

A study on dental caries and oral health care practice among the primary school children in Puthia upazilla under Rajshahi district

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Abstract:

Background: Bangladesh is a low-income developing country with many children suffering from malnutrition and poor health, especially among the deprived sectors of the population. Dental caries is a common problem among children in Bangladesh and our country has very limited facilities for dental treatment and a high population to dental provider ratio (100,000/2). **Objectives:** Attempt has been made to determine the oral hygiene status and dental caries experience of primary school going children in Puthia Upazilla under Rajshahi District. **Methodology:** A community based cross-sectional type of descriptive study was conducted over 301 students of class I to Class V in government primary school of Puthia Upazilla, Rajshahi where the students come mainly from the neighboring locality. Face to face formal interview and clinical examination of the oral cavity was done, and a pre-tested questionnaire was used to collect data. **Results:** Among all the respondents, 33.89% of them brush their teeth once daily, 59.47% brush their teeth twice daily, 6.31% brush their teeth more than two times in a day and only 0.33% brush teeth irregularly. Among the boys (49.50%) had dental caries and among the girls (50.50), 44.74% had dental caries. **Conclusion:** Parents should know about the problems of teeth and oral cavity and must visit dentist regularly. Children should be properly instructed about maintaining oral hygiene.

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Introduction:

Dental caries are most common oral diseases showing striking geographic variations, socio-economic patterns and severity of distribution all over the world. Though many studies are conducted in different parts of the world, the review of literature indicates that there is a great deficiency in baseline data concerning the oral health of Bangladeshi school going children. There is lack of sufficient information regarding the frequency and prevalence of dental caries and oral hygiene status in many parts of Bangladesh, especially in the rural areas.

Bangladesh is a low-income developing country with many children suffering from malnutrition and poor health, especially among the deprived sectors of the population. Dental caries is a common problem among children in Bangladesh and our country has very limited facilities for dental treatment and a high population to dental provider ratio (100,000/2). This could possibly contribute to further deterioration of the oral hygiene status of the children in

Bangladesh. So an attempt has been made to determine the oral hygiene status and dental caries experience of primary school going children in Puthia Upazilla under Rajshahi District.

In our country perspective, in the rural area a large number of primary school going children are the sufferers mainly from dental caries and lack of oral hygiene. It may be due to their improper oral health care practice and chewing habit in their school premises. There is lack of studies on dental health status in Bangladesh. There have been no population-based survey done in the country over the past years and thus, no or insufficient statistics on dental health problems or seeking dental healthcare is available which again reminds us of the necessity of a study for policy making and planning of a preventive programme on dental health care for different segments of the population. So, in this field in depth studies should be carried out to find out the prevailing situation and the associated risk factors. This exploratory study is expected to find out the risk factors associated with dental caries and oral health, which might help in reducing the knowledge gap towards designing a preventive measure for maintaining proper oral health care at primary healthcare level.

Methodology:

A community based cross-sectional type of descriptive study was conducted over 301 students of class I to Class V in government primary school of Puthia Upazilla, Rajshahi

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where the students come mainly from the neighboring locality. Face to face formal interview and clinical examination of the oral cavity was done, and a pre-tested questionnaire was used to collect data. The questionnaire consisted of socio-demographic information e.g. age, grade, sex, religion, literacy status of both mother and father, questions regarding practice of oral hygiene and with the help of a check-list the oral hygiene was examined for the status and dental caries by the data collector. The questionnaire covered the following indicators of oral hygiene, i.e. frequency of tooth-bruising, material used for tooth-bruising, technique of bruising, type of cleaning method of mouth and chewing habit of the respondents. Each student was observed thoroughly to assess their status of oral hygiene as stated above.

Data were analyzed manually with the help of a master sheet and calculator. For frequency distribution descriptive statistics were used, Result were presented by tables and charts. Relationship was assessed between dependent & independent variables.

Results:

Table-I

Distribution of the respondents according to age and sex

Age in years	Respondents		Total No. (%)
	Boys No. (%)	Girls No. (%)	
>6	0(0.0)	5(100)	5(1.66)
7-8	41(46.59)	47(53.41)	88(29.24)
9-10	71(45.51)	85(54.49)	156(51.83)
11-12	29(55.77)	23(44.23)	52(17.27)

Table-I shows sex distribution of the respondents. Out of 301 respondents, 47.18% were boys and 52.82% were girls. About more than half of respondents {156 (51.83%)} age were in between 9 & 10 years, Less than 2 percent were e'6 years old, 88 (29.24%) were in between 7 & 8 years and 52 (17.27%) were in between 11-12 years.

