



ORIGINAL RESEARCH

Replacement of Missing Teeth among Patients – Factors Determining The Attitude



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ABSTRACT : Background: Replacement of missing teeth is important since it restores the functional and/or esthetics component. Among the options, patient's attitude generally plays an important role in selecting the type of prosthesis.

Aim and Objectives: To highlight the factors determining the attitude of patients for replacement of missing teeth reporting to a dental college in Puducherry, India.

Materials and Methods: A ten-item, closed-ended questionnaire was used to record the responses of 50 patients followed by a clinical examination Existing and missing teeth were charted by a single trained investigator. Collected data were analyzed using chi-square test at a significance level of 0.05.

Result: The age of the subjects ranged from 25 years to 67 years with more subjects in range of 25 – 44 years. Among the study subjects 64 percent of the subjects belonged to class II [upper middle] socioeconomic status; 46 percent reported missing posterior teeth; 36 percent cited lack of knowledge and 24 percent reported that financial constraints were the main reasons for not replacing their missing teeth. Dental caries and periodontal diseases were found to be the most common cause for tooth loss. Subjects with different levels of socioeconomic status reported different reasons for not replacing extracted teeth, and these differences were not statistically significant ($\chi^2=9.27$, $p>0.05$, NS).

Conclusion: The findings indicate that awareness needs to be improved on the importance of both functional and esthetic aspects of teeth, since more importance was given to functional rather than esthetics component.

Key words: *attitude, replacement of teeth, patient expectations, awareness*

INTRODUCTION

Smile is a window into one's personality. Teeth play a significant part in the maintenance of a healthy personality and an affirmative self-image. ¹ Tooth loss is psychologically a very traumatizing and upsetting experience, and is considered to be a serious event in the life of a person, requiring significant psychological readjustment. ² Today, a modern view of dentistry is one that recognizes the emotions or psychological essence of the patient in relationship to the dental situation, dental health care, and, especially, esthetics. ³ The attitude towards tooth loss is changing. Adults have greater expectations of their dental health than in the past. ⁴ It is proved that a significant relationship exists between the edentulous state and fiscal concerns that are usually associated with low occupational levels. It is therefore reasonable to conclude that edentulism is due to various combinations of cultural, educational background, financial, and dental disease attitudinal determinants, as well as to treatment received in the past. ⁵

In the recent past, prosthetic treatment involved replacement of missing teeth by means of removable partial dentures (RPD's), fixed dental prosthesis (FDP's), complete dentures, or over dentures. ⁶ However, more emphasis is being placed on patient-mediated concerns in prosthetic treatment planning than the previous methods of clinical dental examinations, the clinicians' sense of fine judgment keeping in mind the fiscal earnings of the patient.

It is often said that, attitudes are not taught but caught or acquired by social interaction. Patients' attitudes toward dentures, measured by means of a questionnaire prior to the patients' receiving new dentures, could be a prospective tool to determine satisfaction with new dentures. ⁷

A study conducted in India by Shigli K et al in 2007 showed that subjects with different levels of socioeconomic status reported different reasons for not replacing the teeth and these differences were statistically significant. ⁸

In India, the data on attitude of patients regarding replacement of their missing teeth is limited. Therefore, the purpose of our study was to assess the factors which determine the attitude of patients towards replacement of missing teeth among patients reporting to a dental college in South India.

MATERIAL AND METHODS

A cross-sectional survey to determine patients' attitudes about replacement of missing teeth was conducted. All the patients who reported to the department of prosthodontics, Indira Gandhi Institute of Dental Sciences (IGIDS), Puducherry over a period of one month (June 2015) with at least one missing tooth (excluding third molars) were included in the study after they were informed of the nature of the study and gave their consent.

Ethical clearance was obtained from the Institutional Ethical Committee. A ten-item, closed-ended questionnaire was used to record the responses, followed by a clinical examination in which the chief complaints were recorded and existing and missing teeth were charted. Missing teeth were classified as anterior and posterior, so that a distinction could be made between esthetic and functional needs. The questionnaire had two parts. The first part assessed the socio-demographic factors. Kuppuswamy's socio-economic classification which includes educational level, monthly income and occupation was used to classify the socio-economic status (SES) of the patients.⁹ Accordingly the socio-economic status was divided into class I to class V: Upper [class I], Upper middle [class II], Lower middle [class III], Upper lower [class IV], Lower [class V]. The second part included questions regarding their period of edentulousness, reason for not replacing missing teeth, the reasons and expectations of a replacement from a dentist. A single trained investigator recorded answers from the patients followed by a clinical examination. Collected data were statistically analyzed using chi-square test at a significance level of $p < 0.05$. All the data analysis was performed using statistical software (SPSS for Windows, version 16; SPSS Inc., Chicago, IL).

