



# Knowledge and Oral Hygiene Practice by School Children in Cox's Bazar, Bangladesh.

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## ABSTRACT

**Background:** A healthy mouth enables people to eat, speak and socialize without pain, discomfort or embarrassment. The Oral cavity is a portal of entry and the site for microbial infections that affect overall health status; Oral diseases are one of the most prevalent diseases, endangering our health and safety. **Objectives:** the objective of this study was to identify oral hygiene practiced by school children in Cox's Bazar, Bangladesh **Methods:** A descriptive cross-sectional study carried out among 474 students of class IX of at randomly selected Schools in Cox's Bazar, Bangladesh. The samples were collected by purposive sampling technique and a structured questionnaire considering objectives of the study was used to collect data, Data were collected by face-to-face interview of the students, SPSS software (version 19) was used to analyze the data, and descriptive statistics and chi-square test were done. **Results:** Maximum, {274(57.8%)} children brushed their teeth every day at age of 5 to 10 years, and 233 (49.2%) children Brushed their teeth at morning and night, Relationship between age and oral hygiene practice is statistically significant (P value 0.03). Male and female are relatively same in oral hygiene practice. Most of {438(92.4%)} the children clean teeth with tooth brush and tooth paste, 243(51.3%) children used tooth brush in upward and downward direction. **Conclusion:** Age, parents' education, teachers, others personnel's and media are important factors to motivate the children to maintain oral hygiene regularly, property and using teeth cleaning devices and materials.

## KEY WORDS:

Oral hygiene practice, School children

## INTRODUCTION:

Oral health is a state of being free from chronic mouth and facial pain, oral and throat cancer, oral sores, birth defects Such as cleft lip and palate, periodontal disease, tooth decay and tooth loss, and other diseases and disorders that affect the oral cavity. Risk factors for oral diseases include poor oral hygiene, unhealthy diet, tobacco and alcohol use. A healthy mouth enables people to eat, speak and socialize without pain, discomfort or embarrassment. The oral cavity is a portal of entry and the site for microbial infections that affect overall health status. Oral diseases are one of the most prevalent diseases, endangering our health and safety Neglecting oral hygiene can cause caries, toothache, and loss of teeth which could lead to disability of chewing, and speech, orthodontic problems and TMJ disorders. Poor oral health might have a profound effect on general health. Bacteria from the oral cavity can be aspirated into the lung to cause respiratory diseases such as pneumonia, especially in people with periodontal disease. People with periodontal disease are almost twice as likely to suffer from coronary artery disease as these without periodontal disease. There is association between human periodontal disease and certain system disorders such as diabetes mellitus, pneumonia, heart disease and pre-term birth.

Plaque largely is made up of commensal species in the mouth Dental plaque formations involve an ordered pattern of

colonization by many different bacteria. The accumulation of plaque is considered a complex and multifactor process overall. The changes in the specific composition and quantity of plaque alter its potential to cause periodontal and dental problems. The most common procedure to remove dental plaque involves using a toothbrush and toothpaste. Although using a toothbrush significantly improves the level of adequacy of oral hygiene, there are many other contributing factors, such as dental flossing and mouth rinsing etc.

Children who have dental caries in their primary dentition are more likely to have dental caries in permanent dentition. Growing children need proper guidance for healthy growth, upkeep and hygiene of their teeth. Permanent teeth erupt during the school age years. Good dental hygiene and regular attention to dental caries are

Vital parts of health supervise during this period. Correct brushing techniques and the role of fermentable carbohydrates that play in production of dental caries should be taught or reinforced. The objective of this study was to identify oral hygiene practice patterns among schoolchildren,

#### METHODS:

A descriptive cross-sectional study was carried out among the students of randomly selected different schools at Cox's Bazar in Bangladesh. The study was conducted from January 2018 to June 2018 among 474 students of class I to class X. The samples were collected by purposive sampling technique. In order to collect the data a structured questionnaire and a checklist was prepared at the beginning of the study considering all objectives and variables of the study. Data were collected by the researcher through face-to-face interview of the students and by oral examination. SPSS software package (version 19) was used to analyze the data. Descriptive statistics were used for all variables. Values were expressed as percentage and chi-square test was done. According to the objectives and variables of the study the results were presented in the form of tables and graphs.

