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ORIGINAL ARTICLE

Various interdental aids, their effectiveness and recommendation; A Cross-Sectional Survey

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ABSTRACT

Objective: The aim of this study is to discover effectiveness of interdental aid, their use in the daily oral hygiene and suggestion of interdental aid to be used.

Methods & Materials: This study was conducted among 503 convenient samples of patients from outpatient department of IOD, CMH Lahore medical college. It is a questionnaire-based study. Data collected from February 2021 to April 2021. A written consent was taken. All the examiners were calibrated for check-up and questionnaire was filled on effectiveness of interdental aids and its uses and recommendation by individual.

Results: Total 503 people with 230 females and 273 males were participated in the study. Majority of the sample size did not know how to do interdental cleaning. Also, there is lack of awareness about dental hygiene in the masses.

Conclusion: Amongst the patients which came for their dental treatments who were using any interdental cleaning aid, toothpick was the most common choice. However, toothpicks are not a recommended aid because it can damage the gums and cause bleeding. Awareness should be given to the patients so that they use appropriate methods and aids for interdental cleaning.

Keywords: Interdental Aids, Effectiveness

INTRODUCTION

Periodontal diseases are prevailing extensively all around the globe. Though this chronic disease is preventable but still notable populations are affected by this. [1] For a better oral health care, dental students should promote and educate about public dental health. [2-4] Therefore we can define oral health as "a standard of health of oral and related tissues that an individual to eat, speak and socialize without active disease, discomfort or embarrassment and which contribute to general well-being." A good oral health is considered important and pivotal component of good general health.[5]

Biofilm or dental plaque, that is formed, is major cause for periodontal diseases and carious lesions at the proximal side hence the bacterial plaque should be disrupted and removed for its prevention. [6] Toothbrush alone cannot serve for this purpose, therefore for effective removal of dental plaque further aids such as dental floss should be adjuvant to it.[7] To remove plaque dental floss is observed as most effective interdental aid.[8] A study reported that regular use of dental floss shield from periodontal disease as well as reduce the risk of CVD "cardiovascular disease"[9] But unfortunately patients are not advised routinely in the dental practice. [10] It has been noticed that when used in combination, toothbrush, and dental floss, they act as an effective mean to mechanically remove dental plaque and prevent periodontal disease maintaining a good oral hygiene.[11] It has been reported that primary etiological factor is the development of chronic inflammatory periodontal disease is retention of plaque. [12] Due to frequent accumulation of plaque in interproximal or interdental sites, periodontitis and gingivitis lesions are seen. [13] These interproximal areas are frequently affected by caries hence a focus on oral self-care has been greatly made. [14] for this purpose a more triangular cross-section was introduced and advised by Axelsson [15] and Dörfer et al. [16]Interproximal plaque can be greatly reduced by interdental brushes which are available in different shapes and size. [17] Those who have healthy gingiva and smaller embrasures would need smallest interdental brushes which would prove effective in this case. [17] People with large hands or those with limitations in manual dexterity, these brushes greatly aid them. [17.] Thus, in patients receiving supportive periodontal therapy, the cylindrical shape IDBs should be preferred to obtain and maintain gingival health around natural teeth.[18] Therefore removal of plaque mechanically is considered as bedrock of successful management of periodontal disease in patients who are at high-risk.[19] But beside all this people lose interest to use them as they are time-consuming.[20]

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MATERIAL & METHODS

The study design is a cross-sectional survey using structured close ended questionnaire that assessed the effectiveness of interdental aids among the patients

presenting in the outpatient department at Institute of Dentistry, CMH Lahore Medical College for various treatment modalities. The study population comprised of patients from both genders and all age groups with convenient sampling. A written informed consent was sorted from study participants. The performed questionnaire was be distributed in their respective classrooms.

Inclusion Criteria:

Ages: patients of all ages

Patients of both genders.

Exclusion Criteria:

Patients with physical abnormality or handicapped e.g., poliomyelitis.

