



# Knowledge on Oral Hygiene and Oral Health Status among the Secondary School Students

S. M. Ashraful Hayet\*, Md. Hafizul Islam, M. A. Awal

Department of Dentistry, Rangpur Medical College Hospital, Rangpur, Bangladesh

## Email address:

ashraful.hayet@gmail.com (S. M. A. Hayet)

## To cite this article:

S. M. Ashraful Hayet, Md. Hafizul Islam, M. A. Awal. Knowledge on Oral Hygiene and Oral Health Status among the Secondary School Students. *International Journal of Dental Medicine*. Vol. 1, No. 2, 2015, pp. 17-21. doi: 10.11648/j.ijdm.20150102.12

---

**Abstract:** Background: Dental disease is very common in our country. Lack of awareness about the dental disease and proper treatment facilities are the main cause of poor dental condition. Improper tooth brushing among the child age group and poor socio-economic status are the main cause of developing dental disease commonly in rural or in urban area also. Objectives: To assess the knowledge on oral hygiene and dental status among secondary school student in Rangpur, Bangladesh. Materials and Methods: This study was carried out to evaluate the oral health status and oral hygiene practice in secondary school going students (Class VIII to class X) age group in 13 to 16 years. In this cross sectional study, purposively selected 96 students were interviewed on oral health status using structured questionnaire and a checklist. Results: Most of the students, 93.76% believe that milk and vegetables were the essential food for teeth, and 97.92% believe that sweet is harmful for teeth and 72% believe tooth decay is the main tooth problem. It is revealed that 50.08% said oral microorganism and food practice are the reason for tooth cavity and 69.79% said unhealthy gingival is the main reason for gum bleeding. In this study it is found that, 65.62% students DMFT score is 0 and mean DMFT Score is 0.55, 66% students had oral Hygiene Index is good (0.1-1.0), 25% students oral Hygiene Index is fair (2.1-3.0). Conclusion: The present survey showed that majority of students had an adequate level of knowledge on oral health but low level of oral health practices. Age had no influence on the level of oral health knowledge and practices of students. A good quality of life is possible if students maintain their oral health and become free of oral disease.

**Keywords:** Oral Hygiene, Oral Health, Knowledge, School Students

---

## 1. Introduction

Dental disease is very common in our country. Caries, gingivitis and periodontitis are the common dental disease. Lack of awareness about the dental disease and proper treatment facilities are the main cause of poor dental condition<sup>1, 2</sup>. Improper tooth brushing among the child age group and poor socio-economic status are the main cause of developing dental disease commonly in rural or in urban area also.<sup>3</sup> Apart from some developmental and structural defects, human teeth may suffer from decay and are lost eventually if proper care and precautionary measures are not employed in due time. Dental decay, most commonly known as dental caries, is a common cause of tooth loss among children and adults all over the world. Early childhood caries can start to develop as soon as teeth erupt and cavities may be visible as early as 10 months of age.<sup>4</sup>

A child is a precious gift which has lots of potential within, which can be the best resource for nation if raised and molded in good manner. Dental diseases affecting the child are not

same as affecting that adult. The target organs are the same like, teeth, gingival, but the etiopathogenesis are different because, primary dentition is morphologically different, food habits are different from that of adult and poor control over maintenance of oral hygiene leads to common dental problems that include dental plaque, dental caries, malocclusion, gingivitis etc.

