Junior Science Communications
Faculty of Applied Sciences, UiTM Shah Alam
https://journal.uitm.edu.my/ojs/index.php/JSC

E-ISSN 2637-0689
Vol 64 2026

Colloquium on Applied Sciences 2 2025
7-12 July 2025, Faculty of Applied Sciences, UiTM Shah Alam, Malaysia

Relationship Between Work-Related Psychosocial Stress and Physiological Stress Responses Among Municipal Workers in Post Covid-19

Nur Farhana Nabila Mohd Firdaus[a], Nurulain Mustafa Udin[a*]

Structured Abstract

Background: COVID-19 pandemic led to substantial changes in daily routines, resulting in an increased depression, anxiety, and stress due to social and economic disturbances. Municipal workers played a crucial role, but they are often exposed to work-related psychosocial stressors, including excessive workloads that can lead to burnout. In Malaysia, mental health issues among workers are significant concern, yet local research remains limited regarding those in semi-urban regions like Dungun. This study aims to bridge the research gap by evaluating the relationship between psychosocial stress level and physiological stress responses.

Methods: Cross-sectional quantitative design was used, involving 103 full-time municipal workers chosen at random from Majlis Perbandaran Dungun. Psychosocial stress levels were assessed using Depression, Anxiety, and Stress Scale (DASS-21) and Psychosocial Risk Assessment and Management at the Workplace (PRisMA) framework. Physiological responses were determined through the measurement of blood pressure (BP) and respiratory rate (RR). Statistical analysis was conducted using SPSS to generate descriptive statistics and Pearson correlation analysis to explore the relationships between psychosocial stress and physiological responses.

Results: Analysis showed that anxiety and stress were prevalent among respondents, with stress identified as the dominant psychosocial issue characterized by heightened emotional reactivity. PRisMA data revealed that work demand and job support reached organizational high-risk levels, with 82% of respondents reporting excessive workloads and 84.5% experiencing work-life imbalances. 51.5% of the respondents exhibited blood pressure readings above the normal range, falling into prehypertensive or stage 1 hypertensive categories. Despite these findings, there was no significant correlation between psychological domains (depression, anxiety, and stress) and the physiological responses of blood pressure or respiratory rate.

Conclusion: Organizational stressors significantly contribute to cardiovascular strain among municipal workers, even when breathing patterns remain stable. While interpersonal support is high, it is often insufficient to offset the systemic burdens of high work demands and lack of autonomy. Recommendations include implementing a psychosocial hierarchy of controls to eliminate negative working conditions and enhancing organizational support systems to prevent adverse health outcomes.

Keywords: Municipal workers, Psychosocial stress, DASS-21, PRisMA, Physiological response

*Correspondence: nurulainmustafa@uitm.edu.my
[a] School of Chemistry & Environment, Faculty of Applied Sciences, Universiti Teknologi MARA, Shah Alam, Malaysia