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Knowledge and Practice of Interdental Aids among College Students of Dharwad City - A Cross-Sectional Study

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Abstract

Background: Dental plaque is considered as one of the chief causative agents of periodontal disease. The routinely used mechanical plaque control tool in almost every household is the manual toothbrush. However, brushing alone does not eliminate plaque completely. Deposits in inaccessible areas of the oral cavity such as interproximal areas can lead to severe periodontal conditions. In light of this scenario, routine use of interdental cleaning devices as adjuncts to tooth brushing for oral hygiene maintenance becomes all the more important.

Objective: Assessing the practice and knowledge of interdental aids among college students of Dharwad city was the objective of the present study.

Methods: A descriptive, cross-sectional, close-ended questionnaire-based survey was conducted. The survey forms were distributed among the study subjects through WhatsApp social media.

Results: About 16.6% participants believed that toothbrush can effectively clean interproximal surfaces and 41% subjects were aware of interdental cleaning aids. The information regarding interdental aids was provided by dentists to 20% subjects. About 53% participants expressed to be motivated to use interdental aids for oral health maintenance.

Conclusion: The temperament of people towards oral health and the dentists' outlook plays a pivotal role in regulating good oral health conditions of any population. This survey concluded that large section of young population of Dharwad city had an insight about interdental aids.

Keywords: Plaque control, Interdental cleaning aids, Periodontitis, Tooth brushing

Introduction

World Health Organisation considers 'oral disorders' as widespread noncommunicable diseases. Oral hygiene and cleanliness are crucial for the protection and nurture of oral health. Periodontal disorders are the most widespread oral illnesses, despite being treatable and preventative.[1] Populations around the world are impacted by caries, periodontal disorders and oral cancers. In terms of high prevalence of these oral disorders, India is not an exception.[2] Periodontal disease prevalence and the need for treatment have always been higher in populations with low awareness.[3] In India, statistics show that a mere 2% population visit the dentist, 50% use toothbrushes, while 95% are reported to have periodontal diseases.[4]

Periodontitis is primarily caused by dental plaque, the mechanical removal of which constitutes the measure for its prevention.[5] The most common device used for mechanical plaque control is the manual toothbrush. Using a manual toothbrush for removal of mechanical plaque at home is not quite effective for treating adults with gingivitis.[6,7] The justification for treating inter-dental cleaning as a separate entity is the reasoning that just brushing teeth does not adequately clean the spaces between the adjacent teeth, leaving certain sections of teeth unclean.[8] For the preservation of gingival health, avoidance of periodontal conditions and decrease in caries, it is vital to remove interproximal plaque to disrupt the biofilm.[9,10] The relationship between interproximal oral hygiene (IOH) practices and decline in plaque is well documented.[11] It is the responsibility of the dental professionals to advocate and inform patients about the significance of incorporating interdental cleaning into their home-care routine as the infection frequently begins and spreads from the tissues immediately adjacent to the interproximal tooth sites.[12]

"An environment which is conducive to shifting the onus of public health from the shoulders of healthcare personnel to 'people's own hands' would essentially thrive upon the population's health literacy through its accurate knowledge and understanding of scientifically supported information and facts," was one of the guiding principles of the WHO's Ottawa charter for health promotion in 1986. The intellectual, emotional, behavioural components determine the person's attitude. The intellectual component represents the person's beliefs and knowledge, the affective quotient the strength of their beliefs, and the behavioural component their readiness to act to a certain situation. Thus, attitudes to dental care could be defined, e.g., by self-assessment of one's dental health (cognitive), and the inclination to attend for regular dental examination (behavioural). The data obtained from cross sectional studies of representative population are beneficial in designing therapeutic and preventive protocols. Hence, assessing the familiarisation and practice of interdental aids among college students of Dharwad city was the purpose of this study.

Materials and Methods

A cross-sectional questionnaire-based study was conducted among the college students. A self-developed, pre-validated and close-ended questionnaire was used. The questionnaire was directed to the participants through social platform via WhatsApp along with a consent form and details of the study.

Inclusion criteria

The study participants belonged to the age group of 18-25 years. All the study subjects were from Dharwad city.

Exclusion criteria

Participants not fulfilling the inclusion criteria were not considered for the study.

Validation of questionnaire

Questions generation: Six experts in the topic of interproximal cleansing aids were requested to identify important issues/suggest appropriate questions for this questionnaire study. The responses thus collected were read, categorized and converted into relevant questions. The questionnaire thus formed contained 16 questions. For the content validation, the preliminary questionnaire was sent to six experts to consider each question regarding its relevance to the topic. The final version of the questionnaire consisted of 16 questions.

