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Review Article

The mediating role of sleep quality in the relationship between workload and employees' job stress: A systematic review

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Abstract

Background: Workload is a major occupational factor that contributes to employees' job stress and may also impair sleep quality. Increasing evidence suggests that sleep quality is not merely an outcome of work strain, but may function as an important mechanism through which workload influences psychological well-being. However, the mediating role of sleep quality in the relationship between workload and employees' job stress has not been systematically synthesized across occupational settings.
Objective: This systematic review aimed to examine the mediating role of sleep quality in the relationship between workload and employees' job stress and to synthesize current evidence on how sleep quality explains or modifies this association across employee populations.
Methods: This study employed a systematic review design. Literature searches were conducted in Scopus, PubMed, ScienceDirect, ProQuest, and ClinicalKey for Nursing for articles published between 2015 and 2025. Studies were included if they involved employees or workers, examined workload or work-related stress, assessed sleep quality, and reported job stress-related outcomes. Study selection, data extraction, and quality appraisal were conducted systematically, and the findings were synthesized narratively because of heterogeneity in study designs, measures, and analytical approaches.
Results: The search identified 2,264 records, and 12 studies were included in the final synthesis. The included studies consistently showed that higher workload or work-related stress was associated with poorer sleep quality across diverse occupational groups. Sleep quality emerged as a recurrent mediating factor linking occupational burden with adverse outcomes, including burnout, depressive symptoms, daytime dysfunction, and reduced well-being. Additional psychological mechanisms, such as rumination, anxiety, and depression, frequently strengthened this pathway, whereas physical activity, resilience, and social support appeared to buffer the negative effects.
Conclusion: Sleep quality plays a significant mediating role in the relationship between workload and employees' job stress. Interventions to reduce job stress should therefore address not only workload management, but also sleep health and related psychological factors in the workplace.

Background

Workplaces across sectors continue to expose employees to high quantitative, cognitive, and emotional demands, and these demands increasingly shape mental health outcomes in modern organizations. Job stress emerges when employees perceive that work demands exceed their coping resources during daily occupational activities (Shao et al., 2025; Lai et al., 2025). Recent studies have shown that work-related stress remains strongly associated with impaired well-being, burnout, and other adverse psychological outcomes among workers in different occupational groups (Chen et al., 2025; Rozmann et al., 2025; Sikaras et al., 2025). This condition has become more important after the pandemic because many institutions still maintain high workloads, rapid work cycles, and unstable recovery opportunities for employees (Rozmann et al., 2025; Zabin et al., 2025). Therefore, researchers need to clarify the mechanisms through which workload contributes to job stress in order to support more effective workplace interventions (Lai et al., 2025; Shao et al., 2025).

Workload represents one of the most consistent occupational exposures that can intensify employees' psychological strain in routine work settings (Matti et al., 2024; Nyaaba et al., 2025). Employees often experience heavier task demands, time pressure, and role overload together with higher levels of tension, fatigue, and emotional exhaustion at work (Matti et al., 2024; Yu et al., 2024). Previous evidence has demonstrated that work-related stressors can impair physiological and psychological regulation through repeated activation of stress-response systems, including chronic arousal processes (Noushad et al., 2021; Hinds

& Sanchez, 2022). These processes may gradually worsen employees' ability to recover after work and may increase their vulnerability to persistent job stress over time (Matti et al., 2024; Nyaaba et al., 2025). However, the relationship between workload and job stress does not appear to be purely direct because several intermediary behavioral and psychosocial factors may influence this pathway (Chen et al., 2025; Safieh et al., 2025).

Sleep quality is one of the most relevant intermediary factors because sleep plays a central role in emotional regulation, cognitive restoration, and physiological recovery after occupational strain (Scott et al., 2021; Billings, 2026). Employees who experience high work demands frequently report poor sleep quality, shortened sleep duration, sleep fragmentation, and daytime dysfunction in occupational settings (Yu et al., 2024; Rozmann et al., 2025; Zabin et al., 2025). Longitudinal and cross-sectional studies have linked work stressors and job strain to poorer sleep quality among workers, including nurses, teachers, miners, and municipality employees (Matti et al., 2024; Nyaaba et al., 2025; Leitaru et al., 2019). Poor sleep quality can also aggravate emotional instability, reduce coping capacity, and increase susceptibility to mental distress in daily work life (Scott et al., 2021; Purdani et al., 2026). Accordingly, sleep quality may function as a meaningful mechanism that explains how workload translates into greater job stress among employees (Safieh et al., 2025; Chen et al., 2025).

