

A Study on Awareness Among Dental Students Regarding Flossing

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Abstract

Home dental care plays a very important role in the curbing the accentuated periodontal disease. Especially in interdental region where access is limited for meticulous oral hygiene. In such situation, dental floss plays a very important role in maintaining inter dental soft tissue integrity. It is a prime responsibility of all the dentists to educate and motivate patients to maintain oral hygiene. In the present study awareness of dental students on maintenance, usage, benefits and availability of dental floss was assessed. The survey forms were circulated using Google Forms. The statistical analysis was made using mean and average which concluded that out of a total 279 participants, 36.7 % of students floss, among which 20.9% of students started flossing after joining dental college. Thus, the present study concludes that, along with knowledge and awareness regarding flossing, motivation to maintain interdental soft tissue health is important for a dental student who is considered as a mirror of future dentistry.

Keywords: Flossing, dental students, survey, Interdental aid

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Introduction

Periodontal disease can be divided broadly in to gingival diseases and periodontitis, both of which are inflammatory conditions caused by the formation and persistence of microbial biofilms on the hard, non-shedding surfaces of teeth. Plaque induced gingivitis is a chronic inflammatory condition confined to the gingival connective tissue. In susceptible patients, gingivitis may progress to periodontitis. Periodontitis is characterized by host mediated non-reversible destruction of the supporting structures of the teeth and if left untreated, is a leading cause of tooth loss¹. In India, the prevalence of periodontal disease has been reported to be high with studies showing every second person above the age of 35 years with periodontal pockets and 85% of total teeth extracted after 30 years attributed to periodontal diseases². Prevention of periodontal disease consists of patient-performed control of the dental biofilm and professional interventions.

Patient-performed control of the dental biofilm includes oral hygiene procedures such as mechanical and chemical plaque control¹. Tooth brushing mechanically disrupts the oral biofilm and reduces the bacterial burden at the tooth gingival interface³. However, toothbrushes have poor interdental access⁴. Interdental areas are more prone to periodontal breakdown. Thus, the use of interdental aids such as interdental brushes or dental floss used in combination with tooth brushing enhances the effectiveness of mechanical plaque control⁴.

Dental students play an important role in educating and promoting public oral health⁵. Thus, their knowledge and practice of basic oral hygiene techniques is necessary not only for personal oral hygiene but also bring about changes in oral hygiene behavior of their patients to address inadequate plaque removal. A person will benefit most by using a dental aid that they are motivated to use and that science has proven it efficient. Dental floss is considered more effective in the anterior teeth.

Patient's compliance is directly associated with the ease of use and their motivation. Moreover, studies indicate that interdental brushes are easier to use than dental floss⁶. The aim of the present study was to assess the knowledge and frequency of use of dental floss among undergraduate and postgraduate dental students.

Material and Methods

An online pretested and validated questionnaire form prepared using google forms were floated among undergraduates, postgraduates and interns. Questionnaire consisted total of a 22 objective type questions that included demographic data, oral hygiene practices and questions on flossing habits. A total of 279 students participated in the survey. Only dental students who are willing to participate in survey were included. The data were analyzed in Microsoft excel and google form results using average and percentage.

Results

A total of 279 dental students responded for the survey, out of which 76.2% were female students while 23.8% were male students. Out of total response 79.7%, 16.7% and 3.6% of undergraduate, post graduate and intern responded respectively (Table 1). A total of

