	Qualitative/implementation evidence; not effectiveness evidence	Appraised with design-appropriate JBI/MMAT tool	JBI Critical Appraisal Checklist for Qualitative Research (10 applicable criteria)	Moderate robustness
19	Foster, Shochet (2024)	Australia	Public sector	Partially cluster randomized controlled trial (quantitative)	Empirical intervention study with outcome data	Appraised with design-appropriate JBI/MMAT tool	JBI Critical Appraisal Checklist for Randomized Controlled Trials (13 applicable criteria)	Moderate robustness
20	Goetze (2025)	Global	Mixed sector	Cross-sectional correlational study	Observational empirical evidence; not intervention effectiveness evidence	Appraised with design-appropriate JBI/MMAT tool	JBI Critical Appraisal Checklist for Analytical Cross-Sectional Studies; 8 applicable criteria	Moderate robustness
21	Goodwyn, Beech (2024)	Not reported	Mixed sector	Phenomenological study (qualitative)	Qualitative/implementation evidence; not effectiveness	Appraised with design-	JBI Critical Appraisal	High robustness

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ID	Author (year)	Country	Sector	Study design (verbatim)	Evidence-status category aligned with 04.1	Appraisal action aligned with 04.1	Final appraisal tool/action	04.1 appraisal status
					evidence	appropriate JBI/MMAT tool	Checklist for Qualitative Research; 10 applicable criteria	
22	Guido, Peruzzi (2025)	Italy	Private sector (nonprofit)	Quasi-experimental, longitudinal study (quantitative)	Empirical intervention study with outcome data	Appraised with design-appropriate JBI/MMAT tool	JBI Critical Appraisal Checklist for Quasi-Experimental Studies (9 applicable criteria)	Moderate robustness
23	Hale, Lim (2025)	United States	Public sector	Cross-sectional observational study (quantitative)	Observational empirical evidence; not intervention effectiveness evidence	Appraised with design-appropriate JBI/MMAT tool	JBI Critical Appraisal Checklist for Analytical Cross-Sectional Studies; 8 applicable criteria	Moderate robustness
24	Rose, Smith (2025)	United States	Mixed sector	Prospective longitudinal single-group intervention study with a randomized text-message maintenance component (quantitative)	Tested intervention with outcome data	Appraised with design-appropriate JBI/MMAT tool	JBI Critical Appraisal Checklist for Quasi-Experimental Studies (9 applicable criteria)	Moderate robustness
25	Harris, Amano (2024)	United States	Public sector	Phenomenological study (qualitative)	Qualitative/implementation evidence; not effectiveness evidence	Appraised with design-appropriate	JBI Critical Appraisal Checklist for	High robustness

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ID	Author (year)	Country	Sector	Study design (verbatim)	Evidence-status category aligned with 04.1	Appraisal action aligned with 04.1	Final appraisal tool/action	04.1 appraisal status
						JBI/MMAT tool	Qualitative Research (10 applicable criteria)	
26	Heredia, Ventura (2024)	Spain	Mixed sector	Randomized controlled trial (quantitative)	Empirical intervention study with outcome data	Appraised with design-appropriate JBI/MMAT tool	JBI Critical Appraisal Checklist for Randomized Controlled Trials; 13 applicable criteria	Moderate robustness
27	Jacobson, Westein (2022)	United States	Public sector	Observational study (qualitative)	Qualitative/implementation evidence; not effectiveness evidence	Appraised with design-appropriate JBI/MMAT tool	JBI Critical Appraisal Checklist for Qualitative Research; 10 applicable criteria	Moderate robustness
28	Jiang, Song (2024)	China	Public sector	Cross-sectional observational study (quantitative)	Observational empirical evidence; not intervention effectiveness evidence	Appraised with design-appropriate JBI/MMAT tool	JBI Critical Appraisal Checklist for Analytical Cross-Sectional Studies; 8 applicable criteria	Moderate robustness
29	Kaur, Arora (2023)	India	Public sector	Cross-sectional observational study (quantitative)	Observational empirical evidence; not intervention effectiveness evidence	Appraised with design-appropriate JBI/MMAT tool	JBI Critical Appraisal Checklist for Analytical Cross-Sectional Studies; 8 applicable	Low robustness

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ID	Author (year)	Country	Sector	Study design (verbatim)	Evidence-status category aligned with 04.1	Appraisal action aligned with 04.1	Final appraisal tool/action	04.1 appraisal status
							criteria	
30	Klasen, van Amelsvoort (2021)	Netherlands	Mixed sector	Exploratory-descriptive qualitative study with semi-structured interviews and thematic analysis	Qualitative/implementation evidence; not effectiveness evidence	Appraised with design-appropriate JBI/MMAT tool	JBI Critical Appraisal Checklist for Qualitative Research; 10 applicable criteria	Moderate robustness
31	Kuronen, Winell (2023)	Finland	Mixed sector	Cross-sectional observational study (quantitative)	Observational empirical evidence; not intervention effectiveness evidence	Appraised with design-appropriate JBI/MMAT tool	JBI Critical Appraisal Checklist for Analytical Cross-Sectional Studies; 8 applicable criteria	Low robustness
32	Kurosawa, Adachi (2024)	Japan	Not reported	Study protocol for a randomized controlled trial (quantitative)	Protocol/planned intervention; not evidence of effectiveness	Not appraised for effectiveness	Not appraised for effectiveness; protocol/planned RCT; 0 applicable criteria	Not appraised for effectiveness
33	Lanfranchi, Zambetti (2025)	Italy	Public sector	Cross-sectional observational study (quantitative)	Observational empirical evidence; not intervention effectiveness evidence	Appraised with design-appropriate JBI/MMAT tool	JBI Critical Appraisal Checklist for Analytical Cross-Sectional Studies (8 applicable criteria)	Moderate robustness
34	Lebares, Greenberg (2021)	United States	Public sector	Cross-sectional observational study (qualitative and	Mixed/combined empirical design; appraised with design-appropriate tool	Appraised with design-appropriate	MMAT mixed-methods criteria: 5 qualitative criteria,	Moderate robustness