Several recent studies have already suggested that sleep quality mediates the associations between occupational stressors and psychological outcomes in specific populations. Psychiatric nurse research has shown that sleep quality mediates the relationship between stress and depressive symptoms together with occupational burnout in clinical settings (Hsieh et al., 2021). Police officer research has also demonstrated that sleep quality operates as one of the mediating factors between perceived stress and job burnout during demanding work conditions (Chen et al., 2025). Studies on shift schedules and work–family conflict further indicate that sleep quality can transmit the effects of adverse work patterns to harmful psychosocial outcomes (Safieh et al., 2025). Other investigations have shown that occupational stress worsens sleep outcomes and contributes to daytime sleepiness, insomnia, and reduced resilience among nurses and other workers (Rozmann et al., 2025; Sikaras et al., 2025; Zabin et al., 2025). Nevertheless, these findings remain scattered across occupations and study designs, and they have not yet been synthesized specifically for the relationship between workload, sleep quality, and employees' job stress.

The current literature still presents several important gaps that justify a systematic review on this topic. First, many studies examine work stress, burnout, insomnia, or sleep problems separately, but fewer studies specifically evaluate sleep quality as a mediator between workload and job stress in employee populations (Matti et al., 2024; Safieh et al., 2025). Second, the available evidence comes from heterogeneous occupational groups, and this diversity makes the overall pattern difficult to interpret without systematic synthesis (Nyaaba et al., 2025; Rozmann et al., 2025; Zabin et al., 2025). Third, recent evidence increasingly supports the broader role of sleep in mental health improvement, yet the occupational mediation pathway remains insufficiently consolidated in one review (Scott et al., 2021; Purdani et al., 2026). Fourth, new analytical approaches such as mediation analysis and meta-analytic structural modeling have strengthened causal pathway interpretation, but their implications for workload–stress mechanisms need clearer integration (Lai et al., 2025; Shao et al., 2025). Therefore, a systematic review is necessary to organize the evidence, identify recurring patterns, and clarify the explanatory role of sleep quality in occupational stress processes.

A clearer understanding of this mediating mechanism can provide practical value for occupational health, organizational policy, and employee well-being programs. Employers can design more precise interventions when they know whether sleep quality acts as a central pathway linking workload to job stress in the workplace (Scott et al., 2021; Billings, 2026). Occupational health professionals can also use this evidence to recommend sleep-focused prevention strategies alongside workload management and psychosocial support programs for employees (Rozmann et al., 2025; Sikaras et al., 2025). In addition, researchers can use a systematic synthesis to identify methodological limitations, dominant

occupational settings, and future research directions in this field (Matti et al., 2024; Lai et al., 2025).

Based on this rationale, this systematic review aims to examine the mediating role of sleep quality in the relationship between workload and employees' job stress and to synthesize current evidence on how sleep quality explains or modifies this association across employee populations.

Methods

Study Design

This study employed a systematic review design to comprehensively examine the mediating role of sleep quality in the relationship between workload and employees' job stress. The systematic review approach was selected because the topic involves a complex pathway among occupational exposure, recovery-related mechanisms, and psychological outcomes, which requires the integration of findings from multiple empirical studies rather than reliance on a single primary dataset. This design enabled the reviewers to identify, appraise, and synthesize relevant evidence from different occupational sectors and study settings in a transparent and reproducible manner. The review process was developed and reported in accordance with the PRISMA 2020 guideline.

Research Question

The review was guided by a focused research question formulated to determine whether sleep quality functions as a mediating factor in the relationship between workload and job stress among employees. The main review question was: "What is the mediating role of sleep quality in the relationship between workload and employees' job stress?" This question was constructed to capture three core concepts central to the review: workload as the occupational exposure, sleep quality as the proposed mediator, and job stress as the primary psychological outcome. The formulation of this question reflected the conceptual need to move beyond direct-effect models and to explore whether sleep-related disruption constitutes an explanatory pathway through which workload affects employee stress. This framing also allowed the review to include studies that assessed either full mediation, partial mediation, or indirect pathway patterns involving sleep quality within occupational contexts.

