

Dental Status and Oral Hygiene Practice among the Elderly People Attending at the Outpatient Department of BIRDEM Hospital, Dhaka

S Debnath¹, MSA Farzan², I Zerin³, MA Kabir⁴, MS Hossain⁵

Abstract :

This was a cross-sectional study on dental status and oral hygiene practices conducted among elderly people at outpatient department of BIRDEM Hospital from the month of April to June 2010. The objective of the study was to assess dental status and oral hygiene practice among the elderly people. A total of 167 elderly people aged above 60 were selected by purposive sampling technique. Data were collected with a pre-tested structured questionnaire and a checklist was filled in after oral examination. On analysis of data dental caries was found in 97% of the elderly people, while both missing and filled teeth were found in 96%. In most of the elderly people, DMFT score was 1 or higher; whereas only 9% of the elderly people had DMFT score 0; that is free from any form of dental decay, missing teeth or dental filling. The number of decayed, missing or filled teeth increased with less frequency of daily tooth brushing. Male elderly people had more dental caries compared to female elderly people. Daily teeth cleaning was practiced by 90% of the elderly people irrespective of age and socio-demographic status. Tooth brush was used by 79% and toothpaste was used by 85% of the elderly people respectively. The study also revealed that dental floss was practiced by 44% elderly people and brushing time was followed 1-3 minutes by 49% only. Elderly people who brushed their teeth before bedtime had less caries compared to the elderly people who did not brush their teeth before bedtime. Taking snacks between meals was preferred by 76% and 82% did not clean their teeth after a snack. On the basis of the finding it may be concluded that dental caries in elderly people is one of the major health concern, creating awareness through proper information on dental health can reduce the burden of dental disease in the elderly.

Key Words: Dental status, oral hygiene practice

Introduction:

Population ageing has become a major concern worldwide as both numbers and proportions of older people continue to grow very rapidly. The older population of the world will grow from its current size of 629 million to almost 2 billion by the year 2050.

Today, one in every ten persons of the world is 60 years or older. In 1950, according to the United Nations estimates, there were 205 million persons aged 60 years and over throughout the world, constituted 8% of the total global population. In 2002, it was estimated to 629 million which constitutes 10% of the total world population.¹ It is also growing up in Bangladesh. In the more developed regions, the number of older persons will rise from 235 million in 2002 to 395 million in 2050. In the less developed regions, the older population will rise from 393 million in 2002 to 1569 million in 2050. Projected total increase in the older population between 2002 and 2050 will be 1334 million at the global level of which 160 million would be in the developed regions and 1174 million in the less developed regions of the world.² The study reveals the existing situation and information regarding practice on oro-dental hygiene among the elderly people. The study revealed the status and practice of dental health care which improved after dental health educational program. The data regarding methods, frequency, timing and materials used for cleaning teeth found were inappropriate, insufficient and incorrect in most cases.³ The proportion of older people continues to grow worldwide, especially in developing countries.

1. Dr.Sujan Debnath,BDS,MPH, Assistant Professor,Dept of Dental Public Health, Pioneer Dental College,Dhaka
2. Dr.Md.Sajedul Asif Farzan,BDS,MPH, Assistant Professor, Dept of Children Preventive and Community Dentistry Pioneer Dental College, Dhaka
3. Dr.Ishrat Zerin, BDS,MPH,Assistant Professor,Dept of Dental Public Health,Saphena Womens Dental College,Dhaka
4. Dr.Md. Arafat Kabir,Fellow-Ph.D(Japan),BDS,Founder Director &Lecturer, Dept. of Oral and Maxillofacial Surgery,Pioneer Dental College, Dhaka
5. Dr.Muhammed Shakhawat Hossain,BDS,Lecturer, Dept. of Oral and Maxillofacial Surgery,Pioneer Dental College, Dhaka

