

Assessment on Occupational Noise Exposure at Manufacturing Company in Negeri Sembilan

Putri Yasmien Soraya Razak^a, Zitty Sarah Ismail^{a*}

Structured Abstract

Background: Manufacturing of truck and bus bodies involves various work processes and machinery, exposing workers to potentially dangerous high noise levels. Noise emitted from machinery and tools has been linked to several occupational health hazards such as noise-induced hearing loss (NIHL) and tinnitus. The major sources of noise in manufacturing plants are angle grinders, fans, motors, hammers, pumps, cutting saws and drillers. This study aimed to evaluate the noise exposure level in the workstations, assess workers' daily noise dose, and investigate the relationship between noise exposure level and worker's daily noise dose.

Methods: In achieving the study objectives, the data is being measured by conducting on-site monitoring and Pearson Correlation Analysis. Area monitoring was conducted using the sound level meter (SLM) to measure the noise exposure level while personal monitoring was conducted using noise dosimeters to measure workers' daily noise dose.

Results: The L_{Aeq} in the work areas ranges from 66.5 decibels (A) to 92.6 decibels (A). Majority of the machinery in the manufacturing plant surpass the excessive noise limits of 82 decibels (A) and Noise Exposure limit (NEL) of 85 decibels (A) that is recommended in the Industry Code of Practice (ICOP) for Management of Occupational Noise Exposure and Hearing Conservation 2019. The findings in this study indicate that one of the workers exceeded the recommended daily noise dose and peak level with a reading of 112.2% and 150 decibels (C). Additionally, this study demonstrated a weak negative correlation between noise exposure level and worker's daily noise dose with $R^2 = -0.335$. This indicates the relationship between the noise exposure level and the worker's daily noise dose is insignificant.

Conclusion: In line with achieving the Sustainable Development Goals (SDG) on Decent Work and Economic Growth, it is recommended to conduct future studies that develop noise mapping and consider factors that influence the daily noise dose to minimise the risk of occupational noise exposure. Therefore, this study will be useful in providing insights for policymakers and employers in creating a safe and healthy workplace environment for workers.

Keywords: Occupational noise, truck and bus body manufacturing, noise-induced hearing loss, noise exposure limit.

*Correspondence: zitty@uitm.edu.my

^aSchool of Chemistry & Environment, Faculty of Applied Sciences, Universiti Teknologi MARA, Shah Alam, Malaysia.