Inclusion and Exclusion Criteria

The eligibility criteria were defined a priori to ensure that the included studies were directly relevant to the review objective. Studies were included if they examined employees or workers from any occupational sector, such as healthcare, banking, education, or manufacturing, and if they measured the key variables of workload, sleep quality, and job stress within the same study framework. The review accepted cross-sectional, longitudinal, and observational analytic studies, because these designs are commonly used to investigate occupational psychosocial relationships and mediation patterns in workplace research. Articles were also required to be published in English, available in full text, and published within the time range of 2015 to 2025 in order to capture contemporary evidence relevant to current work environments and sleep-health issues. Studies were excluded if they did not assess sleep quality as an analytic variable, did not report job stress or workload as central variables, or consisted of literature reviews and other non-empirical publications. These criteria were established to preserve conceptual consistency across the included studies and to avoid incorporating evidence that could not directly answer the review question.

Search Strategy

The literature search was conducted systematically across several major electronic databases to identify studies relevant to the review question. The databases used in this review were Scopus, PubMed, ScienceDirect, ProQuest, and ClinicalKey for Nursing, as these sources provide broad coverage of health, behavioral, nursing, and occupational research. The search process used a combination of controlled vocabulary and free-text keywords, including terms derived from Medical Subject Headings (MeSH), in order to maximize both sensitivity and specificity in retrieving relevant studies. The main search string combined the

concepts of workload, sleep quality, job stress, and employee population as follows: ("workload" OR "job demands" OR "work-related stress") AND ("sleep quality" OR "sleep disturbance") AND ("work stress" OR "occupational stress" OR "employee stress") AND ("employee" OR "worker" OR "staff"). Boolean operators were used to connect synonymous and conceptually related terms, while database-specific adjustments were applied when necessary to accommodate indexing structure and search syntax. The search was limited to studies published between 2015 and 2025, written in English, and available as full-text articles, because these restrictions were considered necessary to ensure feasibility, accessibility, and relevance to contemporary occupational conditions.

Study Selection Process

The study selection process followed the standard PRISMA flow consisting of identification, screening, eligibility assessment, and inclusion. All records retrieved from the database search were first imported into Mendeley Reference Manager, which was used to organize citations and detect duplicate records before screening began. The initial search yielded 2,264 articles, after which 1,297 records were removed during the early exclusion process, leaving 967 articles for title and abstract screening. During this screening stage, 915 articles were excluded because they did not match the scope of the review, resulting in 52 full-text articles that were assessed for eligibility. Of these, 40 studies were excluded after full-text review because they did not adequately report the principal variables required for this review, particularly workload, sleep quality, or job stress.

To strengthen selection reliability, two reviewers independently screened titles, abstracts, and full-text articles, and disagreements were resolved through discussion; when consensus could not be reached, a third reviewer was consulted to make the final decision. This multistep procedure reduced selection bias and strengthened the credibility of the final study set (See Figure 1).

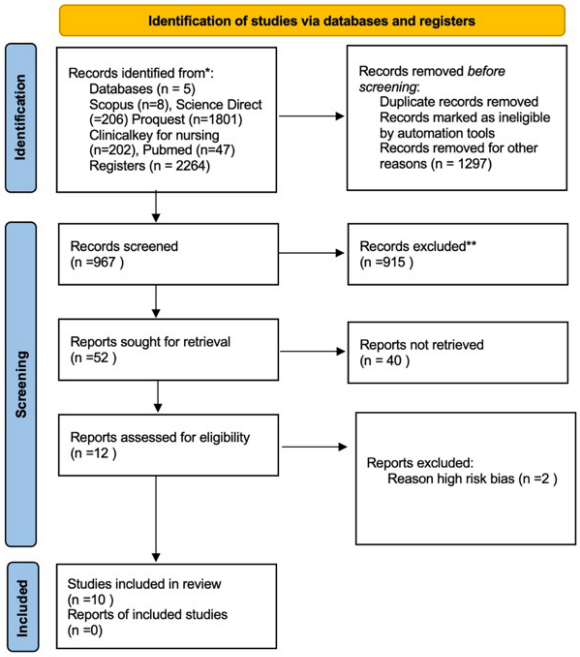

Figure 1. PRISMA flowchart of the article selection process in a systematic review

