

Original Article**Awareness towards Oral Health Management among the Rural Adults in Bangladesh**

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For Correspondence*Abstract**

Background: The prevalence of oral diseases has increased, mainly for individuals from low socio-economic groups¹. Recently, it has been recognized that oral infection, especially periodontitis, may affect the course and pathogenesis of a number of systemic diseases, such as cardiovascular disease, bacterial pneumonia, diabetes mellitus, and low birth weight^{2,3}.

Objectives: To assess the knowledge, attitudes and practice regarding oral health management among adults in a selected rural area of Bangladesh.

Materials and Methods: This was a cross-sectional study which was conducted at rural area of Chandra gram village, Bajitpur, Kishoreganj. The study was conducted for a period of 1 year which effect from 1st January 2021 to 31st December 2021, among the rural adults. Total respondents were 125. The sampling technique will be convenience of non-probability type with eligible criteria and willing to participate in the study.

Results: Knowledge about oral health majority 115(92%) had said yes, meaning of oral health majority 87(69.6%) meant brushing of teeth, complications can occur if they do not maintain their oral health majority 115(92%) told yes, need to go to dentist due to problem releted to oral health majority 113(90.4%) said yes, smoking leads to bad oral health management majority 115(92%) told yes. betel leaf and nuts chewing proceeds to good oral health management majority 92(70.6%) said no, prevention of problem related to bad oral health management majority answered 77(61.6%) only brushing of teeth. Regarding the asking the reason for last dental checkup majority 19(30.1%) for dental caries

Conclusion: According to this study, I have come to know that most of the people were illiterate and they do not know what actually the oral health means.

Introduction

Dental health is a fundamental component to general health, well-being, and quality of life. Dental health enables an individual to speak, eat and socialize. Dental health implies being free of chronic oro-facial pain and the absence of mouth diseases such as dental caries (tooth decay), periodontal disease (gum disease)¹. The burden of dental disease affects children, adults and the elderly, disrupts life and causes considerable suffering, discomfort, embarrassment, and economic hardship. Dental caries generally is under control in most high income countries, much of the disease still remains untreated in populations of low and middle-income countries. In rich and in poor countries, the greatest burden of dental diseases lies on the disadvantaged and poor population groups, e.g. people of low education, low income, unemployed, or elderly and disabled people². Over the past 20 years, a marked decline in the prevalence of dental diseases has been observed in several Western industrialized countries. Improved dental health is seen in the systematic decline in dental caries and a continually growing number of caries free individuals. This is ascribed to population-based preventive programs with effective use of fluoride, improved participation in dental health programs, changes in oral hygiene and sugar intake habits³. On the other hand, in many developing countries an increase in dental caries has resulted from unhealthy dietary habits, poor dental hygiene habits, limited use of fluoride and near to the ground use of dental health services, if available. In addition, urbanization and adoption of Western lifestyles observed in many developing countries and the absence of public prevention programs have caused a rapid increase in dental caries⁴. The principal causes to poor dental health are shared by those responsible for chronic diseases; first of all, these factors are related to poor diet, tobacco use, excessive use of alcohol and physical inactivity⁴. Joint action of communities, professionals and individuals aimed at reducing the impact of sugar consumption and emphasizing the beneficial impact of fluoride can

prevent dental caries and tobacco intervention and proper oral hygiene can help prevention of periodontal disease⁵. A study was done in London among 1072 patients to determine their knowledge on correlation between smoking and periodontal disease. This study highlights a general lack of awareness between smoking and periodontal diseases with only 6% of respondents knowing of this link. Seven per cent of respondents that were.

