Research Article

COMPARING EMPLOYER-BASED AND EMPLOYEE-BASED PSYCHOSOCIAL RISK ASSESSMENT APPROACHES CONTRIBUTING TO WORKPLACE STRESS AND OCCUPATIONAL MENTAL ILLNESSES IN INDUSTRIAL SETTINGS: A SYSTEMATIC REVIEW

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Abstract

Background: Occupational mental illnesses, including anxiety, depression, PTSD, and workplace stress, present serious challenges in industrial settings, making the identification of psychosocial risk factors critical for prevention and intervention. Employer-based and employee-based assessments are key tools for evaluating these risks, but their relative strengths and weaknesses remain inadequately explored.

Methods: A Systematic Review (SR) of database used: Scopus, Web of science, Cochrane library and PubMed was conducted using the Preferred Reporting Items for Systematic Reviews (PRISMA) technique. Keywords "psychosocial risk assessment", "workplace", "mental health risk assessment", "employer evaluation", and "psychometric evaluation" were used in this research. The inclusion criteria were: (1) Studies in industries involving psychosocial risk assessment, (2) English language, and (3) Research published in peer-reviewed journals within ten years (2014 to 2024). The EPHPP-Quality Assessment Tool was used to assess the quality of the studies.

Results: All 9 studies utilised employee-based assessments, highlighting gaps in capturing organisational-level stressors. Key psychosocial risks consistently identified included workload, low job control, role ambiguity, and inadequate support, which were strongly linked to adverse mental health outcomes. However, the lack of employer-based assessments limited the identification of systemic factors such as workload distribution and organisational policies.

Conclusion: The findings emphasise the need for a hybrid assessment model integrating employer and employee-based data. Such a model could provide a more comprehensive understanding of workplace risks and support the development of effective strategies to mitigate occupational mental illnesses, enhance employee well-being, and improve overall organisational performance. ***ASEAN Journal of Psychiatry, Vol. 27 (01) January, 2026; 1-11.***

Keywords: Psychosocial Risk Assessment; Workplace; Mental Health Risk Assessment; Employer Evaluation; Psychometric Evaluation

Abbreviations: COPSOQ: Copenhagen Psychosocial Questionnaire; DOSH: Department of Safety and Health; EPHPP: Effective Public Health Practices Project; EWCS: European Working Conditions Survey; PRIWA: Psychosocial Risks and Impacts in Workplace Assessment; PTSD: Post Traumatic Stress Disorder; WDQ: Work Design Questionnaire

Introduction

The prevalence of occupational mental health challenges, including anxiety, depression, and stress, has intensified in recent years, particularly within industrial settings. Factors such as excessive workload, low job control, role ambiguity, and inadequate social support have been identified as key contributors to adverse mental health outcomes [1]. For instance, job ambiguity and workload variability have been shown to increase the likelihood of developing anxiety and depression, with odds ratios of 2.18 for anxiety and 1.98 for depression [1]. The financial burden of workplace stress is equally concerning, contributing to an estimated $190 billion annually in U.S. healthcare costs and a $154 billion global productivity loss [2]. Despite widespread recognition of these issues, the dominant use of employee-based psychosocial risk assessments limits the identification of systemic organisational stressors, such as ineffective job design and insufficient managerial support [3]. This gap highlights the necessity of employer-led evaluations to address the gaps between individual and organisational factors that lead to occupational health challenges.

Researchers have increasingly emphasised the need for hybrid assessment models that integrate employee-reported data and organisational metrics [4] to address these limitations. Employee-based assessments provide essential insights into subjective experiences, including emotional exhaustion and interpersonal conflicts, yet often fail to capture organisational-level dynamics. Conversely, employer-based assessments focus on objective measures, such as workload allocation and leadership quality, which are critical in identifying and mitigating systemic stressors. Research indicates that combining these approaches enhances the comprehensiveness of psychosocial risk assessments. For instance, hybrid models that merge job demands and control measures with effort-reward imbalance frameworks have improved the accuracy of identifying psychological distress by 20% compared to individual approaches [5]. This evidence underscores the necessity of integrating these complementary assessment methods to develop more effective workplace interventions.

Hybrid models that combine employee self-reports and organisational data provide a comprehensive solution to psychosocial risk assessment by addressing both individual-level stressors and systemic workplace factors. These models enhance accuracy by integrating subjective experiences, such as burnout and emotional exhaustion, with objective metrics like workload distribution and leadership quality. For example, a predictive model that incorporates internal organisational metrics and individual well-being indicators significantly improved the accuracy of predicting at risk employee outcomes [6]. A comparative analysis of psychosocial risk frameworks revealed that hybrid assessments allow organisations to design more tailored interventions, improving workplace well-being and productivity [7]. By leveraging the strengths of both approaches, hybrid models reduce the limitations associated with standalone self-reports, such as bias and incomplete data, creating a more effective and robust approach to workplace risk management.