Quality Appraisal

The methodological quality of the included studies was appraised using the Joanna Briggs Institute (JBI) Critical Appraisal Checklist, with the specific checklist version selected according to the design of each included study. This appraisal approach was chosen because the review included observational analytic studies with potentially diverse methodological structures, and the JBI tools are widely recognized for evaluating the rigor and risk of bias of non-randomized evidence. Each study was assessed on several domains, including clarity of the research objective, appropriateness of the study design, adequacy of sampling procedures, validity and reliability of the measurement instruments, appropriateness of statistical analysis, and potential sources of bias in data collection and interpretation. The appraisal was conducted independently by two reviewers to minimize subjective judgment and to increase consistency in quality assessment. After evaluation, each study was categorized into low, moderate, or high methodological quality based on the overall appraisal score. This quality appraisal process provided an important basis for interpreting the strength of the evidence and for

determining the weight given to individual studies during narrative synthesis.

Data Extraction and Synthesis

Data extraction was carried out using a structured extraction form developed by the reviewers to ensure uniform collection of information across all included studies. The extraction process was performed independently by two reviewers in order to reduce data entry errors and to limit interpretive bias. The extracted information included the author and publication year, country of study, study design, population characteristics, sample size, research setting, measurement instruments, analyzed variables, statistical methods, and principal findings related to workload, sleep quality, and job stress. This structured approach allowed the reviewers to compare studies systematically across methodological and substantive dimensions. Any discrepancies in extracted data were resolved through discussion, and unresolved differences were adjudicated by a third reviewer to ensure consistency and completeness of the final dataset. Because the included studies varied in research design, occupational setting, sample characteristics, and measurement methods, the review used a narrative synthesis approach rather than a quantitative meta-analysis. The synthesis focused on three major analytical domains: the relationship between workload and sleep quality, the relationship between sleep quality and job stress, and the role of sleep quality as a mediator linking workload to job stress. In addition, descriptive comparison was used to highlight variations in sectoral context, sample profile, instruments, and analytic methods across the included studies, thereby allowing a more nuanced interpretation of the evidence base.

Results

Study selection

The database search identified 2,264 records. After the initial removal of clearly irrelevant records, 967 articles proceeded to title and abstract screening. At this stage, 915 articles were excluded because they did not match the focus of the review. The full texts of 52 studies were then assessed for eligibility. Following full-text review, 40 articles were excluded because they did not sufficiently report the principal variables required in this review, namely workload or work-related stress, sleep quality, and job stress-related outcomes. As a result, 12 studies were included in the final narrative synthesis.

Characteristics of included studies

The included studies were conducted across a wide range of countries and occupational settings, including China, Taiwan, Japan, Sweden, Germany, Ghana, Nigeria, and the Netherlands. Most studies used a cross-sectional design, while a smaller number adopted longitudinal or mixed cross-sectional/longitudinal approaches. The occupational groups covered academic staff, psychiatric nurses, public servants, municipal workers, miners, police officers, and general employees, indicating that the association among workload, sleep quality, and stress-related outcomes has been examined in both public and private work environments. Sample sizes varied substantially, ranging from fewer than 100 participants to more than 2,700 participants, which reflects notable heterogeneity in study scale and context. Across studies, the Pittsburgh Sleep Quality Index (PSQI) was the most frequently used measure for sleep quality, while stress-related constructs were assessed using instruments such as the Perceived Stress Scale, Effort–Reward Imbalance, and other occupational stress questionnaires (See Table 1).

Relationship between workload or work-related stress and sleep quality

Most included studies showed a consistent pattern in which higher workload, job strain, or work-related stress was associated with poorer sleep quality. This pattern was reported among nurses, miners, municipal workers, public servants, police officers, and employees from multi-sector settings. Workers who experienced heavier demands, lower role clarity, or higher emotional pressure were more likely to report sleep disturbance, insomnia symptoms, daytime sleepiness, or overall poor sleep quality. Several

studies further indicated that poor sleep was not merely a parallel outcome of occupational stress, but part of the mechanism through which stressful work conditions exerted broader psychological effects. Although one study in academic staff reported no statistically significant direct correlation between work-related stress and sleep quality, the overall direction of findings across the synthesis remained largely consistent.