Knowledge on Oral Hygiene and Oral Health Status among the Secondary School Students in Department of Dentistry, Rangpur Medical College Hospital, Rangpur, Bangladesh found 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 students⁹. The level of awareness and dental health knowledge in diabetic patients is good in Saudi Arabia. About the attitude and practice of the diabetic patients towards oral health, the overall oral hygiene measures in diabetic patients were found to be good in this study. Most of the patients consult the dentist, brush Journal of Education and Practice their teeth at least Once daily and regularly visit the dentist at least once a year for checkup¹⁰. Dental care is the maintenance of healthy teeth and may refer to: Oral hygiene, the practice of keeping the mouth and teeth clean in order to prevent dental disorders Dentistry, the professional care of teeth, including professional oral hygiene and dental surgery Dental surgery, any of a number of medical procedures that involve artificially modifying

In the oral health context, literacy can be considered as the skills necessary for people to understand the causes of poor oral health, to learn and adopt fundamental aspects of positive oral self-care behaviors, to communicate with oral health care providers, to place their names on dental treatment waiting lists or organize appointments, to find their way to the dental clinic, to fill out the necessary forms and to comply with any required regimes, including follow-up appointments and compliance with prescribed medication. Lack of

oral health literacy (OHL) can create a significant barrier to prevent oral disease and to promote oral health.¹ The general perception that dentistry is expensive keeps many people away from the registered professionals on one hand, while on the other hand making them hostage to the services of nonregistered lay practitioners. The result is that the people of Bangladesh, in general, have a very low level of awareness regarding oral health and hygiene². Although much is known about health literacy in the medical context, little is known about oral health literacy (OHL) and its relationship to clinical conditions, patients'

Subjective assessments, and OHL's perceived impacts on daily life in the community. A working group defined OHL as "the degree to which individuals have the capacity to obtain, process, and understand basic oral health information and services needed to make appropriate health decisions"³. Oral health literacy is the new imperative for better oral health as health literacy is now considered a determinant of health⁴. But the problem is when one cannot make appropriate health decisions and the burden of oral disease is particularly high for the disadvantaged and poor population groups in both developing and developed countries. In addition to poor living conditions, the major risk factors relate to unhealthy lifestyles (i.e. poor diet, nutrition and oral hygiene and use of tobacco and alcohol), and limited availability and accessibility of oral health services⁵. Health literacy encompasses several abilities including word recognition, reading comprehension, communication skills, and conceptual knowledge. To date, conceptual knowledge has not been included in oral health literacy research⁶. Researchers hypothesize that an individual's health literacy is represented by a constellation of skills and abilities, including word recognition, reading comprehension, communication proficiency, and conceptual knowledge⁷. Lack of education along with traditional beliefs and socio-cultural factors lead to development of false perceptions and myths. The concept of dental myth usually emerges from false

traditional beliefs and non-scientific knowledge. This is embedded in the psyche of future generations over a period of time, and, thus, creates hindrance in the recognition of scientific and contemporary Oral diseases are a big public health problem all around the world. The prevalence of oral diseases has increased, mainly for individuals from low socio-economic groups¹. Recently, it has been recognized that oral infection, especially periodontitis, may affect the course and pathogenesis of a number of systemic diseases, such as cardiovascular disease, bacterial pneumonia, diabetes mellitus, and low birth weight^{2, 3}. Dental caries is one of the major oral diseases for children, which is caused by dental plaque and is directly related with poor oral hygiene practices⁴⁻⁷. Unfortunately oral hygiene has mostly remained an ignored and unrealized social problem that has steadily become a huge public health burden⁸. Bangladesh is no exception to this issue. Around 46% of 12-year-old children in a study based in rural Bangladesh reported having bleeding gums and calculus deposits on their teeth⁹. Dental caries was also found to be associated with a poor quality of life and low height, weight, and body mass index in previous studies from Bangladesh⁵.

Dental health is a fundamental component to general health, well-being, and quality of life. Dental health enables an individual to speak, eat and socialize. Dental health implies being free of chronic oro-facial pain and the absence of mouth diseases such as dental caries (tooth decay), periodontal disease (gum disease)¹. The burden of dental disease affects children, adults and the elderly, disrupts life and causes considerable suffering, discomfort, embarrassment, and economic hardship. Dental caries generally is under control in most high income countries, much of the disease still remains untreated in populations of low and middle-income countries. In rich and in poor countries, the greatest burden of dental diseases lies on the disadvantaged and poor population groups, e.g. people of low education, low income, unemployed, or elderly and disabled people². Over the past 20 years, a marked decline in the