#### RESULTS:

Among children, maximum, [279(58.9%)] were 5 to 10 years; male (50.4%) and female (49.6%) were about same and regarding parent's education level 133(28.1%) were higher educated and 19(4%) were literate (Figure-1)

Maximum, [274(57.8)] children Brushed their teeth every day at age of 5 to 10 Years (table-1) from 5 to 10 years age, 123(25.9%) children and above 10 years age, 112(23.6%) children brushed their teeth twice daily (table- II). Total 233(49.2%) children brushed their teeth at morning and night among them, 119(25.1%) children from 5 to 10 year age and 112(23.6%) are above 10 year age (table-III). Total 207(43.7%) children brushed their teeth for 3 minutes. Among them 124 (26.2%) children from 5 to 10 year age and 78 (16.5%) children are above to year age 10 year age (table-IV) Relationship between age and oral hygiene practice is statistically

significant; P value < 0.05.

Among the males, 232(48.9%) children brushed their teeth every day (table-V), 111(23.4%) children brushed their teeth twice daily (table- VI), 110(23.2%) children brushed their teeth at morning and night (table-VII), 101(21.3%) children brushed their teeth for 3minutes (table-VIII).

**Table I: Distribution of children according to teeth brushing in relation to age (n=474)**

Age	Teeth Brushing		Total	P Value
	Everyday	Some times		
<b>Up to 5 yrs</b>	n 23	0	23	0.01
	% 4.9	0	4.9	
<b>5 to 10 yrs</b>	n 274	5	279	58.9
	% 57.8	01.1	58.9	
<b>Above 10 yrs</b>	n 165	7	172	36.3
	% 34.8	1.5	36.3	
<b>total</b>	n 462	12	47.4	100
	% 97.5	2.5	100	

P value reached from  $\chi^2$  test

**Table II: Distribution of children according to relationship between age and frequency of teeth brushing (a=474)**

Age	How Many Time Brushing				Total	P Value
	Once	Twice	Thrice	Total		
<b>Up to 5 yrs</b>	n 21	2	0	23	0.083	
	% 4.4	4	0	4.9		
<b>5 to 10 yrs</b>	n 140	123	16	279	58.9	
	% 29.5	25.9	3.4	58.9		
<b>Above 10 yrs</b>	n 50	112	10	172	36.2	
	% 10.5	23.6	2.1	36.2		
<b>total</b>	n 211	237	26	474	100	
	% 44.5	50	5.5	100		

P value reached from  $z^2$  test

**Table III: Distribution of children according to relationship between age and frequency of teeth brushing (n=474)**

Age	How Many Time Brushing						Total	P Value
	Before Breakfast	After Breakfast	Before Bed	After Every Meal	Morning and Night	Total		
<b>Up to 5 yrs</b>	n 21	0	0	0	2	23	0.09	
	% 4.4	0	0	0	4	4.9		
<b>5 to 10 yrs</b>	n 142	2	2	14	119	279	58.9	
	% 30.0	4	4	3	25.1	58.9		
<b>Above 10 yrs</b>	n 49	1	0	10	112	172	36.2	
	% 10.3	2	0	2.1	23.6	36.2		
<b>total</b>	n 212	3	2	24	233	474	100	
	% 44.7	6	4	5.1	49.2	100		