RESULTS

The questionnaire was answered by all 50 patients (28 males and 22 females). Thirty percent of patients were in the age group of 25-44 years. Majority of the

patients belonged to class II socioeconomic status (Table 1). Forty six percent of patients had reported to get their posterior missing teeth replaced. Patients with replacement for two and three missing teeth constituted about 32 and 20 percent respectively (Table 1). Dental caries and loosening of the teeth were the main reasons for teeth extraction. A major proportion of patients reported within one year of their partial edentulousness (Table 1). About 24 percent of the patients reported that they were not instructed by the dentist for replacement of missing tooth. Lack of knowledge about treatment options was reported by about 36 percent of the patients, followed by 24 percent who expressed financial constraint (Table 2). Subjects with different levels of SES reported different reasons for not replacing missing teeth, and these differences were not statistically significant ($\chi^2=9.27$, $p > 0.05$, NS) (Table 3). Financial constraint and lack of knowledge were reported as the reasons by patients of low and high SES respectively. Thirty eight percent of the patients reported attention given by others as the main reason for replacement followed by the inability to chew food properly. Comfort of prosthesis on wearing/using was the top expectation by the patient on receiving the prosthesis and equal importance given to financial constraints, esthetics and ability to chew/bite (Table 4). Six percent of the patients who lost teeth only in the anterior segment required prosthesis for appearance, and almost equal number of patients with missing posterior teeth required prosthesis for function and due to attention by others (12 percent and 14 percent) (Table 5).

DISCUSSION

The present study was conducted to assess the attitude of patients reporting to department of Prosthodontics, Indira Gandhi Institute of Dental Sciences, Pondicherry. A total of 50 subjects were included in the study with 28 males and 22 females. A majority of the patients reporting to department were middle aged. The dental facilities are often underutilized by the older age group since constraints like mobility (transportation), lack of information, and misconception about the value of dental visits hinder the very prospects of a better dental care.¹⁰ Also perceptions associated with increased age like lack of interest in esthetics and too old to wear a denture may also contribute to low perceived needs in the higher age group. Generally it is assumed that

population with low income tend to visit dental institutes since dental services in such institutes are affordable, however, in the present study we found that majority of the patients visiting the dental institute belonged to class II socioeconomic group [upper middle]. This could be explained since, the institute charges a decent, but affordable amount for the fabrication and delivery of partial denture [both removable and fixed]. Elias and Sheiham found that patients are more likely to seek replacement of a missing anterior tooth than a posterior tooth, and rated aesthetics above function in their priority for tooth replacement.¹¹ In the present study about 46 percent of the patients reported for replacement of posterior missing teeth followed by 30 percent for replacement of both anterior and posterior teeth. This can be explain by the fact that most people in India are more concerned about the masticatory function of a prosthesis rather than esthetics, a finding also observed by Shigli K et al in 2007.⁸ Most of the patients cited dental caries and periodontal diseases as reasons for loss of teeth, which is in agreement with factsheet provided by the World Health Organization (WHO).¹² The time frame for replacement of teeth after extraction is generally after healing of extraction socket. The reporting for replacement of missing teeth was by 60 percent of the patients within one year of extraction. All the patients were asked about any instructions given by the dentist (regarding replacement) and surprisingly only 46 percent of the dentist advised their patients to do so and 30 percent of the patients did not remember. Rehabilitation is an important aspect of treatment which increases the oral health related quality of life. It is the very duty of the dentist to provide every detail of various treatment options to the patient irrespective of patients' compliance for the same. Gerritsen et al in 2010 did a systematic review and meta-analysis on tooth loss and Oral Health Related Quality of Life (OHRQoL), and found a fairly strong evidence that tooth loss is associated with impairment of OHRQoL.

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A majority of the patients in our study cited lack of knowledge regarding replacement of missing teeth followed by financial constraints. Very few of them expressed lack of time and low felt needs for replacement. Even though most of the patients belonged to class II [Upper middle] status, the affordability was not an issue, however in spite of their higher income and education, their lack of knowledge

about replacement of missing teeth itself is a barrier to seek dental health care which is in accordance with Marcus et al who found that lack of education about importance of oral health, the need for preventive services, and the consequences of neglect appear to constitute a significant barrier to dental health care.¹⁴

When patients were asked about the reasons for getting their missing teeth replaced, surprisingly patients overlooked their felt needs, their esthetics and a decent proportion of them reported 'attention by others' to their missing teeth as the main reason for replacement. The findings are similar to a study conducted by Al-Quran et al in 2011 where similar reasons were cited by the participants, as reason for replacement of teeth.¹⁵ This could be due to the difficulty or hesitance experienced in approaching others due to repeated reminder of being told about their missing teeth. Of lately, it is has been found that, more subtle aspects of social function may also be affected by relatively common oral conditions such as tooth loss.¹⁶ 'Inability to chew' and 'esthetics' were few reasons reported by patients. On a positive note about 20 percent of the patients reported for replacing their missing teeth since they were told by their dentist to do so. This shows a good compliance on the part of patients. Irrespective of the reasons the patients might have reported to the department, a majority of them expected their prosthesis to be comfortable after delivery of prosthesis. Factors outlining the comfort after wearing prosthesis were not measured in the current study and require future research to elicit the same.

