

SYSTEMATIC REVIEW

A Systematic Review on Employee Well-Being and Its Role in Enhancing Safety Performance

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ABSTRACT

Introduction: Workplace wellness is increasingly recognized as a multidimensional construct within occupational health and safety (OHS), impacting not only individual employee health but also organizational performance. Despite its growing prominence, existing research on workplace wellness remains fragmented, with limited integration across key dimensions such as physical, intellectual, environmental and financial well-being. **Methods:** This study employs a systematic literature review of 31 peer-reviewed studies published between 2013 and 2024. Guided by the PRISMA framework, articles were selected based on relevance to workplace wellness and OHS. Thematic coding and comparative analysis were applied to explore the presence, interaction and outcomes of the four wellness dimensions. **Results:** The review highlights that environmental (67%) and physical (61%) wellness are most frequently linked to workplace safety outcomes, particularly in manufacturing and healthcare sectors. Financial wellness (19%) emerged mainly in relation to job insecurity and cost-of-living stress, while intellectual wellness (16%) was associated with professional development and coping mechanisms. Across studies, psychosocial stressors, long working hours and poor work-life balance were consistently identified as factors reducing overall well-being. **Conclusion:** This review underscores the need for an integrated approach to workplace wellness that encompasses Physical, Intellectual, Environmental and Financial dimensions. These dimensions are interdependent and shaped by sector-specific demands, economic shifts and evolving work environments.

Malaysian Journal of Medicine and Health Sciences (2026) 22(s8):359-366.doi:10.47836/mjmhs.22.s8.46

Keywords: Employee well-being, Safety performance, Safety behaviour, Organizational factors, Systematic review

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INTRODUCTION

Employee well-being has increasingly emerged as a central determinant of occupational health and safety (OHS) performance, influencing safety compliance, behavioural outcomes, health status and productivity (1, 2, 3). In recent years, organizations worldwide have confronted new and complex challenges including increasing in psychosocial risks, remote and hybrid work fatigue, rising burnout and workforce turnover which have intensified the strategic importance of employee well-being as a predictor of safety culture and organizational resilience (4, 5). The Job Demands–Resources (JD-R) Model provides a theoretical foundation to explain how personal and organizational resources such as physical, intellectual, environmental and financial well-being

sustain against job demands, mitigate burnout and foster safe work behaviour (2). Similarly, Safety Climate Theory posits that employees' perceptions of an organization's safety priorities and practices shape their engagement in safety-related behaviours (1, 6). Globally, evidence has shown that higher levels of employee well-being are associated with improved risk perception, stronger adherence to safety protocols, reduced injury rates and lower absenteeism (1, 3, 7). However, despite these international trends, many workplaces continue to struggle with maintaining employee well-being amidst rapid digitalization, economic uncertainty and evolving psychosocial hazards (4, 8). Within this context, understanding the multidimensional nature of well-being and its role in shaping safety performance is becoming an increasingly urgent global and regional priority, including in Malaysia (9).

In Malaysia, workforce well-being has gained significant policy and research attention due to its direct implications for productivity, retention and occupational safety. Post-