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ID	Author (year)	Country	Sector	Study design (verbatim)	Evidence-status category aligned with 04.1	Appraisal action aligned with 04.1	Final appraisal tool/action	04.1 appraisal status
				quantitative)		JBI/MMAT tool	5 quantitative descriptive criteria, and 5 mixed-methods criteria; screening questions excluded from scoring	
35	Lerner, Adler (2021)	United Statess	Mixed sector	Cross-sectional observational study + Randomized controlled trial + Quasi-experimental study (quantitative)	Descriptive/programme or institutional source; not appraised for effectiveness	Not appraised for effectiveness	Not appraised at article level: narrative programme-of-research overview reporting six heterogeneous primary evaluations; no single JBI/MMAT checklist applicable	Not appraised for effectiveness
36	Locklear, Taylor (2020)	China	Mixed sector	Randomized controlled trial (quantitative)	Empirical intervention study with outcome data	Appraised with design-appropriate JBI/MMAT tool	JBI Critical Appraisal Checklist for Randomized Controlled Trials; 12 applicable criteria; item 5 not applicable because the intervention was self-administered	Moderate robustness

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ID	Author (year)	Country	Sector	Study design (verbatim)	Evidence-status category aligned with 04.1	Appraisal action aligned with 04.1	Final appraisal tool/action	04.1 appraisal status
37	Madden, Blewitt (2022)	Australia	Private sector (nonprofit)	Descriptive, exploratory study with purposive sampling (qualitative)	Qualitative/implementation evidence; not effectiveness evidence	Appraised with design-appropriate JBI/MMAT tool	JBI Critical Appraisal Checklist for Qualitative Research (10 applicable criteria)	Moderate robustness
38	Maddock, McGuigan (2023)	Northern Ireland	Mixed sector	Randomized controlled trial (quantitative)	Empirical intervention study with outcome data	Appraised with design-appropriate JBI/MMAT tool	JBI Critical Appraisal Checklist for Randomized Controlled Trials; 13 applicable criteria	Low robustness
39	Maddock (2024)	Northern Ireland	Not reported	Randomized controlled trial (quantitative)	Empirical intervention study with outcome data	Appraised with design-appropriate JBI/MMAT tool	JBI Critical Appraisal Checklist for Randomized Controlled Trials (13 applicable criteria)	Low robustness
40	Maddock (2025)	Northern Ireland	Public sector	Cross-sectional observational study (quantitative)	Observational empirical evidence; not intervention effectiveness evidence	Appraised with design-appropriate JBI/MMAT tool	JBI Critical Appraisal Checklist for Analytical Cross-Sectional Studies (8 applicable criteria)	High robustness
41	Mediavilla, McGreevy	Spain	Public sector	Multicenter parallel-group randomized	Protocol/planned intervention; not evidence	Not appraised for	Not appraised for effectiveness:	Not appraised for

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ID	Author (year)	Country	Sector	Study design (verbatim)	Evidence-status category aligned with 04.1	Appraisal action aligned with 04.1	Final appraisal tool/action	04.1 appraisal status
	(2022)			controlled trial with 1:1 allocation (quantitative)	of effectiveness	effectiveness	protocol for a planned multicentre randomized controlled trial; no JBI/MMAT effectiveness criteria applicable	effectiveness
42	Melloy, Sayre (2026)	United States	Mixed sector	Cross-sectional cohort quantitative study with latent profile analysis (LPA)	Observational empirical evidence; not intervention effectiveness evidence	Appraised with design-appropriate JBI/MMAT tool	JBI Critical Appraisal Checklist for Analytical Cross-Sectional Studies; 8 applicable criteria	Moderate robustness
43	Mixafenti, Karagkouni (2025)	Greece	Private sector	Cross-sectional observational study (quantitative)	Observational empirical evidence; not intervention effectiveness evidence	Appraised with design-appropriate JBI/MMAT tool	JBI Critical Appraisal Checklist for Analytical Cross-Sectional Studies (8 applicable criteria)	Moderate robustness
44	Mulfinger, Jarczok (2025)	Germany	Mixed sector	Cluster randomized controlled trial (quantitative)	Empirical intervention study with outcome data	Appraised with design-appropriate JBI/MMAT tool	JBI Critical Appraisal Checklist for Randomized Controlled Trials (13 applicable criteria)	Moderate robustness

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ID	Author (year)	Country	Sector	Study design (verbatim)	Evidence-status category aligned with 04.1	Appraisal action aligned with 04.1	Final appraisal tool/action	04.1 appraisal status
45	Munn, Liu (2021)	United States	Not reported	Cross-sectional observational study (quantitative)	Observational empirical evidence; not intervention effectiveness evidence	Appraised with design-appropriate JBI/MMAT tool	JBI Critical Appraisal Checklist for Analytical Cross-Sectional Studies (8 applicable criteria)	High robustness
46	Newell, Cutrona (2024)	United States	Public sector	Observational study (qualitative)	Qualitative/implementation evidence; not effectiveness evidence	Appraised with design-appropriate JBI/MMAT tool	JBI Critical Appraisal Checklist for Qualitative Research (10 applicable criteria)	Moderate robustness
47	O´Connor-Pérez, Eugenia Carballo-López (2025)	Spain	Public sector	Cross-sectional study (quantitative)	Observational empirical evidence; not intervention effectiveness evidence	Appraised with design-appropriate JBI/MMAT tool	JBI Critical Appraisal Checklist for Analytical Cross-Sectional Studies (8 applicable criteria)	High robustness
48	Penev, Zhao (2023)	United States	Private sector	Retrospective matched cohort study based on administrative/claims data (quantitative)	Observational empirical evidence; not intervention effectiveness evidence	Appraised with design-appropriate JBI/MMAT tool	JBI Critical Appraisal Checklist for Quasi-Experimental Studies (8 applicable criteria; criterion 6 not applicable)	Moderate robustness

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ID	Author (year)	Country	Sector	Study design (verbatim)	Evidence-status category aligned with 04.1	Appraisal action aligned with 04.1	Final appraisal tool/action	04.1 appraisal status
49	Pignatiello, Cuccia (2023)	United States	Private sector	Cross-sectional observational study (quantitative)	Observational empirical evidence; not intervention effectiveness evidence	Appraised with design-appropriate JBI/MMAT tool	JBI Critical Appraisal Checklist for Analytical Cross-Sectional Studies (8 applicable criteria)	High robustness
50	Priede, López-Álvarez (2021)	Spain	Public sector	Cross-sectional observational study (quantitative)	Descriptive/programme or institutional source; not appraised for effectiveness	Not appraised for effectiveness	Not appraised for effectiveness: descriptive cross-sectional institutional survey mapping mental health programmes; no JBI/MMAT effectiveness criteria applicable	Not appraised for effectiveness
51	Prudenzi, Graham (2022)	England	Public sector	Randomized controlled trial (quantitative)	Empirical intervention study with outcome data	Appraised with design-appropriate JBI/MMAT tool	JBI Critical Appraisal Checklist for Randomized Controlled Trials (13 applicable criteria)	Moderate robustness
52	Puschner, Stiawa (2025)	Germany	Mixed sector	Cluster randomized controlled trial (quantitative)	Empirical intervention study with outcome data	Appraised with design-appropriate JBI/MMAT tool	MMAT mixed-methods criteria: 5 qualitative criteria, 5 quantitative randomized	Moderate robustness