Given the increasing demand for thorough psychosocial risk assessments, this study investigates how hybrid models combining employee-reported data with organisational metrics can enhance the identification of workplace stressors. By bridging current gaps in risk assessments, this systematic review aims to inform the development of holistic assessment frameworks and improve intervention strategies to mitigate occupational mental illnesses and foster healthier workplace environments.

Objective

The objective of this study is to identify key psychosocial risk factors that contribute to occupational mental illnesses in industrial environments. Key psychosocial risk factors contributing to occupational mental illnesses in industrial environments include high job strain, low job control, poor managerial support, role ambiguity, emotional demands, and imbalanced effort-reward structures, all of which significantly increase the risk of anxiety, depression, and burnout [8-12]. The existing research primarily relies on self-reported employee assessments, which fail to capture employer assessment on structural workplace stressors, such as job design inefficiencies and ineffective managerial support, [13] as it has shown to give a more comprehensive evaluation of workplace stressors, improving accuracy and intervention strategies [14].

The second objective is to delineate the development of employer-based risk assessment methods for workplace mental health. It has gained increasing attention as a key tool in mitigating occupational stress and improving employee well-being. A study in Malaysia introduced employer practice evaluation to manage psychosocial risks, [15] while some proposed risk matrices for psychosocial risk assessments to evaluate workplace mental health risks [16].

There is an urgent need for employer-driven risk assessment models, enhanced risk matrices, and stronger policy integration to safeguard workplace mental health in Malaysia and beyond. In Malaysia, the Department of Occupational Safety and Health (DOSH) has proactively addressed workplace psychosocial risks by introducing the “Guidelines on Psychosocial Risk Assessment and Management at the Workplace 2024” [17] to advocate for a comprehensive approach; however, the focus is on workplace stressors and lacking the coverage on occupational mental illnesses.

Materials and Methods

This systematic review evaluated existing psychosocial risk assessment models in industrial settings, comparing employer- and employee-based approaches. The aim was to determine the relative effectiveness, reliability, and applicability of these approaches in identifying psychosocial risk factors contributing to work-related stress and occupational mental illnesses, including anxiety, depression, and PTSD. Despite the intended focus on both employer- and employee-based assessments, the review revealed significant gaps in the availability of studies directly incorporating employer-based assessments.

Eligibility criteria

Studies were eligible if they investigated psychosocial risk assessments within industrial settings and evaluated tools, processes, or frameworks designed to identify workplace stressors. The review included randomised controlled trials, observational studies (cohort, case-control, and cross-sectional), and validation studies. While the inclusion criteria aimed to capture both employer- and employee-based assessments, only studies using employee-based assessments met the criteria for inclusion.

Search strategy

The study followed the PRISMA Statement as a systematic review framework. Additionally, this study adheres to the PICO framework (Population, Intervention, Comparison, Outcome) to ensure a structured and rigorous review process (Table 1). This methodology facilitated a comprehensive exploration of topics related to risk assessment and psychosocial factors in the workplace. Four major journal databases were selected to ensure a robust literature search: Scopus, Web of Science (WoS), Cochrane Library and PubMed. The study utilised targeted keywords, including “psychosocial risk assessment”, “workplace”, “mental health risk assessment”, “employer evaluation”, “psychometric evaluation”.

Table 1. PICO framework.

Population: “Employers” OR “manager” OR management OR officer OR “workplace” OR “workplace assessments” OR “industry” OR “organization” “psychosocial risk assessment” OR “workplace risk assessment” OR “risk assessment tool” OR “psychosocial hazards” OR “employer evaluation” OR “mental health risk assessment” psychosocial risk OR psychosocial domains OR psychosocial factors OR organizational impactpsychometric OR validation OR validity OR reliability OR factor analysis OR
Intervention: “psychosocial risk assessment” OR “workplace risk assessment” OR “risk assessment tool” OR “psychosocial hazards” OR “employer evaluation” OR “mental health risk assessment”
Comparators: employee based assesment
Outcome: psychosocial risk OR psychosocial domains OR psychosocial factors OR organizational impact psychometric OR validation OR validity OR reliability OR factor analysis OR

Below is an example of the search query used in the SCOPUS database: (employers OR manager OR management OR officer OR workplace OR "workplace assessments" OR industry OR organization) AND ("psychosocial risk assessment" OR "workplace risk assessment" OR "risk assessment tool" OR "psychosocial hazards" OR "employer evaluation" OR "mental health risk assessment" OR "psychosocial risk" OR "psychosocial domains" OR "psychosocial factors" OR "organizational impact") AND (psychometric OR validation OR validity OR reliability OR "factor analysis").

