Prevalence of oral hygiene aids and bleeding gums among the people visiting Private Dental Hospital in Gadap town, Karachi

Mohammad Ali Leghari¹, Syed Inayat Ali², Faisal Rehan³, Humera Ali⁴, Usman Shoukat Ali Arain⁵

¹Department of Community Dentistry, Baqai Dental College, Baqai Medical University, Karachi, Pakistan, ²Department of Anatomy, Baqai Medical College, Baqai Medical University, Karachi, Pakistan, ³Department of Oral Pathology, Baqai Dental College, Baqai Medical University, Karachi, Pakistan, ⁴Dental Physician, Dental Health Care Manager, Karachi, Pakistan, ⁵House Surgeon, Baqai Dental College, Karachi, Pakistan

Abstract

Aim: The objective of the study to assess the prevalence of oral hygiene practices, types of tools using for cleaning teeth, and frequency of cleaning teeth associated with the self-reported bleeding gums in the residents of Karachi.

Materials and Methods: A cross-sectional study of 364 sampled among the patients visiting outpatient dental clinic aged 17 years or above, mean age was 35 years. Information were collected by questionnaires related to cleaning of teeth, frequency of cleaning teeth, self-perceived bleeding gums, and betel nut chewing. Frequency and percentage used for descriptive analysis and Chi-square test was used for difference in categorical variable. Stata 11 was used for statistical analysis. Total number of 364 patients was surveyed.

Results: Prevalence of cleaning teeth among the sample was 86.8%. Frequency of cleaning teeth once a day was 58.79%. Toothbrush used as an instrument for oral hygiene among population was 84.2%. 87.36% of the participants clean their teeth at morning. Self-perceived bleeding gums among the sample were 38%. Chewing of betel nut prevalence was 31.8%.

Conclusion: Regular cleaning of oral cavity prevents the initiation of dental caries, gingivitis and periodontitis. Selection of tool for cleaning oral cavity was appropriate on the other hand <60% of the sample was practicing oral hygiene per day which was not satisfactory, further investigation and awareness programs are needed to evaluate the overall practices of oral hygiene among the population on larger sample size.

Clinical Significance: The present study demonstrates the oral hygiene practices of a selected group of population. The results could be used to educate the patients about maintaining proper oral hygiene which could lead to a decrease in the prevalence of oral and dental diseases.

Introduction

The frequently occurring dental diseases such as tooth loss, periodontal diseases, and tooth decay contribute enormous dental health burden in both developing and developed countries. However, could be prevented by proper oral hygiene measures.¹ Dental plaque consists of microbes that adheres to the tooth surface and in gingival sulcus and consequently lead to the destruction of the tooth and gingival tissues.²,³ Gingival bleeding, pain, and swelling are standard signs of gingivitis.⁴

There are consensuses on the recommendation of brushing and flossing teeth once a day by American Dental Association and other organization for the prevention and prevalence of dental diseases.¹ Mechanical removal of plaque is a reliable and sufficient source of maintaining oral hygiene performed thoroughly and at daily basis.⁵ In various parts of the world contemporary methods of cleaning teeth are not accessible and uncommon, the chewing sticks such as Neem twig are used more frequently in rural and urban areas of South Asia. It has substantial effect in the treatment and prevention of infections, tooth decay, bleeding, and sore gums.⁶

Brushing for sufficient time with proper technique significantly removes the dental plaque therefore both time, and
Prevalence of oral hygiene practices and self-reported bleeding gums

Leghari, et al.

Technique are essentials for effective removal of plaque.\(^1\) It has also been evaluated that occurrence of plaque induce gingivitis efficiently reduces by daily tooth brushing with proper technique and enough time.\(^2\)

The objective of this study is to find out the frequency of tooth brushing, tools used for brushing, and patients’ self-perception of bleeding gums.

Materials and Methods

A cross-sectional study was conducted from January 2016 to February 2016 among 364 patients visiting Private Dental College Hospital, Karachi, Pakistan. A convenience sampling method was used for selection of the participants who visited the outpatient dental clinic during the daytime hours with oral complaints. Respondent’s age ranging from 12 to 70 years who were willing to participate in the research. The objective of the study was explained and informed written consent was taken from each respondent before the data collection.

Information was collected on self-structured questionnaire which included sections of demographic information consists of age, gender, and second section contain the questions about oral hygiene i.e., do you clean your teeth, tools for cleaning teeth, frequency of maintaining oral hygiene, timing of cleaning teeth, betel nut chewing habit, and self-perceived bleeding gums.

Ethical permission was obtained from the ethical board of the dental hospital. The participants were from low socioeconomic areas. The study was conducted at the Department of Periodontology and Oral Medicine, Baqai Dental College and Hospital, Karachi.

The data were analyzed using the statistical analytical software Stata 11 and the variable was analyzed on frequency distribution and percentage. Chi-square test was used for observing the difference in categorical observations. \(P < 0.05\) was used as statistical significance.

Results

Out of 364 patients surveyed, there were 290 (80%) male and 74 (20%) female respondents. Mean age of the respondents was 35 (standard deviation 12) years with range of 12-70 years.

There were 314 (86.8%) respondents who said yes for the question regarding cleaning their teeth and 48 (13.2%) replied with answer no and there was no significant difference among the gender in cleaning their teeth and their frequency presented in Graph 1.