Address of correspondence: Dr. Sujan Debnath, BDS, MPH, Assistant Professor, Dept of Dental Public Health Pioneer Dental College, Dhaka, e-mail:devnath007@yahoo.com

This, along with an increase in the prevalence of oral disease and non-communicable diseases, will significantly challenge health and social policy planners. The Oral Health Programme encourages public health care administrators and decision-makers to design effective and affordable strategies and programmes for better oral health and quality of life of the elderly, which should be integrated into general health programmes.⁴ Finally, surveillance systems targeted at the oral health of the elderly can help assess the attainment of goals for oral health of the elderly and provide data for analysis of cost-effectiveness of oral health programmes. The aged population in Bangladesh is growing both in absolute members and as a percentage of total population. Though the steady increase in proportion does not seem to be remarkable, yet the increase in absolute number is quite significant.⁶ The United Nations latest population projection for Bangladesh indicates that the growing of population in the country is expected to accelerate around the year 2010. In the year 2025 the number of older persons is projected to grow to 17.7 million constituting 8.4% of the total population. The acceleration of population ageing is expected to be exceptionally high between the year 2025 and 2050 as a result of which the number of older persons in 2050 will reach 42.5 million, this would constitute 16.0% of the total national population when in every six persons would be an elderly person.² Geriatric medicine has emerged as an important branch since 1950. Geriatric dentistry also, along with gerontology, is emerging as a special branch of dentistry since 1970.⁷ For planning geriatric dental health, it is important first to define what is the geriatric population and what is its percentage in relation to general population. In general terms, for developed countries with colder climates, it is a population of persons over the age of 65 years.⁸ For developing countries, especially in a country like Bangladesh due to poor nutritional status and climatic conditions, 60+ is taken as the geriatric age group. However, age alone is not taken as criteria for geriatric dentistry. Geriatric dentistry also includes provision of dental care for adults with one or more chronic debilitating physical or mental illness with associated medications and psychological problems.³ The predominant oral health problems of the elderly include dental caries, periodontal disease, dry mouth (xerostomia), tooth wear and oral cancer.⁹ Recurrent caries around failing restorations, cervical caries (around the neck of the tooth) or root caries are the most common dental caries in the elderly.

The number of teeth that need to be extracted due to periodontal disease increases with age.¹⁰ The progressive impact of smoking and drinking on the development of soft tissue lesions is more apparent in older adults, and the prevalence of oral cancer increases with age.¹¹ Older people can be a valuable resource; they can contribute to society within their families, communities and national economies as either a formal or an informal part of the workforce, or through volunteer work.¹² The negative impact of poor oral conditions on daily life is particularly significant among edentulous people. Extensive tooth loss reduces chewing performance and affects food choice; for example, edentulous people tend to avoid dietary fibre and prefer foods rich in saturated fats and cholesterol.¹³

Materials and Methods:

This descriptive cross-sectional study was carried out at the Dental outpatient department of BIRDEM Hospital, Shahabagh, Dhaka. Total allocated study period was 3 months commencing from April to June 2010. A total of 167 elderly people aged 60 years and above irrespective of sex were selected for the study who attended at the outpatient department with dental problems. The sample was selected by purposive sampling technique. A pretested structured questionnaire and a checklist were used for collection of data. Data were collected by the researcher himself through direct face to face interview of the elderly people and clinical examination was done after taking verbal consent of the respondent. The decayed, missing, filled teeth (DMFT) component of oral health was recorded during the clinical examination. Data analysis was done using statistical software package for social science version 11.5 for Windows and Microsoft excel according to the key variables and objectives of the study.

Result:

This was a cross sectional study conducted in BIRDEM Hospital with a view to assessing Dental Status and Oral Hygiene Practice among the elderly people. A total of 167 elderly people aged 60 years and above were interviewed. Among the 167 elderly people, 79 (47.31%) were female and 88 (52.69%) male. It was observed that highest percentage (49.10%) of the respondents was in the age group of 60-69 years followed by (35.0%) in the age range of 70-79 years. It was found that the percentages decline with increasing in age and the highest age group (80 years) had 18.1% respondents only.