Table-II

Distribution of the respondents according to Parents' education of the respondents

Levels of literacy	Parents		Total No. (%)
	Fathers No. (%)	Mothers No. (%)	
Illiterate	47(46.53)	54(53.47)	101(16.78)
Up to class V	85(42.50)	115(57.50)	200(33.22)
Class VI to HSC	127(54.74)	105(45.26)	232(38.54)
Above HSC	42(60.87)	27(39.13)	69(11.46)
Total	301(50.0)	301(50.0)	602(100)

Total-II shows education status of the parents of the respondents. Among 101 illiterate parents, 46.53% were fathers and 53.47% were mothers. About 33% of the parents had primary education, 38.54% had secondary education and 11.46% had graduation or more educational degree.

Table-III

Distribution of the respondents by chewing habits

Chewing materials	Respondents	
	No.	%
Chocolate	209	69.43
Chewing gum	76	25.25
Others	16	5.32
Total	301	100

Table-III shows the distribution of the respondents by chewing habits. Here it was found that out of 301 respondents, 69.43% had habit of chocolate chewing 25.25% had habit of chewing gum and 5.32% had habit of chewing other materials.

Table-IV

Distribution of respondents by oral hygiene practices

Frequency of Tooth-Bushing	Respondents	
	No.	%
Once Daily	102	33.89
Twice Daily	179	59.47
>2 Times	19	6.31
Irregular	01	0.33
Total	301	100
Technique of Tooth-Bushing		
To & fro both surface	230	76.41
Up & down Both surface	48	15.95
Outer surface only	23	7.64
Total	301	100
Cleaning instruments		
Tooth Brush	298	99.01
Wood Stick	0	0.0
Finger	2	0.66
Others	1	0.33
Total	301	100
Cleaning Materials		
Tooth paste	258	85.72
Tooth powder	42	13.95
Charcoal	1	0.33
Others	0	0.0
Total	301	100

Table-IV shows the distribution of respondents by frequency of tooth brushing. Among all the respondents, 33.89% of them brush their teeth once daily, 59.47% brush their teeth twice daily, 6.31% brush their teeth more than two times in a day and only 0.33% brush teeth irregularly. Out of 301 respondents, 76.41% of them brush their teeth to and fro both surface, 15.95% brush their teeth up and down both surface and 7.64% brush their teeth outer surface only. Among all the respondents, (99.01%) of them clean their teeth with toothbrush, 0.66% use finger and only 1 student (0.33%) brush his teeth by other method. Here out of 301 respondents, 85.72% of them use toothpaste for brushing 13.95% of them use toothpowder and only one student i.e. 0.33% use charcoal for brushing.

Table-V
Distribution of respondents by dental caries

Respondents	Dental caries		Total No. (%)
	Present	Absent	
Boys	72 (48.32%)	77 (51.68%)	149 (49.50)
Girls	68 (44.74%)	84 (55.26%)	152 (50.50)
Total	140	161 (53.49%)	301 (100)

Table-V shows that among the boys (49.50%) had dental caries and among the girls (50.50), 44.74% had dental caries.

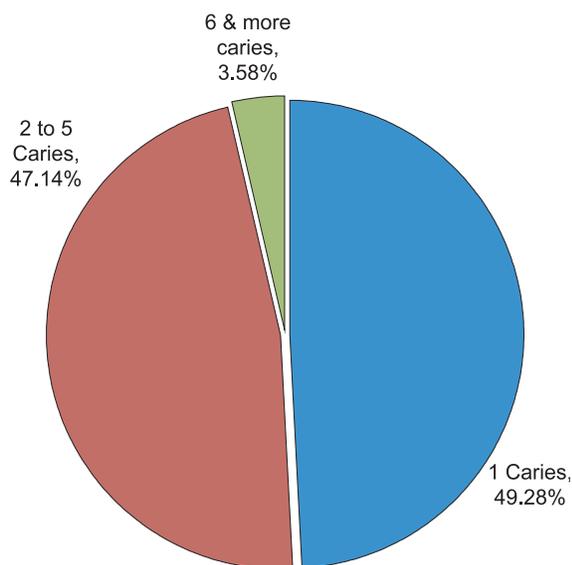


Fig.-1: *Distribution of respondents by dental caries*

Figure -1 shows the condition of Dental caries among the respondents. Here it was found that 49.28% of the respondents had at least one dental caries, 47.14% of them

had 2 to 5 dental caries and only 5 student's i.e.3.58% had 6 and more dental caries.



Fig.-2: *Distribution of respondents by no. missing teeth*

Figure 2 shows the number of missing teeth. Here it was found that out of 301 students 92 had missing teeth and among them 65.21% had at least one tooth missing, 32.61% of them had 2 to 5 teeth missing and only 2 students i.e. 2.18% had 6 and more teeth missing.

