

RESPIRABLE DUST MONITORING AMONG CLEANERS AT MELATI COLLEGE UITM SHAH ALAM

Aina Rizal*, Azura Sulong

Structured Abstract

Background: Cleaners exposed to respirable dust have a major risk of developing respiratory conditions such as asthma and chronic obstructive pulmonary disease (COPD). This study focuses on cleaners at Melati College, UiTM Shah Alam, who were regularly exposed to particulate matter due to their job responsibilities. Despite this, there was limited awareness and lack of studies addressing respirable dust exposure in non-industrial environments such as university dormitories, where cleaners are often overlooked in occupational health research. The objectives of this study are to determine the concentration of respirable dust exposed to cleaners at Melati College, UiTM Shah Alam, to evaluate the respiratory health symptoms among them and to assess their potential health risk including carcinogenic and non-carcinogenic health risk.

Methods: Respirable dust was measured using the Gillian Gil Air Plus personal air sampling pump, and respiratory symptoms were assessed through questionnaires based on American Thoracic Society parameters.

Results: Results showed that the respirable dust concentrations ranged from 0.6 mg/m³ to 1.4 mg/m³ which remained below the permissible exposure limits (PELs) set by USECHH, ACGIH, and OSHA. Despite this, some cleaners reported symptoms such as coughing and eye irritation, indicating that prolonged low-level exposure may still impact health. The discussion highlights that factors such as duration of work, type of task, and environment can influence exposure levels.

Conclusion: In conclusion, although measured values were within safe limits, the presence of symptoms suggests the need for further research. Future studies should include larger sample sizes, cover other campuses or industries, evaluate environmental changes, use control groups, and incorporate biomarkers or lung function tests for more accurate assessments of health impacts.

Keywords: Respirable Dust, Occupational Health, Cleaners, Health Risk Assessment, Permissible Exposure Limit

*Correspondence: 2022456138@student.uitm.edu.my

Faculty of Applied Sciences, Universiti Teknologi MARA, Shah Alam, Malaysia