



## Knowledge and Attitude Among Dental And Medical Students About Interdental Oral Hygiene Maintenance

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### Abstract

**Introduction:** The accumulation of plaque is facilitated by inadequate oral hygiene maintenance which predisposes to gingivitis, leading to the onset of periodontal inflammation. For regular oral hygiene maintenance toothbrush alone is not sufficient for keeping the teeth and surrounding structures free from plaque. The uses of interdental aids are important to sufficiently clean the interdental areas from the accumulation of biofilm that forms from time to time.

**Objectives:** To assess the Knowledge and attitude among dental and medical students related interdental oral hygiene maintenance.

**Material and Methods:** A questionnaire survey was conducted among 600 dental and medical students to record the responses related to knowledge and attitude regarding interdental oral hygiene maintenance. The responses recorded were subjected to statistical analysis to obtain the results.

**Results:** The knowledge about interdental cleaning aids was good and their attitude towards interdental oral hygiene maintenance was found to be fair among dental students. Medical students were having inadequate knowledge about interdental cleaning aids and they also had a very poor attitude towards interdental oral hygiene maintenance.

**Conclusion:** Knowledge on interdental oral hygiene maintenance was inadequate among medical students and also their attitude towards maintaining interdental cleanliness was also very poor hence, it is suggested to include a topic in their curriculum on comprehensive oral

hygiene maintenance which specifically emphasize on various types of interdental oral hygiene aids, their indications and usage. So that medical students can provide complete oral health education to their patients.

**Key Words:** Oral Hygiene, Periodontal Disease, Toothbrushing, Interdental Cleaning Aids, Dental Floss, Interdental Brush.

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## **Introduction**

Oral biofilm is the primary etiological element in periodontal diseases, which are substantial contributors to public health issues around the globe. The most effective way to stop dental plaque from growing is thought to be mechanical removal. Since interdental spaces are difficult to clean with a toothbrush, interdental spaces end up being the main regions where leftover plaque builds up. Since interproximal plaque plays a major role in the development and progression of gingival and periodontal disorders, maintaining interdental oral hygiene should play a significant role in oral health education. Clinically, interproximal areas typically experience more severe gingivitis and periodontitis. Because of this, dental treatment for gingivitis and periodontitis often includes interdental cleaning as part of the oral health education programme.<sup>1</sup> Traditionally, flossing was recommended for interdental cleaning because it is perhaps the most widely applied technique. Dental floss, interdental brushes, wooden interdental aids, and oral irrigators are just a few of the interdental cleaning tools utilised for interdental cleaning. However, it was discovered that interdental brush was more effective than dental floss at removing plaque from open interproximal gaps.<sup>2</sup> Interdental aids-related knowledge and attitudes are known to a lesser extent than is necessary. The public oral health education and motivation are greatly aided by healthcare professionals, particularly medical and dental students. A very few studies have been reported in literature regarding assessment of knowledge and attitude towards interdental oral hygiene maintenance among dental and medical students. Hence, this study was carried out to assess the knowledge and attitude among dental and medical students related to interdental oral hygiene maintenance.

**Aim:** To assess the knowledge and attitude among dental and medical students related to interdental oral hygiene maintenance.

## **Materials and Methods**

This questionnaire survey was conducted among the Dental and Medical students of Kanpur city using an open-ended questionnaire written in English. Total of 600 students, 300 each from dental and medical colleges, were included in this study. Dental and Medical students from final year and internship batches were included and those who were not agreed to participate in the study were excluded. The purpose of the study was explained to every participant and they have been asked to fill the questionnaire. Survey performa having questionnaire consisting of 10 questions. First section had 5 questions which are directed to assess the knowledge and the remaining 5 questions in second section for determining the attitude related interdental oral hygiene maintenance. Responses of participants with respect to each question were recorded by ticking the answer YES or NO. The study was approved by the Institutional Ethics Committee (RDCHRC/ETHICSCOMMITTE/0157) and informed consent was obtained from all the study participants.

### **Statistical Analysis**

Statistical analysis was carried out using Statistical Package of Social Sciences (SPSS Inc. Chicago IL, version 11.0 for windows.) For quantitative variations percentage were calculated. Means were compared among the three groups. Mean, standard deviation and p value were calculated using one-way Anova test.

