

ASSESSMENT OF NOISE AND VIBRATION EXPOSURE AMONG INDUSTRIAL WORKERS

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ABSTRACT.

Occupational exposure to noise and vibration is a significant health risk in industrial environments. Prolonged exposure can lead to auditory and non-auditory health issues, including hearing loss, stress, and musculoskeletal disorders. This study aims to assess the effects of noise and vibration exposure on industrial workers, categorizing them into different exposure groups.

Keywords: Noise exposure, vibration, hearing loss, occupational health, industrial workers

Methods

A cross-sectional study was conducted on workers in the manufacturing sector. Participants were divided into four groups: (1) workers with low hearing threshold shifts due to noise, (2) workers with high hearing threshold shifts, (3) workers exposed to both noise and vibration, and (4) a control group of healthy workers. Audiometric and vibration exposure assessments were performed, and statistical analysis was conducted to determine the correlation between exposure levels and health outcomes.

Result

The findings revealed that workers exposed to both noise and vibration (Group 3) exhibited the highest rates of hearing impairment and physical discomfort. Group 2 also showed significant auditory deterioration, while Group 1 displayed moderate threshold shifts. The control group (Group 4) exhibited no significant hearing or health issues. The study further demonstrated that vibration exposure exacerbates noise-induced hearing loss.

Discussion

The results highlight the urgent need for preventive measures in industrial settings, including noise reduction strategies, personal protective equipment (PPE), and regular health monitoring programs. The combination of noise and vibration poses a compounded risk that requires targeted intervention.

Conclusion

Occupational noise and vibration exposure significantly impact workers' health, particularly auditory functions. Employers and policymakers should implement stricter regulations and health surveillance programs to mitigate these risks.

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