The selection process of relevant publications is illustrated in Figure 1. The review methodology involved a systematic review, identification of key variables, and content analysis. The systematic search, conducted in February 2025, aimed to identify relevant studies by searching multiple databases for related literature. Keywords were carefully chosen based on past research recommendations, ensuring alignment with the study’s focus on psychosocial risk assessment at the workplace leading to occupational mental illness. During the initial screening, 902 duplicate articles were removed, and 50 were ineligible, leaving 3,000 articles that matched the search criteria based on title and keywords. After further screening with automation tools, only 35 articles remained for in-depth evaluation. After assessing their relevance and alignment with the selection criteria, 9 articles were finalised for detailed review and discussion. The selected studies were explicitly chosen for their ability to address the research questions. The review process included reading abstracts first, then in-depth analysis of the full articles to extract key themes. In the subsequent phase, researchers identified study variables. They recorded article attributes, including country of origin, author names and year of publication, risk assessment methods for assessing psychosocial, study population, study design, statistical key findings and essential domains and items extracted. The structured approach guided by b ensures a transparent, reproducible, and methodologically sound systematic review process.

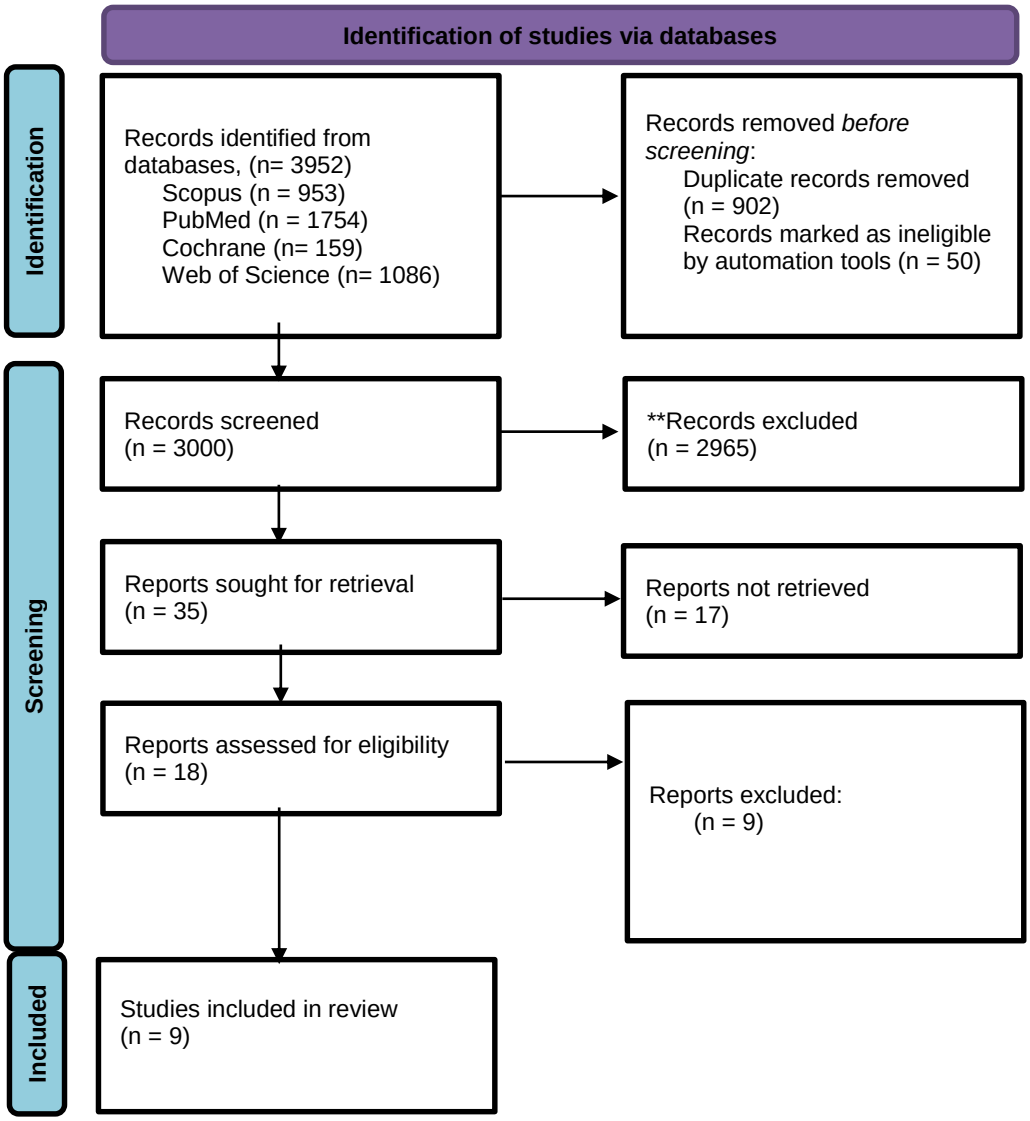

Figure 1. PRISMA flowchart for the systematic review. Figure source from: Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ 2021;372:n71. doi: 10.1136/bmj.n71. **Automation tools were used in the screening of article process.

Selection process

Five independent reviewers (Siti Fatimah Az-zahra MH (SFAMH), SM Yasin (SMY), Mohamad Rodi Isa (MRI), Azlina wati Nikmat (AN), Nurhuda Ismail (NI)) screened studies based on titles and abstracts, followed by full-text reviews of potentially eligible articles. Discrepancies were resolved through consensus discussions. Full-text articles that met the eligibility criteria were subjected to additional checks through citation searches and trial registry screenings.

Data collection and extraction

A standardised data extraction form collected key study characteristics, assessment methodologies, sample populations, statistical analyses, and outcome measures. Data were synthesised to facilitate a comparative analysis of the effectiveness and limitations of psychosocial risk assessment methods.

Dealing with missing data

The review relied solely on available data from the included studies. Missing data were documented, and no attempts were made to contact study authors or sponsors to retrieve additional information.

Search strings

We searched PubMed, Web of Science, Scopus and The Cochrane Library for clinical trials in Cochrane Central

Register of Controlled Trials (CENTRAL). Searchers were run from inception to 5th February 2025.

Data extraction