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ID	Author (year)	Country	Sector	Study design (verbatim)	Evidence-status category aligned with 04.1	Appraisal action aligned with 04.1	Final appraisal tool/action	04.1 appraisal status
							controlled trial criteria, and 5 mixed-methods criteria; screening questions excluded from scoring	
53	Radheshyam, Ramani (2024)	India	Private sector	Quasi-experimental study (quantitative)	Empirical intervention study with outcome data	Appraised with design-appropriate JBI/MMAT tool	JBI Critical Appraisal Checklist for Quasi-Experimental Studies (9 applicable criteria)	Low robustness
54	Rattray, Dawber (2023)	Australia	Public sector	Cross-sectional observational study (qualitative and quantitative)	Mixed/combined empirical design; appraised with design-appropriate tool	Appraised with design-appropriate JBI/MMAT tool	MMAT mixed-methods criteria: 5 qualitative criteria, 5 quantitative descriptive criteria, and 5 mixed-methods criteria; screening questions excluded from scoring	Moderate robustness
55	Reeves, Dyer (2022)	United States	Mixed sector	Exploratory qualitative study with individual semi-structured interviews and directed content analysis	Qualitative/implementation evidence; not effectiveness evidence	Appraised with design-appropriate JBI/MMAT tool	JBI Critical Appraisal Checklist for Qualitative Research (10 applicable criteria)	Moderate robustness

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ID	Author (year)	Country	Sector	Study design (verbatim)	Evidence-status category aligned with 04.1	Appraisal action aligned with 04.1	Final appraisal tool/action	04.1 appraisal status
56	Rödlund, Toropova (2025)	Sweden	Public sector	Cluster randomized controlled trial (quantitative)	Empirical intervention study with outcome data	Appraised with design-appropriate JBI/MMAT tool	JBI Critical Appraisal Checklist for Randomized Controlled Trials (13 applicable criteria)	Moderate robustness
57	Sanetti, Pierce (2022)	United States	Public sector	Single-group intervention (pre–post design) (quantitative) Descriptive qualitative study (based on interviews and focus groups)	Mixed/combined empirical design; appraised with design-appropriate tool	Appraised with design-appropriate JBI/MMAT tool	MMAT mixed-methods criteria: 5 qualitative criteria, 5 quantitative non-randomized criteria, and 5 mixed-methods criteria; screening questions excluded from scoring	Moderate robustness
58	Schubert, Zeschke (2021)	Germany	Mixed sector	Theoretical-conceptual study (qualitative)	Conceptual evidence; not empirical effectiveness evidence	Not appraised for effectiveness	Not appraised for effectiveness: theoretical-conceptual paper; no design-specific JBI or MMAT critical appraisal tool applicable.	Not appraised for effectiveness
59	Shaw, Butcher (2025)	England	Public sector	Non-experimental study (qualitative and quantitative)	Non-empirical or non-outcome source; not appraised for effectiveness	Not appraised for effectiveness	Not appraised for effectiveness: intervention-development study using the	Not appraised for effectiveness

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ID	Author (year)	Country	Sector	Study design (verbatim)	Evidence-status category aligned with 04.1	Appraisal action aligned with 04.1	Final appraisal tool/action	04.1 appraisal status
							Behaviour Change Wheel; no JBI/MMAT effectiveness criteria applicable	
60	Singh, Oke (2025)	Nigeria	Private sector	Mixed-methods observational study	Observational empirical evidence; not intervention effectiveness evidence	Appraised with design-appropriate JBI/MMAT tool	MMAT mixed-methods criteria (5 applicable criteria)	High robustness
61	Smith, Barratt (2021)	Australia	Private sector	Cross-sectional observational study (quantitative)	Observational empirical evidence; not intervention effectiveness evidence	Appraised with design-appropriate JBI/MMAT tool	JBI Critical Appraisal Checklist for Analytical Cross-Sectional Studies (7 applicable criteria; item 4 not applicable)	Moderate robustness
62	Tenney, Dexter (2021)	United States	Mixed sector	Longitudinal observational/quasi-experimental study (quantitative)	Mixed/combined empirical design; appraised with design-appropriate tool	Appraised with design-appropriate JBI/MMAT tool	JBI Critical Appraisal Checklist for Quasi-Experimental Studies (9 applicable criteria)	Moderate robustness
63	Turunen, Karhula (2025)	Finland	Public sector	Quasi-experimental study (quantitative)	Empirical intervention study with outcome data	Appraised with design-appropriate JBI/MMAT	JBI Critical Appraisal Checklist for Quasi-	High robustness

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ID	Author (year)	Country	Sector	Study design (verbatim)	Evidence-status category aligned with 04.1	Appraisal action aligned with 04.1	Final appraisal tool/action	04.1 appraisal status
						tool	Experimental Studies (9 applicable criteria)	
64	Van Duijnhoven, de Vries (2024)	Netherlands	Mixed sector	Quasi-experimental study (quantitative)	Protocol/planned intervention; not evidence of effectiveness	Not appraised for effectiveness	Not appraised for effectiveness: study protocol/planned organizational-level intervention; no JBI/MMAT effectiveness criteria applicable	Not appraised for effectiveness
65	Xiang, Cheng (2020)	United States	Private sector	Mixed-methods study with a convergent parallel design, combining a quantitative survey and semi-structured qualitative interviews (quantitative and qualitative)	Mixed/combined empirical design; appraised with design-appropriate tool	Appraised with design-appropriate JBI/MMAT tool	MMAT mixed-methods criteria: 5 qualitative criteria, 5 quantitative descriptive criteria, and 5 mixed-methods criteria; screening questions excluded from scoring	Moderate robustness
66	Yang, Huang (2025)	China	Mixed sector	Cross-sectional observational study (quantitative)	Observational empirical evidence; not intervention effectiveness evidence	Appraised with design-appropriate JBI/MMAT tool	JBI Critical Appraisal Checklist for Analytical Cross-Sectional Studies (8 applicable criteria)	Moderate robustness

