

Association between Tooth Loss and Oral Awareness Amongst Dentate and Partially Dentate Subjects of Pakistani population

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Abstract

Tooth loss can be a major cause of functional, psychological and social discomfort. These factors lead to an increase in concerns about oral and dental health. The basic aim of this study was to assess association between tooth loss and oral awareness amongst dentate and partially dentate subjects.

A cross-sectional study was carried out on 300 subjects divided into two equal groups i.e. dentate and partially dentate. Both the groups were assessed using the same questionnaire which was designed to acquire data of oral hygiene knowledge, attitude and practices in patients visiting the out-patient and prosthodontics department of FMH dental hospital.

With regards to the knowledge about oral hygiene, 78.7% subjects in GROUP A considered plaque as a caries causing agent whereas in group B, 80% said yes to plaque being the caries causing agent. 88.7% in GROUP A and 84.7% in GROUP B believed that bleeding gums mean inflamed gingiva. According to 96% of group A subjects, cleaning of teeth in very important as opposed to the 4% that believed that it is not so important likewise 94% of group B subjects considered cleaning of teeth as very important. When asked about concerns regarding dental health, in group A 57.3% were very concerned, 42% were not so concerned and 0.7% had never bothered at all. In group B, 53.3% were very concerned, 41.3 were not so concerned and 5.3 % had never bothered about their dental health. In group A, Brushing frequency was reported as twice daily by 55.3 %, once daily by 35.3%, more than twice daily by 4% and 5.3% of patients brushed occasionally whereas in group B, 46% brushed twice daily, 40% once daily, 6% more than twice daily and 8 % brushed only occasionally. Group A subjects visited a dentist more frequently as compared to group B subjects.

No significant difference in awareness regarding oral hygiene knowledge, attitude and practices was seen in the two groups. Intensive population-directed strategies for oral health education should be considered in order to further improve the oral hygiene practices of the entire population.

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Introduction

Loss of natural teeth is an inevitability of untreated oral disease. Most commonly, tooth loss is a result of advanced carious lesions or

severe mobility or trauma. Poor oral hygiene is a major factor in most reasons for tooth loss, including carious lesions and periodontal disease, which leads to gingival recession and eventual loss of tooth. Increased age results in more chances of tooth loss due to a decreased capacity for the aging body to heal itself and more probability of decreased health in general. However, as life expectancy has increased over the past years, the number of elderly requiring dentures has also increased.^{1, 2, 3}

Dentures are used for replacing lost teeth and returning the functional and esthetic

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conditions to the patients. As such, there is a large population section that has to deal with non-natural teeth on a regular basis. The artificial denture requires optimum cleanliness to preclude any damaging effects to the natural oral structure. Often, hygiene aids other than brushing the teeth, like dental floss and interdental brushes, are required to maintain the health of the remaining teeth, and especially the abutments. The denture also requires more than a simple rinse under running water to keep it free of food debris and plaque and to discourage growth of *Candida* species. As a whole, it has been noted that the standard of oral hygiene practiced by denture-wearing patients is not as good as it should be to maintain an optimum health of the remaining oral tissues.^{4, 5}

This study attempts to review the oral hygiene practices of dentate and partially dentate patients, and to compare the standards of both. The hypothesis is that the loss of natural teeth is an event that leaves an impact on the patient's perspective of their oral cavity, making the patient aware of the poor oral hygiene that had caused the tooth loss and therefore, motivates the patient into improving the standard of oral hygiene via a form of negative conditioning. The patients were randomly selected from the Fatima Memorial Hospital Out-patient Department and Prosthodontics Department. They were divided into two groups: "Dentate" and "Partially Dentate". The data collection was done via a specially designed questionnaire that covered aspects of their personal history, general medical history, dental history, and oral hygiene habits.