Table-VI
Distribution of respondents by number of filled teeth

Number of filled teeth	Respondents	
	No.	%
At least 1	4	100
2 to 5	0	0
6 and more	0	0
Total	4	100

Table-VI shows that only 4 students had filled teeth and all of them one tooth filling.

Discussion:

This study was carried out among the primary school children in a selected primary school at Puthia Upazilla under Rajshahi District to observe oral hygiene practice and dental caries. The general Prevalence rate of positively detected cases of any level of dental caries was 83% among children in both the first and fourth grades for the 2 years (Gandeh & Millat, 2000). It can be seen from both table that female children showed higher rates in both grades. Rates of dental caries showed significant difference according to social class. Low social classes had a significantly higher rate in both sexes (P<0.0001) (Adekoye CA et al, 2006). In this study, the dental caries among different age group of the respondents. Here it was found that among the children aged 6 years or less, 40% had dental caries, 67.03% had dental caries in the age group of 7 to 8 years or less, 40% had dental caries, 67.03% had dental caries in the age group of 7 to 8 years, 36.77% had dental caries in the group of 9 to 10 years and 44% had dental caries in the age group of 11 years or more. The prevalence of caries was 13.9% and the mean DMFT was 0.14. The mean DMFT was low in both public (0.08) and

private (0.18) schools. The decayed component (D) of the DMFT accented for 77.2% while filling (F), missing teeth (M) accounted for 15.8% and 7% respectively. The probability of having caries experience DMFT > 0 was significantly associated with the type of school $P > 0.05$ (Petersen PE and Esheng Z 1998).

In this study it was found out of 301 respondents, 76.41% of them brush their teeth to and fro both surface, 15.95% brush their up and down both surface and 7.64% brush their teeth outer surface only. Here it was found that 49.28% of the respondents had at least one dental caries, 47.14% of them had 2 to 5 dental caries and only 5 students i.e. 3.58% had 6 and more dental caries. In a study it was found that at age 6, 86 percent of the children were affected by dental and age 12 the mean DMFT index was 1.0. (Datta P, Datta PP, 2013).

Some studies showed that 72% student had dental caries, Prevalence of dental caries was assessed according to different socio-demographic parameters. It is seen that 61.2% of the students aged 13 years, and 80% of the students aged more than 13 years had dental caries, So, prevalence of dental caries increased with increase in age and this difference is statistically ($p=0.027$). It was seen that 68.8% of boys had dental caries as compared to 76% girls having the same problem. However, this difference is not significant statistically (Gladwell C, 2012; Heba, 2014).

Students were asked about their habit of brushing the teeth. It is seen that 47.4% the students who used to brush twice a day had dental caries as compared to 76.84% of the students having habit of brushing the teeth either once daily or not every-day suffered from dental caries. This difference is statistically significant. 56.41% of the students having habit of washing mouth after taking food always or most of the time had presence of dental caries. The prevalence is 80% among students who rarely used to wash mouth after taking food. This difference is again statistically significant (Dania EA, 2013). Caries prevalence and mean dmft/DMFT score of 5-6-year-olds was 52%, 1.59 and 41%, 0.84 respectively (Joshi N, 2013)

The study reported low dental visit with 93% of children having never visited a dentist or a health care service. Although 61% children reported receiving oral health education, 82% did not know about fluoride and its benefit on dental health. About 50% children reported bacteria as the main cause of tooth decay and 23% as not brushing teeth for gingivitis. Among the 361 school children clinically examined, overall dental caries prevalence was 45% (Brighton TM, 2013)

The prevalence of dental caries was significantly higher in Nairobi West District (37.5%) than in Mathira West District (24.0%) (OR=1.9 CI=1.3-2.7). The major portion of caries experience for both districts was decayed teeth (Jahani Y, 2013). The national prevalence of dental caries and its severity in children in Saudi Arabia was estimated to be approximately 80% for the primary dentition with a mean dmft of 5.0 and approximately 70% for children's permanent dentition with a mean DMFT score of 3.5 (Rebecca H, 2004). The prevalence of dental caries was 69.12%. The present study showed a high prevalence of dental caries in both urban (59.5%) and rural (40.8%) children. The mean DMFT in urban and rural areas was 1.29 and 0.66 respectively. Furthermore, data showed a general lack of knowledge on oral health issues by the participants.

Conclusion:

This cross sectional type of descriptive study was carried out among the primary school children at Puthia. Most of the school going children used tooth brush and paste for cleaning their teeth. Among the children 46.51% had dental caries, 30.56% children had missing teeth and 1.33% of them have taken conservative dental treatment as filling. Parents should have the proper education about oral hygiene of their children specially of growing age like school going children. Parents should know about the problems of teeth and oral cavity and must visit dentist regularly. Children should be properly instructed about maintaining oral hygiene.

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