pandemic realities such as burnout, hybrid work fatigue and rising psychosocial risks have further exposed the vulnerability of employees across key industries particularly manufacturing, healthcare, education and oil and gas where high job demands, long working hours and exposure to both physical and psychosocial hazards remain prevalent (10, 11, 12, 11). In response, several national initiatives have emphasized the integration of psychosocial health into OHS frameworks, including the Department of Occupational Safety and Health (DOSH)'s Guidelines on Managing Psychosocial Risks at the Workplace (2023) and the OSH Master Plan 2021–2025, which advocate a “Total Worker Health” approach that unites physical, mental and social well-being dimensions. Nevertheless, local research remains uneven, with a predominant focus on physical and environmental wellness while mental, financial and intellectual dimensions receive limited empirical attention (13, 14, 15). For example, some studies suggest that mental and social well-being predict safety participation more strongly than physical health (1, 16), whereas others highlight the influence of ergonomic and environmental factors (1, 17). These inconsistencies are largely attributed to variations in conceptualization, sectoral context and methodological design, as most studies employ cross-sectional approaches that constrain causal and longitudinal insights (13, 14, 18). The lack of integrated, multidimensional well-being frameworks within OHS management further limits understanding of how various wellness domains collectively shape safety performance (4, 2, 8). Nationally, the National Health and Morbidity Survey (NHMS, 2015) revealed that one in three Malaysian adults experience mental health challenges (18), while the Employment Hero (2024) Wellness at Work Report identified physical and environmental well-being as key predictors of workplace safety outcomes, particularly related to fatigue, ergonomic risks and hazard exposure (19). Collectively, these findings underscore persistent well-being challenges and the urgent need for integrated wellness strategies within Malaysia's occupational safety landscape (10, 20).

Due to the increasing recognition of employee well-being as a key determinant of workplace safety, existing literature has grown substantially. However, it remains imbalanced, focusing predominantly on physical and environmental wellness while underrepresenting intellectual and financial well-being dimensions (13, 14, 15). This narrow emphasis constrains the development of holistic OHS frameworks capable of addressing the complex interplay of psychosocial, economic and organizational factors that influence safety performance (4, 2, 8). Given the unsystematic understanding across well-being domains and the limited integration of psychosocial aspects, a comprehensive synthesis is needed to clarify how these factors jointly shape safety outcomes. Accordingly, this systematic review seeks to consolidate existing empirical evidence across multiple

sectors and industries, identify research gaps and propose an integrative perspective on employee well-being within occupational health and safety systems. This study adopts a systematic review guided by the PRISMA framework using databases.

MATERIALS AND METHODS

Screening

The review process commenced by defining the eligibility timeframe for study inclusion. Peer-reviewed journal articles published between 2013 and 2024 were selected to ensure coverage of contemporary perspectives and post-pandemic shifts in workplace well-being research, consistent with recent systematic mapping practices in OHS literature (21, 22). This timeframe captured the evolving impacts of COVID-19 and digital labour transformation on occupational well-being (5).

A comprehensive literature search was conducted across Scopus, Springerlink and Science Direct, reflecting recommended multi-database strategies for systematic evidence synthesis in safety and behavioural science research. Boolean keyword combinations such as “employee well-being,” “occupational health and safety,” “workplace wellness,” “safety performance,” and “occupational hazards” were applied. Searches were restricted to English-language, peer-reviewed journal articles to ensure methodological comparability and consistency of extraction. Search strings and inclusion criteria for Scopus, Springerlink and Science Direct were documented to maintain reproducibility and consistency with indexed sources. Its inclusion was deliberate to capture emerging empirical studies not yet indexed in traditional databases, especially post-COVID-19 transitional workplace research.

Titles and abstracts were screened against relevance criteria. Studies were included if they examined one or more dimensions of employee well-being (physical, environmental, financial, or intellectual) in relation to occupational safety outcomes, consistent with multidimensional well-being frameworks. Articles were excluded if they focused on non-occupational settings, non-empirical work, clinical populations, or if full-text access was unavailable.

Selection Process

A total of 1,243 records were initially identified across all databases. After removing 312 duplicates, 931 unique articles underwent title and abstract screening. Of these, 754 articles were excluded due to irrelevance to OHS or lack of focus on well-being. The remaining 177 full-text articles were assessed for eligibility, with 146 excluded for reasons such as non-OHS scope, absence of empirical evidence, or failure to align with the four targeted well-being dimensions. Finally, 31 studies met all inclusion criteria and were retained for synthesis.

Figure 1 presents the PRISMA 2020 flow diagram summarizing the screening and selection process.