It was observed that highest percentage (47.72%) of the male was in the age group of 60-69 years followed by (56.96%) of the female age group of 60-69 years. Among 167 elderly people, 127(76.04%) were Muslims, 27(16.16%) were Hindus, 9 (5.38%) were Christians, 4 (2.39%) were Buddhists. It was observed about 46 (27.54%) were graduates. While only 8.38%(14) were illiterates and 14.97%(25) were primary passed. The table also shows that 14.37%(24), 16.76%(28) and 17.96%(30) of the fathers received SSC, HSC and Masters degree respectively. Majority of the respondents were housewives 63 (37.72%). 52 (31.13%) were retired, 21 (12.57%) were businessmen, while 11 (6.58%) did agricultural job. It was observed that 95 (56.88%) of the respondents came from a family whose monthly income was above 10000 taka. While 27 (16.16%) and 45 (26.94%) of the respondents belonged to families whose monthly income were 1000-5000 taka and 5000-10000 taka respectively. Majority of the people 97 (58.08%) cleaned or had their teeth cleaned once daily, while 70 (41.91%) of them did the same twice a day. Among the 167 elderly people 77 (46.10%) did not brush their teeth before bedtime while 90 (53.89%) brushed their teeth before bedtime. Among 167 elderly people 104 (62.27%) did not brush their teeth after breakfast while 63 (37.72%) brushed their teeth after breakfast. Among 167 elderly people 142 (85.02%) used tooth paste for tooth cleaning, while 25 (14.97%) did not use tooth paste to clean their teeth. Among 167 elderly people, 75 (44.91%) used dental floss, while 92 (55.08%) did not use dental floss to clean their teeth. Among 167 elderly people, 23 (13.77%) visited a dentist in the last 3 months, while 144 (86.22%) did not visit to a dentist.

TABLE-1 : Distribution of the respondents by regular tooth cleaning

Regular tooth cleaning	Frequency	Percentage
Yes	151	90.41
No	16	9.58
Total	167	100.00

Table-1 shows the distribution of the respondents according to regular tooth cleaning habit. Among 167 elderly people, 151 (90.41%) their teeth cleaned regularly while only 16 (9.58%) did not clean their teeth regularly

TABLE-2: Distribution of the respondents by the device used for tooth cleaning

Tooth cleaning device	Frequency	Percentage
Tooth brush	132	79.04
Finger/Meshwak	35	20.95
Total	167	100.00

Table-2 shows that among 167 elderly people, 132 (79.04%) used tooth brush for tooth cleaning, while 35 (20.95%) used fingers to clean their teeth.

TABLE:3 Distribution of respondents by the number of decayed teeth

Number of decayed teeth	Frequency	Percentage
None	06	3.59
1	27	16.16
2	39	23.35
3	44	26.34
4	32	19.16
>4	16	9.18
Total	167	100.00

Table 3 Shows that among 167 elderly people, 06 (3.59%) had no any decayed tooth, 27 (16.16%) had only 1 tooth decayed, 39 (23.35%) had 2 teeth decayed, 44 (26.34%) had 3 teeth decayed, 32 (19.16%) had 4 teeth decayed, while 16 (9.18%) had more than 4 teeth decayed.

TABLE:4 Distribution of respondents by the number of missing teeth

Number of missing teeth	Frequency	Percentage
None	05	2.99
1	30	17.96
2	36	21.55
3	62	37.12
4	34	20.35
Total	167	100.00

Table-4 shows that among 167 elderly people, 05 (2.99%) did not have any missing tooth, 30 (17.96%) had only 1 tooth missing, 36 (21.55%) had 2 teeth missing, 62 (37.12%) had 3 teeth missing, 34 (20.35%) had 4 teeth missing.

