

A survey of schoolchildren's exposure to secondhand smoke in Malaysia.

Abstract

Background: There is a lack of data describing the exposure of Malaysian schoolchildren to Secondhand Smoke (SHS). The aim of this study is to identify factors influencing schoolchildren's exposures to SHS in Malaysia. **Method:** This cross-sectional study was carried out to measure salivary cotinine concentrations among 1064 schoolchildren (10-11 years) attending 24 schools in Malaysia following recent partial smoke-free restrictions. Parents completed questionnaires and schoolchildren provided saliva samples for cotinine assay. **Results:** The geometric mean (GM) salivary cotinine concentrations for 947 non-smoking schoolchildren stratified by household residents' smoking behaviour were: for children living with non-smoking parents 0.32 ng/ml (95% CI 0.28-0.37) (n = 446); for children living with a smoker father 0.65 ng/ml (95% CI 0.57-0.72) (n = 432); for children living with two smoking parents 1.12 ng/ml (95% CI 0.29-4.40) (n = 3); for children who live with an extended family member who smokes 0.62 ng/ml (95% CI 0.42-0.89) (n = 33) and for children living with two smokers (father and extended family member) 0.71 ng/ml (95% CI 0.40-0.97) (n = 44). Parental-reported SHS exposures showed poor agreement with children's self-reported SHS exposures. Multiple linear regression demonstrated that cotinine levels were positively associated with living with one or more smokers, urban residence, occupation of father (Armed forces), parental-reported exposure to SHS and education of the father (Diploma/Technical certificate). **Conclusions:** This is the first study to characterise exposures to SHS using salivary cotinine concentrations among schoolchildren in Malaysia and also the first study documenting SHS exposure using salivary cotinine as a biomarker in a South-East Asian population of schoolchildren. Compared to other populations of similarly aged schoolchildren, Malaysian children have higher salivary cotinine concentrations. The partial nature of smoke-free restrictions in Malaysia is likely to contribute to these findings. Enforcement of existing legislation to reduce exposure in public place settings and interventions to reduce exposure at home, especially to implement effective home smoking restriction practices are required.

Keyword: Enzyme-immunoassay method; Salivary cotinine; Schoolchildren; Secondhand smoke; Self-reported smoke exposure; Smoke-free legislation.