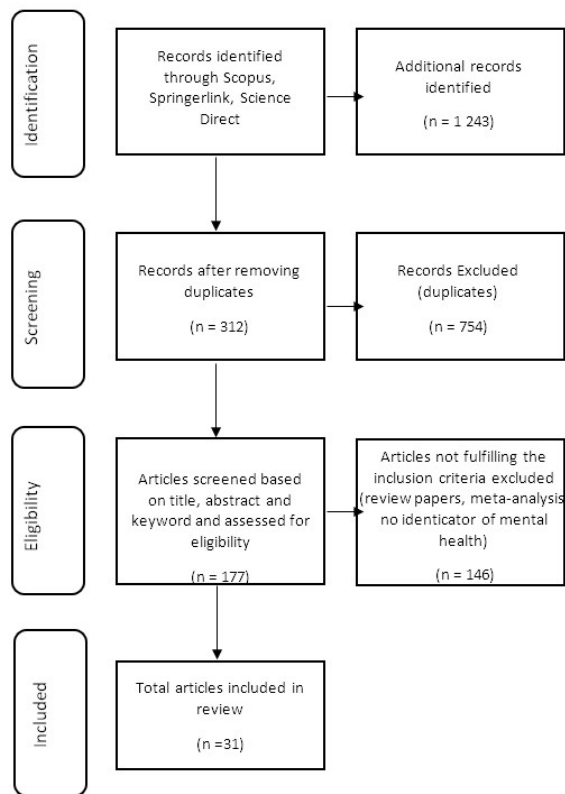


Fig. 1: Selection flow diagram (Adapted from PRISMA selection flow diagram)

Data Extraction and Thematic Coding

A structured data extraction template was applied to capture study characteristics, including design, sector, worker demographics, operationalization of well-being domains and safety outcome indicators. Thematic coding and comparative analysis were conducted to identify recurring concepts and patterns across the selected studies. Themes were first developed through manual coding, where key phrases and findings related to the four wellness dimensions (physical, intellectual, environmental and financial) were highlighted and grouped by similarity. Codes were then refined through iterative comparison across studies to ensure consistency and relevance. Emerging subthemes were categorized under broader domains of workplace wellness and safety outcomes. This process allowed the final themes to be systematically grouped into interrelated categories reflecting wellness dimensions, sectoral context and reported impacts on occupational health and performance. This procedure aligns with qualitative thematic synthesis methods recommended for complex psychosocial constructs (23).

RESULTS

The review indicated that environmental and physical well-being were the most frequently examined dimensions in relation to workplace safety as per

mentioned in **Table I**. Environmental well-being (67%) was most prominent in manufacturing and healthcare sectors, where employees experienced hazardous exposure, thermal stress, noise and ergonomically demanding tasks (17, 24, 6). These factors were consistently associated with increased fatigue, reduced hazard perception and higher incident probability (11, 25). This suggests that improving environmental conditions such as air quality, temperature control and noise reduction, which can directly enhance workers' alertness and hazard recognition, thereby lowering the likelihood of accidents.

Physical well-being (61%) was frequently emphasized through links between fatigue, musculoskeletal strain, physical exertion and safety outcomes, particularly when long working hours and insufficient rest periods were present (12, 26, 3). This implies that interventions targeting ergonomic design, workload management and adequate rest could directly reduce physical strain and accident occurrence, reinforcing safe operational practices.

Financial well-being appeared in 19% of studies, emerging mainly in contexts involving job insecurity and cost-of-living pressures especially within SMEs and platform-based labour during the COVID-19 period (15, 27, 18, 28). Employees facing financial strain demonstrated reduced concentration and a higher tendency to overlook procedural controls. This indicates that financial stress may indirectly undermine safety attention and compliance by diverting cognitive resources away from hazard awareness, leading to lapses in judgment or risk-taking behaviour. Financial pressures were also noted in other sectors such as construction and retail, highlighting its relevance across diverse work environments. Trends over time suggest increasing recognition of financial well-being during periods of economic uncertainty.

