

## KNOWLEDGE ON ORAL HYGIENE AMONG THE PATIENTS ATTENDING PRIVATE DENTAL CLINICS IN BANGLADESH

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**Abstract:** Oral disease is a common public health problem in Bangladesh. Lack of awareness and improper treatment facilities are the main cause of poor oral health condition in our country. This study was conducted to assess the level of knowledge on oral hygiene among the patients attending selected private dental clinics. A descriptive cross-sectional type of study was utilized, among the patients who attended private dental clinics in Chittagong area of Bangladesh. A total of 160 patients were selected purposively and interviewed using a pre-tested semi-structured questionnaire. The mean age of the respondents was  $29.20 \pm 4.31$  years. About 73.1% of the respondents were male and more than half (55.0%) of the respondents had bachelor degree and above, followed by secondary school level of education (19.4%). 73.1% of the participants used to brush their teeth more than twice per day, 55.6% of the respondents used to spent 1-3 minutes while brushing their teeth and the rest spent more than 3 minutes brushing their teeth. The findings revealed that majority of the patients had fair level of knowledge regarding the oral hygiene. The level of knowledge was found to be significantly associated with educational level and monthly income of the respondents.

**Keywords:** Dental, Health, Hygiene, Oral, Teeth

## **Introduction**

Oral hygiene is the practice of keeping the mouth and teeth clean to prevent dental problems, most commonly, dental cavities, gingivitis, periodontal diseases and bad breath<sup>1</sup>. Oral diseases are a major public health concern owing to their high prevalence and their effects on the individual's quality of life<sup>2</sup>. There are also oral pathologic conditions in which good oral hygiene is required for healing and regeneration of the oral tissues. These conditions include gingivitis, periodontitis, and dental trauma, such as subluxation, oral cysts, and following wisdom tooth extraction<sup>3-5</sup>. The possible etiological factors leading to these oral diseases are genetic predispositions, developmental problems, poor oral hygiene and traumatic incidents<sup>6</sup>.

Oral hygiene behavior and seeking oral health care depend on a number of factors. Patients comply better with oral health care regimens when informed and positively reinforced. Lack of information is among the reasons for non-adherence to oral hygiene practices. Further, oral health attitude and beliefs are significant for oral health behavior<sup>7</sup>. Keeping a healthy oral profile requires joint efforts from the dentist as well as the patient himself. One of the most important factors that decide the dental health of a population is the outlook of its people toward their dentition<sup>8</sup>.

Generally, dentists recommend that teeth be cleaned professionally at least twice per year<sup>9</sup>. Professional cleaning includes tooth scaling, tooth polishing, and, if tartar has accumulated, debridement; this is usually followed by a fluoride treatment. However, the American Dental Hygienists' Association (ADHA) publicly stated in 1998 that there is an absence of evidence that scaling and polishing provides therapeutic value<sup>10</sup>. The Cochrane Oral Health Group reviewed nine studies but found them to be of insufficient quality and not enough evidence to support the claims of the benefits of regular tooth scaling or tooth polishing<sup>11</sup>. Oral health knowledge is

considered to be an essential prerequisite for health related behavior, although only a weak association seems to exist between knowledge and behavior in cross-sectional studies, nevertheless studies have shown that there is an association between knowledge and better oral health<sup>12</sup>. Tooth decay is the most common global diseases. Dentist and dental hygienist are about preventing tooth loss and gum disease. The patient needs to be aware of the importance of brushing and flossing their teeth daily. Parents need to be educated to promote a healthy life and mouth for their children. At any age; a person should be notified about how to take care of their teeth and how they will be able to keep their teeth and not need dentures. This study was conducted to assess the level of knowledge on oral hygiene among the patients attending selected private dental clinics in Chittagong, Bangladesh.

### **Materials and Methods**

A cross-sectional type of study was conducted to assess the level of knowledge about oral hygiene among the patients. The patients who were seeking treatment during January to April 2016 in different private dental clinics in Chittagong area of Bangladesh were selected using purposive sampling technique. Patients above 15 years of age irrespective of gender, religion and customs were included and patients below the age of 15, mentally ill and physically disabled patients were excluded for participation.

