

INTERDENTAL CLEANING: A CROSS-SECTIONAL SURVEY

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ABSTRACT

Bacterial plaque accumulation is the main cause of periodontal disease. That must be removed from all the surfaces of the tooth especially the interdental areas because these areas are the most difficult to clean, and thus common site for the periodontal disease.

The aim of this study was to determine the interdental cleaning knowledge of students of various colleges in Karachi. This was cross sectional study. Information from students was obtained using a properly prepared questionnaire.

A total of 400 students, out of which 200 were dental and 200 were non-dental students participated in this study. Statistically significant difference was found about the awareness of interdental cleaning ($p=0.016$) and the use of interdental cleaning aids ($p=0.008$). Majority of the students were aware of interdental cleaning, yet they did not apply their knowledge properly. In order to encourage them, dentists need to emphasize on importance of cleaning the interdental areas by promoting dental hygiene programs, seminars and community visits.

Key Words: Dental floss, oral hygiene, interdental cleaning.

INTRODUCTION

Tooth cleaning is a part of oral hygiene and still remains the most effective means of bacterial plaque removal. A thin biofilm or mass of bacteria that grows on surfaces of teeth, is the primary cause of periodontal disease.¹ Use of the appropriate skills of tooth cleaning should include all the tooth surfaces with emphasis on interdental areas which are the most difficult to clean.² Certain teeth and gums related problems like tooth decay and periodontal disease are result of improper interdental cleaning. Primary prevention and oral hygiene maintenance is the key to reduce problems. If periodontitis is left untreated, may lead to tooth loss.^{3,4}

Several types of the brushing techniques are designed to achieve maximum removal of food particles and plaque for example Bass, Scrub or Circular, Vertical, Charter, Roll technique and Smith method. The most commonly used brushing method is the Horizontal Scrub method where the bristles are activated in gentle,

horizontal scrubbing motion. But this method is not effective in cleaning the interproximal areas and does not remove deposits from there, so inaccessibility to these areas becomes challenging for the patients and the most common site for the periodontal disease to occur. Thus proper cleaning of the interdental areas is extremely important. A myriad of devices are designed to access interdental areas for example dental floss and tapes, water jet, interdental brushes, and tips and plastic or wooden picks are available.⁵ Products can vary according to comfort, cost, ease of use, consumer acceptance and effective in reducing bleeding, gingival inflammation and the composition and quantity of plaque. As there are so many options available, patients need a professional's guidance to determine what choices to make. Dental hygienist, an auxiliary dental worker specializing in scaling and polishing teeth, can assist by offering recommendations that are individualized and based on patients need and abilities.

METHODOLOGY

This study was conducted at different colleges of Karachi. It was a cross sectional study. The participants were dental and non-dental students aged 18 years and above. Data were collected from October 2016 to February 2017. Four hundred students were recruited, using convenience sampling out of which 200 were dental and 200 were non-dental. A self-administered questionnaire was made to collect the data which consisted of socio-demographic characteristics that is age, gender, marital status and field that is dental or non-dental, and an information related to interdental cleaning that included awareness about interdental cleaning, type

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of interdental cleaning device used, frequency of teeth cleaning, visits to dentists, reasons for not cleaning interdentally, whether gums bleed while brushing, or avoid flossing any part of your mouth, usage of fluoride rinse after brushing. Data were entered into the SPSS version 24 and analyzed. Test of association was done using chi square statistics.

RESULTS

Details of results can be seen in Tables 1-2 and Figs 1-2.

DISCUSSION

Analysis of this study showed that 19% of the dental students cleaned their teeth once a day, 76% twice a day and 5% more than twice a day whereas on the other hand 21.8% of the non-dental students brushed their teeth once a day, 70.3% twice a day, 6.0% more than twice a day and 1% never. But the findings by Elizabeth and Dosumu⁶ showed that 57.7% of the patients cleaned their teeth once in the morning 38.5% did so twice > 2.1 % more than twice a day and only 2% of the patients did not clean their teeth regularly. Another study⁷ showed that 69% used tooth brush once daily, 13% brushed twice daily, while 18% never used a toothbrush at all.

In the present study 98% of dental and 90% of non-dental students were aware of interdental cleaning, when compared to another study⁸ 74.29% were aware of interdental cleaning and 25.1% were not aware. One more study⁹ showed that 98% of the undergraduate students used dental floss and 2% stated they never used it. Another study¹⁰ conducted by Neeraja only 18% students knew about dental floss which might be due to unawareness.

