

Tracking sick building syndrome clusters among hospital staff: an iaq-based approach

Purnima devi Suppiah, MD¹, Stephenie Ann Albart, MD¹, Nor Aslina Abd Jalil, MEnv²

¹Clinical Research Center, Hospital Seberang Jaya, ²Faculty of Technology and Applied Sciences, Open University Malaysia

ABSTRACT

Introduction: Sick Building Syndrome (SBS) poses a significant but under-recognised occupational health challenge in healthcare settings. With hospital workers often exposed to suboptimal indoor air quality (IAQ), identifying environmental contributors to SBS is critical for protecting healthcare staff and maintaining high-quality patient care. This study aimed to assess the prevalence and the association between workstation type and discomfort in a tertiary hospital in northern Malaysian. **Materials and Methods:** A cross-sectional study was conducted between December 2024 and February 2025, involving a walkthrough inspection of various hospital zones based on the Industry Code of Practice on Indoor Air Quality (ICOP 2010) and a structured online questionnaire completed by 265 healthcare workers. SBS symptoms and environmental discomfort factors were analysed in relation to workstation type (open vs. enclosed). **Results:** Enclosed workstations showed a higher prevalence of SBS symptoms, including respiratory symptoms (range 61-69%), headache (73.6%) and fatigue (78.10%). Significant associations were observed between workstation type and five key discomfort factors. Open-concept workstations reported higher levels of discomfort due to high temperature ($p=0.025$), stuffy air ($p=0.015$), dry air ($p=0.016$), unpleasant odour ($p=0.006$), and exposure to passive smoking ($p=0.003$). Findings from the walkthrough inspection revealed inadequate ventilation, fungal growth, and chemical exposures from cleaning agents. **Conclusion:** These findings underscore the urgent need for targeted interventions, including improved ventilation, routine IAQ monitoring, and hospital-wide policy enhancements. Strengthening IAQ management strategies is essential to creating a healthier work environment in tertiary healthcare facilities and safeguarding the well-being of healthcare professionals.