Oral diseases affect the most basic human need: the ability to eat and drink, swallow, maintain proper nutrition, smile and communicate. Oral health and overall health and well being are inextricably connected. Periodontal or gum diseases are now being investigated as potential risk factors for the development of systemic disease.<sup>5</sup> For instance, accumulating evidence now points to a possible link between periodontal diseases and the incidence of premature, low-birth weight babies, cardiovascular disease and pulmonary disease. Oral diseases affect not only the health of the oral cavity and associated craniofacial structures, but can be detrimental to the overall health and well-being of individuals. Adequate information on pattern of dental diseases and to take necessary

preventive programme to fight against the dental problems is a burning issue in health sectors.<sup>6,7</sup> In spite of this, dental caries and periodontal diseases are still the major cause for extraction, though their relative contribution to tooth mobility varies from place to place. Poor oral health and tooth loss have a profound effect on general health, quality of life, and can lead to poor dietary habits. Although the patterns dental disease are gradually changing, dental caries and periodontal disease are still the most important problems that are frequently seen and observed among the majority of the patients attending to the dental hospitals.<sup>8</sup>

Oral health as an essential aspect of general health can 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 well-being”.<sup>9</sup> Oral health knowledge is considered to be an essential prerequisite for health-related practices, and studies have shown that there is an association between increased knowledge and better oral health. Those who have assimilated the knowledge and feel a sense of personal control over their oral health are more likely to adopt self-care practices.<sup>10</sup> Dental public health represents a new non-clinical specialty, which refers to dental health care evaluation and dental health promotion in order to meet the population needs. The most of the common dental disease can be controlled only if the individual patient exercises a considerable measure of initiative and responsibility.

Oral health is a vital part of general health and is a valuable asset of every individual. Oral diseases are one of the most common of non-communicable diseases affecting varied population. It is an important public health problem owing to the prevalence, socio-economic aspect, expensive treatment and lack of awareness.<sup>11</sup> Oral health status has a direct impact on general health and conversely general health influences oral health.

Though oral and dental diseases are rarely life threatening, they do have an impact on the quality-of-life. The health-care in India is still under various stages of development with vast differences between regions and states. For the oral health of the general population at the global level, marked changes in oral disease pattern has been observed over past decades. The level of oral health knowledge and practices of primary school students is unknown and worthy of investigation, and this study aimed at assessing the level of oral health knowledge and practices of primary school students in Rangpur, Bangladesh.

## 2. Methodology

A descriptive cross-sectional study was carried out in secondary school at Rangpur from July 2013 to September 2013. Ninety six students of class VIII to X were selected purposively as study sample. A structured questionnaire (both Bengali and English versions) considering all objectives of the study was used in data collection. Data were collected through face-to-face interview of the students, and by oral examination. Dental examination of the students and interview of them

were done after taking verbal consent of the class teachers. Data were collected on the basis of Age, Sex, knowledge about dental problem, oral hygienic index and dental status. Materials used for oral examination were –dental caries probe, dental mirror, cotton, antiseptic solution. The students’ dental examinations were carried out with torch light on normal chair. Pointed end of the caries probe was gently pressed over the black marks if any on the tooth surface to identify carious teeth. Tip of the periodontal probe was introduced into the selected gingival margin to score the gingival condition. The data were checked before leaving the interview area and necessary correction were made at the spot. Statistical Analysis: SPSS software package (version 17) was used to analyze the data. Descriptive statistics were used for all variables. Values were expressed as percentage.

## 3. Results

*Table 1. Distribution of respondents according to Socio economic status.*

| N=96               | Frequency | Percent |
|--------------------|-----------|---------|
| Sex                |           |         |
| Male               | 28        | 29.17   |
| Female             | 68        | 70.83   |
| Age                |           |         |
| 13-14 Years        | 57        | 59.38   |
| 15-16 Years        | 39        | 40.63   |
| Study Class        |           |         |
| Class VIII         | 55        | 57.29   |
| Class X            | 41        | 42.71   |
| Fathers Education  |           |         |
| Illiterate         | 2         | 2.08    |
| Primary            | 10        | 10.42   |
| S.S.C              | 29        | 30.21   |
| H.S.C              | 30        | 31.25   |
| University         | 24        | 25.00   |
| Others             | 1         | 1.04    |
| Mothers Education  |           |         |
| Illiterate         | 5         | 5.21    |
| Primary            | 21        | 21.88   |
| S.S.C              | 27        | 28.13   |
| H.S.C              | 31        | 32.29   |
| University         | 12        | 12.50   |
| Fathers Occupation |           |         |
| Service            | 59        | 61.46   |
| Business           | 27        | 28.13   |
| Agriculture        | 10        | 10.42   |
| Mothers Occupation |           |         |
| Housewife          | 80        | 83.33   |
| Service            | 15        | 15.63   |
| Business           | 1         | 1.04    |