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ID	Author (year)	Country	Sector	Study design (verbatim)	Evidence-status category aligned with 04.1	Appraisal action aligned with 04.1	Final appraisal tool/action	04.1 appraisal status
67	Yap, Zainal (2025)	Singapore	Public sector	Quasi-experimental study without a control group (quantitative) Descriptive qualitative study (with thematic analysis)	Mixed/combined empirical design; appraised with design-appropriate tool	Appraised with design-appropriate JBI/MMAT tool	MMAT mixed-methods criteria: 5 qualitative criteria, 5 quantitative non-randomized criteria, and 5 mixed-methods criteria; screening questions excluded from scoring	Moderate robustness
68	Zhang, Huang (2022)	China	Public sector	Observational study (qualitative)	Qualitative/implementation evidence; not effectiveness evidence	Appraised with design-appropriate JBI/MMAT tool	JBI Critical Appraisal Checklist for Qualitative Research (10 applicable criteria)	High robustness

Supplementary Table S4C Study-level critical appraisal results

ID	Author (year)	Appraisal tool and applicable criteria	Criteria met, n/N	Proportion of applicable criteria met, %	Operational robustness category	Main methodological limitations
1	Bernburg, Groneberg (2020)	JBI Critical Appraisal Checklist for Randomized Controlled Trials (13 applicable criteria)	7/13	53.8%	Moderate robustness	No participant, provider, or outcome-assessor blinding; waitlist control without equivalent attention; incomplete group-specific attrition

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ID	Author (year)	Appraisal tool and applicable criteria	Criteria met, n/N	Proportion of applicable criteria met, %	Operational robustness category	Main methodological limitations
						reporting; no intention-to-treat analysis reported; small pilot sample below planned size; self-reported outcomes only; follow-up limited to 36 weeks.
2	Bonde, Mikkelsen (2024)	JBI Critical Appraisal Checklist for Quasi-Experimental Studies (9 applicable criteria)	6/9	66.7%	Moderate robustness	Lack of a control group; absence of randomization; major external influences (COVID-19 pandemic, lockdowns, and organizational restructuring); substantial loss to follow-up; potential for temporal confounding; inability to establish definitive causal inference.
3	Cedstrand, Augustsson (2022)	JBI Critical Appraisal Checklist for Quasi-Experimental Studies (9 applicable criteria)	4/9	44.4%	Low robustness	Non-randomized allocation of one intervention and one control region; baseline group imbalance; low and differential response rates, especially in the control group; only one pre-intervention measurement; potential contextual confounding from COVID-19; incomplete implementation across projects; self-reported outcomes.
4	Chaiear, Sirisawasd (2026)	JBI Critical Appraisal Checklist for Analytical Cross-Sectional Studies (8 applicable criteria)	6/8	75.0%	Moderate robustness	Convenience sampling; single university hospital setting; lack of control for potential confounding factors; limited generalizability to other professional groups and healthcare institutions; cross-sectional design with no longitudinal follow-up.
5	Costa, Santos (2021)	Not appraised: study protocol for a planned three-arm randomized controlled trial; no JBI/MMAT effectiveness criteria applicable	Not applicable	Not applicable	Not appraised for effectiveness	Protocol without empirical outcome data; open-label planned design; anticipated attrition of approximately 40%; several primary and secondary outcomes are self-reported; recruitment restricted to the Lisbon Metropolitan Area;

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ID	Author (year)	Appraisal tool and applicable criteria	Criteria met, n/N	Proportion of applicable criteria met, %	Operational robustness category	Main methodological limitations
						restrictive eligibility criteria may limit generalizability.
6	Dalgaard, Kirkegaard (2025)	JBI Critical Appraisal Checklist for Quasi-Experimental Studies (9 applicable criteria)	3/9	33.3%	Low robustness	Uncontrolled pre-post design; no randomization; high attrition and changing participant composition across time points; only one pre- and one post-intervention measurement; COVID-19-related contextual confounding; incomplete implementation of action plans and non-completion of the top-management workshop.
7	Davis, Bailey (2025)	JBI Critical Appraisal Checklist for Quasi-Experimental Studies (9 applicable criteria)	2/9	22.2%	Low robustness	Uncontrolled pre-post design; anonymous repeated cross-sectional surveys without individual follow-up; non-comparable annual samples; major concurrent COVID-19, curriculum, staffing, and system changes; only one pre-intervention measurement; unvalidated composite wellness measures; inappropriate use of paired t-tests for unpaired annual samples.
8	De Angelis, Giusino (2020)	Not applicable (Concept Paper / Study Protocol)	Not applicable	Not applicable	Not appraised for effectiveness	Protocol paper; does not include participant assessment, data collection, results, or empirical analyses; describes only the planned methodological design of the H-WORK project.
9	De Bruin, Valentin (2020)	MMAT mixed-methods criteria: 5 qualitative criteria, 5 quantitative non-randomized criteria, and 5 mixed-methods criteria; screening questions excluded from scoring	10/15	66.7%	Moderate robustness	Non-randomized single-group design; no concurrent control group; self-selected/referral sample; possible cointerventions and expectancy effects; incomplete reporting of outcome-data completeness; self-reported outcomes; intervention fidelity and home practice not systematically assessed; small qualitative sample.

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ID	Author (year)	Appraisal tool and applicable criteria	Criteria met, n/N	Proportion of applicable criteria met, %	Operational robustness category	Main methodological limitations
10	Deng, Huang (2021)	JBI Critical Appraisal Checklist for Analytical Cross-Sectional Studies (8 applicable criteria)	7/8	87.5%	High robustness	Cross-sectional design; adapted Chinese JD-R exposure measure without full validation reported; self-reported exposures and outcomes; possible common-method bias and social desirability bias; unmeasured confounding; sample restricted to foundation employees participating in training.
11	Díaz-Benito, Barriopedro Moro (2022)	JBI Critical Appraisal Checklist for Randomized Controlled Trials (13 applicable criteria	9/13	69.2%	Moderate robustness	Allocation concealment insufficiently described; baseline age imbalance; intervention providers not blinded; no attention-matched control; self-reported productivity and quality-of-life outcomes; unclear adjustment for baseline imbalance; single-company pilot sample; short follow-up.
12	Doyle Fosco, Schussler (2023)	MMAT mixed-methods criteria (5 applicable criteria)	3/5	60.0%	Moderate robustness	Small follow-up sample; low follow-up response rate; self-reported outcomes; absence of a control group; no formal effectiveness testing; limited generalizability; predominantly White sample; potential for social desirability bias; variability in program acceptability.
13	Elder, Johnston (2021)	JBI Critical Appraisal Checklist for Qualitative Research (10 applicable criteria)	7/10	70.0%	Moderate robustness	No explicit philosophical perspective; limited researcher positionality and reflexivity; small purposive and snowball sample from one emergency department; second nominal group included only two participants; initial stressor ranking completed by six of eight Group 1 participants; proposed strategy not implemented or tested for feasibility or effectiveness.
14	Elling, Almquist (2022)	JBI Critical Appraisal Checklist for Randomized Controlled	4/13	30.8%	Low robustness	Allocation concealment not reported; post-randomization loss of two clusters; baseline