### **Results**

Table 1 show that 94.7% of the dental students and 65.3% of medical students knew about importance of cleaning interdental areas and the difference among two groups was significant. 94.3% of the dental students and 74.7% of medical students knew that the gingival inflammation initiates in interdental area and the difference among two groups was significant. 99.7% of the dental students and 75% of medical students knew about dental floss and the difference among two groups was significant. 96.3% of the dental students and 52% of medical students knew about other interdental cleaning devices apart from dental floss and the difference among two groups was significant. 95.7% of the dental students and 61.3% of medical students knew that the usage of sharp objects like pins are harmful to gums and the difference among two groups was significant. Table 2 shows that 94.7% of the dental students and 72.3% of medical students reported that interdental cleaning is important for good gingival and periodontal health and the difference among two groups was significant. 98.3% of the dental students and 71.7% of medical students knew that there has to be patient compliance in the use of interdental cleaning aids and difference among two groups was

significant. 98.3% of the dental students and 69% of medical students reported that interdental plaque control is an essential component to complete the patient's self-care program and the difference among two groups was significant. 98.3% of the dental students and 88.7% of medical students reported that tooth brushing alone can accomplish plaque removal from the proximal tooth surfaces and the difference among two groups was significant. 94.7% of the dental students and 63.7% of medical students reported that it is important to know about the type of embrasure before prescribing the interdental cleaning aid and the difference among two groups was significant. Graph 1 shows that the knowledge on importance of interdental oral hygiene maintenance among medical students was found to be poor, which is revealed in the result as there was a statistically significant difference in knowledge and attitude in dental and medical students with dental students (96.13% and 79.67%) showed significantly more knowledge and favourable attitude regarding interdental oral hygiene maintenance as compared to medical students (65.67% and 73.07%).

**Table 1. Comparison of knowledge on interdental oral hygiene maintenance among dental and medical students.**

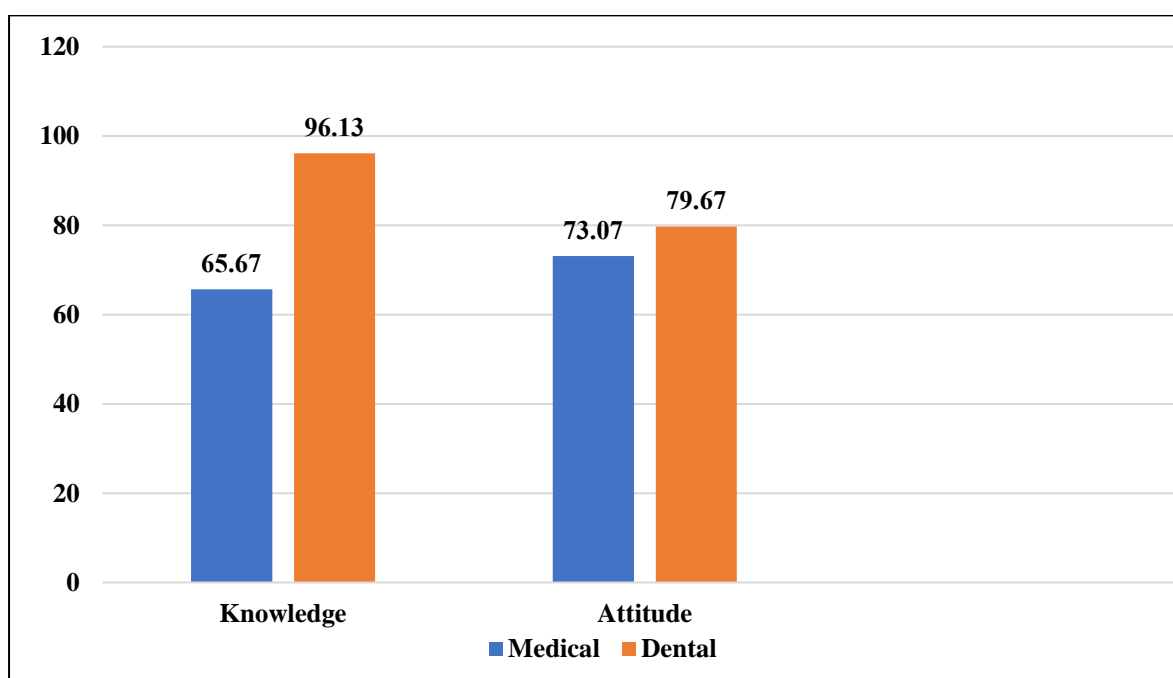
Question	Medical	Dental	P value
1. Do you know about importance of cleaning interdental area (in between teeth apart from chewing surfaces).	196(65.3)	284(94.7)	<0.001*
2. Do you know that gingival inflammation initiates in interdental area	224 (74.7)	283(94.3)	<0.001*
3. Do you know what is dental floss.	225 (75)	299(99.7)	<0.001*
4. Do you know about other interdental cleaning devices other than dental floss.	156 (52)	289(96.3)	<0.001*
5. Do you know that the usage of sharp objects like pins are harmful to gums.	184 (61.3)	287(95.7)	<0.001*
Fisher exact test; * indicates significant difference at $p \leq 0.05$			

