



## Prevalence of Dental Caries among Slum School Children: a Cross Sectional Observational Study

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### Abstract:

**Background:** *Dental caries is a public health problem in developing countries like Bangladesh. The unique characteristic of dental diseases is that they are universally prevalent and do not undergo remission or termination if untreated and require technically demanding expertise and time consuming professional treatment.*

**Objective:** *To assess prevalence of dental caries among slum school children was aim of this study.* **Methodology:** *This was a cross sectional observational study conducted among 100 school going slum children. Non probability purposive sampling technique was used to collect data. The teeth showing discoloration, chalky appearance of enamel, softened enamel or broken surface by visual examination or probing has been defined as caries tooth. Prior interview verbal consent was taken from every respondent.* **Result:** *Mean±SD age was 10.47±1.65 year. About 76% were male & 24% were female students. Prevalence of dental caries was 55%. Significant association was found between consumption of biscuits, sweets, chocolate, chewing gum everyday and dental caries ( $P<0.05$ ). Frequency of cleaning of teeth and dental caries was statistically significant ( $P<0.05$ ).* **Conclusion:** *Dental caries was more prevalent among students who took sweet foods*

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*and brush once daily. Effective oral health education programme may be constituted to build awareness.*

**Key words:** Dental caries, Slum children

## Introduction

Caries in infants and young children is one of the most frustrating and difficult problems, not only for the parents but also for the society. Too many of us have experienced toothache that ends up in a sleepless night, time loss from work or school and ultimately decreases enjoyment in eating, talking and socializing.<sup>1</sup> The high prevalence of dental caries among the primary school children is probably due to inadequate knowledge or ignorance about the practice of personal hygiene, etiology, prevention, dietary habit and complication of the diseases.<sup>2</sup> Dental caries is considered a major public health problem globally due to its high prevalence and significant social impact. World Health Organization reports 60-90% of schoolchildren worldwide have experienced caries, with the disease being most prevalent in Asian and Latin American countries.<sup>3</sup> The unique characteristic of dental diseases is that they are universally prevalent and do not undergo remission or termination if untreated and require technically demanding expertise and time consuming professional treatment. According to G. Dale if deciduous teeth are retained beyond time of exfoliation, they are known to cause delay in eruption of permanent teeth and thus lead to malocclusion and other orthodontic problems, which will then need expensive corrective measures.<sup>4</sup> Like other developing country, dental decay problem of this country is a great problem and dental care facilities are not sufficient. Therefore, orodental diseases may turn into a severe medical, social and financial problem, specially the prevalence of dental caries among the young children. A few studies have been done previously regarding this problem

among the primary school children. The aim of this study was to assess prevalence of dental caries among slum school children in selected area of Dhaka city. This age group was chosen because it is the time of adolescent growth spurt and orthodontic problems are most amenable to correction in this age group.<sup>5</sup> The slum area was chosen because lower socioeconomic condition may influence oral health.

## **Methodology**

This was a descriptive cross-sectional observational study. Study was conducted among 100 school going slum children in Mirpur, Dhaka. Non probability convenient sampling method was used to select sample population. Data were collected from the respondents through face-to-face interview. The examination of teeth of the students was done under good illumination with the help of dental mirror and periodontal probe. The teeth showing discoloration, chalky appearance of enamel, softened enamel or broken surface by visual examination or probing has been defined as caries tooth. The questionnaire was used after verbal consent of the respondents and their voluntary participation was sought. The bangle questionnaire was used during interview. After data collection, data were sent to the researcher, which was sorted, scrutinized by the researcher herself by the selection criteria and then data were analyzed by calculator and personal computer by SPSS version 12.0 program. The open ended questions were grouped and categorized. Data were analyzed by descriptive statistics and inferential statistics.