Study characteristics and outcomes data from each study were recorded in a data extraction form, which was initially piloted on 13 studies. 2 study authors (Siti Fatimah Az-zahra MH (SFAMH) and SM Yasin (SMY)) extracted the following data from included studies.

Table 2. Study characteristics.

Country of origin	Author (year)	Risk assessment used	Study population	Study design	Statistical key findings	Domains/Items/ Construct findings
Spain	García-Izquierdo and Castaño [30]	Work Design Questionnaire (WDQ-18)	500 multi-sector employees	Validation study	CFA (RMSEA=0.049, CFI=0.954); Cronbach's α for individual factors=0.58–0.95. Significant gender invariance.	WDQ-18 dimensions: autonomy, task variety, job complexity, support, ergonomics
Italy	De Sio, et al, [25]	Work-Related Stress Questionnaire (WRSQ)	50 employees	Pre-pilot test	Cronbach's α=0.93 (33-item), 0.86 (final 10-item); Pearson correlation r=0.90 (p<0.001) confirmed high test-retest reliability.	10 domains: Job satisfaction, job demand, support, role, work-life balance
Austria	Gren [20]	Copenhagen Psychosocial Questionnaire (COPSOQ) - IT sector adaptation	200 IT employees	Validation study	EFA (KMO=0.847), explained variance=52.2%; factor loadings>0.5; removal of items<0.4.	Job identification, self-determination, life satisfaction, social support
Turkey	Medeni, et al, [22]	COPSOQ-III (Hydroelectric Industry)	201 hydroelectric plant workers	Cross-sectional study	*Chi-square*, logistic regression (p<0.05); burnout prevalence=14.5%, work-life conflict=13.9%.	Work-life conflict and burnout (COPSOQ-III sub-scales)
Germany	Metzler, et al, [24]	Psychosocial Hazard Risk Assessment (PHRA)	549 blast furnace workers	Cross-sectional study	Multiple regression, t-tests; high exposure risk in repetitive tasks and workload; predictive validity confirmed.	Psychosocial hazards: Job strain, burnout, leadership, job security
Spain	Moncada, et al, [21]	COPSOQ-Istas21 (3rd version update)	1,807 employees	Cross-sectional validation study	Descriptive analysis, internal consistency (α>0.70), prevalence ratios for mental health and job satisfaction significant.	22 dimensions: Job demands, organisational justice, work-life balance, support
Malaysia	Nuruzzakiyah, et al, [23]	Manufacturing Psychosocial Risk Model	258 manufacturing workers	Cross-sectional study	EFA reduced 10 dimensions to 8; significant correlations between psychosocial risks and work performance (p<0.05).	Job demands, job control, work environment, interpersonal relationships
Greece	Roussos [26]	Psychosocial Risks and Impacts in Workplace Assessment (PRIWA)	1,032 - 1,309 employees	Psychometric development and validation	EFA, CFA confirmed 7-factor structure; internal consistency (α>0.8); concurrent validity tested against COPSOQ-II and UWES.	PRIWA dimensions: workload, role conflict, organisational culture, leadership
Multi-country (Europe, EU dataset)	Russo, et al, [27]	European Working Conditions Survey (EWCS) Analysis	21,020 workers (34 EU countries)	Cross-sectional survey	Multivariate regression: β=0.411 (workplace violence) and β=0.0859 (repetitive tasks) highly associated with mental health.	Psychosocial, task-related, and somatic risk factors for mental health