A total of 160 samples were selected purposively and interviewed in the study area. The questionnaire used in this study was pre-tested prior to the data collection in another area within the Chittagong city and due to that some parts of the questionnaire were modified. The data was collected using semi-structured questionnaire by face to face interview. Verbal inform consent was taken before starting the data collection. After collection of the data, all the interviewed

questionnaires were checked for completeness, correctness and internal consistency to exclude missing or inconsistent data. Corrected data was entered into SPSS 22.0 version for analysis. Chi-square test was employed to find out the association between different variables. A p-value less than or 0.05 was considered as significant. The knowledge scale was also used to identify the respondent's level of knowledge about the oral hygiene. Ethical clearance was obtained from Faculty of Allied Health Sciences Research Ethics Committee of Daffodil International University, Dhaka Bangladesh.

## Results

### Socio-demographic distribution of the participants

Table 1 showed that the mean age of the respondents was 29.20±4.31 years and the majority (40.6%) of the respondents were in the age group 26-35 years old, followed by 16-25 years (39.4%). More than seven-tenths (73.1%) of the respondents were male and the rest were female. According to educational level of the respondents above half (55%) had bachelor degree & above level of education, followed by secondary (19.4%). Close to six-tenths (58.7%) of the respondents' monthly income was >\$300.

**Table 1: Socio-demographic distribution of the participants (n=160)**

Factors	Frequency	Percentage
<b>Age (years)</b>		
<b>16-25</b>	63	39.4
<b>26-35</b>	65	40.6
<b>36-45</b>	21	13.1
<b>46 Above</b>	11	6.9
<b>Mean± SD</b>	29.20±4.31	
<b>Sex</b>		
<b>Male</b>	117	73.1
<b>Female</b>	43	26.9

<b>Educational level</b>		
No formal education	4	2.5
Primary	7	4.4
Secondary	31	19.4
HSC	30	18.7
Bachelor degree and above	88	55.0
<b>Monthly income (USD)</b>		
<\$100	21	13.1
\$100-\$300	45	28.1
>\$300	94	58.8
<b>Total</b>	<b>160</b>	<b>100</b>

**1USD=81BDT (2015)**

### **Distribution of respondents by Knowledge regarding tooth brushing**

Table 2 showed that more than seven-tenths (73.1%) of the respondents brushed their teeth twice in a day, followed by once in a day (19.4%). The majority (62.5%) of the respondents used to brush their teeth in the morning before breakfast. Above half (55.6%) of the respondents used to spent 1-3 minutes while brushing their teeth and the rest used to spent more than 3 minutes while brushing their teeth. More than seventy percent normally changed their brush after using it for more than a month and the rest use to change it every month. According to proper brushing techniques about 57.5% mentioned that the technique was up to downward for upper teeth and 38.1 percent mentioned that the technique was down to upward for lower teeth.

**Table 2: Distribution of respondents by Knowledge regarding tooth brushing (n=160)**

<b>Variables</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Brushing practices</b>		
Once per day	31	19.4
Twice per day	117	73.1
More than twice per day	12	7.5
<b>Time of tooth brushing</b>		
Morning before breakfast	100	62.5
After breakfast	32	20.0
After lunch	3	1.9
Nights before sleeping	25	15.6
<b>Time spent for tooth brushing</b>		
1-3 minutes	89	55.6
More than 3 minutes	71	44.4
<b>Frequency of changing toothbrush</b>		
Every month	37	23.1
More than a month	123	76.9

<b>Total</b>	<b>160</b>	<b>100</b>
<b>Proper brushing techniques (Multiple response)</b>		
<b>Front to backward</b>	40	25.0
<b>Down to upward for lower teeth</b>	61	38.1
<b>Up to downward for upper teeth</b>	92	57.5
<b>Backward to front</b>	21	13.1
<b>Don't know</b>	22	13.8

### **Distribution of respondents by knowledge on mouthwash**

Table 3 showed that the majority (43.1%) of the respondents were using mouthwash sometimes, followed by never (24.4%), regularly (17.5%), twice per day (15%) and the rest never used any mouthwash at all. According to the knowledge about method of using the mouthwash the majority (72.5%) mentioned rinsing the mouth, followed by don't know (20%), gurgle (5.6%), stick on teeth and the rest mentioned take like medicine (1.9%).