Table 1. Characteristics of Included Studies and Key Findings

Author (Year)	Country	Population/ Setting	Design	Main Measures	Key focus	Core finding
Akobundu et al. (2025)	Nigeria	Academic staff, medical school (n=92)	Cross-sectional	IPAQ-SF, PSQI, work-related stress questionnaire	Stress, sleep, physical activity	Stress correlated with physical activity; poor sleep was more common in high-stress staff, but direct stress–sleep association was not significant.
Hsieh et al. (2021)	Taiwan	Psychiatric nurses (n=248)	Cross-sectional	PSQI, PSS, BDI, Occupational Burnout Inventory	Stress, sleep, burnout, depressive symptoms	Sleep quality and burnout significantly mediated the association between stress and depressive symptoms.
Van Laethem et al. (2015)	Netherlands	Employees across sectors (n=877)	Longitudinal	PSS, PSQI, CFQ	Stress, sleep, perseverative cognition	Perseverative cognition mediated the link between work-related stress and sleep quality.
Leitaru et al. (2024)*	Sweden	Municipality workers (n=2,765)	Cross-sectional	ERI, IPAQ, PSQI	Job strain, sleep, physical activity	Higher job strain was associated with poorer sleep; physical activity showed a protective effect.
Matti et al. (2021)*	Germany	Full- and part-time employees (n=360)	Cross-sectional/Longitudinal	WRRQ, PSS, PSQI	Stress, rumination, sleep	Affective rumination and detachment mediated the relationship between work stress and sleep quality.
Yu et al. (2024)	China	Nurses, 9 hospitals (n=760)	Cross-sectional	Job stress scale, PSQI	Job stress, sleep, childhood adversity	Job stress was directly associated with poorer sleep; childhood adversity moderated the association.
Iwasaki et al. (2021)*	Japan	Public servants (n=2,331)	Cross-sectional	PSQI, role stress measures	Role stress, sleep	Role ambiguity and role conflict were associated with poorer sleep quality.
Nyaaba et al. (2025)	Ghana	Small-scale miners (n=664)	Cross-sectional	PSS-4, WHODAS 2.0, GAD-7, PHQ-9	Stress, sleep problems, anxiety, depression	Anxiety and depression mediated the association between work-related stress and sleep problems.
Chen et al. (2025)	China	Police officers (n=1,384)	Cross-sectional/SEM	Stress, social support, resilience, sleep, burnout measures	Stress, sleep, burnout	Sleep quality mediated the relationship between perceived stress and job burnout.
Liu et al. (2021)	China	Employees in an urban setting (n=2,331 analyzed)	Cross-sectional	Job stress, PSQI, well-being measures	Stress, sleep, well-being	Sleep quality mediated the relationship between job stress and employee well-being.

Mediating and related psychological mechanisms

The synthesis showed that sleep quality frequently functioned as a mediating or pathway variable linking work-related stress exposures to adverse psychological outcomes. In psychiatric nurses, sleep quality mediated the relationship between stress and depressive symptoms together with occupational burnout. In police personnel, sleep quality contributed to the pathway between perceived stress and job

burnout. In other studies, the link between work stress and sleep problems was reinforced by additional psychological mechanisms such as rumination, anxiety, depression, and burnout, suggesting that sleep disturbance often develops within a broader stress-response process. These findings indicate that the effect of workload or occupational stress on employee well-being is not exclusively direct, but operates through intertwined behavioral and psychological pathways in which sleep quality has a central role.

Protective and moderating factors

Several studies also identified factors that could buffer or modify the adverse relationship between occupational stress and sleep quality. Physical activity appeared to weaken the negative effect of job strain on sleep among municipal workers. One study found that childhood adversity moderated the relationship between job stress and sleep quality, suggesting that vulnerability to occupational stress may differ according to earlier life experiences. Other studies highlighted the importance of social support and psychological resilience as related explanatory factors in stress–sleep pathways. These findings suggest that the impact of workload on sleep is not uniform across employees and may depend on both internal psychological resources and external protective conditions.

Discussion

This systematic review found that high workload and work-related stress were consistently associated with poor sleep quality across diverse occupational groups. The review also showed that sleep quality functioned as an important pathway through which occupational burden was linked to adverse psychological outcomes. Several included studies indicated that poor sleep did not stand alone as a secondary symptom, but operated as a meaningful mechanism that intensified burnout, depressive symptoms, and reduced well-being. The synthesis further revealed that the relationship between workload and job stress was strengthened by additional psychological processes, such as rumination, anxiety, and depression. At the same time, some protective conditions, including physical activity, social support, and resilience, appeared to weaken the harmful effect of work strain on sleep. These findings suggest that sleep quality should be considered a central target in efforts to reduce the psychological burden associated with excessive workload in employees.