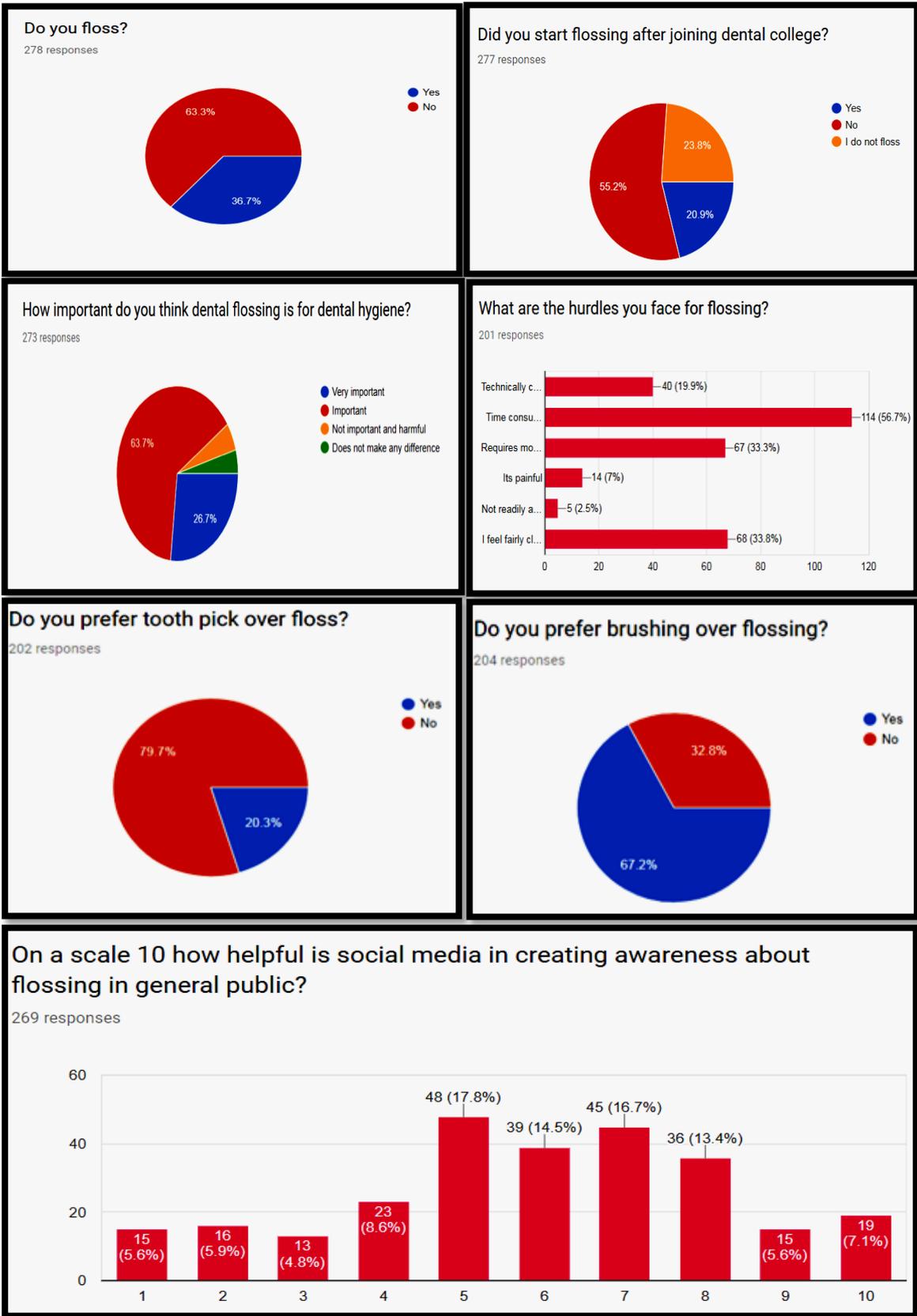
102(36.7%) student use dental floss as plaque control measure (Graph 1) and 56.4%, 92.2%, 42.6% and 31.4% of the students use mouth wash, tooth brush, tongue cleaner and other interdental aids respectively (Table 2). Out of total population of 279, 58 students (20.9%) started flossing after joining dental college. 26.7% and 63.7% of students think it is very important and important respectively, while 5.1% and 4.4% student think flossing is not important and harmful and does not make any difference respectively. Fifty seven percentages of students do not floss as flossing is time consuming whilst 33.8% of students have reported that they feel fairly clean after brushing. 67.2% of population prefer brushing over flossing while, 79.9% of population prefer flossing over tooth pick. A total of 75.1% of students have scored 5 or more than 5 on a scale of 1 to 10 in role of social media in creating awareness among general public (All the data shown in Graphs below).

Table- 1: Count of participants

Designation	Female	Male	Grand Total
Intern	8	2	10
Post graduate	36	10	46
Under graduate	163	54	217
Grand Total	207	66	273

