Junior Science Communications
Faculty of Applied Sciences, UiTM Shah Alam
https://journal.uitm.edu.my/ojs/index.php/JSC

E-ISSN 2637-0689
Vol 42 2024

Colloquium on Applied Sciences 2024
19-21 January 2024, Faculty of Applied Sciences, UiTM Shah Alam, Malaysia

A Study on Indoor Airborne Fungi That Leads to Sick Building Syndrome (SBS)

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Structured Abstract

Background: Indoor airborne fungi are recognized as a significant factor affecting air quality and occupant health in various settings, including homes, workplaces, and especially healthcare facilities. These microorganisms thrive in damp environments, releasing spores and volatile organic compounds. This study aims to measure indoor airborne fungi concentrations in healthcare facilities, identify self-reported symptoms of sick building syndrome (SBS) among healthcare workers, and investigate the correlation between SBS and fungal concentrations in these indoor environments, particularly relevant during the COVID-19 pandemic.

Methods: The research was conducted in selected areas of Pusat Kesihatan UiTM Shah Alam, including treatment rooms, admin office, and IT rooms. Air samples were collected using a BioStage QuickTake 30 sample pump and cultured on Malt Extract Agar (MEA). A questionnaire survey was distributed to healthcare workers to document SBS symptoms and perceptions of the work environment. Data analysis involved calculating fungal concentrations and using Pearson correlation coefficients to assess the relationship between SBS symptoms and fungal presence.

Results: This research effectively investigates the link between self-reported symptoms in workers and the levels of indoor fungi. The findings show a moderate positive correlation of 0.518 between relative humidity and fungal concentration, along with a comparable correlation of 0.472 between temperature and fungal concentration. Although there is an inclination for fungal concentration to increase with higher temperature and humidity, however, the correlation lacks statistical significance.

Conclusion: The investigation at Pusat Kesihatan, UiTM Shah Alam, effectively assessed the indoor air quality, identifying elevated levels of airborne fungi in Treatment Room 2 associated with moderate humidity. Despite a generally low prevalence of symptoms, the prominent complaints of healthcare workers, such as headaches and fatigue, emphasize the significance of addressing environmental conditions to ensure well-being in the workplace.

Keywords: Indoor Airborne Fungi, Sick Building Syndrome, Healthcare Facilities, Indoor Air Quality, Respiratory Health, Occupational Health.

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