These findings support the argument that workload exerts its harmful effect on employees not only through direct psychological pressure but also through disruption of restorative sleep processes (Matti et al., 2024; Rozmann et al., 2025). High work demands increase cognitive arousal, emotional tension, and sustained physiological activation, and these conditions reduce the ability of workers to initiate and maintain restorative sleep at night (Noushad et al., 2021; Hinds & Sanchez, 2022). This mechanism explains why employees who face excessive demands often report both elevated stress and deteriorated sleep quality in parallel occupational contexts (Yu et al., 2024; Zabin et al., 2025). Previous occupational studies have similarly shown that job strain, role overload, and work-related stressors predict poorer sleep outcomes in workers from different sectors (Leitaru et al., 2019; Iwasaki et al., 2018). The present review therefore extends the current body of knowledge by showing that sleep quality does not merely accompany workload-related stress but may explain part of the pathway through which work burden affects employee mental health (Hsieh et al., 2021; Chen et al., 2025). This interpretation is also consistent with broader evidence showing that better sleep quality contributes to better emotional regulation and improved mental health outcomes (Scott et al., 2021; Billings, 2026).

The mediating role of sleep quality identified in this review has important theoretical implications for occupational stress models because it places recovery failure at the center of the stress process (Safieh et al., 2025; Liu et al., 2021). Sleep serves as a biological and psychological recovery mechanism, and impairment in sleep quality weakens employees' capacity to cope with subsequent work demands in a healthy manner (Scott et al.,

2021; Varpaei et al., 2026). When employees fail to recover adequately after exposure to high workload, they become more vulnerable to cumulative strain, emotional exhaustion, and reduced well-being over time (Matti et al., 2024; Lai et al., 2025). This review also aligns with studies showing that sleep quality mediates the relationship between stress and downstream outcomes such as burnout, depressive symptoms, and diminished work functioning (Hsieh et al., 2021; Chen et al., 2025). In this context, poor sleep quality may act as a transitional mechanism that transforms temporary work strain into persistent psychological distress (Nyaaba et al., 2025; Sikaras et al., 2025). Thus, the mediating role of sleep quality helps clarify why employees exposed to similar workloads may experience different levels of job stress depending on their recovery capacity and sleep condition (Billings, 2026; Purdani et al., 2026).

Another important point emerging from this review is that the relationship between workload and sleep quality appears to be influenced by additional psychological mechanisms, particularly rumination, anxiety, depression, and burnout (Matti et al., 2024; Nyaaba et al., 2025). Rumination prolongs exposure to work-related stress by keeping employees cognitively attached to workplace problems after working hours, and this process impairs detachment and sleep onset (Matti et al., 2024; Shao et al., 2025). Anxiety and depression also intensify hyperarousal and emotional dysregulation, and these conditions further reduce sleep quality in stressed workers (Nochaiwong et al., 2021; Nyaaba et al., 2025). Burnout creates an additional layer of chronic exhaustion, and this state often coexists with poor sleep and declining mental resilience in high-pressure occupations (Hsieh et al., 2021; Sikaras et al., 2025). The interaction of these mediators suggests that sleep quality is embedded within a broader psychosocial process rather than operating as an isolated variable (Chen et al., 2025; Yu et al., 2024). Accordingly, interventions that address only workload without addressing maladaptive cognition and emotional distress may fail to produce substantial improvement in employee stress outcomes (Rozmann et al., 2025; Zabin et al., 2025).

The review also indicates that the occupational context matters because the magnitude and expression of workload-related sleep problems vary across sectors and professional roles (Rozmann et al., 2025; Zabin et al., 2025). Nurses, police officers, miners, and public-sector workers often face demanding schedules, emotional labor, and role-related pressures that elevate both occupational strain and sleep disturbance (Hsieh et al., 2021; Chen et al., 2025). In healthcare settings, heavy emotional demands and shift work can intensify fatigue and impair sleep continuity, thereby increasing susceptibility to burnout and mental health symptoms (Safieh et al., 2025; Sikaras et al., 2025). In industrial and mining contexts, physically demanding tasks and constrained working conditions may combine with psychological stress to worsen sleep-related outcomes (Nyaaba et al., 2025; Renner et al., 2022). Public servants and municipal workers may experience a different configuration of stress, in which low control, role ambiguity, and effort–reward imbalance contribute to poor sleep quality (Leitaru et al., 2019; Iwasaki et al., 2018). This sectoral diversity strengthens the external relevance of the review because it shows that the mediating function of sleep quality is not limited to one profession but appears across multiple occupational environments (Liu et al., 2021; Lai et al., 2025).