Patients who did not want to be a part of the study.

RESULTS

The study sample comprised of 54.3% males and 45.7% females, respectively. It was observed that more males presented to the outpatient department for various treatment modalities. Surprisingly, 52.1% study sample revealed that no one introduced them to interdental aid. They have known about them since childhood.25.8% of the sample size mentioned Dentists or dental surgeon informed them about the use of various interdental aid for cleaning the proximal surfaces of the teeth. Surprisingly, 10.9% of the population knew by themselves about interdental aids and their use. 6.4% individuals were informed by their friends about the interdental aid and their effectiveness. Maximum number of patients perceived toothpick as an interdental aid. Dental floss topped the list in 2nd position. Twofold sample had no idea about different surfaces of the teeth. Furthermore, the study participants. Majority of the individuals did not know how to floss. Approximately, 2/3rd study population had no information about to use a dental floss.

More individuals mentioned that Floss as an interdental aid is not essential. 60% participants highlighted that it is not essential as an interdental aid and 40% suggested as a yes. Twofold participants said that floss does not affect gums whilst a mere 34.4 % believed that it does. Approximately three-fold participants did not know about interdental brushes for cleaning proximal surfaces of teeth. More than 2/3rd population knew about the use of toothpick as an interdental aid for removing any food debris stuck between proximal surface of the teeth. Embarrassingly, only 18.3 % population knew how to use interdental brush for cleaning proximal surface of the teeth. Twofold sample size said yes to the question of sharp objects affecting gums.

Majority of the sample size did not know how to use a floss for interdental cleaning purposes. The maximum number of study participants were females(housewives) followed by students. Shopkeeper/business owner were rated at 3rd in the sample distribution. Surprisingly, teachers/ lecturer at various schools/colleges and universities were 4th in the list. Labourers were ranked 5th in the list. Astonishingly, doctors were 6th in the list. Other professions are also mentioned but their results are not significant.

Table 1: Gender distribution

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	male	273	54.3	54.3	54.3
	female	230	45.7	45.7	100.0
	Total	503	100.0	100.0	

Table 2: Who suggested interdental cleaning

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	dentist	130	25.8	25.8	25.8
	Dental Hygienist	3	.6	.6	26.4
	Through Advertisement	10	2.0	2.0	28.4
	Dental Awareness programs	11	2.2	2.2	30.6
	Through a friend	32	6.4	6.4	37.0
	self	55	10.9	10.9	47.9
	none	262	52.1	52.1	100.0
	Total	503	100.0	100.0	

Table 3: Effective interdental aid

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	toothpick	184	36.6	36.6	36.6
	dental floss	135	26.8	26.8	63.4
	interdental brushes	63	12.5	12.5	75.9
	other	13	2.6	2.6	78.5
	none	108	21.5	21.5	100.0
	Total	503	100.0	100.0	

Table 4: Awareness of interdental cleaning among the study participants

Item	Frequency	Percent	Valid Percent	Cumulative Percent
Info of tooth surface	193	38.4	38.4	38.4
Info how to floss	152	30.2	30.2	30.2
Dental floss essential	201	40.0	40.0	40.0
Floss affects gums	173	34.4	34.4	34.4
Info interdental brushes	120	23.9	23.9	23.9
Toothpick info	92	18.3	18.3	18.3
Sharp objects affect gums	335	66.6	66.6	66.6
Info how to floss	152	30.2	30.2	30.2