**Table 3: Distribution of respondents by knowledge on mouthwash (n=160)**

<b>Variables</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Frequency of Using Mouthwash</b>		
<b>Never</b>	39	24.4
<b>Sometimes</b>	69	43.1
<b>Regularly</b>	28	17.5
<b>Twice per day</b>	24	15.0
<b>Method of Using Mouthwash</b>		
<b>Mouth rinsing</b>	116	72.5
<b>Gurgle</b>	9	5.6
<b>Take like medicine</b>	0	0.0
<b>Stick on teeth</b>	3	1.9
<b>Don't know</b>	32	20.0
<b>Total</b>	<b>160</b>	<b>100</b>

### **Knowledge on the device for cleaning inter dental space, time of flossing in a day, causes of dental caries, measures for dental problem and dentist visiting frequency**

Table 4 showed that more than half (54.4%) of the respondents mentioned that the device for cleaning inter dental space is dental floss, followed by thread (28.8%), Khilan (19.4%), fire box stick (6.9%) and the rest mentioned others (3.1%). According to frequency of flossing, most of

them (56.3%) mentioned that the eight times was after meals, followed by don't know (30%), nights before sleeping (10%) and the rest mentioned that its after tooth brushing. It also reported that more than forty percent mentioned that food accumulation was the cause of dental caries, followed by sugar and bacteria (28.1%), don't know (26.3%), lack of fluoride (25.6%) and the rest mentioned that it was due to smoking and alcohol use. More than nine-tenths (94.4%) mentioned that the measures for dental problem was visit to dentist, followed by mouth rinsing with salt warm water (19.4%). Fifty percent of the respondents used to visit doctor every 6 months.

**Table 4: Knowledge on the device for cleaning inter dental space, time of flossing in a day, causes of dental caries, measures for dental problem and dentist visiting frequency (n=160)**

<b>Variables</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Device for cleaning inter dental space</b>		
<b>Khilan</b>	31	19.4
<b>Thread</b>	46	28.8
<b>Dental floss</b>	87	54.4
<b>Fire box stick</b>	11	6.9
<b>Others</b>	5	3.1
<b>Frequency of flossing</b>		
<b>After meals</b>	90	56.3
<b>Nights before sleeping</b>	16	10.0
<b>After tooth brushing</b>	8	5.0
<b>Don't know</b>	48	30.0
<b>Causes of dental caries</b>		
<b>Sugar and bacteria</b>	45	28.1
<b>Smoking and alcohol</b>	32	20.0
<b>Lack of fluoride</b>	41	25.6
<b>Food accumulation</b>	67	41.9
<b>Don't know</b>	42	26.3
<b>Measures for dental problem</b>		
<b>Visit to dentist</b>	151	94.4
<b>Mouth rinsing with salt warm water</b>	31	19.4
<b>Take medicine</b>	11	6.9
<b>Visit to dentist</b>		
<b>Every 1 month</b>	9	5.63
<b>Every 4 months</b>	11	6.88
<b>Every 6 months</b>	80	50.00
<b>Every 1 year</b>	41	25.63
<b>Don't know</b>	19	11.88

\*\*\*Multiple Response

### **Distribution of respondents regarding the knowledge level on oral hygiene**

Table 5 reported that among all the respondents, close to six-tenths (58.8%) had fair level of knowledge regarding oral hygiene, followed by poor level of knowledge (22.5%), good level of knowledge (18.1%) and the rest had excellent level of knowledge (0.6%).

**Table 5: Distribution of respondents regarding the knowledge level on oral hygiene (n=160)**

<b>Level of knowledge</b>	<b>Frequency</b>	<b>percentage</b>
<b>Excellent</b>	1	0.6
<b>Good</b>	29	18.1
<b>Fair</b>	94	58.8
<b>Poor</b>	36	22.5
<b>Total</b>	<b>160</b>	<b>100</b>

#### **Knowledge Scale**

<b>Level</b>	<b>Scores</b>
Excellent	81-100
Good	61-80
Fair	50-60
Poor	0-49

### **Association between Socio-demographic factors and level of knowledge on oral hygiene**

Table 6 showed the relationship between the respondents level of knowledge regarding the oral hygiene and socio-demographic characteristics of the respondent, it has been reported that level of knowledge regarding oral hygiene was associated with educational level and monthly income of the respondents.