**Table 2. Comparison of attitude about interdental oral hygiene maintenance among dental and medical students**

Question	Medical	Dental	P value
6. Do you think interdental cleaning is important for	217(72.3)	284(94.7)	<0.001*

good periodontal health?			
7. Do you think there has to be patient compliance in the use of interdental cleaning aid?	215(71.7)	295(98.3)	<0.001*
8. Do you think interdental plaque control is an essential component to complete the patient's self-care program?	207 (69)	295(98.3)	<0.001*
9. Do you think toothbrushing alone can accomplish plaque removal from the proximal tooth surfaces?	266(88.7)	295(98.3)	<0.001*
10. Do you think it is important to know about the type of embrasure before prescribing the interdental cleaning aid?	191 (63.7)	284 (94.7)	<0.001*
Fisher exact test; * indicates significant difference at $p \leq 0.05$			

**Graph 1. Comparison of overall knowledge and attitude in (%) among dental and medical students.**



## Discussion

This questionnaire survey was conducted among the Dental and Medical students of Kanpur city using an open-ended questionnaire to assess the knowledge and attitude among dental and medical students related to interdental oral hygiene maintenance. The present study

reported that knowledge on importance of interdental oral hygiene maintenance among medical students was found to be poor, only 65.3% of medical students knew the importance of interdental oral hygiene maintenance compared to 94.7% of dental students these results are in accordance with the findings of the study by Usman et al.<sup>3</sup> and Ansari et al.<sup>4</sup> in 2007 and 2003 respectively, where they have found that of 96% dental students have better oral health knowledge as compared to 43.4% medical students. In our study it was found that 96.3% of dental and 52% of medical students knew about the interdental cleaning aids, which is in accordance with the study conducted by Kharidhi L. et al<sup>5</sup> in 2016, where they have found that knowledge and attitude towards the use of interdental aids were better in 82.4% dental students compared to 47.1% medical students. In contrast to the current study results Farhan Riaz et al<sup>6</sup> in 2023 reported that 56.8% of medical students were aware about the usage of interdental aids to clean the interproximal surfaces, compared to the 34.1% dental students. The attitude of medical students towards interdental oral hygiene maintenance was also found to be poor, because only 72.3% of medical and 94.7% dental students were knew that interdental cleaning is important for good periodontal health. This was in accordance with the study reported by Harish Kumar et al<sup>7</sup> in 2017 where total of 77.33% of the dental students brushed twice a day compared to 53.33% of the medical students, hence indicating better oral hygiene measures adopted by dental students. In contrast to the current study results, Hamilton and Coulby<sup>8</sup> in 1991 found that 44% medical students used interdental aids and dental floss as compared to 32% of dental students studied in North Eastern Ontario, Canada. Because the significant resource allocation to oral health education programs among medical students were carried out in Canada. Limitations of this study are smaller sample size.

## **Conclusion**

Knowledge on interdental oral hygiene maintenance was inadequate among medical students and also their attitude towards maintaining interdental cleanliness was also very poor hence, it is suggested to include a topic in their curriculum on comprehensive oral hygiene maintenance which specifically emphasize on various types of interdental oral hygiene aids, their indications and usage. So that medical students can provide complete oral health education to their patients.

## **References**

1. Gjermo P, Flotra L. The effect of different methods of interdental cleaning. *J Periodontal Res.* 1970;5(3):230-6.
2. RD Kiger, Nylund K, RP Feller. A comparison of proximal plaque removal using floss and interdental brushes. *J Clin Periodontol.* 1991;18(9):681-4.
3. Usman S, Bhatt SS, Sargod SS. Oral Health Knowledge and Behaviour of Clinical Medical, Dental and Paramedical students in Manglore. *J Oral Health Comm Dent* 2007;1:46-8
4. Al Ansari J, Honkala E, Honkala S. Oral health knowledge and behaviour among male health sciences college students in Kuwait. *BMC Oral Health* 2003;3:2.
5. Kharidhi L, Vandana et al. Knowledge, attitude and practises of interdental aids among dental and medical Malaysian students in davangere district, Karnataka, india. *CODS journal of dentistry*, July-december 2016;8(2):91-99.
6. F.Riaz, A.Ehsan, N.Umer et al. Awareness Regarding Usage of Interdental Aids and their Role in Oral Hygiene among Medical Undergraduates in District Sheikhpura. *Pakistan Journal of Medical & Health Sciences*, March 2023;17:3
7. Kumar H, Behura SS, Ramachandra S, Nishat R, Dash KC, Mohiddin G. Oral health knowledge, attitude, and practices among dental and medical students in Eastern India– a comparative study. *J Int Soc Prevent Communit Dent* 2017;7:58-63.
8. Hamilton ME, Coulby WM. Oral health knowledge and habits of senior elementary school students. *J Public Health Dent* 1991;51:212-9.