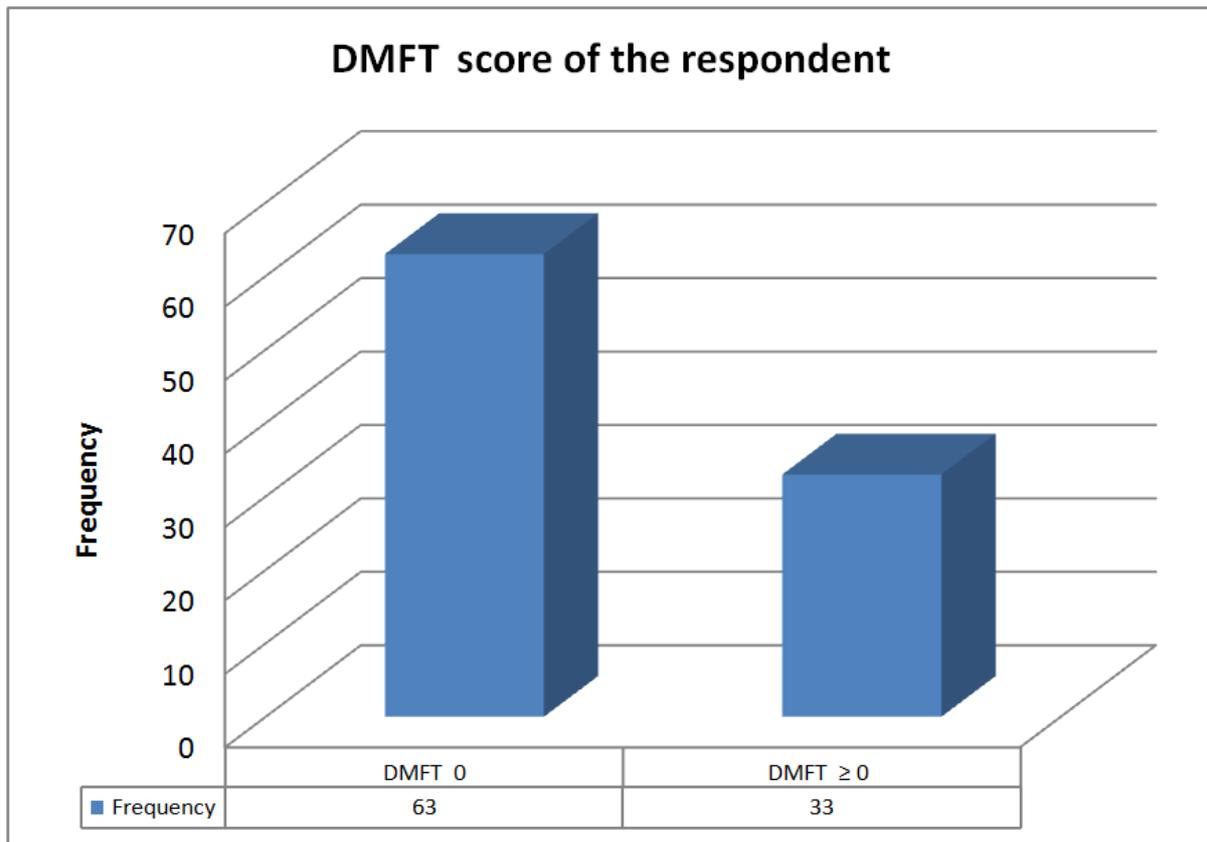
Table: 1 shows that among 96 students 29.17 % respondents