Materials and methods

It is a cross-sectional study based in Fatima memorial dental hospital. It was carried out on 300 subjects divided into two equal groups depending on the presence of full set of teeth i.e. dentate and partially dentate. The knowledge attitude and practices of the subjects were assessed using a custom made questionnaire. Three house officers of FMH dental hospital carried out face to face interviews and no proxies were made.

INCLUSION CRITERIA

Patients and their attendants visiting the out-patient and prosthodontics department of FMH dental hospital

EXCLUSION CRITERIA

Dental health professionals and students.

DATA ANALYSIS

Scores were given to each individual questionnaire and the data was analyzed using SPSS 20.0.

Results

This comparative study was done on two groups, each comprising of 150 participants each. Group A consisted of fully dentate subjects and group B consisted of partially dentate subjects show in table 1 and 2 respectively.

Variables	Group A (N=150)		Group B (N=150)	
	n	%	n	%
How important is cleaning of teeth?				
Very important	144	96	141	94
Not so important	6	4	9	6
Concerns about dental health?				
Very concerned	86	57.3	80	53.3
Not so concerned	63	42	62	41.3
Never bothered	1	0.7	8	5.3
How often do you clean your teeth?				
Occasionally	8	5.3	12	8
Once daily	53	35.3	60	40
Twice daily	83	55.3	69	46
More than twice daily	6	4	9	6
Type of toothbrush used				
Hard	14	9.3	17	11.3
Medium	53	35.3	47	31.3
Soft	77	51.3	85	56.7
Never Noticed	6	4	1	0.7
How often do you change your toothbrush?				
When useless	15	10	26	17.3
Once in three months	121	80.7	105	70
Every six months	10	6.7	15	10
Once a year	4	2.7	4	2.7
How often do you visit a dentist				
Only in problem	142	94.7	147	98
Once in three months	4	2.7	0	0
Once in six months	2	1.3	3	2
Once a year	2	1.3	0	0
Reason for not visiting a dentist				
Fear of instruments	12	8	10	6.7
High cost	11	7.3	9	6
Time constraints	40	26.7	54	36
High cost & Time constraints	0	0	11	7.3
No need	87	58	66	44

Table 1. Group A consisted of fully dentate subjects and group B consisted of partially dentate.

Out of 150, group A had 77 male and 73 female subjects whereas in group B, there were 54 male and 96 female subjects. In group A, 57.3 % were married and in group B 82.75% were married.

In the interviews, medical status of the subjects was inquired. Those having no underlying medical condition were considered healthy and those having hypertension, diabetes mellitus or any other major medical problem were considered unhealthy. According to this, 86% of the subjects of group A were healthy and 14 %

had some underlying medical condition whereas in group B only 67.3 % were healthy and the rest 32.7% had some medical problem.

Variables	Group A (N=150)		Group B (N=150)	
	n	%	n	%
Knowledge regarding gum bleeding as inflamed gingiva				
Yes	133	88.7	17	11.3
No	127	84.7	23	15.3
Knowledge regarding plaque as caries-causing agent				
Yes	118	78.7	32	21.3
No	120	80.0	30	20.0
Do you think poor oral hygiene leads to tooth loss?				
Yes	133	88.7	17	11.3
No	138	92.0	12	8.0
How important is cleaning of teeth?				
Very important	144	96	141	94
Not so important	6	4	9	6
Concerns about dental health?				
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High cost	11	7.3	9	6
Time constraints	40	26.7	54	36
High cost & Time constraints	0	0	11	7.3
No need	87	58	66	44
Do you clean your tongue?				
No	48	32	51	34
Occasionally	30	20	24	16
Yes	72	48	75	50
Do you Rinse after meals?				
No	39	26	27	18
Occasionally	41	27.3	40	26.7
Yes	70	46.7	83	55.3
Use of mouth wash				
No	92	61.3	105	70
Occasionally	45	30	31	20.7
Yes	13	8.7	14	9.3
Ever noticed bleeding from gums				
No	58	38.7	73	48.7
Occasionally	64	42.7	47	31.3
Yes	28	18.7	30	20
Ever noticed smell from mouth				
No	64	42.7	72	48
Occasionally	62	41.3	54	36
Yes	24	16	24	16

Table 2. Specially designed questionnaire for Group A and Group B.