Interestingly this study contradicts the findings of Osterberg et al, who reported that esthetic rather than functional factors determined an individual's subjective need for the replacement of missing teeth.¹⁷ We found about 46 percent of the patients reported for missing posterior teeth and only 16 percent wanted replacements for esthetic reasons. The reporting of patients with more cases of missing posterior teeth in sufficient proportion in the present study indicates a greater inclination for functional rather than esthetic needs. Further studies with specific aims and larger sample are required to establish a statistical confirmation. Another important factor found here is that a significant proportion of patients 'did not remember' the dentist's instruction for prosthesis. Misra et al in 2013, reported that any dental health advice given in order to deal with the condition

and any agreed-upon actions – both concepts relating to future adherent behavior – is generally poor in patients. These findings extend previous work in medical and dental settings by showing that patients remember some aspects of what is discussed, but apparently not those aspects that are likely to help their oral health, such as dental health advice and future actions. In order to support patient adherence in dental settings, it is recommended that, measures be taken in practice to ensure that patients remember consultant's advice immediately post-consultation.¹⁸

The type of prosthesis (fixed/removable) recommended by the dentist was not elicited here since the patients response could be based on his/her affordability, or other factors and could result in bias. Since all the patients who reported never wore prosthesis, their perception to prosthesis could not be recorded. An understanding of the patient's attitudes towards replacement of missing teeth can help the dentist/Prosthodontist in customizing and delivering the prosthesis that can satisfy the patient's expectations, a view also shared by Conny DJ et al.¹⁹

Future studies are recommended to find more effective means to communicate the effect of tooth loss on quality of life among the general population, and stress on the importance of mass media at grass root level to increase awareness and associated benefits of replacing missing teeth. The dental profession, in the future, needs to address a major proportion of population with limited financial resources and with varied cultural factors.

The present study indicates there is a need to create awareness about replacing missing teeth, since a majority of patients belonging to class II [upper middle] SES status expressed lack of knowledge regarding replacement of teeth. More importance was given to functional rather than esthetics component.

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Table 1

Gender		N (%)
	Males	28 (56)
	Females	22 (44)
Age Group (Years)		
	25-34	15 (30)
	35-44	15 (30)
	45-54	11 (22)
	55-64	8 (16)
	65 >	1 (2)
Socioeconomic status		
	Upper (I)	9 (18)
	Upper Middle (II)	32 (64)
	Lower middle (III)	6 (12)
	Upper lower (IV)	3 (6)
Partially Edentulous		
	Anterior	12 (24)
	Posterior	23 (46)
	Both Anterior and Posterior	15 (30)
Missing Teeth		
	One teeth missing	11 (22)
	Two teeth missing	16 (32)
	Three teeth missing	10 (20)
	four teeth missing	9 (18)
	Five missing teeth	3 (6)
	Five > missing teeth	1 (2)
Reasons for tooth Loss		
	Got extracted due to trauma	8 (16)
	Dental Caries	16 (32)
	Failure of any previous treatment	12 (24)
	Loosening of teeth	14 (28)
Period of Edentulousness		
	< 1 years	30 (60)
	2 - 3 years	10 (20)
	> 3 years	10 (20)

N – number of participants, % - percentages

Table 2

Instructions received for prosthesis	N (%)
Instructed by dentist for prosthesis	23 (46)
Not instructed by dentist for prosthesis	12 (24)
Do not remember	15 (30)
Reasons for not replacing their missing teeth	
Financial constraints	12 (24)
Did not feel the need	10 (20)
No time	10 (20)
Had no idea that missing teeth can be replaced	18 (36)

N=Number of participants, %=percentage

Table 3

	I	II	III	IV	total
Financial constraint	0	16 (8)	4 (2)	4 (2)	24 (12)
Did not feel the need	6 (3)	14 (7)	0	0	20 (10)
No time	4 (2)	12 (6)	2 (1)	2 (1)	20 (10)
Did not know	8 (4)	22 (11)	6 (3)	0	36 (18)
TOTAL	18 (9)	64 (32)	12 (6)	6 (3)	100 (50)