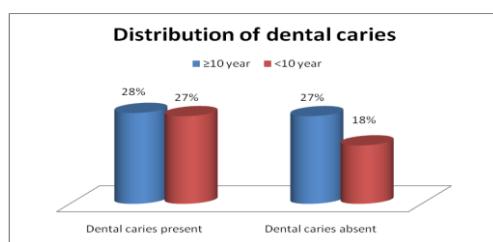
## Result

**Table1. Socio-demographic characteristics (n=100)**

Variables	Number	Percentage
Age group in yrs		
≥10	55	55
<10	45	45
Mean±SD age	10.47±1.65	
Sex		
Male	76	76
Female	24	24
Religion		
Muslim	77	77
Hindu	23	23
Education		
Illiterate	10	10
Primary	16	16
Secondary	16	16
SSC	45	45
HSC	13	13
Occupation		
Housewife	79	79
Service	21	21
Monthly income(BDT)		
<10000	84	84
≥10000	16	16

Results are expressed as number (%) and M±SD

Mean±SD age was  $10.47\pm1.65$  year. About 76% were male & 24% were female students. Most all of the students were Muslim (77%). About 45% of mother passed SSC level of education. Most of the mothers (79%) were housewife and rest was service holder. About 84% study subjects monthly family income was <10000 BDT.



**Figure1: Distribution of students by age and dental caries**

Figure 1 shows that 28% caries developed among the students <10 years of age and 27% dental caries occurred among the students of age group  $\geq 10$  years.

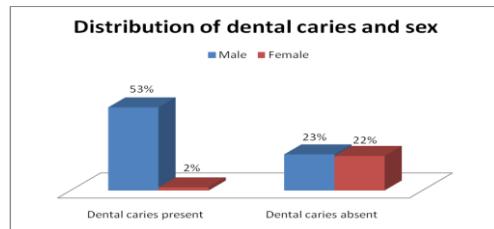


Figure2: Distribution of students by sex and dental Caries

Figure 2 shows that 53% male students developed dental caries followed by female students 2%.

Table3. Association between consumption of biscuits, sweets, chocolate, chewing gum everyday and dental caries

Intake of biscuits, sweets, chocolate, chewing gum every day	Dental caries		Total
	Present n (%)	Absent n (%)	
Yes	55 (55.0)	0 (0.0)	55(55.0)
No	0 (0.0)	45 (45.0)	45 (45.0)
Total	55 (55.0)	45 (45.0)	100(100.0)

$\chi^2 = 40.39$ ; P<0.05

Table 3 shows that significant association was found between consumption of biscuits, sweets, chocolate, chewing gum everyday and dental caries (P<0.05).

Table 4. Association between frequency of cleaning of teeth and dental caries

Frequency of cleaning of teeth	Dental caries		Total
	Present	Absent	
Once daily	55 (55.0)	29 (29.0)	84 (84.0)
Twice daily	0 (0.0)	16 (16.0)	16 (16.0)
Total	55 (55.0)	45 (45.0)	100(100.0)

$\chi^2 = 44.73$ ; P<0.05

Table 4 shows that significant association was found between frequency of cleaning of teeth and dental caries ( $P<0.05$ ).

## Discussion

Dental Caries is the commonest dental problem encountered. As the age advances there was rise in proportion affected by caries. Our study found that 53% male students developed dental caries followed by female students 2%. A study found that both males and females were almost equally affected by caries with slightly higher prevalence among males. A study conducted by Sogi G in Davangare using DMFT/DMFS score reported higher prevalence in females that was statistically significant which revealed dissimilarity to present study.<sup>6</sup> Prevalence of dental caries was more among the students who consumed biscuit, sweet, chocolate, chewing gum everyday which was similar to the study conducted by Nayeem et.al.<sup>7</sup> Most participants brushed once daily, therefore probably did not brush at night after high consumption of sugary snacks observed in this study. Caries is formed as a result of interplay between oral microflora, fermentable carbohydrates like sugary snacks, a susceptible tooth, and adequate time. In contrast to the observation of some earlier researchers.<sup>8-10</sup> The finding of this study was similar to what has been reported in Iran and Brazil.<sup>11</sup> It is revealed that those who used to brush twice a day had significant less prevalence of dental caries as compared to those whose brushing habit is either once daily or not every day.<sup>12</sup> Gathecha et al.<sup>13</sup> in a study in Kenya have found that brushing habit has no significant effect on the prevalence of dental caries which is contradictory to the results of present study.

## Conclusion

Overall prevalence of dental caries among slum school going children was 55% and it was more prevalent among students who took sweet foods and brush once daily.

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