To assess the knowledge of the subjects few questions were asked;

Accordingly, in group A (Table1), 88.7% of the subjects believed that bleeding gums means inflamed gingiva whereas, 11.3% believed it to be opposite. In group B, 84.7% considered that gum bleeding means inflamed gingiva. Whereas, 15.3% considered it not to be so.

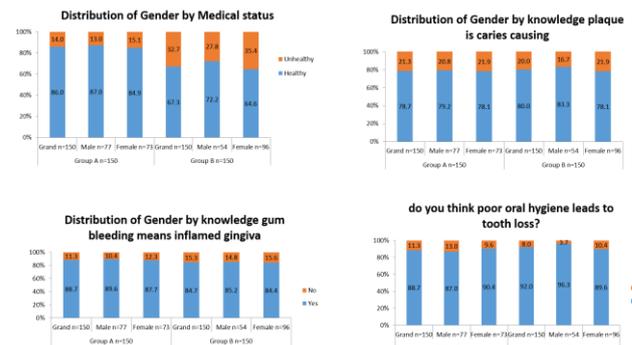


Figure 1. Questioned about plaque being the caries causing agent, at the groups.

When questioned about plaque being the caries causing agent, 78.7% subjects in group A answered in favor of it, whereas, on the other hand 80% of the subjects regarded plaque as a caries causing agent. According to group A subjects, 88.7% think that poor oral hygiene leads to tooth loss and 11.3% were against it. Whereas, in group B, 92% believed that poor oral hygiene leads to tooth loss and 8% opposed it (Figure 1).

When asked about the importance of cleaning the teeth, 96% of the group A subjects felt that cleaning of teeth is very important. And 4% believed that it is not so important. Whereas, among the group B subjects 94% of the subjects believed that cleaning of teeth is very important and for the rest 6% it is not so important.

According to the group A subjects, 57.3% are very concerned about their dental health. 42% subjects are not so concerned and 0.7% never bothered about it. On the other hand, amongst the group B subjects, 53.3% subjects are very concerned about their dental health. 41.3% are not so concerned and 5.3% never bothered about it (Figure 2).

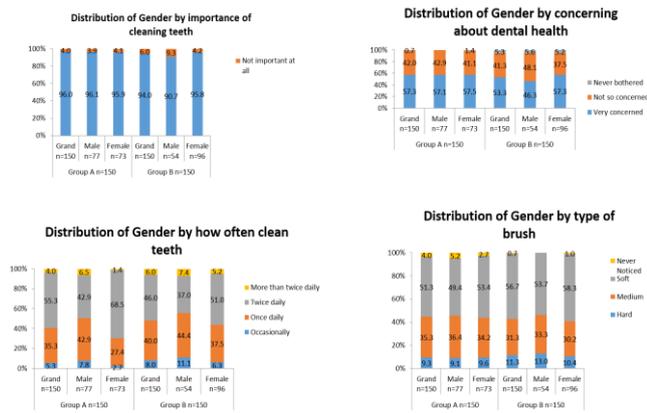


Figure 2. Subjects groups which are concerned about their dental health.