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ID	Author (year)	Appraisal tool and applicable criteria	Criteria met, n/N	Proportion of applicable criteria met, %	Operational robustness category	Main methodological limitations
		Trials (13 applicable criteria)				imbalance in supervisory responsibility and tenure; no blinding; possible contamination and incomplete intervention attendance; substantial attrition with complete-case analysis; self-reported single-item outcomes with uncertain reliability.
15	Engels, Scheepers (2024)	MMAT mixed-methods criteria: 5 qualitative criteria, 5 quantitative non-randomized criteria, and 5 mixed-methods criteria; screening questions excluded from scoring	9/15	60.0%	Moderate robustness	Self-selected and non-representative MSE sample; substantial T1–T2 attrition; descriptive analysis only; no control of confounding; low intervention fidelity and dose; process measures partly based on adapted, short or single-item measures; qualitative sample independent from System P users.
16	Erby and Blustein (2026)	JBI Critical Appraisal Checklist for Analytical Cross-Sectional Studies; 8 applicable criteria	6/8	75.0%	Moderate robustness	Cross-sectional design; self-reported measures; no causal inference; confounding factors not explicitly identified or controlled; missing data/attrition due to long survey; data collected during COVID-19 and racial reckoning period, which may have influenced outcomes.
17	Fatemi, Vagharseyyedin (2024)	JBI Critical Appraisal Checklist for Randomized Controlled Trials; 13 applicable criteria	8/13	61.5%	Moderate robustness	Allocation concealment not reported; no participant, provider, or outcome-assessor blinding; waitlist control without attention matching; no intention-to-treat analysis; self-reported outcomes; fidelity and adherence to home practice not quantitatively reported; single-hospital volunteer sample; one-month follow-up only.
18	Fantus, Cole (2024)	JBI Critical Appraisal Checklist for Qualitative Research (10 applicable criteria)	7/10	70.0%	Moderate robustness	No explicit philosophical perspective; limited researcher positionality and reflexivity; purposive and chain-referral sample restricted to Texas;

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ID	Author (year)	Appraisal tool and applicable criteria	Criteria met, n/N	Proportion of applicable criteria met, %	Operational robustness category	Main methodological limitations
						predominantly female sample; possible underrepresentation of workers concerned about confidentiality or retaliation; no intervention effectiveness outcomes.
19	Foster, Shochet (2024)	JBI Critical Appraisal Checklist for Randomized Controlled Trials (13 applicable criteria)	9/13	69.2%	Moderate robustness	Allocation concealment unclear; participants not blinded; intervention deliverers not blinded; outcome assessors not blinded; self-reported outcomes; smaller sample than planned; short follow-up; single public mental health service; self-selection bias; substantial missing PTGI data.
20	Goetze (2025)	JBI Critical Appraisal Checklist for Analytical Cross-Sectional Studies (8 applicable criteria)	4/8	50.0%	Moderate robustness	Cross-sectional design; convenience and snowball sampling; self-reported occupational exposures; confounders not explicitly identified or controlled; original psychometric models not replicated; data-driven scale modification; low reliability of trait emotional intelligence measure; missing-data handling not reported.
21	Goodwyn, Beech (2024)	JBI Critical Appraisal Checklist for Qualitative Research (10 applicable criteria)	8/10	80.0%	High robustness	Small purposive sample; self-reported perceptions; no quantitative outcome assessment; no control group; no longitudinal follow-up; ethics approval not reported; researcher positionality incompletely described.
22	Guido, Peruzzi (2025)	JBI Critical Appraisal Checklist for Quasi-Experimental Studies (9 applicable criteria)	6/9	66.7%	Moderate robustness	Lack of a control group; absence of randomization; very small sample size (n = 13); single-center pilot study; only two assessment time points (T0/T1); potential confounding by external factors; voluntary participation; limited generalizability of the findings.

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ID	Author (year)	Appraisal tool and applicable criteria	Criteria met, n/N	Proportion of applicable criteria met, %	Operational robustness category	Main methodological limitations
23	Hale, Lim (2025)	JBI Critical Appraisal Checklist for Analytical Cross-Sectional Studies (8 applicable criteria)	6/8	75.0%	Moderate robustness	Cross-sectional design; low response rate (~18%) with possible self-selection bias; self-reported exposures and outcome; several exposure variables based on single or adapted items without reported psychometric evaluation; residual confounding possible; backward-stepwise variable selection; restricted to two hospitals in urban Honolulu.
24	Rose, Smith (2025)	JBI Critical Appraisal Checklist for Quasi-Experimental Studies (9 applicable criteria)	6/9	66.7%	Moderate robustness	No concurrent control group for the primary 12-week coaching intervention; self-selected employee sample; small sample size (n = 50); variable response rates across longitudinal assessments; predominantly female participants; self-reported outcomes; potential history, expectancy, and regression-to-the-mean effects; randomization applied only to the post-program text-message maintenance component; limited generalizability beyond one university and its affiliated hospital.
25	Harris, Amano (2024)	JBI Critical Appraisal Checklist for Qualitative Research (10 applicable criteria)	8/10	80.0%	High robustness	Study conducted exclusively with leaders; convenience sampling; single interviews; lack of participant triangulation (frontline professionals were not included); limited researcher reflexivity; potential for social desirability bias.
26	Heredia, Ventura (2024)	JBI Critical Appraisal Checklist for Randomized Controlled Trials (13 applicable criteria)	7/13	53.8%	Moderate robustness	Allocation concealment not reported; no participant, provider, or outcome-assessor blinding; waitlist rather than active control; 11% attrition with exclusion from post-test; no intention-to-treat analysis; short immediate post-intervention follow-up; possible school-context