were male and 59.38% were in the age group 13-14 years and 40.63% in the age group 15-16 years. 2.08% students fathers were illiterate, 10.42% were primary level, 30.21% in S.S.C level, 31.25% in H.S.C level and 25% were in university level. Beside this 5.21% student's mothers were illiterate, 21.88% were in primary level, and 28.13% in S.S.C level, 32.29% in H.S.C level and 12.5% were in university level. It also shows that 61.46% students fathers occupation were service, 28.13% in business, and 10.42% in agriculture. On the other hand 83.33% students mothers occupation were housewife, 15.63% were in service and the rest were business.

Table: 2 shows that, 47.92% respondent were known about tooth problem among them 72% believe tooth decay is the main tooth problem, 40.63% seems that swelling Gingiva and 10.42% believe Angular Stomatitis/chilitis were the tooth problem. Half of the respondents said Oral microorganism and food particle were the reason for tooth cavity, 45.83% said dental caries were the main reason for tooth cavity and 2.08% said genetically. Half of the respondents found black spot, 42.71% said bleeding from gingival, and 16.9% said broken teeth and 4.17% said Abscess and Pus discharge were the causes of tooth cavities. 69.79% said that unhealthy gingival were the main reason for gum bleeding and 29.17% said it were gingival recession for gum bleeding. It also shows that 64.58% said regular tooth brushing can save them from gum bleeding, 35.42% said eating soft fruit can save them from gum bleeding.

**Table 2.** Knowledge about dental problem among the respondents.

| N=96                                    | Frequency | Percent |
|---|-----------|---------|
| Do you Know About tooth Problem         |           |         |
| Yes                                     | 46        | 47.92   |
| No                                      | 50        | 52.08   |
| Normally what are the tooth problem     |           |         |
| Tooth Decay                             | 72        | 75.00   |
| Swelling Gingiva                        | 39        | 40.63   |
| Angular Stomatitis/chilitis             | 10        | 10.42   |
| What are the sign of tooth cavities     |           |         |
| Dental Caries                           | 44        | 45.83   |
| Genetically                             | 2         | 2.08    |
| Oral Micro Organism and Food particle   | 50        | 52.08   |
| What are the causes for tooth cavities  |           |         |
| Black Spot                              | 48        | 50.00   |
| Bleeding from Gingiva                   | 47        | 42.71   |
| Abscess and Pus discharge               | 13        | 4.17    |
| Broken tooth                            | 4         | 3.13    |
| What do you mean by gum bleeding?       |           |         |
| Healthy Gingiva                         | 1         | 1.04    |
| Unhealthy Gingiva                       | 67        | 69.79   |
| Gingival recession                      | 28        | 29.17   |
| How you save yourself from gum bleeding |           |         |
| Regular Tooth Brushing                  | 62        | 64.58   |
| Eating soft fruit                       | 34        | 35.42   |



**Figure 1.** DMFT Score of the respondent.

Figure 1 shows that, 65.62% respondents DMFT were good, on the other hand 34.38% respondents DMFT  $\geq 0$  that were high. Here, Mean DMFT =0.55 and Std. Dev.