% (N), % - percentage; N – number of participants;

Chi- Square – 9.27, $P=0.412$, NS

Table 4

Reasons for replacement	N (%)
Just because I was told to	10 (20)
It did not look nice	8 (16)
I was unable to bite /chew	13 (26)
Attention by others	19 (38)
Expectations of the prosthesis	
No problem during biting/chewing	10 (20)
Economical	10 (20)
It should be pleasing	10 (20)
Should feel comfortable	20 (40)

N=Number of participants, %=percentage

Table 5

	Anterior	Posterior	Combination	Total
Speech	4 (2)	16 (8)	8 (4)	28 (14)
Appearance	6 (3)	4 (2)	6 (3)	16 (8)
Function	4 (2)	12 (6)	10 (5)	26 (13)
Attention by others	10 (5)	14 (7)	6 (3)	30 (15)
Total	24 (12)	46 (23)	30 (15)	100 (50)

% (N); % - percentage; N – number of participants

REFERENCES

1. Roessler DM. Complete denture success for patients and dentists. *Int Dent J* 2003; 53: 340-45.
2. Omar R, Tashkandi E, Abdul jabbar T, Abdullah MA, Akeel RF. Sentiments expressed in relation to tooth loss: a qualitative study among edentulous Saudis. *Int J Prosthodont* 2003; 16:515-20.
3. Levinson NA. Psychological facets of esthetic dental health care: a developmental perspective. *J Prosthet Dent* 1990; 64:486-91.
4. Allen PF, McMillan AS. A review of the functional and psychosocial outcomes of edentulousness treated with complete replacement dentures. *J Can Dent Assoc* 2003; 69:662.
5. Zarb GA, Bolender CL. Prosthodontic treatment for edentulous patients. 12th ed. St. Louis: Mosby, 2004:6-23.
6. Kalk W, Koysler AF, Witter DJ. Needs for tooth replacement. *Int Dent J* 1993; 43: 41-9.
7. Van Waas MAJ. Determinants of dissatisfaction with dentures: a multiple regression analysis. *J Prosthet Dent* 1990; 64:569-72.
8. Shigli k, Hebbal M, Angadi GS. Attitudes towards Replacement of Teeth among Patients at the Institute of Dental Sciences, Belgaum, India. *J Dent Edu* 2007; 71: 1467-75.
9. Sharma R. Kuppaswamy's Socioeconomic Status Scale – Revision for 2011 and Formula for Real-Time Updating. *Indian J Pediatr* 2012; 79:961–62.
10. Maupome G, MacEntee MI. Prosthodontic profiles relating to economic status, social network, and social support in an elderly population living independently in Canada. *J Prosthet Dent* 1998; 80:598-604.
11. Elias AC, Sheiham A. The relationship between satisfaction with mouth and number and position of teeth (Review). *J Oral Rehabil* 1998; 25: 649-61.
12. [http://www.who.int/mediacentre/factsheets/fs318/en/\[24/5/2015\]](http://www.who.int/mediacentre/factsheets/fs318/en/[24/5/2015])
13. Gerritsen AE, Finbarr PS, Witter DJ, Bronkhorst EM, Creuger Nico HJ. Tooth loss and oral health-related quality of life: a systematic review and meta-analysis. *Health and Quality of Life Outcomes* 2010; 8:126.
14. Marcus PA, Joshi A, Jones JA, Morgano SM. Complete edentulism and denture use for elders in New England. *J Prosthet Dent* 1996; 76:260-6.
15. Al-Quran FA, Al-Ghalayini RF, Al-Zu'bi BN. Single-tooth replacement: Factors affecting different prosthetic treatment modalities. *BMC Oral Health* 2011; 11: 34.
16. [http://www.nidcr.nih.gov/DataStatistics/SurgeonGeneral/sgf/chap6.htm\[25/6/2015\]](http://www.nidcr.nih.gov/DataStatistics/SurgeonGeneral/sgf/chap6.htm[25/6/2015])
17. Osterberg T, Hedegard B, Sater G. Variation in dental health in 70-year-old men and women in Goteborg, Sweden: a cross-sectional epidemiological study including longitudinal and cohort effects. *Swed Dent J* 1984; 8:29-48.
18. Misra S, Daly B, Dunne S, Millar B, Packer M, Asimakopoulou K. Dentist–patient communication: what do patients and dentists remember following a consultation? Implications for patient compliance. *Patient preference and adherence* 2013; 7:543-9.
19. Conny DJ, Tedesco LA, Brewer JD, Albino JE. Changes of attitude in fixed prosthodontic patients. *J Prosthet Dent* 1985; 53:451-4.

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