prevalence of dental diseases has been observed in several Western industrialized countries. Improved dental health is seen in the systematic decline in dental caries and a continually growing number of caries free individuals. This is ascribed to population-based preventive programs with effective use of fluoride, improved participation in dental health programs, changes in oral hygiene and sugar intake habits³. On the other hand, in many developing countries an increase in dental caries has resulted from unhealthy dietary habits, poor dental hygiene habits, limited use of fluoride and near to the ground use of dental health services, if available. In addition, urbanization and adoption of Western lifestyles observed in many developing countries and the absence of public prevention programs have caused a rapid increase in dental caries⁴. The principal causes to poor dental health are shared by those responsible for chronic diseases; first of all, these factors are related to poor diet, tobacco use, excessive use of alcohol and physical inactivity⁴. Joint action of communities, professionals and individuals aimed at reducing the impact of sugar consumption and emphasizing the beneficial impact of fluoride can prevent dental caries and tobacco intervention and proper oral hygiene can help prevention of periodontal disease⁵. A study was done in London among 1072 patients to determine their knowledge on correlation between smoking and periodontal disease. This study highlights a general lack of awareness between smoking and periodontal diseases with only 6% of respondents knowing of this link. Seven per cent of respondents that were.

Knowledge on Oral Hygiene and Oral Health Status among the Secondary School Students in Department of Dentistry, Rangpur Medical College Hospital, Rangpur, Bangladesh found 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 students⁹. The level of awareness and dental health knowledge in diabetic patients is good in Saudi Arabia.

About the attitude and practice of the diabetic patients towards oral health, the overall oral hygiene measures in diabetic patients were found to be good in this study. Most of the patients consult the dentist, brush Journal of Education and Practice their teeth at least once daily and regularly visit the dentist at least once a year for checkup¹⁰. Dental care is the maintenance of healthy teeth and may refer to: Oral hygiene, the practice of keeping the mouth and teeth clean in order to prevent dental disorders Dentistry; the professional care of teeth, including professional oral hygiene and dental surgery. Dental surgery, any of a number of medical procedures that involve artificially modifying

Materials and Methods

This was a cross-sectional study which was conducted among the rural adults of Chandra gram village. The sample size was 125 respondents. The study was conducted for a period of 1 year which effect from 1st January 2021 to 31st December 2021, out of which 30th October to 12th November was spent for data collection. An interview was developed with the help of self-administered semi-structured written questionnaires for the collection of required documents.

First of all verbal consent with greetings and seeking permission was taken from the respondents before the collection of data. They were informed about the objectives of the study. They were also assured that the provided data will remain confidential and will only be used for academic or medical purpose. The study was conducted by face to face interview based on a developed written questionnaire. After compilation of data, the obtained data were checked and verified. Then data were analyzed by excel program from the Master Sheet.

Results

The results had been shown in tabular and graphical forms. The interpretation of the tables and graphs are as follows:

Table I : Distribution of the respondents according to their occupation (n=125)

Occupation	Frequency	Percentage (%)
Businessman	20	16
Service holder	13	10.4
Student	10	8
Farmer	14	11.2
Day laborer	12	9.6
Housewife	47	37.6
Others	9	7.2
Total	125	100

The distribution of the respondents by occupation out of 125 respondents most were housewives 47(37.6%), Businessman 20(16%), Farmer 14(11.2%), Service holder 13(10.4%), Day laborer 12(9.6%), Student 10(8%) and others 9(7.2%).

Table II : Distribution of the respondents according to the source of drinking water (n=125)

Source of Drinking Water	Frequency	Percentage (%)
Rain	0	0
Pond	1	0.8
Tap	4	3.2
Deep Tube well	36	28.8
Shallow Tube well	84	67.2
Others	0	0
Total	125	100

Sources of drinking water majority 84(67.2%) had shallow tube well and followed by 36(28.8%) had deep tube well, 4(3.2%) tap water and only 1(0.8%) pond water.