Intellectual well-being was the least explored dimension (16%), yet it was associated with job autonomy, problem-solving capacity, coping strategies and professional development opportunities (29, 30, 31). Employees with higher autonomy and learning support displayed stronger ownership of hazard management and resilience under operational pressure. This suggests that fostering intellectual engagement and continuous learning can strengthen proactive safety behaviour, as empowered workers are more capable of anticipating risks and maintaining composure during critical situations. Few studies have investigated the direct or indirect effects of intellectual well-being, indicating a significant research gap. Intellectual well-being was particularly relevant in knowledge-intensive sectors, including IT, healthcare, and professional services.

Comparatively, environmental and physical well-being showed the most direct and measurable influence on

Table 1: Summary of occupational well-being components from each article

No	References	Safety related outcomes	Publication Year	Occupational well-being components			
				Physical	Intellectual	Financial	Environmental
1.	Hutton et al., 2022 [30]	Psychological distress and poor mental health were linked to reduced focus, increasing error rates and near misses in hazardous construction environments.	2022				/
2.	Geldart, 2014 [6]	High stress and poor well-being contributed to reduced safety engagement and higher probability of minor accidents and unsafe behaviours	2014	/	/		
3.	Sattar et al., 2023 [31]	Poor mental well-being was associated with reduced professional judgement, indirectly increasing procedural errors and safety incidents.	2023		/		
4.	Idris et al., 2023 [20]	Mental health concerns contributed to distraction and decreased situational awareness, elevating accident risk.	2023	/		/	
5.	Balakrishnan et al., 2023 [37]	Poor psychological well-being increased susceptibility to unsafe decision-making, especially under pandemic-related pressure.	2021			/	/
6.	Mohamed et al., 2022 [38]	Improved mental health reduced human error, stress-related incidents, and unsafe handling of equipment.	2022		/		/
7.	Tan et al., 2023 [28]	Better wellness practices enhanced alertness and reduced near-miss events related to work fatigue.	2022		/	/	
8.	Mohamed et al., 2022 [36]	Reduced absenteeism improved workforce stability, lowering indirect safety risks from understaffing and work overload.	2022	/			/
9.	Wang et al., 2017 [39]	High burnout increased risk-taking behaviour and reduced compliance with safety protocols.	2017	/			/
10.	Jalil & Ali, 2023 [16]	Higher well-being improved emotional stability and decreased errors associated with stress.	2023	/			/
11.	Ibrahim & Ohtsuka, Year [40]	Poor psychosocial well-being increased distraction and contributed to safety-compromising behaviours.	2013				/
12.	Daud, 2017 [27]	Poor psychosocial well-being increased distraction and contributed to safety-compromising behaviours.	2017	/			
13.	Kassim et al., 2018 [10]	Heightened stress correlated with higher accident likelihood and lower safety compliance.	2018		/		/
14.	Khalid & Syed, 2024 [18]	Poor well-being reduced resilience and increased susceptibility to safety-critical errors.	2023			/	
15.	Zhao et al., 2015 [41]	Low well-being increased fatigue-related errors and near misses during shifts.	2015	/			
16.	Adriaenssens et al., 2017 [32]	Elevated stress contributed to impaired decision-making and higher incident risk.	2017	/			/
17.	Lee et al., 2013 [12]	Long shifts increased exhaustion, leading directly to operational errors and safety incidents.	2013	/			/
18.	Pogačar et al., 2018 [24]	Heat stress increased fatigue, dehydration, and physical strain, contributing to accidents and reduced manual precision.	2018	/			/
19.	McHugh et al., 2020 [26]	Shift work fatigue contributed to reduced alertness and increased likelihood of lapses in safety-critical tasks.	2020			/	
20.	Chan et al., 2018 [15]	Financial strain indirectly affected safety behaviour through stress and reduced concentration.	2018	/			/
21.	Ahmad et al., 2023 [33]	Poor balance and high stress increased fatigue and near-miss occurrences.	2023			/	/
22.	Rani et al., 2022 [11]	Poor well-being linked to lower safety engagement and inconsistent compliance.	2022	/			
23.	Hong et al., 2022 [42]	Mental and physical strain increased rate of accidents during high-pressure delivery tasks.	2022	/			/
24.	Moreno-Fortes et al., 2020 [43]	Low well-being was associated with compromised safety performance and judgement.	2020	/			/
25.	Shen & Slater, 2021 [29]	Ineffective coping increased exposure to health risks and unsafe decision-making.	2021				/
26.	Suleman et al., 2018 [34]	Stress impaired executive functioning, increasing administrative and operational safety risks.	2018	/			/
27.	Alvi et al., 2021 [44]	High stress reduced adherence to SOPs and contributed to unsafe shortcuts.	2022	/			
28.	Wang et al., 2020 [25]	Stress increased accident susceptibility in high-precision tasks.	2020				/
29.	Prasad et al., 2015 [35]	Stress-related performance decline increased indirect safety hazards.	2015	/			/
30.	Yuan et al., 2022 [45]	Stress and health decline increased frequency of minor injuries and operational errors.	2022	/			/
31.	Wang et al., 2018 [46]	High stress reduced safety behaviour, but high psychological capital moderated the effect.	2017	/			/
Total Counted Indicators				19	5	6	21
Weightage (%)				61%	16%	19%	67%

