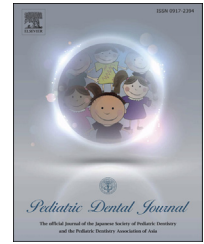




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Original Article

Effect of School Oral Health Promotion Programme on dental health and health behaviour in Vietnamese schoolchildren

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ABSTRACT

Objective: This study was designed to (1) determine dental caries and gingivitis and (2) assess the effect of oral health behaviour and self-perception on dental caries experience of Vietnamese schoolchildren aged 8–10 years old, involved in the School Oral Health Promotion Programme (SOHPP).

Methods: A total of 556 schoolchildren were examined clinically for dental caries, gingival and oral hygiene status following the WHO's "Oral Health Survey" (1997) guidelines and were asked about oral health behaviour and self-perception related to dental caries.

Results: 87.9% of schoolchildren had experienced dental caries ($dft + DFT = 4.1 \pm 3.2$), 76.8% had gingivitis. 8-year-old schoolchildren experienced a significantly higher prevalence of caries compared to 9- and 10-year-olds ($p = 0.007$). Good oral hygiene was observed in 13.5% of schoolchildren; 90% brushed their teeth at least once a day; 60% had visited a dentist during last 12 months. No significant difference was found in oral hygiene behaviours related to reducing dental caries. The odds of high dental caries level $dft + DFT > 6$ was significantly associated with schoolchildren's self-perception of "I am afraid of having a dental check-up." ($OR = 1.7, p = 0.012$), "I often feel discomfort due to toothache during the last 12 months." ($OR = 1.9, p = 0.001$), and consumption of milk with sugar ≥ 1 time/day ($OR = 1.6, p = 0.040$).

Conclusion: Although the caries experience was at moderate level, there is the high prevalence of dental caries and gingivitis status among the Vietnamese schoolchildren due to lack of oral self-care and infrequent dental visits. The positive contents of SOHPP have not yet improved oral health behaviour of schoolchildren.

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1. Introduction

Oral diseases are a major public health problem worldwide. The World Health Organization (WHO) has reported that dental caries affects 90% of school-aged children [1]. In the East Asia region, the prevalence of caries among schoolchildren and the decayed, missing, and filled teeth (DMFT) index score were comparatively high during the period 2005–2015 [2–4].

The oral health of schoolchildren is impacted by such factors as diet, oral hygiene behaviour, dental care education, and parental oral health knowledge [5–7]. The consequence of carious lesions in the primary dentition can have an adverse influence on permanent dentition [8]. Moreover, the oral pain might affect nutritional status and restrict the educational progress of schoolchildren [9,10].

The 8th World Congress on Preventive Dentistry (2005) addressed the prevention of oral diseases which are significant burdens on children, for it strengthened that the school should be used as a platform for the promotion of health, quality of life and disease prevention. Since 1980, the School Oral Health Promotion Programme (SOHPP) was implemented by the Vietnamese government to achieve higher targets regarding enhancing oral health care knowledge, improving oral health outcomes and reducing the prevalence of oral diseases among schoolchildren. Despite the SOHPP, the Vietnamese National Oral Health Survey reported that the prevalence of dental caries among children tends to increase with age; however, this report did not explain risk factors that influence dental caries experience [11].

Vietnamese children normally start primary education at the age of six, and education is compulsory for the next five years. Schoolchildren aged 8–10 years may have a perception of the importance of oral health care, but no reports are available about the oral health status and health behaviour of these groups. Therefore, this pilot study evaluates the efficiency of SOHPP with the aims are to (1) determine dental caries and gingivitis, and (2) assess the effect of oral health behaviour and self-perception on dental caries experience of Vietnamese schoolchildren aged 8–10 years old, involved in the SOHPP.

2. Material and methods

2.1. Sample study

This cross-sectional study was carried out in Danang city, where the School Oral Health Promotion Programme has been run in all schools. Five primary schools were randomly selected for this survey. The head teachers and parents of the chosen school's children aged 8–10 years old were informed of the study. After informed consent was obtained from parents, the schoolchildren were invited to undergo a dental examination and were surveyed for oral health behaviour. Of 600 selected schoolchildren, 556 (93%, 239 boys and 317 girls) from five primary schools agreed to participate in the study. The number of schoolchildren aged 8, 9 and 10

years was 223 (40.1%), 146 (26.3%) and 187 (33.6%) respectively. This study was approved by the Human Research Ethics Committee of Danang University of Medical Technology & Pharmacy.

2.2. Recording oral health behaviour and dental caries

Prior to dental examination, the schoolchildren were asked under the supervision of a dental assistant about their behaviour of toothbrushing, frequency of visiting a dentist, frequency of sugary snacks and drinks, and milk with sugar consumption.

Self-perception related to dental caries included question items as following: (1) “How would you describe the health of your teeth and gums?”; (2) “I feel not satisfied with the appearance of my teeth.”; (3) “I often avoid smiling and laughing because of my teeth.”; (4) “Other children make fun of my teeth.”; (5) “Toothache or discomfort caused by my teeth forced me to miss classes at school or miss school for whole days.”; (6) “I have difficulty in chewing.”; (7) “I often feel discomfort due to toothache during the last 12 months.”; and (8) “I am afraid of having a dental check-up.”

Dental examinations were carried out in each school's dental clinic by two dentists. Intra- and inter-examiner calibration regarding caries number and gingival status had Kappa value of >0.85. Dental examination procedures were performed according to the WHO's “Oral Health Survey” (1997) criteria.

A dental caries was recorded in cases where a tooth had a cavity or restoration. Gingival status was measured using the Community Periodontal Index (CPI). CPI 0 = a healthy gum, CPI 1 = gingival bleeding and CPI 2 = calculus. The index teeth of each sextant were chosen, including the first four permanent molars (teeth 16, 26, 36 and 46) and the upper right (tooth 11) and lower left (tooth 31) incisors. Six sites around the index teeth were examined for gingival status, which was recorded as the highest instance found.

Oral hygiene status was based on the Simplified Oral Hygiene Index (OHI-S) [12]. Each individual's average plaque and calculus index per number of index teeth was combined to obtain their OHI-S score. Schoolchildren with OHI-S scores of 0.0–1.2 had good, 1.3–3.0 fair, and 3.1–6.0 poor oral hygiene.

2.3. Statistical analysis

Data entry and statistical analysis were performed using the SPSS Statistics for Windows, Version 17.0 (SPSS Inc., Chicago, Illinois, USA). Kruskal–Wallis test and ANOVA test determined the difference between dental caries, gingival status and age groups. The Chi-squared test and Student's t-test were used to analyse the association between oral health behaviour and dental health, and self-perception and caries experiences. Mann–Whitney U test was applied for comparison of level of dental caries between boys and girls. The binary logistic regression analysis was used to assess the odds of high dental caries level ($dft + DFT > 6$) related to factors of schoolchildren's oral health behaviour and self-perception. The confidence level of 95% and a two-sided p-value of <0.05 were used to reveal significant differences.

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