Table III : Distribution of the respondents according to complications (n=125)

name of complications	Frequency	Percentage (%)
Oral ulcer	19	14
Foul Breathing	17	12
Teeth bleeding	0	0
Gum bleeding	9	7
Dental Carries	20	14
Oral cancer	1	1
None	11	8
All	18	13
Foul breathing & oral cancer	30	22
Total	125	100

Complications out of 125 respondents majority 30(26%) said foul breathing and oral cancer followed by dental caries 20(17.4%), oral ulcer 19(16.5%), all (oral ulcer, foul berthing, tooth bleeding, gum bleeding and oral cancer 18(15.6%), foul breathing 17(14.7%), None 11(9.6) and only few gum bleeding 9 (7.8).

Table IV : Distribution of the respondents according to timing of brushing teeth per day (n=125)

Timing of brushing teeth per day	Frequency	Percentage (%)
Once daily	43	34.4
Twice daily	76	60.8
Thrice daily	5	4
Never	1	0.8
Total	125	100

Duration of brushing of their teeth majority 76(60.8%) brushed their teeth twice daily, 43(34.4%) once daily, 5(4%) thrice daily and only 1(.8%) never brushed

Table V : Distribution of respondents according to reason for last dental checkup (n=125)

Reasons for last Dental check up	Frequency	Percentage (%)
Follow up	5	7.93
Toothache	15	23.8
Dental carries	19	30.15
Tooth scaling	6	9.52
Tooth extraction	10	15.87
Gum bleeding	1	1.58
Toothache & Dental carries	6	9.52
Dental carries, tooth scaling	1	1.58
Total	63	100

Reason for last dental checkup majority 19(30.1%) for dental caries, 15(23.8%) for toothache, 10(15.9%) tooth extraction, 6(9.5%) for tooth scaling and toothache with dental caries and only 1(1.58%) for gum bleeding and dental caries with tooth scaling.

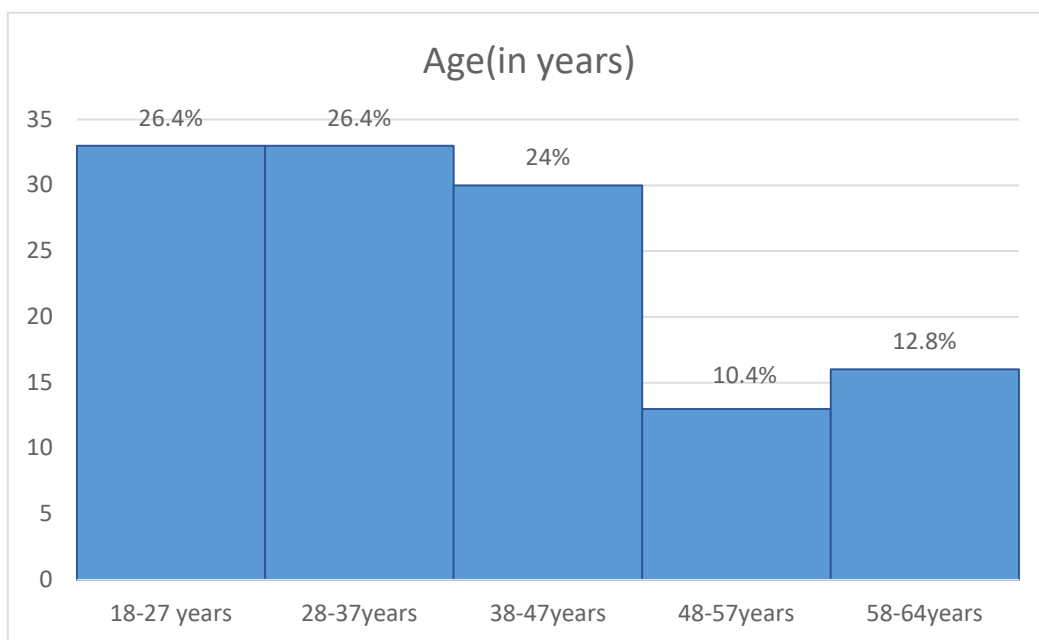


Figure 1: Distribution of the respondents according to age (in years) (n=125)

