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Work-related Musculoskeletal Pain Patterns by Body Region Among Warehouse Workers

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Structured Abstract

Background: Ergonomics is the study of how humans interact with their work environment. In many workplaces, especially warehouses, poor ergonomic conditions can lead to long-term health issues. Warehouse workers frequently perform manual material handling tasks such as lifting, pushing, pulling, and sorting, which require physical strength and proper posture. Work-related Musculoskeletal Disorders (WMSDs) affect muscles, nerves, and joints. Conditions like low back pain and carpal tunnel syndrome commonly arise from unergonomic work practices. Warehouse environments pose high ergonomic risks due to confined spaces, overhead reaching, and frequent lifting, increasing strain on the lower back. This study aims to assess ergonomic risks and the prevalence of back pain among warehouse workers.

Methods: A cross-sectional descriptive study was conducted to examine the distribution of work-related musculoskeletal pain across different body regions. Data were collected using a self-administered questionnaire adapted from the Cornell Musculoskeletal Disorder Questionnaire (CMDQ). Participants marked the body areas where they experienced pain in the past 7 days using a body map. Twenty-four full-time warehouse workers voluntarily took part in the study. Microsoft Excel was used to analyse the data. Results obtained indicate the most affected areas and their ergonomic implications.

Results: From the result, wrist, forearm, and lower back are the highest that report pain from workers which is 79.17%. Follow by foot that report 70.83%. Then 66.67% which is lower leg, thigh, and upper arm. These body part categorized as high risk. The others body part was classified as medium risk starting with knee and shoulder, 58.33%. Then hip and upper back which is 50%. The lowest body part is neck that get 45.83%. From these data, overall, the body have high risk potential. These are the result that collect from the 24 of warehouse workers.

Conclusion: This study found that musculoskeletal discomfort is very common among warehouse workers, especially in the lower back and upper limbs. To reduce these risks, warehouse management should consider ergonomic improvements such as adjustable workstations, mechanical lifting aids, and planned rest breaks. Overall, improving ergonomic practices and taking early action are important to protect workers' health and prevent long-term injuries.

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