Original Article

Attitude on Oral Hygiene among the School going Children in Selected Schools at Dhaka city

Dr. Shamim Ahmed
BDS, MPH
Chief Consultant
Tamanna Dental Zone, Dhaka

Dr. Faisal Solaiman
BDS, MPH
Senior Lecturer
Department of Prosthodontics
City Dental College, Dhaka

Dr. Md. Rakibul Islam
BDS, FCPS (Orthodontics)
Assistant Professor
Department of Orthodontics
City Dental College, Dhaka

Dr. Syeda Mahmuda Akhter
BDS
Senior Lecturer
Department of Periodontology,
Oral Pathology and Oral Medicine
City Dental College, Dhaka

Dr. Mohammed Zahedul Islam Nizami
BDS, GDCSc (Bankok)
Associate Professor
Department of Prosthodontics
City Dental College, Dhaka

Dr. Mst. Amina Khatun
BDS, FCPS (Part II trainee)
(Conservative Dentistry and Endodontics)
Bangabandhu Sheikh Mujib Medical University, Dhaka

Correspondence to:

Dr. Shamim Ahmed
BDS, MPH
Chief Consultant:
Tamanna Dental Zone, Dhaka
Cell phone: +8801819271691
Email: lubaahmed@gmail.com

Abstract :

Aims: The study was carried out among 1200 students of selected schools at Dhaka city to observe their attitude on oral hygiene through a pre-tested semi-structured questionnaire.
Methods: The descriptive type of cross-sectional study was carried out among 1200 students of class IV-IX (aged 10-15 years) in the selected schools of Dhaka city from December 2011 to March 2012 to observe their attitude on oral hygiene through a pre-tested semi-structured questionnaire.
Results: This study revealed that 92.5% of respondents understood the importance of taking care of oral cavity. Seventy seven percent (76.7%) of respondents agreed that regular brushing would prevent tooth decay. Of all, 69.2% respondents brushed their teeth regularly where, 69.2% brushed once a day, 27.5% brushed twice and only 3.3% brushed more than twice in a day. Ninety three percent (92.5%) used toothbrush and 83.3% used tooth paste for brushing their teeth. Among the respondents, 67.5% knew that sweet food caused harm to teeth and 50.0% thought that soft drinks would have the same effects on teeth. Sixty nine (69.2%) percent of respondents reported that they went to dentist on requirement basis and only 8.3% of respondents regularly went to dentist for checkup. An association was found between mothers occupation and regular brushing prevents tooth decay (p=0.04).
Conclusion: The study suggested that the students would be the appropriate target group to receive the first organized intervention leading towards improving the oral health status and reducing prevalence of oral diseases through increasing their attitude.

Key words: Attitude, mother's occupation, father's occupation, prevention, oral hygiene, knowledge, dental caries, gum bleeding, self-care practices.

Introduction:

"While the eyes may be the window to the soul, our mouth is a window to our body's health". The state of your oral health can offer lots of clues about your overall health. Oral health may be defined as a standard of health of the oral and related tissues which enables an individual to eat, speak and socialize without active disease, discomfort or embarrassment and which contributes to general wellbeing.[1] Most oral diseases, like most chronic pathologies in general, are directly related to lifestyle. Oral disease can be considered a public health problem due to its high prevalence and significant social impact. Chronic oral disease typically leads to tooth loss, and in some cases has physical, emotional and economic impacts. These impacts lead in turn to reduced welfare and quality of life. To minimize these negative impacts of chronic