Despite this consistency, the findings should be interpreted in light of methodological variation across the included studies (Matti et al., 2024; Liu et al., 2021). Most of the reviewed studies used cross-sectional designs, and this design limits strong causal inference regarding the temporal order among workload, sleep quality, and job stress (Rozmann et al., 2025; Nyaaba et al., 2025). Several studies also relied on self-reported measures of stress and sleep, and this method may increase reporting bias and inflate perceived associations between variables (Billings, 2026; Purdani et al., 2026). Differences in occupational settings, measurement instruments, and statistical models may also explain variation in the strength of mediation effects across studies (Lai et al., 2025; Safieh et

al., 2025). Nevertheless, the repeated appearance of sleep quality as a significant pathway across multiple countries and professions supports the robustness of the overall pattern identified in this review (Chen et al., 2025; Hsieh et al., 2021). Future research should therefore prioritize longitudinal and analytic designs with stronger mediation testing in order to clarify the directional sequence linking workload, sleep disturbance, and job stress (Van Laethem et al., 2015; Matti et al., 2024).

The practical implications of this review are substantial because organizations can use these findings to design more integrated stress management strategies (Scott et al., 2021; Billings, 2026). Employers should reduce excessive workload and improve job design because lower work strain can prevent sleep disruption and downstream stress responses (Leitaru et al., 2019; Iwasaki et al., 2018). Occupational health programs should also include sleep screening and sleep-health promotion because early detection of sleep disturbance may interrupt the progression from workload to persistent stress and burnout (Nurhayati et al., 2026; Purdani et al., 2026). Mental health support should target anxiety, depression, rumination, and burnout because these factors amplify the adverse impact of workload on sleep quality (Nyaaba et al., 2025; Hsieh et al., 2021). Workplaces may also benefit from promoting physical activity, resilience, and social support because these resources can buffer the negative effect of occupational stress on sleep and well-being (Leitaru et al., 2019; Chen et al., 2025). In this regard, employee stress prevention should move beyond a workload-only approach and adopt a more comprehensive framework that integrates sleep health, psychological recovery, and organizational support (Scott et al., 2021; Shao et al., 2025).

The discussion of these findings also contributes to the growing recognition that sleep quality is a strategic occupational health indicator rather than merely a private lifestyle concern (Billings, 2026; Varpaei et al., 2026). Sleep quality reflects the cumulative burden of work demands, emotional strain, cognitive activation, and social resources that employees carry across the work–rest cycle (Matti et al., 2024; Chen et al., 2025). When organizations ignore sleep-related consequences of workload, they risk allowing an ongoing cycle in which stress impairs sleep and poor sleep further magnifies stress reactivity the next day (Yu et al., 2024; Zabin et al., 2025). The present review shows that this cycle can become especially harmful in occupations with high emotional labor, low control, and unstable recovery opportunities (Rozmann et al., 2025; Safieh et al., 2025). Therefore, sleep quality should be incorporated into occupational risk assessments, employee wellness policies, and future intervention studies that aim to reduce job stress and improve work functioning (Liu et al., 2021; Lai et al., 2025). Taken together, the reviewed evidence strengthens the position that sleep quality is a crucial mediating process in the pathway linking workload to employee stress and should be treated as a priority domain in occupational health practice and research (Hsieh et al., 2021; Chen et al., 2025).

Conclusion and Recommendation

This systematic review concludes that sleep quality plays an important mediating role in the relationship between workload and employees' job stress. High workload contributes to worsening sleep quality, and poor sleep quality increases vulnerability to stress, burnout, emotional distress, and reduced well-being. The review also shows that this pathway is often strengthened by psychological factors such as rumination, anxiety, depression, and low recovery capacity. Therefore, organizations should not focus only on reducing workload, but should also develop workplace strategies that improve sleep health, strengthen psychological support, and promote healthier recovery patterns among employees. Future studies should use stronger longitudinal designs and more consistent mediation analyses to clarify causal pathways and support the development of more effective occupational interventions.

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