P value reached from  $z^2$  test

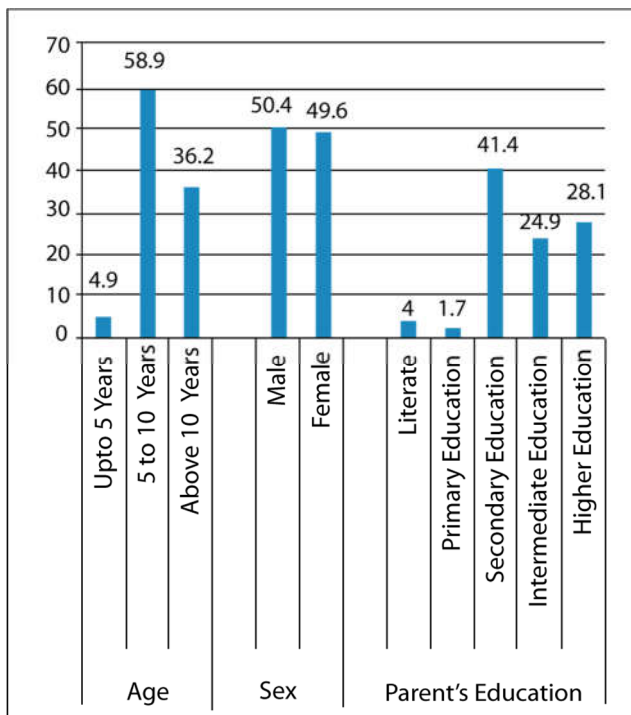


Figure-1: Socio-Demographic Status of the Children

Table IV: Distribution of children according to relationship between age and duration of teeth Brushing (n=474)

Age	Brushing Duration			Total	P Value
	1 to 2 min	3 min	>3 min		
Up to 5 yrs	n	14	5	4	0.019
	%	3	1.1	8	
5 to 10 yrs	n	95	124	60	279
	%	20	26.2	12.7	
Above 10 yrs	n	34	78	60	172
	%	7.2	16.5	12.7	
total	n	143	207	124	474
	%	30.2	43.7	26.2	

P value reached from  $\chi^2$  test

Table V: Distribution of children according to relationship between age and duration of teeth brushing (n=474)

Sex	Teeth Brushing		Total	P Value
	Everyday	Some times		
Male	n	232	0	0.001
	%	48.9	0	
Female	n	230	5	235
	%	48.5	01.1	
Total	n	462	7	474
	%	97.5	1.5	

P value reached from  $\chi^2$  test

Table VI: Distribution of children according to teeth brushing in relation to age (n=474)

sex		How Many Time Brushing			P Value
		Once	Twice	Thrice	
Male	n	113	111	15	0.036
	%	23.8	23.4	3.2	
Female	n	98	126	11	235
	%	20.7	26.6	2.3	
Total	n	211	237	26	474
	%	44.5	50	5.5	

P value reached from  $\chi^2$  test

Table VII: Distribution of children according to relationship between age and frequency of teeth brushing (n=474)

Age		How Many Time Brushing					Total	P Value
		Before Breakfast	After Breakfast	Before Bed	After Evening Meal	Morning and Night		
Male	n	113	1	2	13	110	239	0.036
	%	23.8	2	4	2.7	23.2	50.4	
Female	n	99	2	0	11	123	235	49.6
	%	20.9	0.4	0	2.3	25.9	49.6	
Total	n	212	3	2	24	233	474	100
	%	44.7	6	4	5.1	49.2	100	

P value reached from  $z^2$  test

Table VIII: Distribution of children according to relationship between sex and duration of teeth brushing (n=474)

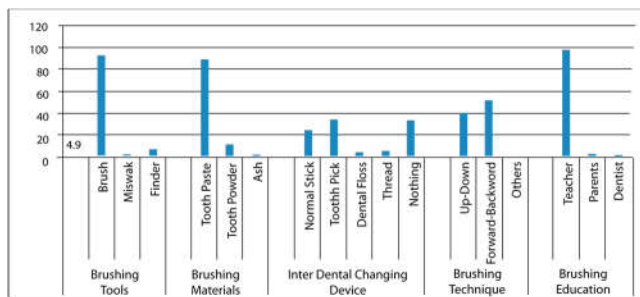
Age		Teeth Brushing			Total	P Value
		1 to 2 min	3 min	>3 min		
Male	n	76	101	62	239	0.01
	%	16	21.3	13.1	50.4	
Female	n	67	106	62	235	49.6
	%	14.1	22.4	13.1	49.6	
total	n	143	13.1	124	474	100
	%	30.2	49.6	26.2	100	

