

Associations of nutritional status, sugar and second-hand smoke exposure with dental caries among 3- to 6-year old Malaysian pre-schoolers: a cross-sectional study

ABSTRACT

Background: Dental caries in primary teeth is a serious oral health concern among children. It can lead to detrimental impacts on a child's growth, development, and quality of life. Therefore, this cross-sectional study aimed to examine the prevalence of dental caries and its associations with nutritional status, sugar and second-hand smoke exposure among pre-schoolers. **Methods:** A total of 26 pre-schools in Seremban, Malaysia were randomly selected using the probability proportional to size sampling. Dental examination was performed by a dentist to record the number of decayed teeth (dt). Weight and height of the pre-schoolers were measured. The mother-administered questionnaire was used to gather information pertaining to the sociodemographic characteristics and second-hand smoke exposure. Total sugar exposure was calculated from a 3-day food record. **Results:** Among the 396 participating pre-schoolers, 63.4% of them had at least one untreated caries, with a mean \pm SD dt score of 3.56 ± 4.57 . Negative binomial regression analysis revealed that being a boy (adjusted mean ratio = 1.42, 95% CI = 0.005–0.698, $p = 0.047$), exposed to second-hand smoke (adjusted mean ratio = 1.67, 95% CI = 0.168–0.857, $p = 0.004$) and those who had more than 6 times of daily total sugar exposure (adjusted mean ratio = 1.93, 95% CI = 0.138–0.857, $p = 0.013$) were significantly associated with dental caries among pre-schoolers. **Conclusion:** A high prevalence of dental caries was reported in this study. This study highlights the need to reduce exposure to second-hand smoke and practice healthy eating behaviours in reducing the risk of dental caries among pre-schoolers.

Keyword: Pre-schoolers; Dental caries; Oral health; Stunting; Second-hand smoke exposure; Sugar exposure; Malaysia