



## Knowledge on Oral Hygiene Maintenance of Children Aged 6 to 9 Years Attending at the OPD of a Tertiary Care Dental Hospital in Dhaka City

Md. Shafiul Alam<sup>1</sup>, Abu Mohammad Shahed<sup>2</sup>, Fahmida Binte Mesbah<sup>3</sup>,  
Mohammad Ahtashamul Haque<sup>4</sup>, Md. Shafiul Azam<sup>5</sup>, Md. Anower Hussain Mian<sup>6</sup>

<sup>1</sup>Associate Professor, Department of Dental Radiology and Imaging, Dhaka Dental College, Dhaka, Bangladesh; <sup>2</sup>Associate Professor & Head, Department of Oral and Maxillofacial Surgery, Dhaka Medical College and Hospital, Dhaka, Bangladesh; <sup>3</sup>Assistant Professor, Department of Community Dentistry, Bangladesh University of Health Sciences, Dhaka, Bangladesh; <sup>4</sup>Assistant Professor, Department of Oral and Maxillofacial Surgery, Dhaka Medical College and Hospital, Dhaka, Bangladesh; <sup>5</sup>Lecturer, Department of Dental Radiology and Imaging, Dhaka Dental College, Dhaka, Bangladesh; <sup>6</sup>Dean, Faculty of Public Health & Head, Department of Community Dentistry, Bangladesh University of Health Sciences, Dhaka, Bangladesh

### Abstract

**Background:** Knowledge from pre-primary school about the prevention of dental caries is better before the disease process has started **Objective:** The purpose of this study was to observe the knowledge of oral health maintenance among the children of 6 to 9 years old such as regular tooth brushing, uses of oral hygiene aids and dental attendance to maintain their good oral health for a life time. **Methodology:** This cross-sectional study conducted in Dhaka Dental College and Hospital, Bangladesh study was carried out from October 2019 to September 2020. A total of 175 participants children aged 6-9 years attending at the OPD with dental Caries in Dhaka Dental College Hospital were the study population. The study population were Included Children aged 6 to 9 years in Dhaka dental college and hospital who were available and wished to participate. The questionnaire was used in this study pre-tested before the data collection, data was collected using semi-structured questionnaire by face-to-face interview. **Result:** A total of 175 participants children aged 6 to 9 years attending at the OPD with dental Caries in Dhaka Dental College Hospital were the study population. The knowledge according to the correct method of tooth brushing to keep healthy teeth which were significant with their age and education. The study revealed the knowledge according to the correct method of tooth brushing to keep healthy teeth which were not significant among both gender ( $P=0.000038$ ) and level of education ( $P=0.00001$ ). The knowledge according to cleaning teeth and mouth after each meal to keep healthy teeth which were significant only with their age ( $P=0.00027$ ) and same as knowledge according to the relation of food or drinks with healthy teeth which were significant with their age ( $P=0.00729$ ) and education significant level ( $P=0.001185$ ), the knowledge according to poor oral health causes of dental problem which were significant with their education level ( $P=0.002524$ ) and knowledge to the necessity of dental check-up at least once in year which were significant with their age ( $P=0.04237$ ) and education level ( $P=0.002524$ ). **Conclusion:** In conclusion, it is found that a significant association between the education level and age of children have good knowledge of oral health hygiene to prevent dental caries among the young children who are more prone to develop the diseases.

**Keywords:** Dental caries; knowledge on oral hygiene; method of tooth brushing; oral hygiene

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**Correspondence:** Dr. Md. Shafiul Alam, Associate Professor, Department of Dental Radiology and Imaging, Dhaka Dental College, Mirpur 14, Dhaka, Bangladesh; Email: shafiulalamxyz@gmail.com; Cell no: +880 1741126080; ORCID: <https://orcid.org/0000-0002-1824-1107>  
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### Introduction

An important predictor of dental caries is the educational level of the parents. Children with parents that have a low level of education tend to have more caries than those with higher education. This is because the more educated parents are aware of the various forms of dental caries prevention<sup>1</sup>. In addition,

such children also have limited access to oral health caregiver where oral health instructions can be given and also where early carious lesions can be detected<sup>2</sup>. It has also been suggested that mothers in deprived areas are more likely to give their children sweets after nursery school, to use sweets as comforters, spend more money on sweets and allow continued sweet consumption during the day<sup>3</sup>.