When asked about frequency of brushing, 55.3% in group A brushed twice daily whereas in group B only 46% did so. 35.3% of group A and 40 % of group B brushed once a day only and 4% and 6% brushed more than twice daily amongst group A and B respectively. 5.3% of group A subjects brushed only occasionally whereas this percentage was 8% in group B. When asked about the kind of brush used for brushing, in group A 9.3% used hard, 35.3% used medium, 51.3% used soft brush and 4% said that they had never noticed what type of brush they were using. In group B, 11.3 % used hard brush, 31.3% used medium and 56.7% used soft brush with only 0.7 % claiming they had never noticed the type of brush they were for brushing teeth. When asked about how often people change their brush, in group A 10% said when useless, 80.7 % said once in three months, 6.7 % every six months and only 2.7 % changed once a year. In group B, 17.3% changed their brush when useless, 70% once in three months, 10% every six months and again only 2.7% said they changed their brush only once a year. When asked how often they visited a dentist, 94.7% in group A said only in problem, 2.7% said once in three months, 1.3% said once in six months and 1.3% said once a year. In group B, 98% said they visited a dentist only in problem, and only 2% said they visited once in six months for a regular checkup (Figure 3).

When asked why subjects did not visit a dentist for a general check-up, 58% of group A and 44% of group B subjects said they do not feel any need for visiting a dentist for a check-up. 26.7% of group A and 36 % of group B subjects blamed time constraints for not visiting a dentist.

7.3% of group A and 6% of group B did not visit a dentist due to high cost of procedures and 8% of group A and 6.7% of group B said they had fear of instruments (Figure 3).

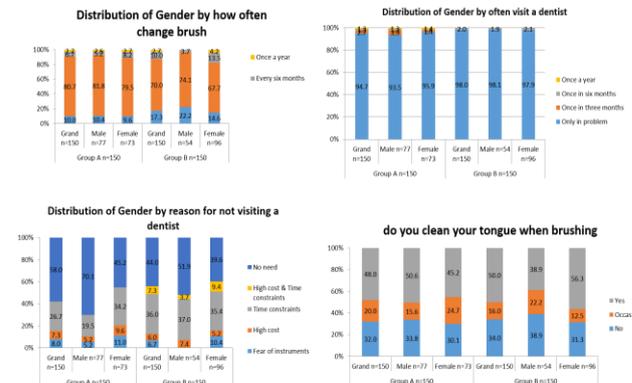


Figure 3. Groups related subjects who did not visit a dentist for a general check-up.

According to the subjects interviewed, in group A 48% of the subjects cleaned their tongue, 32% of the subjects never cleaned their tongue and 20% of the subjects cleaned their tongue occasionally. In group B, 50% of the subjects clean their tongue, 34% of the subjects never cleaned their tongue and 16% of the subjects cleaned their tongue occasionally. In group A, 46.7% of the subjects rinse their mouth after eating. 26% of the subjects never rinsed their mouth and 27.3% of the subjects rinsed their mouth only occasionally. In Group B, 55.3% of the subjects rinsed their mouth after eating. 18% never rinsed their mouth and only 26.7% of the subjects rinse their mouth occasionally. In group A, 8.7% of the subjects used mouthwash, 61.3% of the subjects never used mouthwash and 30% of the subjects use mouthwash occasionally. In group B, 9.3% of the subjects use mouthwash. 70% of the subjects never used mouthwash and 20.7% of them used only occasionally. According to the study, in group A 18.7% of the subjects experienced bleeding from their gums. 38.7% of the subjects never experienced bleeding and 42.7% subjects experienced occasionally, whereas in group B, 20% of the subjects experienced bleeding from their gums. 48.7% never experienced bleeding and 31.3% of them experienced only occasionally. Amongst the group A subjects, 16.4% of the subjects experienced smell from their mouth. 42.7% of the subjects never went through it and 41.3% experienced occasionally. Amongst the group B subjects, 16% of the subjects felt smell from their

mouth. 48% never experienced it and only 36% of them felt occasionally (Figure 4).

