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Assessment on Occupational Noise Exposure Among Workers in Aluminium Manufacturing Company in Klang, Selangor

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Structured Abstract

Background: Noise is a major environmental hazard that can have a significant impact on human health and well-being. Numerous health issues can be caused by prolonged exposure to excessive noise levels including hearing loss, tinnitus, and cardiovascular disease. Exposure to excessive noise can cause hearing loss and that noise is considered a severe danger to human well-being. Aluminium manufacturing involves various machines that produce high levels of noise. This study is aimed to determine the percentage of self-report noise induced hearing loss (NIHL), evaluate the noise exposure level in the company and create noise mapping to identify the high-risk work areas.

Methods: This cross-sectional study was conducted in four different areas in the company, which is Casting, Rolling, Maintenance and Finishing areas. A questionnaire was used to collect the data on self-reported NIHL among workers. Area monitoring was conducted using Sound Level Meter to evaluate the noise level and the data was used to create the noise mapping. Noise mapping has been done using Microsoft words.

Results: Thirty-one respondents were involved in this study. The noise exposure level in the company was in the range of 82 dB(A) to 99 dB(A). The noise level for this company exceeded the excessive noise of 82 dB(A) and noise exposure limit of 85 dB(A) and was identified as high-risk work areas. The rolling area recorded the highest noise level of (99.0±0.18) dB(A) while the lowest noise level is in the finishing area with reading of (82.3±0.21) dB(A). 19.4% of respondents reported of hearing loss and 32.3% of the respondents reported hear ringing and buzzing sounds in their ears (tinnitus). This might be caused by exposure to high noise levels for a long period of time.

Conclusion: In conclusion, the noise level in aluminium manufacturing company exceeds the recommended noise level, leading to reported hearing issues among the workers. A hearing conservation program should be implemented, and it is recommended to measure the personal noise monitoring of the workers to protect workers' health.

Keywords: Aluminium manufacturing, noise-induced hearing loss (NIHL), noise exposure limit

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