P value reached from  $z^2$  test

Among the females, 230(48.5%) children brushed their teeth every day (table-V), 126(26.6%) children brushed their teeth twice daily (table-V1), 123(25.9%) children brushed their teeth at morning and night (table-VII) and 106(22.4%) children brushed their teeth for 3 minutes (table-VII), Relationship between sex and oral hygiene practice is statistically significant; P value 0.05. Among the children, 438(92.4%) children clean their teeth with tooth brush, 417(92.4%) used tooth pest during teeth brushing: 186(39.2%) used tooth brush in forward and backward direction, 243(51.3%) used tooth brush in upward and downward direction.

Among the children, 115(24.3%) used normal stick. 160(33.8%) used tooth pick, 19(4%) used thread, 23(4.9%) used dental floss for inter dental cleaning. Among the children, 462(97.5%) are taught tooth brushing from their parents, 10 (2.1%) are taught tooth brushing from their teacher and 2(0.4%) are taught tooth brushing from their dentist (figure-2).

**Figure 2: Distribution of children according to uses of oral hygiene aids.**



## DISCUSSION:

By socio- demographic status, maximum (38.9%) children's were 5 to 10 years old, among them male and female were same. And education level of maximum, (41.4%) children's parents were secondary and literate were minimum (4%). A study<sup>1</sup>, conducted on Bangladeshi primary school children, 51.98% children were male and 47.97% were children female; and age of the children's was from 6 to 13 years Another study<sup>2</sup> was conducted on Bangladeshi school going rural children, total 350 children's were included in the study age ranging from 10 to 15 years, among them 45.71% were male and 54.29% were female. These study result is similar to the present study.

In the study it is found that most of the children brushed their teeth every day and twice daily at age of 5 to 10 years, and above 10 years age, maximum children brushed their teeth of morning and night for 3 minutes: Age is an Important factor for maintaining oral hygiene, as increasing the age children can realize the importance's of care of teeth. Khan<sup>3</sup> conducted a study on 3-12 years old 646 children in Swat, Pakistan and found border line significant in relationship of age and oral hygiene maintenance

This study found no significant differences between male and female in regularly, frequency, time and duration of tooth brushing. Similar result is found in another study by Take and Juan<sup>4</sup>, Mia et al<sup>5</sup> found male children are significantly higher in regularity, frequency, time and duration of tooth brushing. This variation may be due to geographical variation as they collected sample from Cox's Bazar district there are socio-economic and environmental variation between two districts. The differences may be also due to technique of sample collection as they selected the school by two-stage cluster sampling design

The present study found 92.4% children clean their teeth with tooth brush and tooth paste. This result is supported by Mia et al who found most of the respondents use tooth brush and pest to clean their teeth.

The results differ from another study by Sarwar et al<sup>6</sup> who found that 33.2% were using tooth brush and 12% were using tooth paste and rest of the respondents clean teeth using

finger, branch of teeth, and ash. Tooth powder and charcoal. These differences between due to as they conducted the study in rural area. Maximum (51.3%) children used tooth brush in upward-downward direction and rest of the children brush teeth in faulty direction. Most (97.5%) of the children are taught tooth brushing from their parents and rest of the respondents taught tooth brushing from others. Similar result found in the study by Mia et al. Parents, teachers and others personnel's and media are important factors to motivate the children to maintain oral hygiene.

## CONCLUSION:

Age is an important factor for maintaining oral hygiene. As increasing the age children can realize the importances of care of teeth and they emphasize on oral hygiene maintenance Sex has no significances on oral hygiene practice. Most of the children clean their teeth with tooth brush and tooth pest. Use of finger, branch of tree, ash, tooth powder and charcoal are less amount. Parents, teachers and others personnel's and media are important factors to motivate the children to maintain oral hygiene.

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