Out of 125 respondents most of the respondents 33(26.4%), 33(26.4%), 30(24%), 16 (12.8%) and 13(10.4) were of age group 18 to 27 years,28 to 37 years,38 to 40 years,58 to 64 years and 48 to 57 years respectively

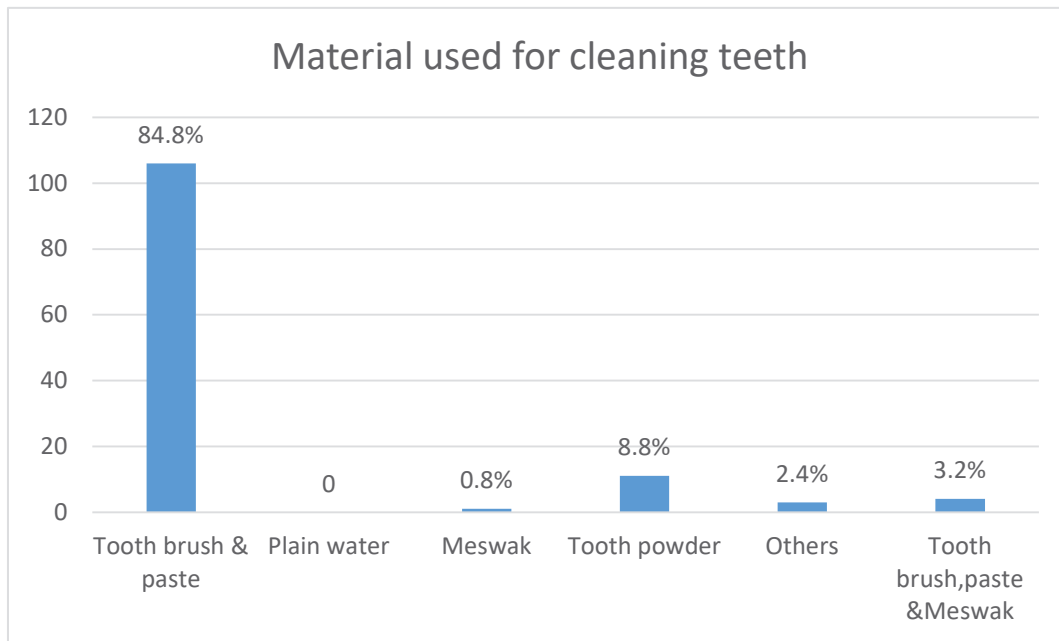


Figure 2: Distribution of the respondents according to material used for cleaning teeth (n=125)

Regarding the use to clean their teeth majority 106(84.8%) use tooth brush and paste, 11(8.8%) tooth powder, 4(3.2%) tooth brush with paste and meswak, others 3(2.4%) and only 1(.8%) meswak