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ID	Author (year)	Appraisal tool and applicable criteria	Criteria met, n/N	Proportion of applicable criteria met, %	Operational robustness category	Main methodological limitations
						and workload confounding.
27	Jacobson, Westein (2022)	JBI Critical Appraisal Checklist for Qualitative Research (10 applicable criteria)	6/10	60.0%	Moderate robustness	No explicit philosophical perspective; limited researcher positionality and reflexivity; ethical approval/consent procedures not reported; convenience self-selected sample; repeated submissions allowed; respondent roles and denominator not available; single academic Level I trauma center; no effectiveness outcomes for the wellness initiative.
28	Jiang, Song (2024)	JBI Critical Appraisal Checklist for Analytical Cross-Sectional Studies (8 applicable criteria)	6/8	75.0%	Moderate robustness	Cross-sectional design; COVID-19 workload index without reported validation or reliability; self-reported exposure, mediator, moderator, and outcome measures; limited generalizability to one Chinese city; residual confounding possible; missing-data handling and adjustment for cluster sampling not reported.
29	Kaur, Arora (2023)	JBI Critical Appraisal Checklist for Analytical Cross-Sectional Studies (8 applicable criteria)	3/8	37.5%	Low robustness	Cross-sectional design; self-structured questionnaire with limited external validation; no explicit identification or adjustment of key confounders; self-reported exposures and outcome; no reported handling of missing data or clustering by hospital; restricted setting of eight large hospitals in Delhi-NCR.
30	Klasen, van Amelsvoort (2021)	JBI Critical Appraisal Checklist for Qualitative Research (10 applicable criteria)	7/10	70.0%	Moderate robustness	No explicit philosophical perspective; limited reflexive reporting on researcher positioning and influence; small purposive sample; all employee participants were male and from one petrochemical company; education level not

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ID	Author (year)	Appraisal tool and applicable criteria	Criteria met, n/N	Proportion of applicable criteria met, %	Operational robustness category	Main methodological limitations
						reported; findings may not transfer to SMEs or organizations with different occupational health systems.
31	Kuronen, Winell (2023)	JBI Critical Appraisal Checklist for Analytical Cross-Sectional Studies; 8 applicable criteria	1/8	12.5%	Low robustness	Cross-sectional secondary analysis of quality-improvement data; limited participant-level description; no reported validation of process measures; no identification or adjustment for confounding; complete-case analysis ignoring missing-data mechanisms; unadjusted models; no effectiveness outcomes.
32	Kurosawa, Adachi (2024)	Not appraised for effectiveness; protocol/planned RCT; 0 applicable criteria	Not applicable	Not applicable	Not appraised for effectiveness	Protocol only; no empirical outcome results; no completed effectiveness analysis; no observed attrition data; open-label design planned; short 4-week intervention; no long-term effectiveness results reported.
33	Lanfranchi, Zambetti (2025)	JBI Critical Appraisal Checklist for Analytical Cross-Sectional Studies (8 applicable criteria)	4/8	50.0%	Moderate robustness	Cross-sectional non-randomized design; convenience and self-selected participation in MountainTherapy; exposure measurement and intervention dose insufficiently standardized; no adjustment for confounding; self-reported outcomes; unvalidated activity-specific adaptations of outcome scales; incomplete reporting of missing data and statistical inconsistencies in frequency analyses.
34	Lebares, Greenberg (2021)	MMAT mixed-methods criteria: 5 qualitative criteria, 5 quantitative descriptive criteria, and 5 mixed-methods criteria;	8/15	53.3%	Moderate robustness	Cross-sectional design after prior initiatives; no pre-post comparison or control group; small single-institution sample; possible non-response and self-selection bias; no adjustment for

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ID	Author (year)	Appraisal tool and applicable criteria	Criteria met, n/N	Proportion of applicable criteria met, %	Operational robustness category	Main methodological limitations
		screening questions excluded from scoring				confounding or multiple testing; focus group based on field notes rather than recording; limited subgroup and gender-specific power.
35	Lerner, Adler (2021)	Not appraised at article level: narrative programme-of-research overview reporting six heterogeneous primary evaluations; no single JBI/MMAT checklist applicable	Not applicable	Not applicable	Not appraised for effectiveness	Heterogeneous underlying study designs; no formal systematic review or meta-analysis; non-RCT findings unadjusted; usual-care comparator varied across RCTs; reliance on self-reported outcomes; generally brief follow-up; no formal cost-effectiveness analysis.
36	Locklear, Taylor (2020)	JBI Critical Appraisal Checklist for Randomized Controlled Trials (12 applicable criteria; item 5 not applicable because the intervention was self-administered)	6/12	50.0%	Moderate robustness	Allocation concealment not reported; baseline equivalence not directly demonstrated; participants not blinded; outcome-assessor blinding not reported; attrition and matched-dyad losses insufficiently detailed; no intention-to-treat analysis; short-term post-intervention assessment only.
37	Madden, Blewitt (2022)	JBI Critical Appraisal Checklist for Qualitative Research (10 applicable criteria)	7/10	70.0%	Moderate robustness	Lack of an explicit philosophical paradigm; lack of researcher reflexivity; researchers' theoretical positioning not described; most participants were located in Victoria; incomplete demographic information for some executives.
38	Maddock, McGuigan (2023)	JBI Critical Appraisal Checklist for Randomized Controlled Trials (13 applicable criteria)	6/13	46.2%	Low robustness	Allocation concealment not reported; no participant, provider, or outcome-assessor blinding; unequal synchronous intervention dose between groups; differential attrition; no intention-to-treat analysis; self-reported outcomes; short-term follow-up only; multiple outcome tests; retrospectively registered trial.

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ID	Author (year)	Appraisal tool and applicable criteria	Criteria met, n/N	Proportion of applicable criteria met, %	Operational robustness category	Main methodological limitations
39	Maddock (2024)	JBI Critical Appraisal Checklist for Randomized Controlled Trials; 13 applicable criteria	4/13	30.8%	Low robustness	Secondary pooled analysis of two RCTs; randomization method not reported in this article; allocation concealment not reported; no participant or facilitator blinding; outcome assessor blinding unclear; completer-only analysis; no intention-to-treat analysis; limited generalizability; self-selection bias; potential group-environment confounding; limited causal inference; underpowered for small to medium moderated mediation effects.
40	Maddock (2025)	JBI Critical Appraisal Checklist for Analytical Cross-Sectional Studies (8 applicable criteria	8/8	100.0%	High robustness	Cross-sectional design; inability to infer causality; convenience sample; data collected from a single region (Northern Ireland); structural equation models (SEM) represent only one of several possible model structures; limited statistical power to detect small effect sizes; potential for Type II error; limited generalizability to other settings and countries.
41	Mediavilla, McGreevy (2022)	Not appraised: protocol for a planned multicentre randomized controlled trial; no JBI/MMAT effectiveness criteria applicable	Not applicable	Not applicable	Not appraised for effectiveness	Protocol without empirical outcome data; no observed adherence, attrition, fidelity, adverse-event, or effectiveness data; participants and care providers not blinded; outcomes are self-reported.
42	Melloy, Sayre (2026)	JBI Critical Appraisal Checklist for Analytical Cross-Sectional Studies (8 applicable criteria)	4/8	50.0%	Moderate robustness	Observational event-level design without causal control; emotion-regulation strategies and negative affect measured with single items; limited identification and adjustment of confounders; one private school in Study 2; short six-week observation period; well-being restricted to negative affect.