Medicinal syrups have long been hypothesized to be a source of hidden fermentable sugars such as glucose, and therefore, have the potential to independently increase the risk of having caries if taken for long periods and/or frequently<sup>4</sup>. Antibiotic syrups particularly independently increased the risk that a child would have a number of carious lesions, especially if taken frequently<sup>5</sup>. Another study done among preschool children in the USA found one of the predictors for dental caries to be familial caries pattern. It was likely that children who had caries also had siblings or parents who had dental caries. Dental caries has a hereditary aspect though its mechanism is not well understood<sup>2</sup>.

Oral health is an essential aspect of general health, as such, oral health knowledge is considered to be an essential prerequisite for health-related practices also explained that there is an association between increased<sup>6</sup>. Knowledge and better oral health because people who assimilate oral health knowledge most probably have a sense of personal control over their oral health, and they are more likely to adopt self-care practice. There is strong evidence between oral health knowledge and better oral health practice by giving adequate information, motivation, and practice of oral health measures to individuals<sup>7</sup>.

The aim of this study was to determine the proportion of dental caries and oral health knowledge of children 6-9 years old at OPD Dhaka Dental College Hospital. Social change may be promoted in such a way that government will be encouraged to inculcate oral health education in the existing school curriculum in order to improve the level of awareness among children.

## Methodology

**Study Settings & Population:** This study was a descriptive type of cross-sectional study conducted in Dhaka Dental College and Hospital, Bangladesh study was carried out from October 2019 to September 2020. A total of 175 participants children aged 6 to 9 years attending at the OPD with dental Caries in Dhaka Dental College Hospital were the study population. The study population were included children aged 6 to 9 years in Dhaka Dental College and Hospital who

were available and wished to participate. The study population excluded children below 6 and above 9 years of age and those who declined to participate were excluded from the study.

**Study Procedure:** The questionnaire was used in this study pre-tested before the data collection, data was collected using semi-structured questionnaire by face-to-face interview. Verbal informed consent was taken before starting the data collection

**Statistical Analysis:** After collection of data, all interviewed questionnaires were checked for completeness, correctness and internal consistency to exclude missing or inconsistent data and those were discarded. Corrected data was entered into Statistical Package for Social Sciences (SPSS) statistical software version 20 for the analysis.

**Ethical Consideration** Ethical clearance was taken from the appropriate authority and ethics was maintained strictly through the study. Ethical clearance was obtained from Ethical Review Committee of Bangladesh University of Health Sciences (BUHS). A request letter of cooperation was taken from BUHS to study area Dhaka Dental College and Hospital Bangladesh in this study prior to the data collection period. All the participants were given an explanation about the objectives of the study and their right to participate or not. An information sheet for participants in Bengali was also given to each subject to read and it was also explained by the investigator to the participants. All questionnaire and ethical documents were translated into Bengali before interview.

## Results

A total of 175 participants children aged 6 to 9 years attending at the OPD with dental Caries in Dhaka Dental College Hospital were the study population. The study population were children aged 6-9 years in Dhaka dental college and hospital. The study was carried out to assess the level of knowledge of children according to their gender, age group and type of school

Table 1: Distribution of the respondents according to Gender and Age group (n=175)

Variables	Frequency	Percent
<b>Gender</b>		
• Male	93	53.1
• Female	82	46.9
<b>Age Group</b>		
• 6 to 7 Years	67	38.3
• 7 to 8 Years	59	33.7
• 8 to 9 Years	49	28.0
<b>Total</b>	<b>175</b>	<b>100.0</b>

Respondents' Knowledge According To Correct Method of Tooth Brush

Table 2: In order to keep the teeth healthy, it is necessary to brush after breakfast in the Morning and after dinner at night