TABLE: 5 Distribution of respondents by the number of filled teeth

Number of filled teeth	Frequency	Percentage
None	4	2.39
1	45	67.16
2	75	44.91
3	29	17.36
4	19	11.37
Total	167	100.00

Table-5 shows that among 167 elderly people, 4 (2.39%) did not have any filled tooth, 43 (67.16%) had only 1 tooth filled, 75 (44.91%) had 2 teeth filled, 29 (17.36%) had 3 teeth filled, 19 (11.37%) had 4 teeth filled.

TABLE: 6 Distribution of the elderly people according to DMTF score

DMTF score	Frequency	Percentage
0	16	9.58
=>1	151	90.41
Total	167	100.00

Table-6 Shows that among 167 elderly people, 16 (9.58%) had DMTF score 0, while 151 (90.41%) had DMTF score 1 or above.

Discussion:

The DMFT status is the summation of decayed, missing and filled teeth in the dentition. The DMFT status was assessed as healthy dentition and DMFT 1 or higher was assessed as presence of decayed, missing and filled teeth. In this study there was 167 elderly people in which 52.69% were male and 47.31% were female and majority of them were in the age range of 60 to 64 years, although age and sex difference was found, male has a little bit higher age than female. Similar pattern of age structure was observed in previous studies by Jabeen (1998).¹⁴ Regarding the sex ratio, Hasan (1998)¹³ and Jabeen (1998)¹⁴ reported a higher male and female ratio, whereas a reverse ratio of male and female sex was found. It was found in this study among 167 elderly people, 90.41% had their teeth cleaned regularly while only 9.58% did not clean their teeth regularly. 58.08% cleaned or had their teeth cleaned once daily, while 41.91% did the same twice a day. 46.10% did not brush their teeth before bedtime while 53.89% brushed their teeth before bedtime. A study was conducted by Wyatt on Elderly Canadians Residing in Long-term Care Hospitals. The LTC hospital residents were responsible for their own oral hygiene; similar conditions have been reported for other countries¹¹. It was found in this study that among 167 elderly people 62.27% did not brush their teeth after breakfast while 37.72% brushed their teeth after breakfast.

79.04% used tooth brush for tooth cleaning, while 20.95% used fingers to clean their teeth. 85.02% used tooth paste for tooth cleaning, while 14.97% did not use tooth paste to clean their teeth. 44.91% used dental floss, while 55.08% did not use dental floss to clean their teeth. 18.1% brushed teeth for <1 minute, 49.10% brushed teeth for 1-3 minutes, while 35.0% brushed teeth for >3 minutes. 32.93% rinsed after snacks intake, while 67.06% did not rinse after snacks intake.

In a study of 118 dentate residents in Avon, two-thirds of the buccal and lingual tooth surfaces were covered in plaque, which implies poor oral hygiene. If one considers a plaque index greater than 2 as poor oral hygiene, then only 26.0% of the population in the present study are at risk. This number is considerably less than the 47% of 713 elderly residents with poor oral hygiene. In a high percentage of subjects who had missing teeth, the teeth were replaced by either fixed, removable partial or complete dentures. The mean number of restored teeth was 9.3, considerably higher than the 3.4 (SD 4.3).¹⁵