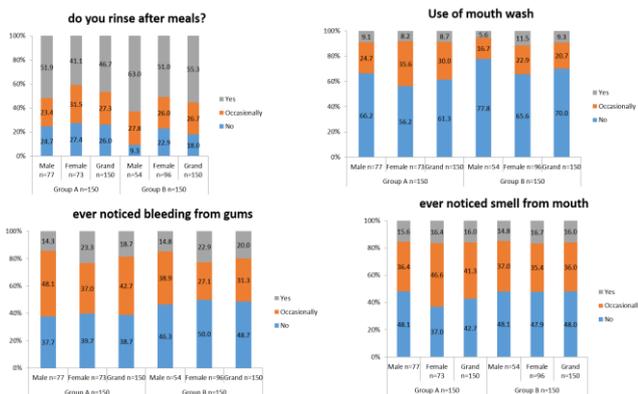


Figure 4. Groups who felt smell from their mouth.

Discussion

Tooth loss can be a major cause of physical and psychological problems. These problems can include: Depression, poor self-esteem, speech problems and even a lack of desire to socialize. Some people think that tooth loss is insignificant. However, tooth loss can greatly affect a person's daily life.^{6,7} Age and loss of teeth can be expected to have a complex relationship with oral health-related quality of life. Age, number of teeth and cultural background are important variables influencing oral health-related quality of life.^{8,9,10}

According to traditional approach to health education, using the Knowledge-Attitude-Practice (KAP) model, the knowledge acquired by the subject generates attitudes that in turn give rise to changes in practice.¹¹ Ours is a KAP study done to find out whether the loss of teeth can lead to an increase in concerns and awareness of oral hygiene. It is a comparative study conducted on two groups- dentate and partially dentate. Both the groups were assessed using the same questionnaires. Our hypothesis was that tooth loss can lead to an increase in care and concerns about the remaining dentition and oral health in general thus leading to better awareness and practices in the partially dentate group. We presented a null hypothesis and we proved it right. No significant difference was seen in the knowledge, attitude and practices amongst the groups. The collected data made it obvious that awareness and knowledge about dental and oral health is very limited and given least priority as seen in another study by Hud and Reisin.^{12,13}

The present study showed a statistically insignificant difference in awareness of the two groups. Within the two groups, the females showed more awareness as compared to males when assessed by their knowledge attitude and practices. More than 90 % of subjects from both the groups visited the dentist only in problem and the most common reason for not visiting a dentist was lack of need perceived by the patient followed by time constraints and fear of instruments. Routine dental treatment has been the missing element.¹⁴

The most common reason for their visit was dental pain as also observed in other studies.^{15,16}

Subjects from the dentate group changed their brush more frequently as compared to the partially dentate ones. About 55% subjects in dentate group brushed their teeth twice daily as compared to the 46% of the partially dentate group whereas more people in group B brushed more than twice daily as compared to group A. which was very consistent with the findings of Harikiran where 38.8% brushed their teeth two or more times daily.¹⁷

According to the study, about 92% of the group A subjects used tooth brush and tooth paste as their cleaning method whereas, about 98.7% of the subjects in group B used tooth brush and tooth paste as their cleaning aid.

In a third-world country like Pakistan, Oral challenges are enormous but they are all linked to the broad social and economic conditions of the country. Dental caries, periodontal disease and other oral disease burden people in Pakistan excessively. These are aggravated by poverty, poor living conditions, ignorance concerning health education and lack of government funding.¹⁸

Taking care of the wider determinants of health by providing basic living necessities such as food, shelter, clothing to people, education, awareness will lead to improvements in oral health of people along with general health. Community oral hygiene promotion must attempt to maximize opportunities for oral health for all and reduce inequalities by removing financial and other barriers.¹⁹ Electronic and print media will be the appropriate way to disseminate oral health awareness to the Pakistani population via mass media.

Conclusions

This study showed no significant difference in awareness of dentate or partially dentate subjects thus proving our hypothesis null. This is a time to realize that oral health is very important in general health. For maintaining healthy lives, oral health should be an important thing to be focused by government and local authorities. To save the nation's smile, Dental professionals and government of Pakistan need to work in collaboration to improve the status of knowledge, attitude and practices of oral health and dental treatment.

Declaration of Interest

The authors report no conflict of interest and the article is not funded or supported by any research grant.

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