oral disease, there is thus a clear need to reduce harmful oral health habits. Such a reduction can be achieved through appropriate health education programs.[2] The past fifty years have witnessed a reduction in the severity and prevalence of oral disease among the population of the developed countries. Dental care has been systematically organized to improve dental health attitudes among children and the young. This development has improved children's dental health and changed the dental caries patterns affecting them. It also resulted in more adults being able to keep their natural dentition functional into a later age.[3] In modern dentistry, "prevention" receives special attention and precedes treatment. Prevention is easier and more economical. Now a days, in advanced societies, through simple prevention techniques such as hygiene training, fluoride therapy, tooth brushing and supplementary instruments, caries prevalence and periodontal diseases have been reduced significantly. As a result, the needs of treatments, that are mostly expensive and time consuming, have been decreased.[4] The behavior of the people, in each society, is influenced by their knowledge and tendencies; on the other hand, the beliefs and tendencies of each society are also influenced by people's behavior. Naturally, social and individual hygiene, depend on people's knowledge. In order to promote useful hygienic habits among people and change their behavior, a comprehensive and accurate program is necessary. Such an approach leads us to achieve our cultural goals. One of the most effective factors, to reach these goals is to invest and pay special attention on oral hygiene training in schools to enhance students' knowledge.[5] The critical approach to health education considers that economic, social and cultural factors are the principal determinants of disease. The responsibility for unhealthy behavior lies with society, not with the individual. The change from an unhealthy attitude to a healthy attitude will occur given adequate information, adequate motivation and adequate practice of the measures to be adopted by the subject. Information means that the subject has all the 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 (knowledge). This knowledge will, in theory, lead to changes in attitude, which will in turn lead the subject to make changes in their daily life. Thus in the case of dental caries, the subjects know (for example) that incorrect brushing may cause caries, and this information generates a positive attitude towards daily brushing (i.e. the intention to brush teeth daily in order to have healthier teeth), and thus changes in brushing behavior. So, the educational program targeted at the individual, aiming to change an unhealthy conduct, will be a complete failure if they do not consider the different aspects of the subject's life, both socioeconomic and environmental, that influence their behavior and are responsible for diverse health problems.[6] Pupils' dental health attitudes could be explained by their present self-care practices in addition to the wish to adopt positive dental health behaviors in the future. Their ability to adopt these was further associated with their positive and negative perceptions of their own dental health. The close association between positive behaviors towards, and feelings of control over future dental health suggested that health attitudes could reflect feelings of empowerment and this was conductive to the adoption of self-care practices. Those pupils who felt empowered were more able to promote their own dental health by means of their positive self-care actions. On the other hand those groups of pupils which appeared less able to assimilate dental health information, which had less positive attitudes and were therefore unable to promote their own dental health through the adoption of self-care practices, could be identified.[8]

Materials and Methods:

The cross-sectional descriptive study was carried out in order to assess the attitude on oral hygiene among 1200 school children in selected schools of Dhaka city from December 2011 to March 2012. Students of class IV-IX (aged 10-15 years old) from Khaled Hyder memorial school, Dhaka and Khilgaon government school, Dhaka were randomly selected and included in the study population.

Inclusion Criteria:

a) Only the student of class IV-IX (aged 10-15 years) were included as sample.
b) Who are willing to give consent or participate to fill up the questioner

Exclusion Criteria:

Students who refused to participate in the study.

Statistical Analysis:

The collected data were edited by checking, rechecking and analyzed by using the software SPSS 17.0 version (Chicago).

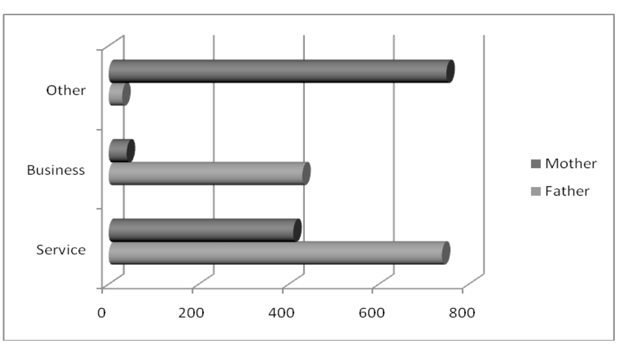
Results:

Table-1: Socio-demographic distribution of the respondents. (n=1200)

Age of Respondents	**Mean**			**SD**
	12.5 years			±2.5
Types of School	Government School		Private School	
	600(50%)		600(50%)	
Gender	Male		Female	
	900(75%)		300(25%)	
Religion	Muslim	Hindu	Other	
	1020(85%)	180(15%)	00(0%)	
Parents' Occupation		Service	Business	Other
	Father	740(61.7%)	430(35.8%)	30(2.5%)
	Mother	410(34.2%)	40(3.3%)	750(62.5%

Table-1 showed that the mean age of the respondents was 12.5±0.5 (range 10-15) years. Among 1200 respondents, 50% of the respondents were studying in the government school and the rest (50%), in the private school. Seventy five percent (75%) were males and the rest (25%) were females. Of all, 85% was muslims and the rest (18%) was hindu.

