

UNIVERSITI TEKNOLOGI MARA

**RESPIRABLE DUST EXPOSURE
IMPACT ON RESPIRATORY
SYMPTOMS AMONG CLEANERS
IN A PUBLIC UNIVERSITY AT
SELANGOR**

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In the name of Allah, The Most Gracious, The Most Merciful.

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ABSTRACT

The cleaners perform a vital role in environmental health by keeping the place clean, but cleaners are also exposed to a variety of hazards. This study aims to determine the respirable dust exposure on respiratory symptoms among cleaners in a public university at Selangor. A cross-sectional study was carried out among 51 cleaners. The respondents' background information and respiratory symptoms were gathered using a series of standardised questionnaires validated by the American Thoracic Society (ATS-DLD-78-A). The 8-hour respirable dust exposure to cleaners was measured using a air sampling pump Gillian & Sensodyne Gil Air 3. The mean of respirable dust was significant from $0.63 \pm 0.57 \text{ mg/m}^3$ with p-value was < 0.001 and T-value was 7.86. The respiratory symptom shown insignificant different for cough, phlegm, wheezing, breathlessness, and cough with phlegm symptoms among the cleaners against working tenure at 4(30.8%), X^2 is 0.52 for cough and 3(27.3%), X^2 is 0.49 for phlegm. Meanwhile for wheezing 1(33.3%), X^2 is 1.00 for breathlessness 5(45.5%), X^2 is 0.74 and for cough with phlegm 1(50.0%), X^2 is 1.00 respectively. The association between respirable dust exposure and respiratory symptoms also show insignificant different but PR is more than 1. This study showed cleaners can expose to respirable dust and it has the potential to expose to the respirable symptoms because of the PR is more than 1 although it not significant.

Keywords: *Cleaner, Respirable dust, Respiratory symptom.*

CHAPTER 1

INTRODUCTION

1.1 Background

It is crucial to maintain a secure and healthy learning environment through regular campus cleaning. Centers for Disease Control and Prevention, CDC¹ (2022) state that the pandemic has made clear how quickly germs can proliferate and how important it is to maintain clean facilities. Health and safety are top priorities for students and staff. It is necessary to hire a cleaning company frequently to perform professional cleaning in classrooms, offices, common areas, break rooms, restrooms, dorm rooms, clinics, and other locations (Broadhurst, 2022). Thus, cleaners have become an important position in building worldwide. Cleaners ensure the environment of a building, workplace, and institution is clean and hygienic for the people.

Tasks and duties of cleaners such as sweeping, mopping, sanitising, restocking supplies; toilet paper, polishing, and collecting garbage need them to move from one place to another, from outdoors to indoor, and vice versa (Hughes, 2021). Gardener, cleaning roads, and grass cutting are also one of the cleaners' duties. Cleaners at public universities, who work an average of 8 to 9 hours per day and 6 days a week tend to expose to particulate matter throughout their working hours.