

An overview of indoor air quality and its impact on respiratory health among Malaysian school-aged children

ABSTRACT

The indoor environment is a major source of human exposure to pollutants. Some pollutants can have concentrations that are several times higher indoors than outdoors. Prolonged exposure may lead to adverse biologic effects, even at low concentrations. Several studies done in Malaysia had underlined the role of indoor air pollution in affecting respiratory health, especially for school-aged children. A critical review was conducted on the quantitative literature linking indoor air pollution with respiratory illnesses among school-aged children. This paper reviews evidence of the association between indoor air quality (IAQ) and its implications on respiratory health among Malaysian school-aged children. This review summarizes six relevant studies conducted in Malaysia for the past 10 years. Previous epidemiologic studies relevant to indoor air pollutants and their implications on school-aged children's respiratory health were obtained from electronic database and included as a reference in this review. The existing reviewed data emphasize the impact of IAQ parameters, namely, indoor temperature, ventilation rates, indoor concentration of carbon dioxide (CO₂), carbon monoxide (CO), particulate matters (PM), volatile organic compounds (VOCs), nitrogen dioxide (NO₂) and airborne microbes, on children's respiratory health. The study found that most of the Malaysian school-aged children are exposed to the inadequate environment during their times spent either in their houses or in their classrooms, which is not in compliance with the established standards. Children living in households or studying in schools in urban areas are more likely to suffer from respiratory illnesses compared with children living in homes or studying in schools in rural areas.