Outcomes

We included the following primary outcome: Identification of psychosocial factors contributing to occupational mental illnesses (anxiety, depression, PTSD) and workplace stress. Secondary outcomes included the development of methods for assessing risk levels.

Data collection process

The following components were included in the search string mesh or other subject terms. Searches were run in the following databases PubMed, Web of Science, Scopus and The Cochrane Library for clinical trials in Cochrane Central Register of Controlled Trials (CENTRAL) from inception to 5th February 2025. Trial registries were used for the search from inception to 5th February 2025.

We only included studies of specific publication types. Conference abstracts, theses, articles in press and books or book chapters did not appear in our search results. Only the following languages were included: English. Additionally, we manually checked the reference lists of the included studies and performed a backward citation analysis and a forward citation analysis.

Quality of assessment

The quality of the selected studies was assessed using the Quality Assessment System for Effective Public Health Practices Project (EPHPP), a standardised tool designed for evaluating quantitative studies. This assessment framework considers key methodological factors, including selection bias, study design, confounding variables, blinding, data collection techniques, and drop-out rates. The EPHPP quality assessment tool dictionary was used to evaluate potential biases within each study to ensure consistency and accuracy. Each study was assigned a quality rating based on individual domain scores, categorising them as strong, moderate, or weak according to the predefined criteria outlined in the assessment tool. The ratings were then consolidated to determine an overall quality classification. Studies were deemed poor quality if two or more domains were rated as weak, moderate quality if only one domain was rated as weak, and high quality if none of the domains were rated as weak. Two authors independently evaluated (SFAMH and SMY). Any discrepancies or uncertainties encountered during the assessment process were resolved through discussion among the reviewers.

Results

Overview of findings

9 studies met the eligibility criteria and were included in the review. These studies provided insights into the effectiveness and limitations of psychosocial risk assessments, although none precisely captured employer-based assessments. All studies exclusively utilised employee-based approaches, relying on self-reported surveys, interviews, and questionnaires to identify workplace stressors and psychosocial risks. This geographic distribution of studies highlights a significant European focus (N=6), with Spain contributing the most studies (N=2), followed by Germany, Italy, Austria, Greece, and Turkey with one study each. The inclusion of Malaysia provides insights from non-European industrial contexts. The multi-country EU dataset study enhances the review by incorporating data from European working conditions (Table 1).

Despite the focus on identifying and comparing both employer-based and employee-based assessments, no included studies utilised employer-based models that directly gathered organizational data from employers or managers. Instead, all 9 studies employed employee-based assessment tools, which collected subjective information from employees regarding job stress, workload, job control, leadership support, and work-life balance.

Key psychosocial risk factors identified

Across the 9 included studies, five studies consistently identified excessive workload, limited job control, unclear job roles, inadequate organizational support, and work-life conflicts as key psychosocial risk factors associated with adverse mental health outcomes. Notably, two studies utilising the Copenhagen Psychosocial Questionnaire (COPSOQ) and the Job Stress and Psychosocial Risks Scale found strong correlations between high job demands and increased symptoms of anxiety, depression, and emotional exhaustion. However, a critical limitation noted in the two studies was the absence of employer-based assessments, leading to identifying organizational-level risks such as workload distribution, job demands, and structural stressors solely through employee self-reports, raising concerns regarding subjective biases.

Statistical validity and limitations of employee-based assessments

The validity of employee-based assessments varied across the studies. Four studies confirmed the robustness of self-reported assessments through statistical analyses such as Confirmatory Factor Analyses (CFA) and regression models, demonstrating that these tools effectively detect psychosocial risks [19-24]. However, two studies raised concerns regarding response bias, recall errors, and subjective variability, showing that self-reported job strain and emotional exhaustion often differed from objective workplace indicators such as absenteeism and productivity. Additionally, one study found that reliance solely on employee self-reported data could misrepresent workplace realities, necessitating additional validation mechanisms to enhance the accuracy and reliability of risk assessments.

