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

E-ISSN 2637-0689
Vol 53 2025

Colloquium on Applied Sciences 1 2025
20-24 January 2025, Faculty of Applied Sciences, UiTM Shah Alam, Malaysia

Comparative Study of Ergonomic Hazards and Musculoskeletal Disorders Syndrome (MSDs) Among Bus Drivers in UiTM Shah Alam and Section 17 Shah Alam Terminal Bus

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Structured Abstract

Background: This study investigates the ergonomic hazards and prevalence of musculoskeletal disorders (MSDs) among bus drivers at UiTM Shah Alam and Section 17 Shah Alam Terminal. Bus drivers frequently experience prolonged sitting, repetitive motions, awkward postures, and exposure to whole-body vibrations, leading to significant health risks, particularly MSDs. Globally, MSDs are among the leading occupational health issues, causing pain, reduced productivity, and even disability. Drivers' tasks, such as steering, gear shifting, and braking, often exacerbate physical strain on muscles and joints. Additionally, external factors like road conditions, long working hours, and inadequate rest breaks contribute to ergonomic risks. By identifying and comparing these risks between two groups of bus drivers, this study seeks to provide actionable insights to improve occupational health and reduce MSD prevalence.

Methods: A cross-sectional design was employed, targeting a sample of 50 bus drivers. Data collection involved a combination of the Standardized Nordic Musculoskeletal Questionnaire (SNMQ) and ergonomic risk assessment tools such as the Rapid Upper Limb Assessment (RULA). Demographic data, work conditions, and ergonomic risk factors were analyzed using SPSS for descriptive statistics. Specific risk factors, including awkward posture, static positions, repetitive motion, and vibration exposure, were assessed through checklist-based evaluations.

Results: The study revealed significant ergonomic hazards and MSD prevalence, with SMART bus drivers reporting higher rates of lower back pain (85.7% vs. 27.6%) and shoulder discomfort (71.4% vs. 34.5%) compared to UiTM drivers. Additionally, repetitive motion and vibration exposure were more prevalent among SMART drivers. Despite these symptoms, the majority were temporary and did not significantly impair job performance. However, SMART drivers were more likely to seek medical attention, reflecting greater symptom severity.

Conclusion: This research underscores the critical need for targeted interventions, such as ergonomic adjustments and health awareness programs, to reduce MSD risks among bus drivers. The findings provide valuable insights for policymakers and occupational health practitioners to enhance driver safety and well-being. Specific recommendations include improving seating ergonomics, incorporating regular breaks, and educating drivers on proper posture and physical activity.

Keywords: Ergonomic Hazards, Musculoskeletal Disorders, Bus Drivers, Occupational Health, Ergonomic Risk Assessment

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