

UNIVERSITI TEKNOLOGI MARA

**INDOOR AIR QUALITY LEVEL
AND SICK BUILDING SYNDROME
SYMPTOMS AMONG OFFICE
WORKERS OF A PUBLIC HIGHER
LEARNING INSTITUTE IN
SELANGOR**

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ABSTRACT

The wellbeing, health, and productivity of office workers are greatly influenced by the quality of the indoor air. The health of the workers was observed to be impacted by poor indoor air quality. The study's objective is to examine the level of indoor air quality and the symptoms of sick building syndrome among the office workers of a public university in Selangor. An extended questionnaire adopted by ICOP IAQ 2010 from the Department of Occupational Safety and Health Malaysia (DOSH) and Questionnaire ATS-DLD-78-A (1978) were distributed to the respondents to assess the sick building syndrome and IAQ were measured by air monitoring using laboratory instruments. The findings indicate that, excluding the temperature, relative humidity, and carbon dioxide readings, most IAQ parameters readings were in compliance with the Malaysian IAQ standard. Besides that, no significant symptoms of sick building syndrome were discovered between working types. Additionally, there were no significant association as well observed between IAQ and the sick building syndrome symptoms. However, only temperature was associated to symptom of irritated nose ($X^2 = 7.127$, $p = 0.01$). In order to investigate the prevalence of sick building syndrome symptoms, the study recommended that future research in the same field implement lung function testing and full IAQ parameters monitoring (physical, chemical, and microbiological).

Keywords: *Sick Building Syndrome, female, office workers, indoor air quality, public university.*

CHAPTER 1

INTRODUCTION

1.1 Background

On June 1, 2009, a public university in Puncak Alam, Kuala Selangor, began its operations (UCS UiTM, 2020). Commonly, a public university consists of professional personnel, including office employees working in enclosed rooms. Among the office workers are the academician and administration workers, who work during office hours, an average of 9 hours per day, from 8 a.m. to 5 p.m. In order to fulfil the missions of education, advancing research, and public service, university academic staff and administrators play crucial and central roles in higher education (Kuo, 2009). As office workers is supposed to work in the building for 9 hours per day and five days a week and spend 90% of their daily working hours indoors (US EPA, 2014), the building's indoor air quality must be maintained.

Indoor air quality (IAQ) can be defined as the quality of the air moving in an enclosed building structure. According to the Occupational Safety & Health Administration of the United States Department of Labour, many aspects may affect indoor air quality; this includes poor ventilation due to the lack of outside air and physical parameters such as temperature, humidity, and air velocity. Not just physical parameters, other parameters such as biological, including mould growth, bacteria, and viruses, may contribute to poor levels of indoor air quality. Cleaning supplies, pesticides, or other chemicals used will also influence the indoor air environment. Indoor air quality must be monitored as poor indoor air quality has been attributed to a variety of diseases and health problems. In addition, low-quality indoor air leads to discomfort, work deficiency, and multiple effects on human health (US EPA, 2014).