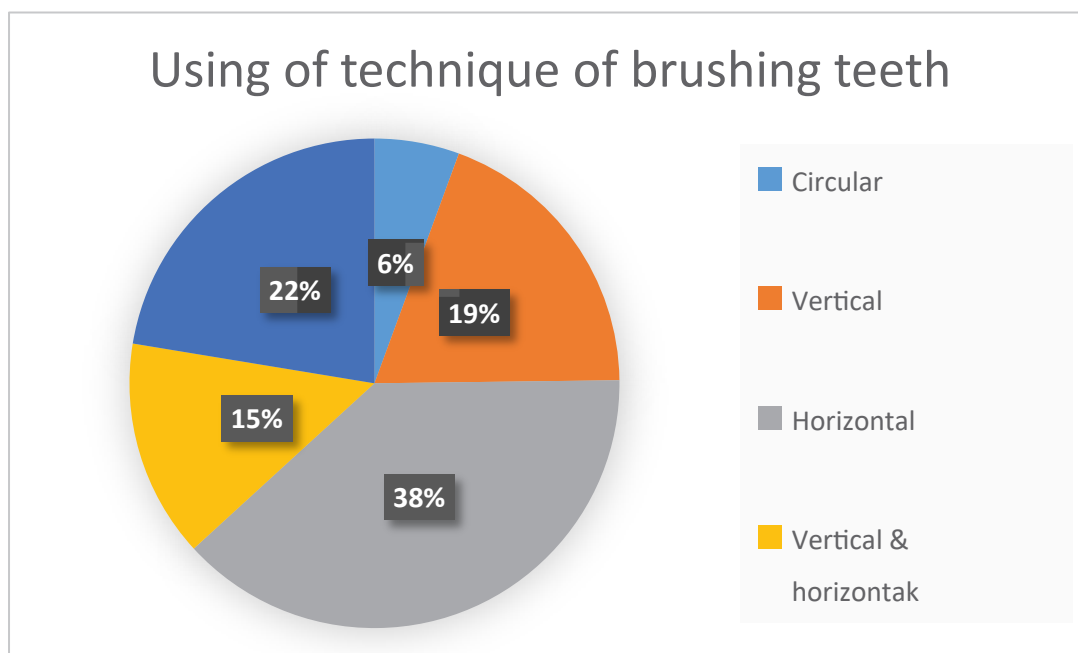


Figure 3: Distribution of the respondents according to using of technique of brushing teeth (n=125)

Regarding their technique use of brushing majority 48(38.4%) said horizontal, all (circular, vertical and horizontal) 28(22.4%), vertical 24(19.2%), vertical and horizontal combinedly 18(14.4%) and only few use the technique of circular 7(5.6%)

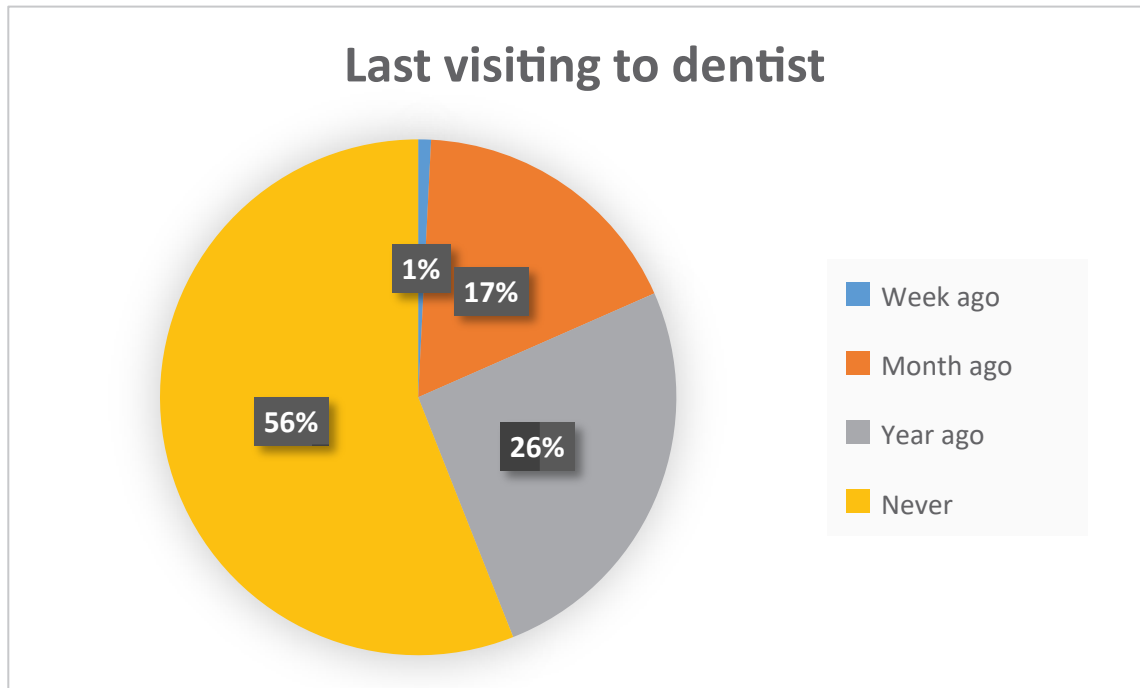


Figure 4: Distribution of the respondents according to last visiting to dentist (n=125)

Regarding the duration of last visit their dentist majority 70(56%) never visited, followed by 32(26.5%) visited year ago, 22(17.6%) a month ago and only 1(.8%) respondent a week ago

Discussion

A descriptive type of cross-sectional study was done to determine the knowledge, attitude and practice of oral health management among adults in a selected area of rural Bangladesh. A total of 125 rural adults of Chandra gram village, Bajitpur, Kishoreganj were selected purposively.