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ID	Author (year)	Appraisal tool and applicable criteria	Criteria met, n/N	Proportion of applicable criteria met, %	Operational robustness category	Main methodological limitations
43	Mixafenti, Karagkouni (2025)	JBI Critical Appraisal Checklist for Analytical Cross-Sectional Studies (8 applicable criteria)	6/8	75.0%	Moderate robustness	Small sample size (n = 35); purposive sampling; study restricted to a single region of Greece; lack of formal control for potential confounding factors; absence of multivariable analysis; use of self-reported data; potential for selection and information bias; cross-sectional design precludes causal inference.
44	Mulfinger, Jarczok (2025)	JBI Critical Appraisal Checklist for Randomized Controlled Trials (13 applicable criteria)	7/13	53.8%	Moderate robustness	No participant, provider, or outcome-assessor blinding; baseline imbalance in leadership characteristics; contamination/crossover in wait-list controls; low intervention uptake; high attrition and missing outcome data; sample below planned size; intervention dose limited to a maximum of 12 hours; substantial pandemic-related protocol deviations.
45	Munn, Liu (2021)	JBI Critical Appraisal Checklist for Analytical Cross-Sectional Studies (8 applicable criteria)	8/8	100.0%	High robustness	Cross-sectional study; conducted within a single healthcare system; convenience sampling; potential for selection bias due to a 46.5% response rate; use of self-reported data; lack of longitudinal follow-up; limited generalizability to other settings.
46	Newell, Cutrona (2024)	JBI Critical Appraisal Checklist for Qualitative Research (10 applicable criteria)	7/10	70.0%	Moderate robustness	Philosophical paradigm not explicitly stated; lack of discussion regarding researcher reflexivity; researchers' theoretical positioning insufficiently described; potential for selection bias, as participants with more positive experiences may have been more likely to participate; study conducted within a single national healthcare system (VHA), limiting transferability.

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ID	Author (year)	Appraisal tool and applicable criteria	Criteria met, n/N	Proportion of applicable criteria met, %	Operational robustness category	Main methodological limitations
47	O´Connor-Pérez, Eugenia Carballo-López (2025)	JBI Critical Appraisal Checklist for Analytical Cross-Sectional Studies (8 applicable criteria)	8/8	100%	High robustness	Cross-sectional design; self-reported depression/anxiety screening; no diagnostic interview; multimorbidity not assessed; small number of male participants; limited causal inference.
48	Penev, Zhao (2023)	JBI Critical Appraisal Checklist for Quasi-Experimental Studies (8 applicable criteria; criterion 6 not applicable)	4/8	50.0%	Moderate robustness	Self-selected, non-randomized exposure; unclear temporal ordering between program use and annual outcomes; residual imbalance in anxiety and adjustment disorders; no pre-intervention measures; unclear handling of matched-pair dependence and residual confounding; restricted to four employer clients; program cost and employer ROI not assessed.
49	Pignatiello, Cuccia (2023)	JBI Critical Appraisal Checklist for Analytical Cross-Sectional Studies (8 applicable criteria)	8/8	100.0%	High robustness	Cross-sectional design precludes causal inference; potential for selection bias; possible exposure misclassification bias (self-reported HNHN affiliation); use of self-reported measures; potential for residual confounding; secondary analysis of an existing database; lack of temporal assessment of effects.
50	Priede, López-Álvarez (2021)	Not appraised for effectiveness: descriptive cross-sectional institutional survey mapping mental health programmes; no JBI/MMAT effectiveness criteria applicable	Not applicable	Not applicable	Not appraised for effectiveness	Convenience sample; incomplete national coverage; unknown proportion of hospitals offering programmes; self-reported institutional data; no data on programme uptake, acceptability, safety outcomes, clinical outcomes, or intervention effectiveness; restricted to the first pandemic wave.
51	Prudenzi, Graham	JBI Critical Appraisal Checklist	7/13	53.8%	Moderate	Allocation concealment not reported; no

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ID	Author (year)	Appraisal tool and applicable criteria	Criteria met, n/N	Proportion of applicable criteria met, %	Operational robustness category	Main methodological limitations
	(2022)	for Randomized Controlled Trials (13 applicable criteria)			robustness	participant, provider, or outcome-assessor blinding; inactive waitlist control; high attrition; analysis excluded 21 randomized participants before the reported ITT sample; missing-data handling by mean substitution and LOCF; self-reported outcomes; short follow-up.
52	Puschner, Stiawa (2025)	MMAT mixed-methods criteria: 5 qualitative criteria, 5 quantitative randomized controlled trial criteria, and 5 mixed-methods criteria; screening questions excluded from scoring	9/15	60.0%	Moderate robustness	Randomization procedures insufficiently reported in the article; baseline comparability unclear; substantial missing quantitative data; self-reported unblinded outcomes; incomplete uptake and adherence data; post-hoc moderator/mediator analyses; intervention complexity and COVID-19-related implementation modifications.
53	Radheshyam, Ramani (2024)	JBI Critical Appraisal Checklist for Quasi-Experimental Studies (9 applicable criteria)	4/9	44.4%	Low robustness	Non-random sampling and self-selected controls; baseline comparability not reported; controls may have had better baseline well-being; no adjustment for baseline differences or confounding; short three-week intervention; incomplete reporting of follow-up and missing data; self-reported outcomes; COVID-19 lockdown may have affected adherence and outcomes.
54	Rattray, Dawber (2023)	MMAT mixed-methods criteria: 5 qualitative criteria, 5 quantitative descriptive criteria, and 5 mixed-methods criteria; screening questions excluded from scoring	10/15	66.7%	Moderate robustness	Cross-sectional and non-randomized design; opportunistic sample from two hospitals; self-reported historical attendance, preferences and outcomes; possible selection and residual confounding; small and uneven subgroup cells; limited reporting of non-response; brief text-box qualitative data.

