Original Article

Loss of First Permanent Molar Teeth in Patients Attending in OPDs of Selected Dental Hospitals in Dhaka City

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Abstract

Tooth loss, especially first permanent molar tooth loss is the ultimate barometer of failure or success in dentistry and dental health programs. A cross-sectional study was conducted among 210 patients attending in outpatient department of selected dental hospitals in Dhaka city to find out the loss of first permanent molar teeth among them. Regarding age (34.8%) of the respondents were below 25 years followed by 25.5% between 25 − 35 years (mean age 33.16 ± 14.10 years). In case of educational status (31%) completed primary education followed by 16.2% were graduates and 33.3% were illiterates. Majority (59.5%) of the respondents had monthly family income below 5000 BDT (mean income 6802.39 ± 6630. 39 BDT). Among the respondents, 33.8% knew brushing technique and 79.5% of them brushed once in a day. Majority (68.5%) of them used tooth paste for brushing and tooth brush was used by 67.1% of the respondents. In case of first permanent molar tooth missing, 50% missed lower left, 19.6% lower right, 17.4% upper left and 13% upper right. Among the respondents, 86% teeth loss was due to caries followed by periodontal disease (12.4%) and orthodontic reason (5.2%). Among the respondents who lost tooth, 55.7% were below 15 years followed by 15 - 30 years (34.3%) and above 30 years (10%). Regarding oral hygiene status, 19% had satisfactory and 81% had unsatisfactory oral hygiene. So it can be concluded that loss of permanent first molars can be avoided if good preventive measures are used before these teeth erupt and are continued after they have erupted in addition to maintaining proper oral hygiene. Further large scale study regarding this topic is recommended.

Keywords: molar teeth, tooth loss.

Introduction

Tooth loss is the ultimate barometer of failure or success in dentistry and dental health programs. Despite significant improvements in oral health, tooth loss remains a dental public health problem among children & adults.

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Tooth loss especially first permanent molar tooth loss is a terminal event in the life of a tooth and is a frequent episode in individuals with uncared and neglected oral cavity[1]. First permanent molars are the most important teeth, with a key role in occlusion. First permanent molar erupts at the age of 6 to 7 years and hence is also known as "six year molar"[2]. Tooth loss can be verified in developed countries in the last years which can be explained by preventive programs and higher accessibility to the oral health care that has been decreasing the tooth loss but the scenario is totally opposite in developing countries[3].

The epidemiology in dentistry has showed that dental caries and periodontal diseases are the most prevalent pathologies that affect the oral cavity[4]. In Bangladesh, where treatment facilities are very limited, poor oral health has turned into a big medical and social problem. The practices of quack and the use of many indigenous methods to get relief from diseases also place them at high risk of complications. The overall influence of oro-dental disease upon the whole community is very severe and cannot be overlooked as it plays an adverse role on general health[5].

The people of low income group in Bangladesh come to the government health complexes and hospitals for the treatment of dental pain. The dental patients cannot think about retention of tooth and thus tooth extraction is the most common treatment for dental pain relief[6].

Molar teeth are very important for occlusal stability and chewing food. These teeth are important in chewing and maintaining the vertical dimension. Due to anatomical structure first permanent molar is more prone to oral diseases.[7]

A study done in Israel on a sample of elderly patients where periodontitis was the main reason for tooth loss, the incisors and molars were the teeth most commonly extracted, the upper premolars were the teeth most frequently extracted due to caries.[8] First permanent Molar tooth loss indicates the unconcern for oral health care, which is a serious health problem. There may be several causes behind this problem, in order to take preventive measures against this problem, the causes should be detected.

Materials and Methods

This cross-sectional study was conducted in Bangladesh Dental College Hospital and Shaheed Suhrawardy Medical College Hospital (Dental Unit) at Dhaka city of Bangladesh, among 210 selected patients with at least one first permanent molar tooth loss who attended at the outdoor dental department during January to April 2014. Data were collected using an interviewer structured and semi-structured questionnaire. Clinical examination was also done by dental mirror and periodontal probe.