Category	Agree	Doesn't know	P value
<b>Gender</b>			
Male (93)	68 (73.1%)	25 (26.9%)	0.027983
Female (82)	47 (57.3%)	35 (42.7%)	
<b>Age Group</b>			
6 to 7 Years (67)	30 (44.8%)	37(55.2%)	0.000038
7 to 8 Years (59)	23 (40.0%)	36 (61.0%)	
8 to 9 years (49)	39 (79.6%)	10 (20.41%)	
<b>Educational Status</b>			
Government Primary school (97)	29 (29.9%)	68 (70.1%)	0.00001
Private Primary school (49)	39 (79.6%)	10 (20.4%)	
No formal education (29)	10. (34.5%)	19(65.5%)	

being attended revealed that knowledge of respondents was significantly influenced by gender, age group and type of school. Among the 175 children participants, male 93 (53.14%) and female 82 (46.86) respectively and average age was 7.25 years with sd ± 00.75. According to age groups out of 175 respondents the highest 67 (38.28%) was in age group of 6-7 years and the lowest 49(28%) was 8-9 years (Table 1).

Table showed respondents' knowledge according to correct method of tooth brushing to keep healthy teeth which were significant with their sex, age and education at significant level of p <0.05 (Table 2). The table shows knowledge according to cleaning teeth and mouth after each meal to keep healthy teeth which were significant with their age at significant level of p <0.05 (Table 3).

Respondents' Knowledge According to Cleaning Teeth and Mouth after Each Meal

Table 3: Knowledge on the Necessity to Always Rinse Our Mouth with Water after Each Meal to Remove Food Debris Trapped between Teeth

Category	Agree	Doesn't know	P value
<b>Gender</b>			
Male (93)	27(15.4%)	66(37.7%)	0.218
Female (82)	31(17.7%)	51(29.2%)	
<b>Age Group</b>			
6 to 7 Years (67)	11(6.3%)	56(32.0%)	0.000
7 to 8 Years (59)	23(13.1%)	36(20.6%)	
8 to 9 years (49)	27(15.4%)	22(12.6%)	
<b>Educational Status</b>			
Government Primary school (97)	21(12.0%)	76(43.4%)	0.229
Private Primary school (49)	17(9.71%)	32(18.3%)	
No formal education (29)	7(4.0%)	22(12.6%)	

Table 4: Distribution of respondents' knowledge to relation of food or drinks with healthy teeth (Knowledge on Foods and drinks with sugar such as sweets, chewing gums, and soft drinks destroy teeth)

Category	Agree	Doesn't know	P value
<b>Gender</b>			
Male (93)	19(10.85%)	74(42.28%)	0.415488
Female (82)	21(12.0%)	61(34.87%)	
<b>Age Group</b>			
6 to 7 Years (67)	11(6.28%)	56(32.0%)	0.0073
7 to 8 Years (59)	17(9.71%)	42(24.0%)	
8 to 9 years (49)	21(12.0%)	28(16.01%)	
<b>Educational Status</b>			
Government Primary school (97)	11(6.28%)	86(49.14%)	0.0012
Private Primary school (49)	17(9.71%)	32(18.28%)	
No formal education (29)	3 (1.71%)	26(14.88%)	

Table 5: Distribution of respondents' knowledge to poor oral health causes of dental problem (Knowledge on Poor oral health causes dental problem such as swelling and gum bleeding)

Category	Agree	Doesn't know	P value
<b>Gender</b>			
Male (93)	16(9.1%)	77(44.0%)	0.325
Female (82)	19(10.9%)	63(36.0%)	
<b>Age Group</b>			
6 to 7 Years (67)	11(6.29%)	56(32.0%)	0.068
7 to 8 Years (59)	13(7.43%)	46(26.28%)	
8 to 9 years (49)	17(9.71%)	32(18.28%)	
<b>Educational Status</b>			
Government Primary school (97)	21(12.0%)	76(43.43%)	0.002
Private Primary school (49)	21(12.0%)	28(16.0%)	
No formal education (29)	3 (1.71%)	26(14.86%)	

Table 6: Distribution of respondents' knowledge to necessity of dental check-up at least once in a year (Knowledge on necessary to check up at least once a year)

Category	Agree	Doesn't know	P value
<b>Gender</b>			
Male (93)	17(9.71%)	76(43.42%)	0.671
Female (82)	13(7.43%)	69(39.43%)	
<b>Age Group</b>			
6 to 7 Years (67)	11(6.28%)	56(32.0%)	0.042
7 to 8 Years (59)	17(9.71%)	42(24.0%)	
8 to 9 years (49)	18(10.28%)	31(17.71%)	
<b>Educational Status</b>			
Government Primary school (97)	21(12.0%)	76(43.43%)	0.002
Private Primary school (49)	21(12.0%)	28(16.0%)	
No formal education (29)	3(2.07%)	26(14.5%)	

Table shows knowledge according to relation of food or drinks with healthy teeth which were significant with their age and education at significant level of  $p < .05$ (Table 4).