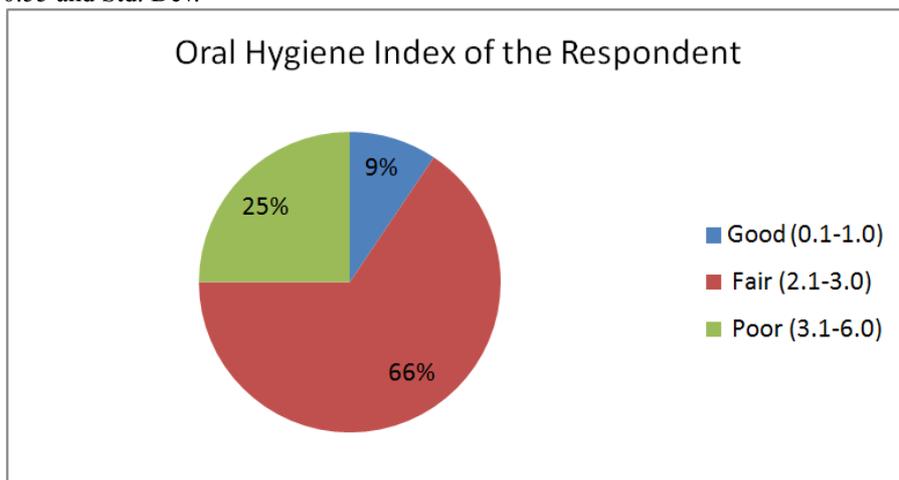


Figure 2. Distribution of the respondent according to Oral Hygienic Index.

Figure 2 shows that, 66% respondents oral Hygiene Index were good (0.1-1.0), 25% respondents oral Hygiene Index were fair (2.1-3.0) and 9% students oral Hygiene Index were poor (3.1-6.0). Here, mean oral Hygiene Index is 2.38 and Std. Deviation is 0.98.

#### 4. Discussion

This study assessed the level of oral health knowledge and oral hygiene practices of secondary school students. The cross-sectional study design took into consideration accessibility to the target group. In our observation of 96 students 29.17 % respondents were male and 70.83 % were female. Among them 59.38% were in the age group 10-11 years and 40.63% in the age group 12-13 years, 57.29% were in the study class six and 42.71 % in the class seven. We found our survey that sweet/sticky foods are the contributory factor of dental and periodontal disease. In our study, 47.92% respondent were known about tooth problem among them 72% believe tooth decay were the main tooth problem, 50.08% said Oral micro organism and food particle were the reason for tooth cavity and 45.83% said dental caries were the main reason for tooth cavity.

And this study 42.71% of total students suffering from gingival disease which is similar to the study of Dr. A.K Joarder<sup>12</sup> which was 40.7% (1988).The survey revealed that 69.79% students said unhealthy gingival were the main reason for gum bleeding and 29.17% said it were gingival recession for gum bleeding. It also shows that 64.58% said regular tooth brushing can save them from gum bleeding, 35.42% said eating soft fruit can save them from gum bleeding. Whereas avoiding of sweet food and intake of sour food that is vitamin "C" containing food decrease the disease.

The survey shows that, 73.96% use brush and paste, 19.79% use brush and tooth powder and 6.25% use coal and finger for brushing their teeth. In comparison of a study of Fakir MM and Alam KMU (2009)<sup>3</sup> it is found that 47.1% use tooth brush and tooth paste, 8.2 % use brush and tooth powder, 25.6% use finger

and tooth powder 18.1% use finger and charcoal and only 1% use meswak.

The survey shows that, 98.96% answered they were brushing regularly and of them 75% brushing two times and 23.96% brushing one times.96.88% said they were brushing morning after get up and 42.71% said they were brushing before bed and 65.63% respondents properly clean teeth and face. In a previous study, it is found oral hygiene practices, in particular, the daily tooth cleaning without tooth brush high (63.8 %) and tooth brush user (33.2 %). Most of the respondents reported to be brushing on daily basis mainly at morning (76.8%) and two times 23.2 % and this may be one of the factors for high prevalence of poor oral hygiene as depicted by the presence of plaque, calculus, caries, gingival bleeding.

