

POSTER ABSTRACT

Oral health screening in early childhood through an educational approach: A Maternal and Child Health initiative by Community Nursing

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Background: Tooth decay in children below age 6 is defined as early childhood caries (ECC). 40% of preschool children in Singapore are affected by ECC, despite increased living standards and affluent society.

ECC in young children can be detrimental if not timely managed, and may lead to pain, infection, impacting sleep and diet. Besides impacting children's health, healthcare cost for dental treatment can be high.

As benefits of early preventive measures outweigh consequences and complications of ECC, there is increasing emphasis on timely screening and early referral for care. With appropriate training and skills, community nurses can be empowered to increase preventive efforts through oral health education and conducting simple screening in the community.

This study examined the effectiveness of an oral health education programme for community nurses.

Approach: Community nurses from Changi General Hospital were involved in an oral health education programme. The programme consisted of an in-person lecture on oral health knowledge and

simple caries screening, and a pre and post-test questionnaire.

The pre-test questionnaire was self-administered one-day before the lecture. The post-test questionnaire was self-administered up to 1 week after the lecture. Pre-test and post-test scores were compared.

A calibration of caries recognition was done to assess competency, using 20 clinical photos of dental caries in anterior and posterior teeth of children below 6 years old. Nurses were given 3 attempts to achieve their best score. They were required to submit their results within 1 month from the lecture date.

Results: A total of 57 community nurses attended the oral health programme. Three questionnaires with missing data were excluded from the analysis. Figure 1 represents the percentage of nurses who participated in the questionnaires, in accordance to rank. The mean pre-test score was 65 (with a range of 40-95). The mean post-test score was 88 (with a range of 70-100).

Fifty-one out of 54 nurses (94.4%) showed improvement in oral health knowledge from the pre and post-test scores. Six community nurses were not involved in the calibration exercise and were excluded from the analysis.

A total of 49 community nurses participated in the calibration for caries recognition. The mean percentage of accuracy when compared to gold standard for anterior and posterior teeth caries was 96% (with a range of 90%-100%).

A follow up study was conducted in 2025, to evaluate the impact of oral health screening knowledge translating into community screening for children below 6 years old. A total of 577 children were screened at partnered pre-schools and community events. They were tiered according to their oral health status and Tier 2 and 3 children received further follow-up phone calls and memo for referral to dental specialist respectively. Figure 2 represents the results from the screening.

Implications: The oral health education programme was concluded to be effective in increasing oral health knowledge, acquiring sufficient knowledge to recognize dental caries in children on photographs. From the follow-up study, it is concluded that the increased knowledge provided nurses ability to conduct community screening, therein rendering early interventions with ECC.