Socio-demographic information:

Out of 125 respondents most of the respondents 33(26.4%),33(26.4%),30(24%),16(12.8%) and 13(10.4) were of age group 18 to 27 years,28 to 37 years,38 to 40 years,58to 64 years and 48to 57 years respectively. Regarding gender 69(52.2%) male and 56(44.8%), their religion status almost 124(99.2%) were Muslims and only 1(0.8%) was Christian. Among the 125 respondents, educational status of most of them 40(32%) were class 1 to 5 and followed by 23(18.4%) class 6 to 10, 21(16.8%) S.S.C passed, 18(14.4%)

H.H.C passed, 11(8.8%) illiterate, 9(7.2%) graduate and a few 3(2.4%) were masters. Most were housewives 47(37.6%), Businessman %) and n 20(16%), Farmer 14(11.2%), Service holder 13(10.4%), Day laborer 12(9.6%), Student 10(8%) and others 9(7.2%). Monthly family income maximum 46(36.8%) had more than 20000 taka and followed by 26(20.8%), 26(20.8%), 15(12%), 12(9.6%), 15001to20000, 10001to 15000 taka, 1000 to 5000 and 5001to10000 taka. Type of family maximum 104(83.2%) was nuclear and 21(16.8%) was joint family. Out of 125 respondents majority 84(67.2%) had family members 4 to 6 in numbers, 20(16%) had 1 to 3 number, 18(14.4%) had 7 to 9 in number and only few 3(2.4%) had more than 10 in number of family members. Sources of drinking water majority 84(67.2%) had shallow tube well and followed by 36(28.8%) had deep tube well, 4(3.2%) tape water and only 1(.8%) pond water. Sanitation status majority 108(86.4%) had sanitary latrine, 15(12%) pit latrine and very few 2(1.6%) used ring latrine.

Basic information (Regarding knowledge and attitudes of oral health):

Regarding their having knowledge about oral health majority 115(92%) had said yes and only 10(8%) said no. The meaning of oral health majority 87(69.6%) meant brushing of teeth, 17(13.6%) meant brushing of teeth and cleaning of mouth by plain water, 15(12%) meant brushing of teeth, cleaning of mouth by plain water and cleaning of tongue and gum, 5(4%) meant cleaning of mouth by plain water and only 1(8%) meant cleaning tongue and gum. Asking complications can occur if they do not maintain their oral health majority 115(92%) told yes, only few 10(8%) did not know. Their complications out of 115 respondents majority 30(26%) said foul breathing and oral cancer followed by dental caries 20(17.4%), oral ulcer 19(16.5%), all (oral ulcer, foul breathing, tooth bleeding, gum bleeding and oral cancer 18(15.6%), foul breathing 17(14.7%), None 11(9.6) and only few gum bleeding 9(7.8). Knowledge their need to go to dentist due to problem related to oral health majority 113(90.4%) said yes and only 12(9.6%) said no. Their thinking of smoking leads to bad oral health management majority 115(92%) told yes and only few 10(8%) did not think that. Thinking of betel leaf and nuts chewing proceeds to good oral health management majority 92 (73.6%) said no and minimum 33(26.4%) said yes. Idea about prevention of problem related to bad oral health management majority answered 77(61.6%) only brushing of teeth, 17(13.6%) cleaning of mouth by mouth wash, 17(13.6%) only brushing of teeth, avoiding smoking and avoid chewing of betel nuts, 5(4%) avoiding smoking, alcoholism and chewing of betel nuts and 4(3.2%) avoid smoking.