The respondents' knowledge according to poor oral health causes of dental problem was observed which were significant with their education at significant level of  $p < 0.05$  (Table 5).

Table shows of respondents' knowledge to necessity of dental check-up at least once in years which were significant with their age and education at significant level of  $p < .05$ (Table 6).

## Discussion

A total of 175 participants' children aged 6-9 years attending at the OPD with dental Caries in Dhaka Dental College Hospital were the study population. the study population were Included Children aged 6-9 years in Dhaka dental college and hospital. This study provides knowledge on dental caries knowledge in a representative sample ( $n = 175$ ) of children (6-9 years) from the outpatient department (OPD) attending for

Dental check-up, Dhaka Dental College Hospital, Dhaka, Bangladesh. Among the 175 children participants, male 93 (53.14%) and female 82 (46.86) respectively and average age was 7.25 years with  $sd \pm 00.75$ . According to age groups out of 175 respondents the highest 67 (38.28%) was in age group of 6-7 years and the lowest 49(28%) was 8-9 years. The knowledge according to the correct method of tooth brushing to keep healthy teeth which were significant with their sex, age and education. Respondents attending private primary schools displayed better dental health knowledge had lower percentage occurrence of dental caries (15.43%) than their counterparts in the government primary schools (76.9%). Hoffman et al<sup>8</sup> also found out in their study that the caries index was highest among public school children.

Students in private schools are often those high self-esteems and whose parents can afford means of keeping their dental health in good shape. It should however be noted that dental problems constitute one of the reasons for students' absenteeism from schools hence schools whether private or public should make

all efforts to assist their students to keep off dental problems.

Most of the children had satisfactory knowledge on the causes on various preventive measures of oral diseases, such as, knowing that it is necessary to brush the teeth after breakfast in the morning and last thing at night, to avoid intakes of foods and drinks that contain sugar, to go for dental check-up at least once in a year, and that it is possible to prevent oral diseases by brushing, flossing and avoiding sugar. These findings are also supported by the studies in the recent past it has been documented that carbonated soft drinks are a major risk for caries development in children 9-10. Studies done in the past tended to concentrate on cariogenic foods hence undermining the role of sugared beverages. Of particular concern are soft drinks which are popular among children. A study conducted in Tanzania knew that dental caries can be caused by frequent consumption of sugary substances and 64% of children knew that proper tooth brushing can prevent dental caries<sup>11</sup>. A Study done in the North Eastern province in Kenya reveal that there is a low level of oral health awareness as 43% of study participants did not know any cause of dental disease<sup>12</sup>. In Myanmar, there was found to be a difference between the level of knowledge pertaining to oral health between children residing in rural areas and those in urban areas<sup>13</sup>.

### Conclusion

In Conclusion, this study confirms that the fact is knowledge when allowed to influence reducing disease occurrence, Knowledge influences people's health. Through basic education and public knowledge, individuals become aware of the meaning of self-protection and personal hygiene. It can thus be recommended that schools incorporate health instruction that relates to maintaining dental health, into their health instructional programs and make it as practical as possible.

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None

### Conflict Of Interest

The authors have no conflicts of interest to disclose.

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### Authors' contributions

Alam MS, Shahed AM conceived and designed the study, analyzed the data, interpreted the results, and wrote up the draft manuscript. Mesbah FB, Haque MA contributed to the analysis of the data, interpretation of the results and critically reviewing the manuscript. Azam MS, Mian MAH involved in the manuscript review and editing. All authors read

and approved the final manuscript.

### Data Availability

Any inquiries regarding supporting data availability of this study should be directed to the corresponding author and are available from the corresponding author on reasonable request.

### Ethics Approval and Consent to Participate

Ethical approval for the study was obtained from the Institutional Review Board. As this was a retrospective study the written informed consent was not obtained from all study participants. All methods were performed in accordance with the relevant guidelines and regulations.

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