accident rates, while financial and intellectual dimensions exerted more indirect effects through mechanisms such as motivation, cognitive focus and safety compliance. This pattern indicates that while environmental and physical interventions yield immediate safety improvements, financial and intellectual wellness initiatives contribute to sustained engagement and long-term safety culture. Interactions among dimensions were observed, for example, financial strain worsening physical fatigue, suggesting that combined interventions may be more effective than isolated measures.

Across all dimensions, recurring themes such as long working hours, psychosocial stress, poor work-life balance and lack of recognition were consistently reported as systemic drivers of diminished well-being and reduced safety outcomes, regardless of sector (18, 32, 33, 34). These findings align with the Job Demand-Resources (JD-R) framework, which posits that excessive job demands combined with insufficient recovery resources heighten strain and safety risk. Most studies employed self-reported surveys and incident report analyses, while a few included observational assessments, highlighting methodological variability. Accordingly, strengthening organizational support systems, recognition mechanisms and recovery opportunities is vital for improving both employee well-being and overall safety performance.

DISCUSSION

The findings restate that employee well-being should be understood as a complicated construct that shapes safety performance across occupational contexts (4, 13). The importance of environmental and physical aspects reflects the traditional OHS focus on controlling perceptible workplace hazards such as noise, temperature, chemical exposure and ergonomic strain (17, 24, 6). While these interventions have historically improved accident prevention, they often overlook non-physical determinants that have grown increasingly significant with evolving economic pressures, technological transitions and psychosocial demands (5, 14, 35). Recent studies indicate growing attention to financial well-being during economic crises such as COVID-19, highlighting its emerging relevance for safety outcomes.

Financial and intellectual dimensions, though less studied, were shown to exert meaningful influence on workers' alertness, decision-making and safety engagement. Employees facing financial insecurity or cognitive overload exhibited higher stress levels and a greater likelihood of procedural violations (15, 27, 16). Conversely, individuals with autonomy, problem-solving opportunities and professional development support demonstrated stronger situational awareness and hazard management skills (1, 29). Despite recognition of intellectual and financial well-being, relatively few