Basic information: (Regarding practice of oral health management):

Asking their cleaning of their teeth regularly majority 119(95.2%) said yes always only few 6(4.8%) said sometimes. Use to clean their teeth majority 106(84.8%) use tooth brush and paste, 11(8.8%) tooth powder, 4(3.2%) tooth brush with paste and meswak, others 3(2.4%) and only 1(8%) meswak. Duration of brushing of their teeth majority 76(60.8%) brushed their teeth twice daily, 43(34.4%) once daily, 5(4%) thrice daily and only 1(8%) never brushed. Spending time on their brushing maximum 53 (42.4%) spend 3 minutes followed by 43(34.4%) spent 5 minutes, 27(21.6%) spent one minutes and only 2(1.6%) less than one minute. Changing of their tooth brush 44(35.2%) changed every three months, 43(34.4%)

changed every monthly, 28(22.4%) every five months and rest 10(8%) had never changed their brush. Technique use of brushing majority 48(38.4%) said horizontal, all (circular, vertical and horizontal) 28(22.4%), vertical 24(19.2%), vertical and horizontal combindly 18(14.4%) and only few use the technique of circular 7(5.6%). Having any bad habits (E.g.: smoking, tobacco, betel nuts and alcohol etc.) majority 72(57.6%) had not, yes 53(42.4%) had mentioned habit. Duration of eating sweets or chocolates majority 54(43.2%) said eat monthly followed by 29(23.2%) three times a week, 21(16.8%) eat one time a week and six times a week. Having cold water from refrigerator regularly majority 89(71.2%) said didn't take, others 36(28.8%) had taken cold water. Asking the ever taking any dental procedure like root canaling, tooth extraction and scaling etc. majority 76(60.8%) had not gotten, others 49(39.2%) had taken the procedure. Last visit their dentist majority 70(56%) never visited, followed by 32(26.5%) visited a year ago, 22(17.6%) a month ago and only 1(8%) respondent a week ago. Reason for last dental checkup majority 19(30.1%) for dental caries, 15(23.8%) for toothache, 10(15.9%) tooth extraction, 6(9.5%) for tooth scaling and toothache with dental caries and only 1(1.58%) for gum bleeding and dental caries with tooth scaling.

In another relevant study, Tooth brushing was mostly a popular practice, but flossing was not. Interestingly, traditional methods of cleaning such as finger, chewing stick, soot, and tobacco powder were still highly prevalent among migrant Bangladeshi women¹¹. Consistent with other ethnic populations, South Asian migrants mostly visited dentists only in the presence of symptoms when prevention may be too late, and treatment delayed. The concept of regular checks and preservation of teeth was not a major component of their dental health behavior, as many did not perceive oral health as important. There is a need for more studies to be conducted with a focus on dental education including the importance of dental care especially for women of child-bearing age.

A major barrier in accessing care for women was the lack of trust in a dentist^{14,15}. or dealing with communication issues in articulating problems to dentists^{13,14,15}. Cost of dental care was generally perceived higher among migrants, irrespective of the host country or ethnicity. The sex of the healthcare provider was also considered as a barrier among Pakistani^{14,15}. And Bangladeshi women¹². In most of the studies where the country of origin was India, barriers were predominately lack of trust and cost of dental

treatments. From smaller and less affluent regions, such as Bangladesh, religiosity was reported as a key issue to quality dental care.

The observed reliance on traditional methods of cleaning were significantly associated with socio-demographic factors, educational status, and lack of language skills¹⁰. Moreover, many women included in the studies who never accessed dental care in regions such as the UK, were illiterate, in the age group of 35–44 years, and had no understanding of English. Lack of language skills was a major barrier in assessing dental services by women of other ethnicities as English was not a primary language. Interestingly, few studies focused on South Asians from the Maldives, Sri Lanka, and Nepal and more investigations need to be carried out to better understand the complexity of these issues among other ethnicities with high levels of migration

Conclusion

This study presented a comprehensive of the oral health related knowledge, attitude & practice of the rural adults. But according to this study, I have come to know that most of the people were illiterate & they do not know what actually the oral health means. Most of the respondents thought that the oral health is just brushing teeth, but they were unaware of the bad oral habits like smoking, drinking alcohol which was lead to bad oral health.

By maintaining good oral health we can at least decrease the economic burden in the family or the rural area as well as whole country. So, everyone should maintain good oral hygiene.

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