

ORIGINAL ARTICLE**Dental Caries and associated factors among 2-5 years children attending OPD of a selected Dental Hospital in Bangladesh*** Md Asif Iqbal Khan¹, Md Mahfuzur Raihan², Md. Mahfuz Hossain³, Abu Syem Md Shahin⁴

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ABSTRACT**Background**

Despite remarkable reduction in the prevalence of dental caries in developed countries, dental caries is still a highly prevalent disease among children in developing countries.

Objectives

To estimate the oral health status of children under five years of age by assessing decayed, missing and filled teeth (dmft) status of primary teeth along with their tooth cleaning and food habits.

Materials and Methods

This cross-sectional study on oral health status of children under five years of age was carried out among 107 children attending the Outpatient Department of Sapporo Dental College and Hospital, situated at Uttara, Dhaka. Data was collected both in English and Bengali with a pre-tested structured questionnaire and a checklist.

Results

Dental caries (d) was found in 69.2% of the children while missing (m) and filled (f) teeth were recorded in 14% and 21.5% of the children respectively. Almost three quarter children (72%) demonstrated an overall dmft score 1 or higher; whereas one third children (28%) demonstrated dmft score 0 or free from any form of dental decay, missing teeth and dental filling. Increased age of the children was directly associated ($p < 0.05$) with the number of decayed, missing or filled teeth.

The study also revealed that correct method of brushing was practiced by only 44% of the children and recommended brushing time (1-3 minutes) was done by 37.3% only. Children who were assisted by their parents during brushing experienced less caries compared to the children who brushed their teeth by themselves and this finding was statistically significant ($p < 0.05$). Taking snacks between meals was preferred by 106 children and among them 97.2% did not clean their mouth after having snacks.

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Introduction

The oral health of preschool children (2-5 years of age) remains a neglected area of health as ever¹. Data related to dental caries prevalence of deciduous teeth are rare in Bangladesh.² Although studies regarding older children and adults are not scarce, the importance of doing systematic research on preschool children has been overlooked.

In the developed countries, the incidence of dental diseases among preschool children has been reduced significantly decade before and these countries could develop efficient preventive measures through several research findings. On the contrary, dental caries prevalence of primary teeth has increased in some less developed countries^{3,4}

In Bangladesh the extent and magnitude of dental caries among young children have not been explored extensively. The World Health Organization (WHO) also does not have any data base on the oral health status of under-five year children in Bangladesh². Therefore, the primary objective of this study was to find out the caries status and associated factors of children under-five years in order to inform policy makers to develop preventive dental care approaches in Bangladesh.

Materials and Methods

This cross-sectional study was carried out at the Outpatient Department (OPD) of Sapporo Dental College and Hospital, Uttara, Dhaka, from April to June 2007. One hundred and seven children between two to five years of age and having only primary teeth were selected by convenience sampling technique. A pretested structured questionnaire and a checklist for clinical examination were used for data collection. The parents of selected children responded the questionnaire and dental examination of the children was carried out by the researcher and trained OPD dental surgeons. All examinations were conducted after having verbal consents from the guardians.

The decayed, missing, filled teeth (dmft) component of oral health was recorded during the clinical examination. Materials used for clinical examination were-dental probes, dental mirrors, cotton and antiseptic solution. The children were seated on a dental chair and dental examination was carried out under direct light with mirror and caries probe. Carious teeth (d), the missing (m) and filled teeth (f) were also counted. Data analysis was done by using

SPSS 11.5 for Windows according to the key variables and objectives of the study.

Results

A total of 107 children were examined during the study. Among them, 49 were male and 58 were female children. Male children under five years of age had a higher prevalence of caries (75.5%) compared to female children (63.8%) of the same age. (Table 1).

Table 1: Distribution of children according to Sex and Carious teeth

Sex of the child	Carious or decayed leeth		Total No
	YES	NO	
	No % □	No % □	
Male	37 □	12 □ 24.5%	49
Female	37 63.8% □	21 □ 36.2%	58
Total	74 69.2% □	33 □ 30.8%	107

Table 2: Distribution of the children according to age and dmft score

Age in years	dmft score			Total
	dmft score 0 or higher	dmft 1 or higher		
	No % □	No % □	No % □	
2-3 Years	17 9 56.7% □	26 □	24.3% □	43
3-4 Years	7 21 23.3% □	28 □	26.2% □	35
4-5 Years	6 47 20.0% □	53 □	49.5% □	59
Total	30 77 100% □	107 □ 100%	100% □	107

P=.000(<.01)

Table 2 shows that dmft score of 1 or higher increases with the increasing age of the children. There exists significant relation between age of children and dmft scores (P=.000, <.01).

Table 3: Distribution of the children by assisted tooth cleaning and dmft score

Characteristic	dmft score		
	dmft score 0	dmft 1 or higher	Total
	No. %	No. %	No.
Child cleans own teeth	18 60%	64 83.1%	82 25
Assisted tooth cleaning	12 40%	13 16.9%	107
Total 18	30 100%	77 100%	

P= .01 (<.05)

Table 3 shows caries state was higher (83.1%) in children who brush their own teeth as compared to those children who enjoy assistance from their parents (16.9%).

Table 4: Distribution of children according to snacking habit and tooth cleaning habit

Characteristics Percentage	Frequency
Snacking habit between meals	
Yes 99.1%	106
No 0.9%	1
Tooth cleaning after snacking	
Yes 2.8%	3
No 97.2%	103

Table 4 shows snacking after meal was observed in 99.1% of the participants but only 2.8% of children cleaned their teeth after a snack food.

Table 5: Distribution of the children according to regularity, frequency, method, timing and time taken for tooth cleaning.

Characteristics	Frequency	Percentage
Daily tooth cleaning		
Regular	102	95.3%
Irregular	5	4.7%
Frequency of cleaning		
Once daily	71	69.6%
Twice daily	31	30.4%
Method of brushing		
Correct method	47	44%
Others	60	56%
Time taken for brushing		
1-3 mins	40	37.3%
Others	67	62.7%

Proper timing of brushing		
Yes	9	8.4%
No	98	91.6%

Discussion

The main findings in the present study were that there was high prevalence of dental caries among the preschool going children and a strong relationship between caries and increasing age of the children. Furthermore, good oral hygiene habits, including the use of correct method of brushing, Tooth cleaning after snacking, assisted tooth cleaning by parents, provided an environment for a high prevalence of dental caries.

The study revealed 69.2% of the under-five children had carious deciduous teeth, which is similar to findings of some other developing countries.^{5,6,7,8} The study also showed a strong relationship between increasing age and increase prevalence of dental caries which indicating the importance of taking preventive measures to control dental caries at the very early stage This result was quite similar with earlier findings in Bangladesh⁹ which reported an increase in caries prevalence with increasing age. The study also revealed that assisted brushing by parents at this age group could be an important factor in lowering caries incidence as young children often fail to clean their teeth in an ideal manner. If snacking habits of children were to taken into consideration, the importance of cleaning or at least rinsing after having a snack is to be emphasized among the children and their parents.

The results of this study indicate negligence and lack of awareness for taking care of children teeth among the parents attending the OPD. Educating both children and their parents about oral health should be made an integral part of health care delivery system in Bangladesh.

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