Fig.1: Distribution of parents' occupation. (n=1200)



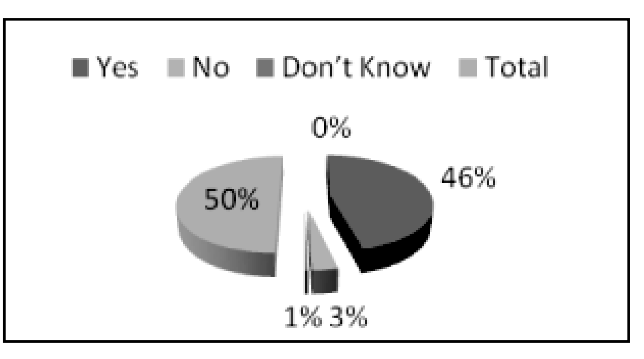
Among all respondents' fathers, 61.7% were service holder, 35.8% businessman and 2.5% were engaged in other jobs. Among the mothers of the respondents, 16.7% were engaged in service, 3.3% in business and 80% did other jobs (Fig.1).

Table-2: Oral habit related variables of respondents. (n=1200)

Regular tooth brushing	**Yes**	**No**	
	830(69.2%)	370(30.8%)	
Times of tooth brushing	Once	Twice	More than
	830(69.2%)	330(27.5%)	40(3.3%)
Tools used for tooth brushing	Tooth brush	Finger	Others
	1110(92.5%)	70(5.8%)	20(1.7%)
Dentifrice used for tooth brushing	Tooth paste	Tooth	Other
	1000(83.3%)	190(15.8%)	10(0.8%)
Knowledge on regular tooth brushing	Yes	No	Don't know
	920(76.7%)	240(20.0%)	40(3.3%)
Knowledge on importance of taking oral care	Yes	No	Don't know
	1110(92.5%)	80(6.7%)	10(0.8%)

Table-2 described the oral habit related variables of the respondents. Among the 1200 respondents, 69.2% brushed their teeth regularly and 30.8% did not. Among them, 69.2% brushed teeth once, 27.5% brushed twice and 3.3% brushed their teeth more than two times in a day. Ninety three percent (92.5%) used toothbrush, 5.8% finger and 1.7% used other materials for tooth brushing. Off all, 83.3% used tooth paste, 15.8%, tooth powder and 0.8% used other materials for brushed their tooth.

Fig.2: Distribution of the respondents by important to take care of oral cavity. (n=1200)



About the knowledge on oral hygiene care, 76.7% thought yes, 20.0% thought no and 3.3% had not any idea about regular brushing prevent tooth decay. And also, 92.5% thought yes, 6.7% thought no and 0.8% had not any idea about the importance of taking care of oral cavity (Fig.2).

Table-3: Food Habit related variables of respondents. (n=1200)

Soft drinks harm tooth	Yes	No	Don't know
	600(50.0%)	460(38.3%)	140(11.7%)
Sweet foods harm tooth	Yes	No	Don't know
	810(67.5%)	320(26.7%)	70(5.8%)

Table-3 describes the food habits related variables of the respondents. Out of 1200 respondents, 50% said yes, 38.3% said no and 11.7% did not had any idea about the question of soft drinks causes harm to teeth. And also 67.5% said yes, 26.7% said no and 5.8% had not any idea about by the knowledge of harmful effect of sweet to teeth.

Table-4: IEC (Information, Education and Communication) related variables of the respondents. (n=1200)

Information from media	Yes	No
	1080(90%)	120(10%)
Information from dentist	Yes	No
	440(36.7%)	760(63.3%)
Information from teacher	Yes	No
	830(69.2%)	370(30.8%)
Information from parents	Yes	No
	420(35%)	780(65%)

Fig.3: Distribution of respondents by information about oral care from parents. (n=1200)

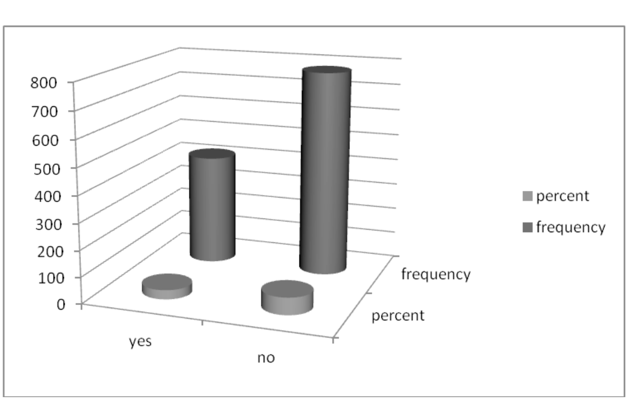


Table-4 shows the IEC (information, education and communication) related variables of the respondents. Among all respondents, 90% had received, and 10% did not receive information from media about oral care. Thirty seven percent (36.7%) received, and 63.3% did not receive information from dentist about oral care, and 69.2% received, and 30.8% did not receive information from teacher about oral care. Of all, 35% received, and 65% did not receive information from parents about oral care (Fig.3).