There were 214 (59%) respondents who brush their teeth once a day, 120 (33%) respondents who brush twice a day and 30 (8%) brush their teeth twice a day presented in Graph 2.

There were 308 (84.62%) individuals who were using toothbrush as a method of cleaning their teeth, other methods of cleaning teeth, 30 (8.24%) individuals used miswak, and 26 (7.14%) used dandasa or munjun as a tool for maintaining their oral hygiene and presented in Graph 3, there was significant difference in using tools for cleaning teeth between male and female participants, results present in Table 1.

There were 318 (87.36%) patients brush their teeth at morning, 40 (10.99%) brush their teeth at mid-day, and there were only 6 (1.65%) patients who brush their teeth at night, presented in Graph 4.

141 (38%) participants in survey noticed bleeding from their gums and 223 (61.2%) said no regarding bleeding from their gums. In survey participants, it was also observed that the results were statistically significant about the association between the difference in those maintaining oral hygiene and self-perceived bleeding from gums and results are presented in Table 2.
There was 116 (31.8%) of respondents who were the frequent user of betel nut chewing, and there was no significant difference among the gender in using betel nut chewing, data presented in Graph 5.

Discussion

Dental plaque has primary role in initiating dental caries, gingivitis, and periodontal problems and considered as the etiological factor in most of the dental diseases and its removal is required for healthy dental tissue.[9]

Oral lesion is easily preventable by primary prevention methods; poor oral hygiene lead to the loss of tooth which is considered a public health problem that affects individuals of all ages.[10]

The study was conducted among the patients in periodontology clinic to observe the self-reported bleeding from the gingiva and the method of cleaning their teeth and the awareness of their oral hygiene status.

The prevalence of male participants in this study was 80% which was slightly lower compare to the study done in Porto, Portugal.[11]

Adequate measure taken for proper oral hygiene could maintain the good general health. For this purpose, different tools are present for maintaining good oral hygiene consisting both of traditional and contemporary. Good oral hygiene needs appropriate tool, its timing of usage and proper technique.[12]

There were 58% individuals in this study who clean their teeth once a day which was lower from another research conducted in Nepal.[13] Study done on the prevalence of tooth cleaning frequency, where 75% of the individual clean their teeth once a day, and 19.5% clean their teeth twice a day.[14] In this study, frequency of cleaning the teeth twice a day was 33% which was approximately close to the study done by Peeran et al. in Libyan population.[15]

There is still a lack of consensus on the frequency of tooth brushing. Quality of tooth brushing has been identified as a significant factor on oral hygiene maintenance. Brushing 2 times a day has been identified as important significant factor in periodontal health but there is no evidence that more than 2 times a day could further improve the oral health.[16]

Toothbrush is the most common tool used for cleaning oral cavity and used worldwide for removal of dental plaque and recommended for the prevention of gingivitis and dental caries and performing oral hygiene behavior.[16,17] In this study, 84% of the study participants used toothbrush for maintaining oral hygiene. Similar results found in the research where the 89.6% participants were using toothbrush along with toothpaste to clean their teeth.[18] Survey done in young adults where the research found the prevalence of 81.6%.[19]

Prevalence of miswak in this research was 9%. On the other hand there was another study done in rural dwellers in Nigeria where the prevalence of using chewing stick was 4%.[14] Use of Miswak consider as a religious and accustomed in among certain culture. Research done in KSA where it was found that 44% of the lower education group were the daily user of it.[20]

Graph 3: Prevalence of different types of cleaning tools among the study participants

Graph 4: Prevalence of cleaning of teeth in daytime

Graph 5: Distribution of betel nut chewing by gender

In this research, 94% of the participants chose morning as the appropriate time for cleaning their teeth, and similar result was also observed in Dhaka.[21]
The prevalence of gingivitis among the study group in this research was 38% which was lower to research done by Taani et al. where 28% Jordanian reported with bleeding from gums and also among the survey done in hospital in Nigeria where 28% gingival bleeding was recorded and the results was contrary to the research done by Sarwar et al. where the prevalence was 67%. The results showed that the prevalence of oral hygiene maintained among the respondent was hundred percent, but gingival bleeding explains that it could be the consequences of inadequate brushing technique, frequency, timing, and usage of betel nut chewing which deteriorate the gingival conditions despite daily brushing.

The prevalence of betel nut chewing was 31.8% in this study, and the result was contrary to study in Kanpur where the prevalence was 89% and similar to the results done by Arora et al. in industrial workers in Ghaziabad where the prevalence of areca nut was 27.2% among the study participants and prevalence was higher in males than compare to females.

The prevalence of betel nut consumption was higher in male participants, and the results were similar to research done in Indore, India where the male to female ratio was 2:1.

The research was conducted among the welfare based dental hospital situated in semi-urban area where population belongs to the lower income group and deprived in education, in survey done in that region it was found out that most of the sample from population was user of betel nut.

**Limitation**

The prevalence of female respondent was lower as compared to male in this study, it could be the reason that dental hospital timing was at morning, on this moment most of the female spend their time at their household due to this reason that do not have time to access to dental clinic for dental treatments as compared to the male.

**References**

24. Sarwar AF, Kabir MH, Rahman AF, Haque M, Kasem MA,