**Table 6: Association between Socio-demographic factors and level of knowledge on oral hygiene (n=160)**

Variables	Level of Knowledge			Chi-square	P-value
	Poor N (%)	Satisfactory N (%)	Good N (%)		
<b>Education</b>					
0-10 class	19(52.8)	22(21.4)	1(4.8)	19.37	0.001
>10 class	17(47.2)	81(78.6)	20(95.2)		
<b>Monthly Income (USD)</b>					
<\$200	23(63.9)	26(25.2)	4(19.0)	20.15	0.001
>\$200	13(36.1)	77(74.8)	17(81.0)		

## Discussions

This cross sectional study was conducted on the patients attending different private dental clinics in Chittagong area of Bangladesh with a view to assess their knowledge on oral hygiene particularly knowledge of tooth brushing, tooth cleaning agent, dental problems, prevention of oral problem, and to explore the relationship between knowledge on oral hygiene and socioeconomic status of the respondents. In this study the mean age of the respondents was  $29.20 \pm 4.31$  years and the majority (40.6%) of the respondents were in the age group 26-35 years. According to educational level of the respondents above half (55%) had bachelor degree and above level of education and close to six-tenths (58.7%) of the respondents monthly income was >\$300. To create such oral health education, the assessment of knowledge is essential<sup>13</sup>. Knowledge means that the individual has all data necessary to understand what oral disease is and how it arises, as well as to understand the protective measures that need to be adopted. This knowledge may lead to a change in attitude, which will in turn may lead the individual to make changes in their daily life<sup>14</sup>.

In the present study more than seven-tenths (73.1%) of the respondents used to brushed their teeth twice per day. Our finding is lower than that of similar study in another country where 90% of the studied participants were brushing their mouth twice per day<sup>15</sup>. Our findings is lower than

that of Parveen *et al.* and Dasgupta *et al.*, the present study revealed that 35.71% of the subjects used to brush their teeth twice daily<sup>16,17</sup>. The majority (62.5%) of the respondents used to brush their teeth morning before breakfast. Similar findings were also reported in a study done by Jain *et al.* at Jodhpur, Sharda *et al.* at Udaipur<sup>18,19</sup>.

According to using mouthwash the majority (43.1%) of the respondents were using mouthwash sometimes. This is consistent with the finding of Sharda *et al.* found mouthwash users to be 64.10%<sup>19</sup>. According to the knowledge about method of using the mouthwash the majority (72.5%) mentioned rinsing the mouth, followed by don't know (20%), gurgle (5.6%), stick on teeth and the rest mentioned take like medicine (1.9%). More than half (54.4%) mentioned that the device for cleaning inter dental space is dental floss, followed by thread (28.8%), Khilan (19.4%), fire box stick (6.9%) and the rest mentioned others (3.1%). According to frequency of flossing, the majority (56.3%) mentioned that the eight times was after meals, nights before sleeping (10%) and the rest mentioned that its after tooth brushing. Traditionally, good oral health practice consists of the implementation of two broadly defined sets of behavior, first; self-care habits such as dental hygiene, restriction of sugar products, and use of fluoride products, second; utilization of dental services such as regular dental visits, oral health education, and professionally applied preventive measures<sup>20</sup>. It also reported that more than forty percent mentioned that food accumulation was the cause of dental caries, followed by sugar and bacteria (28.1%), lack of fluoride (25.6%) and the rest mentioned that it was due to smoking and using alcohol. In a study done by Djuric on oral care in nursing it has been found that self-rated knowledge was poorest on fluorides<sup>21</sup>. More than nine-tenths (94.4%) mentioned that the measures for dental problem was visit to dentist and fifty percent of the respondents used to visit doctor every 6 months. This result is higher than that of a study by Jain *et al.* at Jodhpur and

Pandya *et al.* at Gujarat, where only 10.0 and 3.65%, respectively, would regularly visit a dentist every six months<sup>18,22</sup>.

About 58.8% of the respondents had fair level of knowledge regarding oral hygiene. The results was not similar with questionnaire survey of Roberts which reported that the current knowledge about prevention and treatment of oral problems was 71% <sup>23</sup>. It has been reported that level of knowledge regarding oral hygiene was associated with educational level of the respondents. The findings was inconsistent with the study by Adams which concluded that there was no significant relation of knowledge neither with age nor with education<sup>25,26</sup>.

## Conclusion

The finding of this study reported that majority of the patients had fair level of knowledge about oral hygiene. They are also aware that teeth should be brushed at least twice per day and the toothbrush should be replaced after every three months. It further reported that level of knowledge regarding oral hygiene was associated with educational level and monthly income of the respondents.

## Recommendations

- Public awareness on the importance of oral health needs to be enhanced.
- Further multicentric larger study is recommended.

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