A recent study¹¹ have shown that appropriate interdental cleaning with the appropriate aids and devices reduces plaque accumulation, bacterial aggregation and this decreased the risk of gingivitis. Dental hygiene awareness of individuals is extremely important in

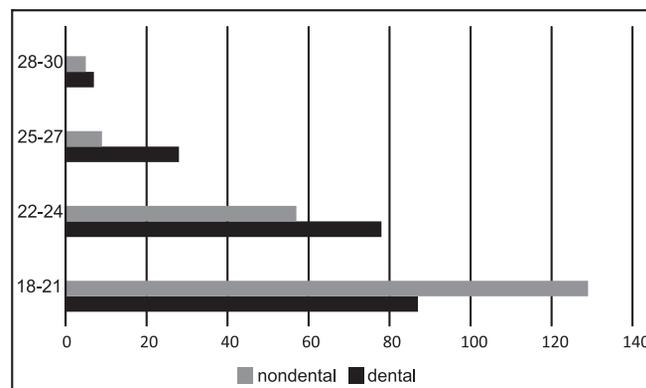


Fig 1: Comparison of responses of interdental cleaning according to age

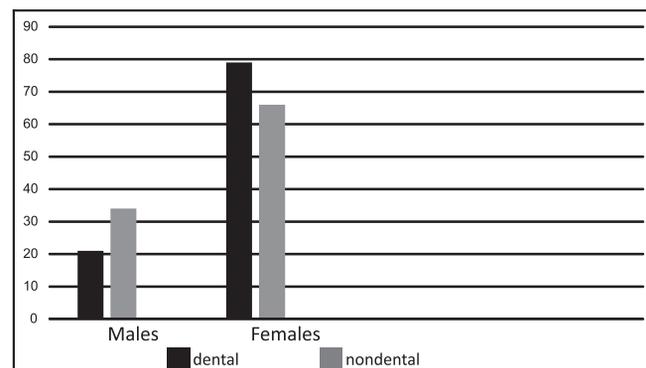


Fig 2: Comparison of responses of interdental cleaning according to gender

TABLE 1: AWARENESS REGARDING CLEANING OF INTERDENTAL AREAS

Responses	Yes		No		P-value
	N	(%)	N	(%)	
Dental	192	(96%)	8	(4%)	0.016*
Non-dental	184	(92%)	16	(8%)	
Total	376	((94%)	24	(6%)	

*Statistically significant P-value

TABLE 2: INTERDENTAL CLEANING AIDS

Responses	Tooth pick		Dental floss		Interdental brushes		None		P-value
	N	(%)	N	(%)	N	(%)	N	(%)	
Dental	37	(18.5%)	109	(54.5%)	31	(15.5%)	23	(11.5%)	0.008*
Non-dental	49	(24.5%)	83	(41.5%)	33	(16.5%)	35	(17.5%)	
Total	86	(21.5%)	192	48.0%)	64	(16.0%)	58	58(14.5%)	

*Statistically significant P-value

their tooth cleaning behavior. However, mostly people tend to ignore this vital habit, and they clean all the surfaces of tooth except the interproximal^{12,13} areas. It is an established fact that tooth brush alone, is not enough for complete removal of dental plaque therefore use of dental floss daily is being emphasized by dentists across the world as a part of daily oral health cleaning routine.¹⁴

The act of cleaning interdentally requires special care and skills. Other than high cost, and unavailability of the interdental cleaning aids are also some of the reasons. There are several interdental cleaning aids including dental floss and tapes, plastic or wooden picks and interdental brushes. All methods are effective but the use of these aids mostly depends upon the morphology and the size of interproximal areas of the tooth as well as depends upon the morphology and the size of interproximal areas of the tooth as well as on patient's factor in maintaining oral hygiene.

One study¹⁵ compared the interproximal plaque removal capacity of dental floss and interdental brushes suggested and found that interdental brushes were more efficacious in interdental supra gingival plaque removal than dental floss.

Another study reported by Dagli RJ and colleagues¹⁶ concluded that dental students had worst oral health knowledge and practices and they need to be improved in order to serve as positive models for their community.

It has been stated that dental health workers play an important role in enhancement of public health education level by providing population with the preventive measures through oral health awareness programs, fluoride applications, community visits and most needed development primary dental care system across the country,^{17,18,19} which was also the goal of current study.

CONCLUSION

Majority of the students were aware of the interdental cleaning, yet they did not apply their knowledge. In order to help them dentists need to provide information about the importance of cleaning the interdental areas through dental hygiene programs, seminars and community visits.

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CONTRIBUTIONS BY AUTHORS

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| 2 Marium Iqbal: | Conceived the idea, Selected the topic and Designed, Questionnaire |
| 3 Anam Jawed: | Data Collection and Data Analysis |
| 4 Umaima Khan: | Data collection and Designed questionnaire |
| 5 Maheen Hanif: | Write up |
| 6 Arooj Sarwar: | Review Write up |