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RESPIRABLE DUST MONITORING AMONG CLEANERS AND STREET SWEEPERS AT FACULTY OF APPLIED SCIENCES UiTM SHAH ALAM

Muhammad Ramadhan Yunus^a, Nor Azura Sulong^{a*}

Structured Abstract

Background: Employees may be exposed to dust, which is a type of pollutant. Abundant scientific research has continuously demonstrated a robust correlation between being exposed to particulate matter with aerodynamic dimensions smaller than 10 μm referred to as PM_{10} and smaller than 2.5 μm referred to as $\text{PM}_{2.5}$, and increased mortality rates. This correlation is especially apparent when considering cardiovascular disorders and lung cancer. This study will primarily examine the cleaners working inside buildings and the street sweepers on the roads at FSG, UiTM Shah Alam. These workers are consistently exposed to respirable dust as a result of their job responsibilities.

Methods: The selection of NMAM 0600 4th Edition was based on its focus on particles that are not regulated by other means, and its specificity in addressing respirable dust. Validated questionnaires were employed to collect pertinent background information and respiratory complaints from the subjects. The study will recruit participants from the community of janitors dwelling in blocks A, B, and C of the Applied Science Faculty, as well as street sweepers at UiTM Shah Alam.

Results: Based on the findings, the concentration levels found in both the cleaner's samples and street sweeper's samples are all within an acceptable range. These concentrations meet the limits set by the ACGIH threshold limit value and OSHA permissible exposure limit. According to the questionnaire, a small number of workers in the cleaning and street sweeping professions are experiencing respiratory issues. Four individuals among the workers are experiencing respiratory symptoms such as coughing, phlegm, and difficulty breathing.

Conclusion: Cleaner respirable dust values of 1.7 mg/m^3 and 1.0 mg/m^3 are the results of calculations made by NMAM 0600. The concentrations of street sweepers are 1.6 mg/m^3 and 0.1 mg/m^3 . The metrics are within the standards, according to the data. In order to assess health concerns, this study also examines the lung dust susceptibility of FSG, UiTM Shah Alam cleaners, and street sweepers. Data on smoking, employment experience, and respiratory symptoms were gathered via a questionnaire. Subsequent data analysis using SPSS software revealed that there is no statistically significant difference between worker cough and respirable dust concentration.

Keywords: Respirable Dust, Particulate Matter, Cleaners, Street Sweepers, Concentration, Risk

*Correspondence: azurasulong@uitm.edu.my

^a School of Chemistry & Environment, Faculty of Applied Sciences, Universiti Teknologi MARA, Shah Alam, Malaysia