Ethical clearance

The ethical clearance was obtained from the Institutional Ethical Board of SDM College of Dental Sciences and Hospital, Dharwad.

Study population

The survey was conducted amongst a heterogeneous group of 300 participants aged between 18-25 years selected using random sampling method. The study participants were briefed about the nature of the research and were asked to complete the questionnaire. The survey was conducted in English language. Consent form was

included in the application. Those who were not willing to provide consent were excluded from the survey. Participants consenting for the study completed the questionnaire and their anonymity was maintained. The required data were collected using a proforma consisting of three main sections. The first section comprised of the consent form, while the second section comprised of the questionnaire including personal details such as age, gender and socio-demographic characteristics. The third section included 12 questions of which seven questions were knowledge-based, and three were related to the usage of interdental cleansing aids, while two questions were designed to test the motivation.

Results

All the study participants included were aged above 18 years, belonging to the age group of 18-25 years. A total of three hundred college students participated in the study. Among them, 90% used tooth brush and tooth paste, 2.3% used neem sticks and 7% used interdental aids for oral hygiene (Figure 1). Among them, 67.6 % reported to brush once daily, 31.3% brushed twice daily and 1% brushed after each meal. About 50.6 % reported facing difficulty in cleaning interproximal areas, while 16% reported difficulty cleaning lingual surfaces, 20.6% subjects found upper and lower surfaces difficult to clean and 12.5% reported difficulty in cleaning top surfaces.

Figure 1: Tools used for dental hygiene

Among the respondents, 16.6% reported that toothbrush can clean interproximal surfaces, 41% were aware of the interdental aids, 42.6% are unaware, while 16.3% reported to be unsure of what interdental aids are (Figure 2). About 20% of the participants reported to have received information on interdental aids from the dentist, 21% from family and friends, 25% from mass media, while 6% reported to have received information from their family doctor.

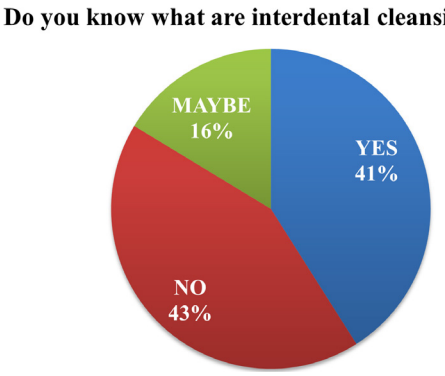

Figure 2: Knowledge of interdental cleansing aids

Regarding the usage of interdental aids, 47.6% subjects were of opinion that they are used to remove food debris, 14.3% believed interdental aids are used to remove stains, while 7.3% opined that they aid in reducing bad breadth (Figure 3).

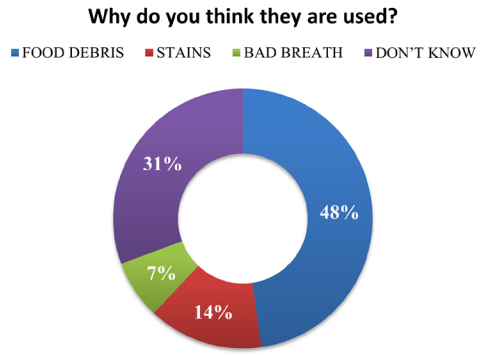

Figure 3: Reason of using interdental cleansing aids

Only 29% received demonstration of appropriate use of interdental aids, while 71% did not receive any information regarding the usage (Figure 4).

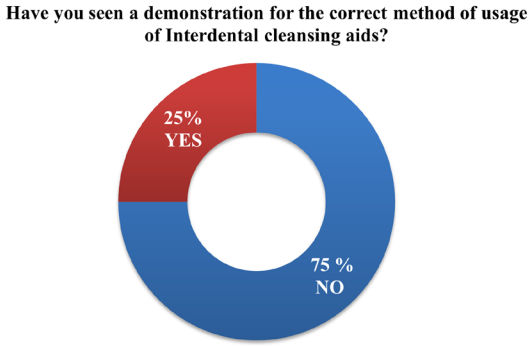

Figure 4: Demonstration of usage of Interdental cleansing aids

About 19.0% of the study subjects reported regular usage of interdental aids, 13.0% used on alternate days, 12% used once a week and 20% of the study subjects used once a month. When asked regarding the type of interdental aid used, 13% subjects reported using dental floss, while majority of the participants used tooth picks

(40%) and 13% used interproximal brushes. About 84% of the study subjects were aware that interdental aids are important for the maintenance of gingival health and 53% participants felt motivated to use interdental aids for oral health.