It was found in this study that 3.59% did not have any decayed tooth, 16.16% had only 1 tooth decayed, 23.35% had 2 teeth decayed, 26.34% had 3 teeth decayed, 19.16% had 4 teeth decayed, while 9.18% had more than 4 teeth decayed. 2.99% did not have any missing tooth, 17.96% had only 1 tooth missing, 21.55% had 2 teeth missing, 37.12% had 3 teeth missing, 20.35% had 4 teeth missing. 2.39% did not have any filled tooth, 67.16% had only 1 tooth filled, 44.91% had 2 teeth filled, 17.36% had 3 teeth filled, 11.37% had 4 teeth filled. 9.58% had DMTF score 0, while 90.41% had DMTF score 1 or above. One study by Stubbs and Riordan to evaluate Dental screening of older adults living in residential aged care facilities in Perth, over half (52 per cent) of the participants were edentulous and 45 per cent of those edentulous participants for whom a recording was made (n=174) had oral mucosal conditions¹⁰. The 164 dentate participants had a mean of 12 disease-free standing teeth, a mean decayed, missing or filled teeth (DMFT) of 24.7 (mean DT 0.8, mean FT 5.3) and half of them required the removal of supragingival calculus. Of those with root caries experience (n=127), a mean of 1.3 untreated decayed roots and a mean of 1.9 roots covered in plaque were recorded. The majority of the participants (83 per cent) were pensioners eligible for government subsidized dental care and 47 per cent were reported by the Directors of Nursing to have dementia.

Conclusion:

This study shows that the dental status of the elderly people in Dhaka city is poor. There is a lack of, perceived need for dental services and of adequate oral self care. Dental health education is also needed focusing on the special needs of this neglected and socio-economically deprived population to improve their quality of life. On the basis of different data of the study the following conclusion may be drawn; the highest rate of DMFT score existed among elderly people. More than two thirds of the elderly people had cleaned their teeth regularly. Only one third of the elderly people visited to a dentist in the last three months. Less than one third elderly people used fingers to clean their teeth. Almost all the elderly people had some form of dental problem the common dental problems were toothache dental extraction.

References:

1. Yukub AM healthy ageing. Towards a society for all ages in Bangladesh. Bangladesh Journal of geriatrics.1999-2000; 37 (1&2) : 149-150.
2. Rashid, Khabir, Hyder's Text book of community medicine & public health. 4th edition, Dhaka. RHM, publisher's. 2007,521-522.
3. Satish Chandra & Shaheen Chandra Text book of community dentistry, 1st edition New Delhi, Jaypee brother's medical publisher's 2007. (239-240).
4. Peter Liloyd king. Oral health needs of the elderly. Australian Dental Journal, 2002 10(8o).96-97.
5. Poul erik Petersen & Tatsuo yamamoto. Improving the oral health of elders people. The approach of the WHO Global oral health programme. Community dent oral epidemiol 2005. 33.81-92.
6. Bhuiyan AM. Prevalence of dental diseases in Bangladesh. Bangladesh dental journal. 1988-89. 5(1). 6-9.
7. Begum A. Joarder MAK. Review of dental carries trends in Bangladesh. Bangladesh dental Journal 1993-94. 10 (1) : 9-13.
8. MH Khandkers Disparities in oral health related quality of life in a population of Bangladesh. Community dent, oral, epidemiol 2009. 35:348-356 .
9. R Saub and RW Evan. Dental needs of elderly hostel residents in inner Melbourne. Australian Dental Journal 2001. 46 (3): 198-202.
10. C stubbs and PJ Riordan. Dental Screening of elder adults living in residential aged care facilities in perth. Australian Dental Journal 2002 47(4). 321-326.
11. Chris C.L. Wyatt. Elderly Canadians Residing in long term case hospitals : Journal of canadial Dental association. 2002. 68(6) : 353-358.
12. Luciene Ribeiro Gaiao. Maria Eneide lietao de Almieda. Poor dental status & oral hygiene practices in institionalized elders people in north-east Brazil. International journal of Dentistry, 2009. Article ID 846081.
13. Hasan T. M Study on elderly people problems in a selected community in Bangladesh NIPSOM, Dhaka University (Dissertation) 1998. 54-59.
14. Jabeen S, Knowledge about self health care among the senior citizens attending Bangladesh Association for the aged and Institute of Elderly Medicine (BAAIGM), Dhaka. NIPSOM, Dhaka University (Dissertation) 1998: 82-86.
15. Kabir H M. Ageing in Bangladesh: The Demographic Picture. Productive ageing in Asia and the pacific. ESCAP. United Nations, New York. 1993; 129: 72 - 75.