Implications of missing employer-based perspectives

A significant gap in workplace mental health research was the absence of employer-driven psychosocial risk assessments in all studies; however, highlighted in six studies [21-23,25-28]. These studies emphasised that without direct input from employers or access to organizational-level data, assessments of workplace psychosocial risks were predominantly based on employee perceptions, which may underreport systemic workplace stressors such as workload allocation, job design, and leadership practices. Four studies further underscored that relying solely on employee self-reports could lead to over emphasizing perceived individual stressors while neglecting critical organizational factors contributing to stress [21,26,27,29].

The need for hybrid assessment models

The integration of both employer-based and employee-based assessments was proposed in four studies, advocating for hybrid models that merge subjective employee self-reports with objective employer-driven metrics such as absenteeism rates, job design structures, and workload allocation [20,24,30,31]. Four studies concluded that a hybrid approach could significantly enhance the predictive accuracy of psychosocial risk assessments, ensuring a more balanced and actionable understanding of workplace stress [22,26,27,30].

Risk assessment methods

Among the 9 studies, only Metzler, et al. explicitly incorporated an objective risk assessment method, systematically comparing exposure-based scoring, comparison-based models, multiple regression, and the Clarke-Cooper approach to evaluate psychosocial risks [24]. Russo et al., partially addressed objective risk assessment by analysing data from the European Working Conditions Survey (EWCS) using multivariate regression models. However, it still relied on self-reported workplace perceptions [27]. Five studies focused on psychometric validation of survey-based instruments without integrating direct exposure-based risk assessments or observational methods [19,20,22,26,28]. Thus, while most studies relied on self-reported measures and statistical validation, Metzler, et al. remain the only study that applied a structured, multi-method risk assessment approach to developing psychosocial risk evaluation tools [24].

Quality assessment

The EPHPP quality assessment of the nine studies (Table 3) found that 88% (N=8) were rated as having moderate overall quality, primarily due to limitations in confounder control, blinding, and reporting of withdrawals/dropouts, as presented in Table 3. Two studies [24,27] scored strongly for selection bias due to the use of large, representative samples, whereas the other two studies [20,25] demonstrated moderate to weak selection bias due to convenience sampling. The study design was rated as moderate for most studies, as the majority followed cross-sectional approaches without control groups. Confounder control was weak to moderate, with some studies adjusting for sociodemographic factors but failing to account for workplace policies. Blinding was consistently weak, as all studies relied on self-reported measures. However, data collection methods were strong across studies, with validated instruments such as the Copenhagen Psychosocial Questionnaire (COPSOQ), Work Design Questionnaire (WDQ), Psychosocial Risk Indicator in the Workplace Assessment (PRIWA) and European Working Conditions Survey (EWCS) questionnaires ensuring measurement reliability. Withdrawals and dropout handling were generally not reported, reducing transparency in the management of missing data.

Table 3. Quality assessment result against the effective public health practice project quality assessment tool.

Study	Selection bias	Study design	Confounders	Blinding	Data collection methods	Withdrawals and dropouts	Overall rating
García-Izquierdo and Castaño [30]	Moderate	Moderate	Weak	Weak	Strong	Not reported	Moderate
De Sio, et al, [25]	Weak	Weak	Weak	Weak	Moderate	Not reported	Weak
Gren [20]	Moderate	Moderate	Weak	Weak	Strong	Not reported	Moderate
Medeni, et al, [22]	Moderate	Moderate	Weak	Weak	Strong	Moderate	Moderate
Metzler, et al, [24]	Strong	Moderate	Moderate	Weak	Strong	Moderate	Moderate
Moncada, et al, [21]	Moderate	Moderate	Weak	Weak	Strong	Moderate	Moderate
Nuruzzakiyah, et al. [23]	Moderate	Moderate	Weak	Weak	Strong	Not reported	Moderate
Roussos [26]	Moderate	Moderate	Moderate	Weak	Strong	Moderate	Moderate
Russo, et al. [27]	Strong	Moderate	Moderate	Weak	Strong	Moderate	Moderate

Assessment of bias

The Risk of Bias in Non-Randomized Studies of Interventions (ROBINS-I) tool (Figure 2) is designed to assess the risk of bias in non-randomized studies, including observational and cohort studies. It evaluates bias across seven domains: confounding, selection bias, classification of exposures, deviations from intended interventions, missing data, outcome measurement, and selective reporting. Each domain is rated as low, moderate, severe, or critical risk of bias, and the highest rating across any domain determines the overall study rating [32]. The ROBINS-I assessment across the 9 studies reveals that bias in measuring outcomes (D6) is a significant concern, with all studies receiving a severe risk rating. Most studies exhibited a moderate risk for confounding (D1) and selection bias (D2), indicating potential limitations in participant selection and adjustment for confounders. However, bias in the classification of interventions (D3), deviations from intended interventions (D4), missing data (D5), and selection of reported results (D7) were rated mainly as low risk (green plus), suggesting that these areas were generally well controlled. The risk of bias for 9 studies was classified as moderate (N=100%), primarily due to concerns surrounding measurement bias, which could affect the validity of the reported findings.