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ID	Author (year)	Appraisal tool and applicable criteria	Criteria met, n/N	Proportion of applicable criteria met, %	Operational robustness category	Main methodological limitations
55	Reeves, Dyer (2022)	JBI Critical Appraisal Checklist for Qualitative Research (10 applicable criteria)	7/10	70.0%	Moderate robustness	Ambiguous integration of philosophical and analytic approaches; limited reflexive reporting; self-selected sample; small sample with predominance of women; perceived impacts only; no causal effectiveness comparison; limited exploration of divergent experiences.
56	Rödlund, Toropova (2025)	JBI Critical Appraisal Checklist for Randomized Controlled Trials (13 applicable criteria)	7/13	53.8%	Moderate robustness	Random-sequence generation and allocation concealment not reported; no participant, provider, or outcome-assessor blinding; incomplete follow-up reporting; self-reported fidelity outcome with validity requiring further investigation; pandemic-related variation in workshop delivery; separate mediation models did not evaluate joint mediator pathways.
57	Sanetti, Pierce (2022)	MMAT mixed-methods criteria: 5 qualitative criteria, 5 quantitative non-randomized criteria, and 5 mixed-methods criteria; screening questions excluded from scoring	9/15	60.0%	Moderate robustness	Two small self-selected school teams; non-randomized sequential comparison between schools; contextual and temporal confounding not controlled; fidelity measure not psychometrically established; facilitator self-rating; qualitative audit trail limited; no teacher stress or burnout effectiveness outcomes.
58	Schubert, Zeschke (2021)	Not appraised for effectiveness: conceptual paper; no JBI/MMAT critical appraisal tool applicable.	Not applicable	Not applicable	Not appraised for effectiveness	Conceptual development paper; theoretical model with supplemental qualitative interviews; no intervention tested; no effectiveness outcomes; no comparative empirical design.
59	Shaw, Butcher (2025)	Not appraised: intervention-development study using the Behaviour Change Wheel; no	Not applicable	Not applicable	Not appraised for effectiveness	Interventions were developed but not tested; no participant outcomes following SWell delivery; no control group, randomization, pre-post outcome

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ID	Author (year)	Appraisal tool and applicable criteria	Criteria met, n/N	Proportion of applicable criteria met, %	Operational robustness category	Main methodological limitations
		JBI/MMAT effectiveness criteria applicable				data, implementation fidelity, acceptability, uptake, or cost-effectiveness data for the final interventions; single-unit formative context.
60	Singh, Oke (2025)	MMAT mixed-methods criteria; 5 applicable criteria	5/5	100.0%	High robustness	Convenience sampling in the quantitative phase; study restricted to Oyo State, Nigeria; potential selection bias and limited generalizability to other contexts; predominantly self-reported data.
61	Smith, Barratt (2021)	JBI Critical Appraisal Checklist for Analytical Cross-Sectional Studies (7 applicable criteria; item 4 not applicable)	5/7	71.4%	Moderate robustness	Cross-sectional design; MTurk convenience sample; self-reported personality and occupational well-being measures; confounders not formally identified or adjusted; profile classification uncertainty; limited generalizability beyond US online-panel workers.
62	Tenney, Dexter (2021)	JBI Critical Appraisal Checklist for Quasi-Experimental Studies (9 applicable criteria)	7/9	77.8%	Moderate robustness	No randomization; self-selection to intervention; baseline differences between groups; possible residual confounding; no blinding; self-reported organizational assessment; no evaluation of advising fidelity.
63	Turunen, Karhula (2025)	JBI Critical Appraisal Checklist for Quasi-Experimental Studies (9 applicable criteria)	8/9	88,9%	High robustness	Absence of randomization; groups defined according to exposure to the legislative reform; potential residual confounding inherent to the observational study design; smaller number of units in the control group; causality cannot be established definitively.
64	Van Duijnhoven, de Vries (2024)	Not appraised: study protocol/planned organizational-level intervention; no JBI/MMAT effectiveness	Not applicable	Not applicable	Not appraised for effectiveness	Protocol without empirical outcome data; no control group planned; self-selected participating groups; potential selection bias; COVID-19 context may affect implementation and outcomes.

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ID	Author (year)	Appraisal tool and applicable criteria	Criteria met, n/N	Proportion of applicable criteria met, %	Operational robustness category	Main methodological limitations
		criteria applicable				
65	Xiang, Cheng (2020)	MMAT mixed-methods criteria: 5 qualitative criteria, 5 quantitative descriptive criteria, and 5 mixed-methods criteria; screening questions excluded from scoring	11/15	73.3%	Moderate robustness	Convenience sample from a small number of agencies; limited representativeness; possible non-response and self-selection bias; modified attitude questionnaire without reported psychometric evaluation in PCAs; limited agency-level and sociodemographic data; practice behaviors self-reported only.
66	Yang, Huang (2025)	JBI Critical Appraisal Checklist for Analytical Cross-Sectional Studies (8 applicable criteria)	6/8	75.0%	Moderate robustness	Selection of exemplary cases only; lack of control for potential confounding factors; use of secondary documentary data; predominance of institutional qualitative information; potential for selection bias and limited generalizability to organizations not participating in the program.
67	Yap, Zainal (2025)	MMAT mixed-methods criteria: 5 qualitative criteria, 5 quantitative non-randomized criteria, and 5 mixed-methods criteria; screening questions excluded from scoring	10/15	66.7%	Moderate robustness	Very small purposive sample from one rehabilitation service; uncontrolled single-group pre-post design; no adjustment for confounding; incomplete intervention attendance; no formal fidelity assessment; self-reported burnout outcome only; immediate post-intervention assessment; quantitative-qualitative divergences not explicitly addressed.
68	Zhang, Huang (2022)	JBI Critical Appraisal Checklist for Qualitative Research (10 applicable criteria)	8/10	80.0%	High robustness	Philosophical perspective and researcher positioning insufficiently explicit; purposive sample of 10 participants without consideration of data saturation; single-hospital setting; potential selection and recall bias; self-reported implementation effects; no quantitative or causal

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ID	Author (year)	Appraisal tool and applicable criteria	Criteria met, n/N	Proportion of applicable criteria met, %	Operational robustness category	Main methodological limitations
						effectiveness evaluation.

Note. The percentage represents the author-defined proportion of applicable appraisal criteria met. It should not be interpreted as an official JBI or MMAT score. Items marked as not applicable were excluded from the denominator. Robustness categories were operationally defined to support descriptive synthesis: high robustness, >=80%; moderate robustness, 50-79%; and low robustness, <50%. These categories were not used as exclusion criteria.

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