Results

Table 01: Distribution of the respondents by socio-demographic characteristics (n=210)

Socio-demographic characteristics	Frequency	Percentage
Age Group		
Below 25 Years	73	34.8
25 - 35 Years	54	25.7
35 - 45 Years	39	18.6
Above 45 Years	44	21.0
Sex		
Male	110	52.4
Female	100	47.6
Level of education		
Illiterate	70	33.3
Primary	65	31.0
Secondary	26	12.4
Higher Secondary	15	7.1
Graduation	34	16.2
Monthly family income		
Below 5000 BDT	125	59.5
5000 - 15000 BDT	73	34.8
Above 15000 BDT	12	5.7

The 'table 01' shows that among the respondents, 73 (34.8%) were in the age group below 25 years, followed by 54 (25.7%) in the age group 25 – 35 years, 44 (21%) in the age group above 45 years and 39 (18.6%) were in the age group 35 – 45 years (mean 33.16 ± 14.10 years). Among the respondents 110 (52.4%) were male and 100 (47.6%) were female. Among the respondents, 70 (33.3%) were illiterates, 65 (31%) had primary education, 34 (16.2%) had graduation, 26 (12.4%) had secondary level of education, 15 (7.1%) completed higher secondary level of education. The monthly family income of 125 (59.5%) families were below 5000 BDT, followed by 73 (34.8%) were monthly income 5000 – 10000 BDT and 12 (5.7%) had monthly income above 15000 BDT (mean 6802.39 ± 6630.39 BDT).

Table 02: Distribution of the respondents by brushing patterns (n=210)

Brushing patterns	Frequency	Percentage
Technique of brushing		
Yes	71	33.8
No	139	66.2
Brush in a day		
Once	167	79.5
Twice	43	20.5
Materials used for brushing		
Tooth paste	144	68.6
Tooth powder	34	16.2
Charcoal	32	15.2
Used for cleaning teeth		
Tooth brush	141	67.1
Meshwak	19	9.0
Finger	50	23.8

The 'table 02' shows that among the respondents, 71 (33.8%) knew the brushing technique and 139 (66.2%) did not. Among the respondents, 167 (79.5%) brushed once and 43 (20.5%) brushed twice in a day. Materials used for brushing, 144 (68.6%) used tooth paste, 34 (16.2%) used tooth powder and 32 (15.2%) used charcoal, 141 (67.1%) used tooth brush, 50 (23.8%) used finger and 19 (9%) used meshwak for cleaning teeth.

Table 03: Distribution of the respondents by first permanent molar missing tooth (n=210)

Missing tooth	Frequency	Percentage
Upper right first permanent molar	30	14.3
Upper left first permanent molar	39	18.6
Lower right first permanent molar	41	19.5
Lower left first permanent molar	100	47.6

The 'table 03' shows that among the respondents first permanent molar tooth missing, 100 (47.6%) had lower left first permanent molar missing, 41 (19.5%) had lower right first permanent molar missing, 39 (18.6%) had upper left first permanent molar missing and 30 (14.3%) had upper right first permanent molar missing.

Table 04: Distribution of the respondents by reasons of teeth loss (n=210)

Reason	Frequency	Percentage
Caries	173	82.4
Periodontal disease	26	12.4
Orthodontic reason	11	5.2

The 'table 04' shows that among the respondents reasons of teeth loss, 173 (82.4%) were caries, 26 (12.4%) were periodontal diseases and 11 (5.2%) were orthodontic reasons.

Table 05: Distribution of the respondents by age of tooth loss (n=210)

Tooth Loss	Frequency	Percentage
Below 15 Years	117	55.7
15 - 30 Years	72	34.3
Above 30 Years	21	10.0

