EDITORIAL

Building Worker Welfare: A Multidisciplinary Analysis of Health and Safety in Various Work Contexts

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Worker well-being is an essential foundation for productivity and quality of life, impacting not only individuals but also the operational sustainability of organizations. In Indonesia, various studies have highlighted the complexity of work, social, demographic, and environmental factors that significantly shape the physical and mental health conditions of workers, which in turn impacts their performance and quality of life. The Impact of Stress and Mental Load in the Workplace.

Work stress is a growing global public health issue. Moderate to high levels of stress, burnout, anxiety, and depression have been widely identified across various professions. High emotional demands, such as facing patient suffering, are the most significant stress triggers for nurses. High workload, staff shortages, inadequate compensation, and time pressure are also significant stressors (S *et al.*, 2025). In the construction industry, mental health issues such as depression, burnout, and sleep difficulties are more common than in other sectors, triggered by the high-risk environment, long working hours, job insecurity, and a culture of machismo. Stigma and work ethic in this industry often lead to mental health issues being overlooked (Hansen, Fassa and Pastika, 2025).

Social and demographic factors also contribute to work stress. A study in Jakarta found that social capital (ß=-0.90) was the strongest predictor of stress, followed by social support (ß=-0.13), age (ß=-0.07), income (ß=0.00), and commute distance (ß=0.19). Younger workers tend to be more vulnerable to stress due to unstable job status or lack of experience. Low income is significantly associated with poorer mental health. Long commutes to work, especially in areas prone to traffic congestion, can increase stress, frustration, and fatigue (Putri *et al.*, 2025).

Health crises like the COVID-19 pandemic have also worsened this situation. Healthcare workers in high-risk zones experienced a significant decline in mental health compared to those in medium-risk zones. The availability of complete Personal Protective Equipment (PPE) and access to comprehensive screening tests (PCR and rapid tests) have been proven to improve the quality of life for healthcare workers (Handayani, Putri and Ramdan, 2025).

In the workers' compensation insurance sector, case managers demonstrated high work capacity but experienced greater personal burnout due to direct and emotionally draining interactions with injured workers. Conversely, administrators, who were more focused on policy and financial oversight, experienced higher client-related burnout, likely due to the bureaucratic nature of the job (Kurnianto *et al.*, 2025).

Physical Health and Workplace Environmental Risks Exposure to environmental hazards and inadequate personal hygiene practices significantly affects workers' physical health. Fueling workers, who are exposed to volatile organic compounds (VOCs) such as BTEX, experience decreased lung function and an increased risk of chronic respiratory diseases like coughing and bronchitis. Analysis shows an increase in Lifetime Cancer Risk (LCR) and Hazard Quotient (HQ) for benzene, xylene, and toluene, exceeding safe limits. Concentrations of VOCs and particulate matter (PM2.5 and PM10) in the work environment often exceed international standards. Smoking, age, and high BMI worsen the impact of this exposure (Basak and Majee, 2025).

In an agrarian environment, workers who frequently come into contact with the soil are susceptible to parasitic and fungal infections. Worm infections (helminthiasis) can cause anaemia

(decreased haemoglobin levels) and cognitive impairment. Poor personal hygiene practices, such as not washing hands before eating or not using protective footwear, significantly increase the risk of this infection and affect blood profiles. Age (>50 years) and gender (female) are also associated with lower hemoglobin levels (Indiastari *et al.*, 2025). Although protective footwear is recommended for farmers, a study of farmers in Lojejer Village found no statistically significant relationship between footwear use or personal hygiene and the incidence of Tinea unguium (nail fungal infection). However, prolonged exposure to a damp/dirty environment and nail trauma remains major risk factors (Iftinan *et al.*, 2025).

Sleep quality and Body Mass Index (BMI) are also important determinants of worker health. Bus drivers, for example, showed significant differences in sleep patterns, fatigue, and BMI depending on their work routes. Uniquely, drivers with the longest sleep duration experienced the highest levels of fatigue, indicating that sleep quality is more important than quantity in determining fatigue levels. Consistently high BMI is associated with reduced work capacity and increased health risks (Nugroho *et al.*, 2025). Safety and Emergency Preparedness Culture Building a safe work environment requires not only compliance with regulations but also the development of a mature safety culture and effective preparedness systems.

A mature safety culture is characterized by proactive practices that are deeply embedded within the organization. Leadership commitment (r=0.712) proved to be the strongest driver of safety culture maturity, followed by transparent communication, continuous learning, adequate information, and employee participation (Astuti, Djunaidi and Alfiyyah, 2025).

In the face of sudden physical dangers like landslides in mining areas, a sophisticated early warning system (EWS) is crucial. Studies show that the Internet of Things (IoT)-based Land Sliding Alert (LASER) system is far superior in warning speed and response rate (100% reactivity) compared to conventional systems. Preparedness is also enhanced thru emergency drills, clear evacuation plans, and effective routine training. Adequate knowledge of evacuation routes and the ability to respond in emergency situations have been shown to have a positive influence on worker behavior (Chadarisman and Herdianto, 2025).

In educational institutions, safety practices encompass structural and environmental dimensions (physical facilities, infrastructure), knowledge (safety education materials, emergency preparedness), behavior (SOP compliance, emergency simulations), and social support (stakeholder involvement). Poor infrastructure can pose dangers, making disaster preparedness, the availability of first aid kits, ventilation, and clean drinking water crucial (Phuspa *et al.*, 2025).

Implications and Continuous Improvement These studies collectively underscore the urgency of a multidimensional and contextual approach to ensuring worker well-being. Priority should be given to policies that protect and empower workers.

1. Strengthening Organizational Safety and Well-being Culture:

• Leadership Commitment: Leadership must visibly prioritize safety and well-being, integrate safety performance into evaluations, and provide consistent safety leadership training.

• Communication and Continuous Learning: Promoting clear communication channels, regular safety information sessions, and active feedback mechanisms. Organizations must learn from past incidents and share knowledge to strengthen a culture of safety.

• Employee Participation: Actively involving employees in safety-related decisions, hazard reporting, and contributing ideas to improve safety culture.

• Digital Support System: Utilizing digital platforms, mobile applications, dashboards, or interactive training modules for better dissemination of safety information and education, especially to address information gaps.

• Stress Management and Mental Support: Implementing workplace social support programs, psychological counselling, structured debriefing sessions, and mental resilience training to reduce emotional burden. Flexibility in work arrangements and peer support programs can help reduce stress.

• Provision of Facilities and PPE: Ensuring the availability and use of complete and standard-compliant personal protective equipment (PPE), as well as regular health screening facilities.

• Early Warning and Preparedness System: Adopt early warning system technology (such as IoT-based LASER) for physical hazards and develop clear emergency evacuation plans with regular training.

2. Improving Individual Health and Awareness:

• Personal Hygiene Education: Conducting educational campaigns to raise awareness about consistent hand hygiene practices, proper footwear use, and nail care, especially in high-risk or agricultural environments.

• Healthy Lifestyle Promotion: Educating workers about the importance of sufficient sleep patterns (7-9 hours), weight management thru good nutrition, and physical activity to improve work performance and overall health. Mentoring programs can also help new workers adopt best safety practices.

• Periodic Health Examinations: Encouraging pre-employment and periodic health examinations to monitor respiratory parameters and other health indicators.

With this comprehensive approach, organizations can ensure the protection and empowerment of workers, contributing to a more productive, resilient, and humane working environment for all.

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