Table 5: Occupation of the study participants

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	housewife	96	19.1	19.1	19.1
	student	75	14.9	14.9	34.0
	businessman / Shopkeeper / self employed	46	9.1	9.1	43.1
	salesman	5	1.0	1.0	44.1
	Teacher / Lecturer	40	8.0	8.0	52.1
	maid	16	3.2	3.2	55.3
	Driver / Rickshaw Driver	13	2.6	2.6	57.9
	Retired Army Soldier	17	3.4	3.4	61.2
	Govt. job / Govt service / Private job / Civil servant	23	4.6	4.6	65.8
	Dependent	10	2.0	2.0	67.8
	Accountant	5	1.0	1.0	68.8
	Cashier / Banker	8	1.6	1.6	70.4
	Nurse	4	.8	.8	71.2
	Line Superintendent Wapda	1	.2	.2	71.4
	Gardner	4	.8	.8	72.2
	Contractor	1	.2	.2	72.4
	labourer	28	5.6	5.6	77.9
	Retired man	12	2.4	2.4	80.3
	Counselling Officer	2	.4	.4	80.7
	LLB / Lawyer	3	.6	.6	81.3
	Mechanic / Plumber	13	2.6	2.6	83.9
	Beautician	5	1.0	1.0	84.9
	Fashion Designing	2	.4	.4	85.3
	Security Guard	6	1.2	1.2	86.5
	Security management / supervisor / sub inspector Airport	7	1.4	1.4	87.9
	Engineer (chemical / mechanical / Electrical), IT professional	16	3.2	3.2	91.1
	Marketing	2	.4	.4	91.5
	Doctor	21	4.2	4.2	95.6
	chef	4	.8	.8	96.4
	welder	2	.4	.4	96.8
	peon/ sweeper	4	.8	.8	97.6
	librarian / clerk	2	.4	.4	98.0
	ward boy	2	.4	.4	98.4
	Architect	3	.6	.6	99.0
	printing press	1	.2	.2	99.2
	social welfare officer	1	.2	.2	99.4
	musician	1	.2	.2	99.6
	Travel Agent	1	.2	.2	99.8
	Molvi / Hafiz e Quran	1	.2	.2	100.0
	Total	503	100.0	100.0	

DISCUSSION

The purpose of the study was to assess the effectiveness and awareness of the interdental cleaning aids and knowledge of the patients attending the outpatient department at the Institute of Dentistry, CMH Lahore Medical College. Analysing the results revealed that 54.3 % study participants were males and 45.7% were females, respectively.

Oral health awareness of individuals is important in their tooth cleaning behaviour.[16] Poor awareness of interdental cleaning, by 65% of the patients in the present study, was a major underlying reason for not adopting the behaviour. The fact that cleaning the interdental areas was considered as being a waste of time or those who were aware of interdental cleaning not feeling like cleaning these surfaces, as indicated by some patients, may be associated with the act of cleaning these teeth surfaces. The act of cleaning interdentally is skill demanding and requires meticulousness, which may explain why these reasons were indicated by some patients. The cost and unavailability of interdental aids were other reasons for not cleaning the interdental areas. These and other reasons are important factors that will need to be strongly considered when an intervention is to be planned, especially at the policy level. The most used interdental aid in this study was dental floss. In current study frequently used interdental aid was dental floss. Similar findings of interdental aids were reported by author authors.[15,17] It is concluded by a review article on interdental cleaning method that all conventional methods were equally effective, but for a patient a specific method is effective and inside the mouth situation also matter.[18] In such environment finger or handselled roll form of dental floss was frequently used, which can be accredited personally or for easy use or accessibility of this form in the markets. It was noted from the results that nonsurgical flat blade was used to clean interdentally, although only two patients did so, nonetheless, this is unhealthy because blade has sharp edges that can injure oral tissues and the individual using it and this should be part of the message when educating patients in this health institution about their oral health.

Blade is not designed for cleaning of the mouth and this habit needs to be actively discouraged.

CONCLUSION

Amongst the patients which came for their dental treatments who were using any interdental cleaning aid, toothpick was the most common choice. However, toothpicks are not a recommended aid because it can damage the gums and cause bleeding. Awareness should be given to the patients so that they use appropriate methods and aids for interdental cleaning.

Ethical Consideration: Ethical approval was obtained from the Institutional Review Board, CMH Lahore Medical College and Institute of Dentistry. Written ethical approval was also obtained from the study participants. IRB ethical letter.

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