Mean= 18.32 ± 9.72 Years

The 'table 05' shows that among the respondents who had tooth loss, 117 (55.7%) were below 15 years followed by 72 (34.3%) were 15 – 30 years and 21 (10%) were above 30 years. The mean years were 18.32 ± 9.72 years.
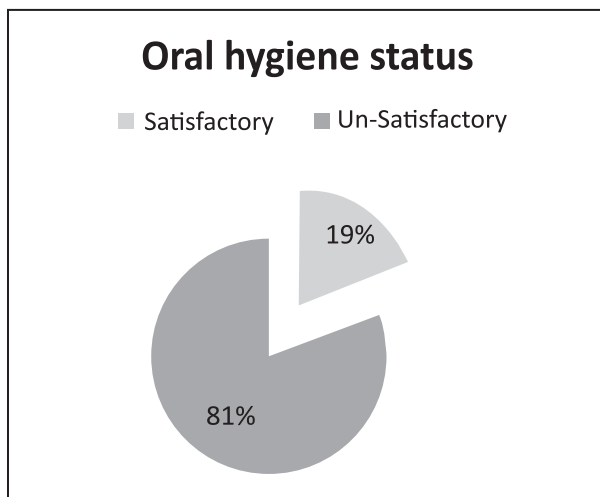

Figure 01: Distribution of the respondents by oral hygiene status (n=210)

The 'figure 01' shows the oral hygiene status, 40 (19%) had satisfactory and 170(81%) had unsatisfactory oral hygiene status.

Discussion

Tooth loss is the ultimate barometer of failure or success in dentistry and dental health programs. This cross-sectional study was carried out to find out the loss of first permanent molar teeth in patients attending in outpatient department of selected hospitals of Dhaka City. Above one-third were in the age group below 25 years, followed by one-fourth were in the age group 25 – 35 years, above one-fifth were in the age group above 45 years, around one-fifth were in the age group 35 – 45 years (mean age 33.16 ± 14.10 years) and above half of them were male. Regarding level of education above one-third had primary followed by below one-fifth graduation, about thirty five per cent were illiterates. Among the respondents monthly family income depending upon the time of tooth loss, around sixty per cent had monthly income below 5000 BDT, followed by below thirty five per cent had monthly income between 5000 – 10000 BDT and five per cent had monthly income above 15000 BDT (mean monthly income 6802.39 ± 6630. 39 BDT).

The study also revealed that among the respondents brushing patterns, above one-third knew the brushing techniques and around eighty per cent brushed once daily. Among the respondents above sixty five per cent used tooth paste for cleaning teeth followed by sixteen per cent used tooth powder and one-seventh used charcoal.

The study shows that among the respondents above sixty five per cent used tooth brushes for cleaning teeth; twenty four per cent used finger and nine per cent used meshwak.

The present study shows that among the respondents first permanent molar tooth missing, around half of them were in lower left, below one-fifth were in lower right, less than twenty percent were in upper left and fourteen per cent were in upper right. A Romanian study shows that percentage of children and adolescents had 5.2% permanent first molars[9]. The study revealed that among the respondents reasons of teeth loss above eighty five per cent were caries, twelve per cent were periodontal diseases and five per cent were orthodontic reasons. A Greek study shows that (36.4%) were extracted because of periodontal reasons[10], 24.5% for dental caries and 31.1% for other reasons such as dental caries and periodontal diseases, root trauma, vertical fracture of root/crown, orthodontic reasons and a Sudanese studies found that prevalence of tooth loss (missing at least one tooth) was 78%; 66.9% of tooth loss was due to caries, and 11.2% was attributable to other reasons[11].

Among the respondents tooth loss above half of them were below 15 years followed by less than thirty five per cent were 15 – 30 years and one-tenth were above 30 years (mean age was 18.32 ± 9.72 years). The study also revealed that among the respondents oral hygiene status below one-fifth was satisfactory, above eighty per cent was unsatisfactory.

Conclusion and Recommendations

The study concluded that among the respondents around thirty five per cent were below 25 years age group and above half of them were male. The study found that most of the (82.4%) respondents tooth loss was due to caries and above half of the respondents tooth loss was in the age below 15 years. The study also revealed that among the respondents oral hygiene status, above eighty per cent were un-satisfactory and below one-fifth was satisfactory. Based on the key findings of the present study, the following recommendations are made: The loss of first permanent molars can be avoided if good preventive measures are initiated after they have erupted, some school based awareness programs including parents, teachers and students can be helpful. It will be more beneficial if mass media start some programs about this matter and further large scale study regarding this topic is recommended.

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