Figure 2. Report of data assessment using the ROBINS-I tool.

Discussion

Overview of findings

The review confirmed that workload, role ambiguity, inadequate support, and work-life imbalance are major contributors to workplace mental health risks. Consistent with previous studies, excessive workload was closely linked to higher rates of burnout and anxiety, with role ambiguity (r=0.279) and role conflict (r=0.318) showing significant contributions to psychological distress [33]. A large-scale European study similarly identified job stress as a significant predictor of reduced mental well-being (β=-0.2352, $p<0.05$), while social support acted as a mitigating factor [34]. Contrasting findings suggest that while role ambiguity does not consistently reduce job performance, workload and role conflict demonstrate stronger and more consistent effects on productivity and well-being. These findings highlight the need for targeted interventions addressing workload management, role clarity, and supportive workplace environments.

Key psychosocial risk factors identified

Recent studies underscore the need to improve employee-based assessments through more robust statistical validation and bias reduction. A confirmatory factor analysis of 1,151 employee responses showed strong internal consistency (α=0.65-0.90) and significant criterion validity ($p<0.001$) [35]. However, limitations associated with response biases, including social desirability, were evident, with one study reporting a 10% bias contamination in assessments [36]. Although dual-response techniques and other bias-correction methods have been applied, they have shown limited improvements, indicating the necessity of integrating objective measures such as physiological biomarkers [37]. Practical diagnostic improvements will likely result from combining employee self-reports with more objective organisational and physiological data.

Statistical validity and limitations of employee-based assessments

The absence of employer-based assessments constrains the identification of systemic organisational stressors, limiting the development of holistic intervention strategies. Studies demonstrate that workload and role clarity have a direct impact on outcomes such as burnout and job satisfaction ($\beta=0.22$, $p<0.01$) [38]. Effective leadership and procedural justice can mitigate these impacts, but without employer-level insights, key organisational factors such as workload distribution and leadership practices remain underexplored [39]. When supportive and well-balanced, organisational culture significantly enhances job satisfaction and reduces burnout [40]. Moreover, structural equation models have shown that job demands and workload distribution significantly influence performance outcomes and stress levels [41]. Integrating employer-based assessments with employee data can provide richer insights into how systemic organisational changes affect individual well-being.

Implications of missing employer-based perspectives

Combining employee self-reports with employer-driven organisational data offers a more comprehensive and accurate evaluation of workplace stressors. Employee-based assessments capture individual-level stress experiences, including emotional exhaustion and interpersonal conflicts, but often fail to account for systemic factors. Conversely, employer-based assessments, which rely on organisational metrics such as absenteeism, job design, and workload allocation, provide objective data but may overlook nuanced individual stressors. Recent research demonstrates that integrating these approaches within hybrid assessment frameworks, such as the job demands-resources model, significantly enhances predictive accuracy and intervention effectiveness [42]. Organisations employing hybrid models have reported reductions in burnout rates and improved job satisfaction by up to 20% following targeted interventions [43]. A comprehensive approach enables the identification of both personal and systemic stressors, making hybrid models a critical tool for sustainable workplace mental health improvements.

The value of hybrid assessment models

Combining employee self-reports with employer-driven organisational data offers a more comprehensive and accurate evaluation of workplace stressors. Employee-based assessments capture individual-level stress experiences, including emotional exhaustion and interpersonal conflicts, but often fail to account for systemic factors. Conversely, employer-based assessments, which rely on organisational metrics such as absenteeism, job design, and workload allocation, provide objective data but may overlook nuanced individual stressors. Recent research demonstrates that integrating these approaches within hybrid assessment frameworks, such as the job demands-resources model, significantly enhances predictive accuracy and intervention effectiveness. Organisations employing hybrid models have reported reductions in burnout rates and improved job satisfaction by up to 20% following targeted interventions. A comprehensive approach enables the identification of both personal and systemic stressors, making hybrid models a critical tool for sustainable workplace mental health improvements.