Table- 2: Count of what are the plaque control measures used

	Under graduate	Post graduate	Intern	Grand Total
Brushing	42	4	2	48
Brushing, Floss	6	4	0	10
Brushing, Floss, Tongue cleaner	4	5	0	9
Brushing, Inter dental brush	2	1	0	3
Brushing, Inter dental brush, Floss	7	1	1	9
Brushing, Inter dental brush, Floss, Tongue cleaner	2	0	0	2
Brushing, Inter dental brush, Mouth wash	2	0	0	2
Brushing, Inter dental brush, Mouth wash, Floss	12	3	2	17
Brushing, Inter dental brush, Mouth wash, Floss, Tongue cleaner	21	8	1	30
Brushing, Inter dental brush, Mouth wash, Tongue cleaner	1	1	1	3
Brushing, Inter dental brush, Tongue cleaner	1	0	0	1
Brushing, Mouth wash	19	2	0	21
Brushing, Mouth wash, Floss	11	2	3	16
Brushing, Mouth wash, Floss, Tongue cleaner	11	5	0	16
Brushing, Mouth wash, Tongue cleaner	31	4	0	35
Brushing, Tongue cleaner	15	5	0	20
Floss	16	1	0	17
Inter dental brush	4	0	0	4
Mouth wash	6	0	0	6



Discussion

Flossing was introduced by the Parmlly L S in the year 1819. He used filamentous material to clean the interdental area along with tooth brush and dentifrice to prevent dental disease ⁷. In 1882, Codman & Shurtleff first produced unwaxed silk floss. However from the year 1887 Johnson & Johnson made silk floss widely available, which was made from leftover of sterile sutures manufacturing ⁸. Ever since, different kinds of dental flosses are commercially available in the market. In the present study less than 50 % of the student population knows the kind of commercially available dental flosses. Hence educating, commercially available products as a part of curriculum can be considered to help students improve their knowledge on flossing. As dental plaque is naturally pathogenic and dental floss disrupts and removes some interproximal plaque, it has been thought that flossing should reduce gingival inflammation. Barendregt et al; in 2002 told Flossing as the sole form of oral hygiene has been shown to be effective in preventing the development of gingival inflammation and reducing the level of plaque ⁹. Thus flossing is essential. In the present study, one third of the total population floss indicating that the flossing is not a common practice when compared to tooth brushing and mouth wash. The ADA reports that up to 80% of plaque may be removed by dental flossing ¹⁰. Waerhaug in 1981 told that even subgingival plaque can be removed from dental floss as it can be introduced 2 to 3.5 mm below the below interdental papilla ¹¹. It is presumed that regular use of dental floss will prevent interdental caries and periodontal disease ¹¹⁻¹³. Several authors have recommended the use of dental floss along with regular tooth brushing to prevent periodontal disease ^{12,14,15}. In the present study more than 60 % of student thinks it is important to floss. In contradiction, Berchier and co-workers in 2008 conducted a systematic review of scientific literature to investigate the efficacy of dental floss as an adjunct to tooth brushing where they concluded that routine recommendation to use floss is not supported by scientific evidence. However, in his systematic review he stated that flossing had an adjunctive

effect on plaque removal when individual studies were considered during analysis.

In spite of the advantages bestowed by the use of dental floss, patient compliance with routine use of dental floss in low. Patient ascribes to the lack of motivation¹². Dental professionals are expected to provide motivation to the patient. In this study, dental students were asked probable hurdle for flossing, where more than 50% of students told that dental flossing in more time consuming hence they were reluctant to floss their teeth regularly. In the present study, in spite of 56.7% of student thinking that flossing is important, only 21% of the students started flossing after entering dental school. This indicates that the exposure of the students to knowledge about benefits and technique of flossing is not enough to promote them to use flossing on a daily basis but motivation is also important. In a study by Sharda et al; in 2008, it was noticed that oral health knowledge, attitude and behavior of dental students were significantly higher in final year students compared to first year students however, he also stated that preventive behavior among the students could still be improved ¹⁶. Thus more the exposure of either dental students or general public to knowledge about flossing or interdental hygiene along with motivation, promotes the use of dental floss. This can be achieved by using communication platform such a social media can be used to create awareness among general public and dental students and professionals. In the present study 70% of students have concede to the idea of using social media as a platform for educational communication. According to Van der Weijden although floss should not be the first tool recommended for cleaning open interdental spaces, if the patient does not like any other tool, flossing could still be part of oral hygiene instruction ¹¹. The dental professional should, however, realize that proper instruction, sufficient motivation of the patient and a high level of dexterity are necessary to make the flossing effort worthwhile.

Conclusion

The result of this survey indicates that the awareness about dental flossing in high among dental students however limited number of student practice flossing on a daily bases due to

various reasons. As the controversy of flossing in literature has emerged since a decade, attention must be given on maintenance of interdental hygiene rather than mode of maintenance of oral hygiene. Dental students are looked up on as role model for maintaining oral hygiene among common population, henceforth care must be given on how well students practice rather than how well students know about oral hygiene measures.

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