Table 1: Questionnaire responses

How many times do you brush your teeth?	Once a day	67.6 %
	Twice a day	31.3 %
	After each meal	1%
Which surface of your teeth do you find difficult to clean?	Upper and lower surfaces	20.6 %
	Front and back surfaces	16 %
	In between your teeth	50.6 %
	Top surface	12.5 %
Do you think toothbrushes can effectively clean interproximal areas (areas between two teeth)?	Yes	16.6 %
	No	26 %
	May be	57.4 %
If yes, how do you know about them?	Through a Dentist	20 %
	Through a doctor	6 %
	Heard from family/friends	21 %
	Mass media/ Newspapers/ Magazines	25 %
If you are using Interdental cleansing aids how often do you use them?	Every day	19.0 %
	Alternate days	13 %
	Once a week	12 %
	Once a month	20 %
Which type of Interdental cleansing aids do you use?	Dental floss	13 %
	Toothpick	40 %
	Interproximal brush	13 %
	Rubber tips	1 %
Do you think interdental cleansing is important for the maintenance of your gums?	Yes	84 %
	No	16 %
If you have never used a interdental cleansing aid till now. Are you interested to use it hence forth if recommended?	Yes	53 %
	No	11 %
	May be	36 %

Discussion

Each individual should strive to set a good example for healthy oral health attitudes and behaviour to their families, and friends. They should encourage individuals to maintain good oral health.[13,14] The attitude of people and dentists is crucial in determining the oral health conditions.[14,15] The removal of inter-proximal plaque is paramount for maintenance of gingival health, prevention of periodontal diseases. Inter-proximal plaque cannot be effectively removed by using just the toothbrush and patients need to resort to additional home care techniques such as interdental aids.[13,15]

In the present study, 90% subjects cleaned their teeth daily using tooth brush and paste, which is in accordance with other studies.[15,16] Majority (67%) brushed only once a day. This could be attributed to unawareness or lack of enthusiasm. About 50% reported difficulty in cleaning the interproximal surfaces. Sixteen percent reported brushing lingual surfaces to be more complicated compared to other surfaces, contrary to Finnish (78%) and Japanese (55%) students.17 About 42% of the subjects were unaware of interdental aids, and this could be contributing to their sparse use. About 20% subjects received information regarding interdental aids from dentists, while 25% reported receiving information from social media. A mere 19% of subjects reported using interdental aids regularly. Evidence in the literature demonstrating sparse use of flossing as a prophylactic measure among various populations of the world corresponded to this study.[15,18,19] Conventional study subjects lacked knowledge regarding the use of interdental aids, appropriate force and technique. These results are in accordance with the studies conducted by Neeraja *et al.*[17] The usage of floss without proper guidance can result in gingival ulcerations. Overly vigorous flossing may lead to ulceration of gingiva, cervical tooth abrasion, gingival recession and gingival irritation.[20] Majority of subjects (40%) reported using toothpicks for maintenance of good oral hygiene. However, toothpicks could cause gingival abscess when improperly used.20 Oral health education is essential to enhance the habit of using interdental aids.[15,21-25]

Conclusion

The attitude of individuals towards their own teeth and the attitude of dentists play an important role in determining the oral health status of the population. This survey found that young population of Dharwad city have a fair degree of familiarity regarding interdental

aids. Various health programs concerning appropriate usage of mechanical plaque control aids is fundamental to educate individuals about the importance and maintenance of periodontal health. This study provides data for future research and allows comparisons with other populations. Limitations of this study includes smaller sample size and predominance of female subjects among the respondents. The gender bias might have affected the outcome of the study as females are more inclined towards personal hygiene. A larger sample size, eliminating any biases could result in a more accurate outcome. The authors recommend similar research to be conducted in different economical strata to spread awareness and benefit people of poorer strata.

Clinical significance

The rate of acceptance of interdental aids among younger population was studied. The advice of correct habitude of interdental aids can be implemented by dental practitioner. The targeted youth in this study lacked knowledge regarding proper method and correct indications of mechanical plaque control aids to be used.

Funding source

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Conflict of Interest

Nil

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