Implications of the study

The findings of this review have significant implications for advancing the design of comprehensive psychosocial risk assessments in industrial settings. The exclusive reliance on employee-based assessments across all included studies highlights a critical gap in capturing organizational-level stressors. Without employer-driven data on structural workplace factors such as workload distribution, job design, and leadership practices organisations risk underestimating the impact of systemic stressors. This underreporting could lead to interventions that primarily address individual symptoms of stress while neglecting broader organisational contributors, thus limiting the effectiveness of workplace mental health strategies. Therefore, integrating employer-based assessments is essential for organisations aiming to design holistic interventions that address individual and structural risk factors, improving employee well-being and sustained productivity.

Furthermore, this study supports the development of hybrid assessment models that merge employee-reported data with organisational metrics to provide a more accurate and actionable understanding of workplace stress. Employee-based assessments effectively capture subjective experiences such as emotional exhaustion and interpersonal conflict, but they often suffer from response bias and inconsistencies when used alone. Conversely, employer-based assessments bring objectivity by leveraging organisational metrics like absenteeism rates and workload allocation. A hybrid model enables organisations to detect hidden systemic issues while validating subjective reports with objective data, thereby enhancing the precision of risk identification. As supported by case studies, organisations that have adopted such integrated models have seen measurable improvements in employee satisfaction and burnout reduction, emphasising this approach's practical advantages. The widespread implementation of hybrid models could help bridge gaps in psychosocial risk management, offering scalable and effective solutions for diverse industrial environments.

Limitations

A key limitation of this systematic review is the absence of studies directly employing employer-based psychosocial risk assessments. Despite the objective of comparing the effectiveness of employer- and employee-based methods, all 9 included studies focused solely on employee-reported data through surveys, interviews, and questionnaires. This presents a critical gap in evaluating systemic organisational stressors, such as workload distribution, role allocation, and leadership practices, which require input from employer-driven assessments. Employee-based assessments, while effective in capturing subjective experiences of stress, are prone to response bias and recall errors, limiting their accuracy. The lack of objective organisational data restricts this review's ability to provide comprehensive conclusions about how individual and structural factors interact to influence workplace stress and occupational mental illnesses.

Another limitation stems from the heterogeneity of the assessment tools and methodologies used in the included studies. Differences in constructs, psychometric properties, and population demographics make generalising findings across diverse industrial contexts challenging. While many tools demonstrated acceptable reliability (Cronbach's $\alpha>0.7$), the lack of standardisation in scoring methods introduces variability in results. Furthermore, most studies employed cross-sectional designs, limiting the capacity to establish causal relationships between identified psychosocial risks and adverse mental health outcomes. Longitudinal studies would be better suited to assess the temporal progression of workplace stressors and their impact. Future research should prioritise longitudinal designs and incorporate employer-driven data alongside employee self-reports to address these limitations. Integrating objective organisational metrics such as job performance, absenteeism rates, and workload distribution could enhance the reliability and comprehensiveness of future psychosocial risk assessments, ultimately improving intervention strategies to mitigate occupational mental health risks in industrial environments.

Conclusion

This systematic review highlights the need for a more comprehensive approach to psychosocial risk assessment in industrial settings. The exclusive reliance on employee-based assessments within the reviewed studies highlights key limitations in capturing systemic workplace stressors, including workload allocation, job design, and organisational culture. While employer-based assessments effectively identify individual stress experiences, they often miss the broader organisational factors contributing to workplace stress leading to occupational mental illnesses. This limitation emphasises the importance of integrating objective organisational data through employer-based assessments. A hybrid assessment model combining both perspectives would provide a more accurate and holistic understanding of workplace risks, enabling organisations to implement targeted and effective mental health interventions. Future research should focus on developing and validating such models, as they have the potential to bridge existing gaps and contribute to enhanced strategies for reducing occupational mental illnesses and fostering healthier work environments.

Ethics Approval and Consent to Participate

This systematic review adhered to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) standards. No primary data were collected; the research was based solely on publicly available data from the listed databases. All data were analysed anonymously, and no identifiable information was extracted or saved. No human participants were involved; therefore, ethical approval from an Ethics Committee or Institutional Review Board was not required. The authors declare no conflicts of interest.

Consent for Publication

This manuscript does not contain data from any person, including identifiable details, images, or videos. Not applicable.

Availability of Data and Materials

This published article and its supplementary information files include all data generated and analysed during this study.

Competing Interests

The authors declare that they have no competing interests.

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Authors Contributions

SFAMH conceptualised the study, designed the methodology, and conducted data extraction and analysis. SMY contributed to the interpretation of results and manuscript drafting. MRI, NI, AN reviewed and revised the manuscript for intellectual content. All authors read and approved the final manuscript.

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