It is revealed that 75% students said about television and 25% said magazine and Newspaper is the media that they have learn about dental care. On the other hand 60.42% learn from dentist and 20.83% said they learn from parents about dental care. The survey revealed that in the age group 10-13 mean DMFT is 0.55 for the permanent teeth which is lower to the study of Fakir MM and Alam KMU (2009)<sup>3</sup> it is found that in the age group 08-12 DMFT index it is 1.05 for the permanent teeth. The study shows that in the context of OHI, 66% respondents oral Hygiene Index were good (0.1-1.0), 25% respondents oral Hygiene Index were fair (2.1-3.0) and 9% students oral hygiene Index were poor (3.1-6.0)

#### 5. Conclusion

The present survey showed that the levels of oral health knowledge and attitudes were low. Poor quality of life in terms of experience of pain and discomfort from teeth was common in interviewed; however, due to limited access to dental care most people remained underserved. Dental visits were infrequent and mostly carried out for emergency care. The multivariate analyses of dental caries experience revealed the existence of socio-behavioral determinants of oral health;

dental caries and pain are currently somewhat higher among the privileged population groups. Bad mouth breath is a cause of concern among primary school children and significantly associated factors includes gum bleeding on oral hygiene practice by oral hygiene practicing materials and tooth decay

## Acknowledgement

Authors here by acknowledge to the students of 2<sup>nd</sup> year (department of Dental Public Health) BDS of Rangpur Medical College Dental Unit, Rangpur, Bangladesh who cooperated in study by participating in data collection.

---

## References

- [1] Sarwar AFM, Kabir MH, et al. Oral hygiene practice among the primary school children in selected rural areas of Bangladesh. *Dhaka National Med. Coll. Hos.* 2011; 18(01):43-48
- [2] Helen W & Ian N. Evidence-based periodontal disease prevention and treatment: introduction. *Periodontology* 2000, 37: 9–11
- [3] Fakir MM, Alam KMU, Mamun FA, Sarker N. A Survey on Oral Health Condition in Primary School Children. *Medicine today* 2010; 22(02): 70-72.
- [4] Farzan MSA, Aayeed MA, Debnath S, Zerlin I, Afrin S. Oral health condition among selected school children in Dhaka city. *Bangladesh J Dent Edu Res* 2013; 3(1):21-24.
- [5] Mamun MA & Ahmad MS. Knowledge and Practice about Oral Hygiene of School Children in Northern Region of Bangladesh. Survey 2014; Department of Dental Public Health, Rangpur Dental College, Rangpur, Bangladesh.
- [6] Poul EP. Integrated prevention of oral and chronic disease- the challenges to dental public health. *European Association of Dental Public Health, Meeting 2006.* [www.eadph.org](http://www.eadph.org) viewed on 15/06/2015.
- [7] Oral health in America: A report of the surgeon general 2000. Downloaded from <http://www.nidcr.nih.gov> on 15/06/2015.
- [8] Anand PS, Kuriakose S. Causes and Patterns of Loss of Permanent Teeth among Patients Attending a Dental Teaching Institution in South India. *J Contemp Dent Pract* [Internet]. 2009 Sept; 10(5). Available from: <http://www.thejcdp.com/journal/view/causes-and-patterns-of-loss-of-permanent-teethamong-patients-attending-a-d>
- [9] Lorna Carneiro, Msafiri Kabulwa, Mathias Makyao, Goodluck Mrosso, and Ramadhani Choum, "Oral Health Knowledge and Practices of Secondary School Students, Tanga, Tanzania," *International Journal of Dentistry*, vol. 2011, Article ID 806258, 6 pages, 2011. doi:10.1155/2011/806258
- [10] Rafi AT, Syed MY, Zakirulla M, Nasim VS, Mohammad Al Z. Oral hygiene knowledge and practices among school children in a rural area of southern Saudi Arabia. *Int J Contmp Dent* 2012; 3(1):57-62.
- [11] Ahmad MS, Mamun MA, Islam MS, Rubby MG, Alam MM. Oral Health Status among the Tobacco Workers in Rangpur, Bangladesh. *Rangpur Den Coll J* 2014; 2(1):13-16
- [12] Begum A. Joarder MAK. Review of dental carries trends in Bangladesh. *Bangladesh dental Journal* 1993-94. 10(1) :9-13.