Table-5: Association between socio-demographic factor (mother's occupation) and attitude (regular brushing prevent tooth decay) of the respondents. (n=1200)

Mother's Occupation	Regular Brushing prevent			Total	P value
	Yes	No	Don't		
Service	240	140	30	410	
Business	20	20	0	40	0.04
Other	660	80	10	750	
Total	920	240	40	1200	

Table-5 described the association between socio-demographic factor (mother's occupation) and attitude (regular brushing prevent tooth decay) of the respondents. Out of 410 mother who did service 240 respondents thought regular brushing prevent tooth decay, out of 40 mothers who did business, 20 respondents thought the same and out of 750 mothers who did other jobs, 660 respondents had the same view. And there is a significant association found between mother's occupation and respondents thought about regular brushing prevent tooth decay (p 0.04).

Discussion:

The variable "attitude" ("It is important to take care of my teeth") was likewise included in our model. If the knowledge-attitude-practice relationship were a direct relation, introduction of the variable attitude would lead to excellent fit, and the attitude and knowledge would be correlated. In fact, however, the results of this study show that attitude has an effect in its own right, such that subjects with the same knowledge and more positive attitude have healthier habits. The principal reason put forward to explain phenomena of this type is that subjects can develop mechanisms of selective perception and retention of information, such that they do not readily accept those aspects that they might at first reject. This would explain why, with the same degree of knowledge, different attitudes are generated in subjects from different environments and with different beliefs and different social, educational and economic levels. These socio-demographic factors act on the subject, modulating the information perceived and retained. In this way, once the model has been adjusted for knowledge and attitudes, the effect of socioeconomic and cultural level on hygiene is probably attributable to two causes. First, there is a residual effect of confusion that cannot be ignored, due to defects in the classification arising in the establishment of the variables knowledge and attitude: these variables in all probability do not classify subjects perfectly. The observed effects on oral hygiene of mother's educational level and habitat (urban or rural) are probably residual effects. In addition, we have seen that the concept of attitude as direct cause of practice is not always valid, since some changes in attitude are not followed by changes in behavioral patterns: attitude is only one factor determining behavior. Thus a subject with a highly positive attitude to tooth brushing, but with constraints that hinder daily brushing (for example, the child does not have a toothbrush, or no-one else in the family brushes their teeth), may not show straightforward translation of attitude to practice. As regards attitude to oral healthcare, 83% of subjects reported that it was very important to them to look after their teeth, and only 1.3% reported that looking after their teeth was unimportant.[9]

The present study showed that majority of respondents thought it was important to take care of oral cavity. Out of 1200 respondents, 92.5% reported it was important to take care of oral cavity, 6.7% thought that it was not important, while 0.8% did not know about it (Table-2).

A study in Jordan showed approximately 69% of the study sample brushed their teeth at least twice daily, while 17% reported irregular tooth brushing. Approximately 83% of the subjects reported using a toothbrush and toothpaste to clean their teeth. Two percent reported using dental floss, 6% reported using mouthwash, and 7% reported using tooth

picks as extra aids for oral hygiene The study population did not brush their teeth at a similar time during the day. However, most subjects brushed their teeth before going to bed and/or in the morning. About 71% of the subjects took at least two minutes to brush while 15% took less than one minute. Most subjects showed awareness of the importance of tooth brushing for caries prevention (81%). Parents' role in daily oral care was reported to be mainly related to giving advice on the importance of brushing (59%). Only 26% of the subjects reported being advised and watched by parents during brushing. Approximately 15% of the study sample reported that their parents never watched their brushing technique nor gave them advice on brushing.[10]

The present study showed that 69.2% respondents regularly brushed their teeth while 30.8% were irregular in brushing. Again 69.2% respondents brushed their teeth at least once in a day, 27.5% brushed twice in a day while 3.3% brushed more than twice in a day. 92.5% respondents used toothbrush as brushing tools and 83.3% used tooth pest as dentifrices. 35% responded report that they got information about oral care from parents as 65% did not. However 76.7% respondents think regular brushing prevents tooth decay while 20% did not think regular brushing prevents decay (Table-2). We found there is a significant association between mother's occupation and thinking of respondents that regular brushing prevents decay (p=0.04) (Table-5).