studies have examined their direct or indirect impact on safety performance, indicating areas for future research. These results extend prior evidence suggesting that cognitive empowerment and financial stability enhance adaptive responses to safety-critical conditions (8, 31). The observed associations align with theoretical perspectives such as the Job Demand-Resources (JD-R) model and Conservation of Resources (COR) theory, which posit that when workers face high demands with inadequate recovery or support resources, well-being deteriorates and safety behaviors decline (18, 32). These findings can also be interpreted through broader well-being frameworks such as the PERMA model (Positive Emotion, Engagement, Relationships, Meaning, Accomplishment) and the WHO's Well-being Framework, both emphasizing that psychological and environmental resources collectively sustain engagement and performance. These findings can also be interpreted through integrated well-being frameworks, emphasizing that combined psychological, cognitive, financial, and environmental resources are essential for sustained safety performance. The recurrence of psychosocial strain and long working hours identified in this review echoes these frameworks, highlighting that positive organizational resources on autonomy, recognition and growth which are essential to maintaining safety culture and resilience. Most studies relied on self-reported surveys and incident report analyses, with fewer employing observational assessments, highlighting methodological variability and limitations.

Cross-sector comparisons revealed distinct risk patterns. In manufacturing and healthcare, physical and environmental elements dominate safety challenges due to direct exposure to mechanical, chemical and ergonomic hazards. Conversely, SME and digital platform sectors exhibit higher vulnerability to financial stress and cognitive fatigue, where job insecurity, workload fragmentation and information overload undermine sustained safety vigilance (28, 16). Physical and environmental well-being dominate in high-risk sectors, whereas financial and intellectual well-being are more critical in cognitively intensive or precarious work environments, underscoring the need for context-sensitive interventions.

From a practical standpoint, organizations and policymakers should operationalize this integration through multidimensional wellness programs that address all four domains simultaneously. Such programs may combine ergonomic redesign and fatigue management with financial literacy training, mental health support and professional development initiatives. Practical interventions should target each dimension: environmental (noise reduction, temperature control), physical (ergonomic redesign, workload management), financial (job security, financial literacy), and intellectual (training, autonomy, professional development). Embedding well-being metrics within risk assessment

frameworks or safety key performance indicators (KPIs) can enable early identification of well-being deficits that precede safety incidents. At the policy level, regulators could require periodic psychosocial and economic risk audits to complement traditional hazard evaluations, ensuring both physical and psychosocial aspects of work are systematically managed.

Overall, this review highlights that fostering holistic employee well-being is not merely a welfare initiative but a strategic component of occupational safety culture. Future OHS frameworks should adopt integrative approaches that balance physical hazard control with cognitive, financial, and emotional resource enhancement, addressing observed gaps and interactions to build resilient and sustainable workplaces.

CONCLUSION

This systematic review highlights that fostering holistic employee well-being is not merely a welfare initiative but a strategic component of occupational safety culture. It advances understanding by demonstrating how the four key domains summarizing physical, environmental, financial and intellectual well-being interact to influence safety behaviour, hazard awareness, and organizational performance across sectors (13, 4, 2). By synthesizing these domains, the review provides a practical framework for integrating well-being indicators into safety management systems and guiding the design of multidomain wellness programs and policy interventions (19, 1, 36). This integrative approach bridges gaps between traditional OHS practices and contemporary wellness strategies, offering a pathway for future research and organizational innovation (4, 8, 9). Future OHS frameworks should adopt integrative approaches that balance physical hazard control with cognitive, financial, and emotional resource enhancement to build resilient and sustainable workplaces. Future studies may also explore the role of spiritual well-being, particularly in cultural contexts where faith, purpose, and moral values influence coping, motivation, and commitment to safe work practices (20, 16).

LIMITATION

This review was limited by the inclusion of English-language, peer-reviewed articles only, which may exclude relevant regional or non-indexed research. Database coverage was confined to Scopus, Springerlink and Science Direct, potentially missing grey literature or unpublished industry data. Additionally, while thematic synthesis ensured analytical consistency, no formal quality appraisal scoring was conducted, which may affect the depth of evidence weighting. These limitations should be considered when interpreting the generalizability of findings.

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