In a study in Pakistan among 281 respondents, the author found that sweets (64.9% of respondents) and soft drinks (68.8%of respondents) affect teeth and may lead to decay. Approximately 73 % of respondents had the knowledge what treatment was required.[11]

The present study showed that 80.8% of respondents like sweet food while 67.5% think sweet food causes harm to teeth then 32.5% had the other idea. 50.0% of respondents think soft drinks causes harm to oral cavity, 38.3% thought soft drinks did not any effect on oral cavity (Table-3).

In a research, 300 high school students, at the age of (16 years ± 6 months) were investigated, 164 students (54.7%) expressed that visiting dentist was necessary every 6 months, but practically only 20% of them referred to dentist every 6 months and 70%, only upon problems such as toothache, referred to the dentist. Forty four percent of the students expressed lack of enough time as a reason for their irregular reference to dentist. Sixty two percent of the students brushed their teeth regularly and most of them (140 individuals) spent 2 to 5 minutes for brushing and just for 6.3% of them (19 individuals) tooth brushing took more than 5 minutes.[12]

The present study showed that 69.2% of respondents preferred they visited the dentist when necessary while only 8.3% reported that they visited dentist regularly. And rest of the respondents (22.5%) visited irregularly or not (data is not shown). In 2003, a study to describe oral health behavior, illness behavior, oral health knowledge and attitude among 12 year-old Chinese, the authors found 41.7% of respondents were informed about oral health care, 47.2% declared that they never received any oral health instruction while 11.3% were not aware of it. In 12 years-old significantly more urban child (60.0%) than rural (36.8%) children received oral health information.[13]

The present study showed that 35% of respondents got advice for oral care from parents while 65% did not. Again 69.2% of respondents said they had advice from teacher for oral care and 36.7% respondents said they got advice from dentist. It is interesting that almost 90% of respondents declared that they got information about oral care from media about taking care of tooth as they saw television commercial of tooth pest (Table-4).

Conclusions:

The present study shows that an increase in knowledge risk factors for oral disease is important in oral health campaigns that aim to promote healthy habits; however, the efficacy of these campaigns will be limited if we do not take into account key determinants of attitude and of the putting into practice of these healthy habits (economic status, family and social environment, educational level, etc.) in the population in which we are trying to change behavior. The study also suggests that student would be the appropriate target group to receive the first organizes intervention leading towards improving the oral health status and reducing prevalence of oral diseases through increasing their attitude.

References:

1. Department of Health. An oral health strategy for England, London: department of health, 1994.
2. La evidencia de la eficacia de la promoción de la salud. In "La evidencia de laeficacia de la promoción de la salud" edited and translated by the Spanish Ministerio de Sanidad y Consumo. RCOE 2002;7:537-45.
3. Downer MC. The improving oral health of United Kingdom adults and prospects for future. Br Dent J 1991;23:154-58.

4. Denielsen B, Manj F. Transition dynamics in experimental gingivitis in human. J Periodontol 1984,24:258-60.
5. Ullah MS, Aleksejunience J, Eriksen HM. Oral health of 12-year-old Bangladeshi children. Acta Odontol scand 2002;60(2):117-22.
6. Redmond CA, Blinkhorn FA, Kay EJ, et al. A cluster randomized controlled trial testing the effectiveness of a school-based dental health education program for adolescents. J Public Health Dent 1999;59(1):12-17.
7. Al-Ansari JM, Al-Jairan LY, Gillespie GM. Dietary habits of the primary to secondary school population and implications for oral health. J Allied Health 2006;35(2):75-80.
8. Freeman R, Maizels J, Wylir M, et al. The relationship between health-related knowledge, attitude and dental health behavior in 14-16-year old adolescents. Com Dent Health 1993;10:397-404.
9. Smyth E, Caamaño F, Fernández-Riveiro P. Oral health knowledge, attitude and practice in 12-year-old schoolchildren. Med Oral Pathol Oral Cir Bucal 2007;12(8):E614-20.
10. Al-Omiri K, Al-Wahadni AM. Oral Health attitudes, knowledge and behavior among school children in North Jordan. J Dent Edu 2006:179.
11. Mirja BAK, Izhar F. Oral health attitude, knowledge, and behavior amongst high and low socioeconomic school going children in Lahore, Pakistan. Pakistan Oral & Dent J 2011;31(2). Available from: URL: http://www.podj.com.pk/
12. Haghighati F, Mofidi F. An evaluation of high school female student's knowledge and behavior regarding oral hygiene. Iranian J Publ Health 2006;35(1):82-87.
13. Zhu L, Petersen PE, Wang HY, et al. Oral health knowledge, attitude and behavior of children and adolescents in China. Int Dent J 2003;53:289-98.