

Reasons and Associated Problems for Not Replacing Lost Teeth: A Cross-sectional Survey

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To find out and to understand the reasons and the associated problems for not substituting the lost teeth and to make an attempt in reducing the possible cause of not replacing the missing teeth. A total of 300 patients who had visited to the Faculty of Dental Sciences, Sri Ramachandra Medical college & research institute with aged above 25 years with as a minimum of one missing teeth (excluding third molars) not replaced for more than three months and have visited the Institute other than for replacement of the missing teeth were selected. The study includes a predesigned and structured questionnaire containing seven (closed end) questions and followed by clinical examination recording the number and positions of the missing teeth. All the data were statistically analyzed. Statistical analysis shows the 42% of the patients find economical reason as the main hurdle for the replacement of the teeth followed by 33% of patients finds lack of time and remaining 25% of the patients are unaware of replacing the missing teeth. The 62% of male patients were found to be not pleased with their existing oral condition in terms of mastication of food & whereas 61% of female patients were found to be not satisfied with the aesthetics of the present dentition. Out of the various reasons, the economic reasons was the key reason for non- replacement of missing teeth. The patients having missing posterior teeth had more than the one-year duration of edentulousness. It can be suggested that, to reduce the economic burden in replacing the missing teeth, the Government of India and the insurance providers can include the dental treatment in their list of treatment covered by the health insurance.

Keywords: Missing teeth, Non-replacement, Economical reasons, Unawareness, Partial edentulism, cross-sectional survey.

Oral health plays a vital part in the maintenance of the overall health of a person. Healthy teeth are essential not only for physical but also for psychological well-being^{1, 2}. The common reasons for missing teeth are dental caries, periodontal disease, trauma & congenital^{3, 4}. Edentulism, not just outcomes in decreased oral capacities yet, in addition, remains a major public health issue⁵.

For over the years clinicians have hypothesized a requirement for tooth substitution in the upkeep of oral wellbeing. Hirschfeld inferred that inability to supplant a missing tooth could prompt caries as well as periodontal disease and proposed that tooth replacement will avert unwanted changes in tooth position⁶. It also felt that maintenance of intact arch was imperative in the upkeep of oral health⁷. The complications

of not replacing teeth are improper speech, the inefficiency of mastication, changes in occlusal stability, the occurrence of temporomandibular joint disorders, lifting and drifting of teeth & alveolar bone loss⁷⁻⁹.

In many developed western countries, the conflicting data exist, regarding the increase or decrease in the prevalence of partial edentulism and tooth loss^{10, 11}. But most of the patient undergone replacement for tooth loss with some type of prosthesis¹². In developing countries like India even though there are oral health programs and awareness campaigns, it seems to be many patients who are in the suburban & rural areas does not undergo replacement of teeth¹³.

The aim of the study is to find out and to understand the reasons and the associated problems for not replacing the lost teeth and to make an attempt in reducing the possible cause and thereby improving the quality of life.

MATERIALS AND METHODS

A cross-sectional study was conducted to find out the reasons for not replacing the lost teeth, in partially edentulous patients visiting as an outpatient (OP) to Faculty of Dental Sciences, Sri Ramachandra Medical College and Research

Institute, Chennai. Patients aged above 25 years with as a minimum of one missing teeth (excluding third molars) visiting the Institute other than that for replacement of the missing teeth were included in the study. Completely edentulous, mixed dentition, patients with developmental problems and poor mental health patients were excluded from the study. Institutional ethical clearance was obtained (CSP/17/JAN/54/57) to conduct the study, and the purpose of the study was explained to each participating patient in their own regional language and the consent was obtained for the same.

The predesigned and structured questionnaire containing seven (closed end) questions along with the details of the sociodemographic status were recorded. Out of seven questions, six were on a two-point scale (yes & no), one question had three options (unawareness, economic & busy lifestyle). Clinical examination was also evaluated to record the number and positions of the missing teeth. A single trained investigator explained all the questions in their regional language and recorded the answers which are followed by a clinical examination to record the clinical status of the patient's oral cavity. All the data were collected and analyzed using statistical software (SPSS for Windows, version 21; SPSS Inc., Chicago, IL).

Table 1. Distribution of Missing Teeth

Teeth missing	Male [45%]	Female [55%]	Total [100%]
Anterior	43	21	64
Posterior	50	76	126
Both	43	67	110

Table 3. Reasons for Non Replacement

Reasons	Male [45%]	Female [55%]	Total [100%]
Financial problem	62	64	126
Busy lifestyle	46	53	99
Lack of awareness	28	47	75

Table 2. Duration of Missing Teeth

Duration of missing teeth	Male [45%]	Female [55%]	Total [100%]
Less than 6 months	21	19	40
6 months 1 year	21	22	43
1 year More than 1 year	28	33	61
	65	90	155

Table 4. Convenience to Reach the Hospital

House too far from the hospital	Male [45%]	Female [55%]	Total [100%]
Yes	51	60	111
No	85	98	189

Table 5. Efficiency of Masticatory Function

Masticatory function with present dentition	Male [45%]	Female [55%]	Total [100%]
No	84	84	168
Yes	52	80	132

Table 6. Esthetic Satisfaction about Present Condition

Present condition is esthetically satisfied	Male [45%]	Female [55%]	Total [100%]
Yes	81	64	145
No	55	100	155

RESULTS

A total number of 300 patients included in this study, out of the 300 patients, 136 patients are male (45%) and 164 patients (55%) are female with the age ranging from 25 to 60 years old. In this study, lost teeth were categorized as anterior or posterior, so that to have a distinction between aesthetic and functional needs for replacing the teeth. However, first premolars are considered to be important for both esthetics and function, they were included in both the classifications.

From the results, it was found that 22% of the patients have only anterior teeth missing, 42% of the patient has only posterior teeth missing and the remaining 36% of the patient had both anterior and posterior teeth missing (Table 1). When considering the duration of edentulousness 52% of the patient have not replaced the teeth for more than a year and only 13% of the patient are being edentulousness for less than 6 months (Table 2).

42% of the patients find economic reasons as the main burden for not replacing the lost teeth which are followed by 33% of patient finds lack of time as the reason and the remaining 25% of the patients were unaware of replacing the missing teeth (Table 3). In terms of accessibility to the hospital, 63% percent of the patients are residing near to the hospital (Table 4).

Masticatory function: In comparison with the female patient 50%, male patients 62% were

found to be not satisfied with their existing oral condition (Table 5).

Aesthetic condition: In comparison with the male patient 40%, female patients 61% were found to be not satisfied with esthetics (Table 6).

DISCUSSION

This present investigation based on the perception that among the individuals visiting the dental college with partial edentulousness, only a few of them get their teeth replacement. A total of 300 patients participated in this study of which 45% were male and 55% were female with a mean age of 25 to 60 years. The key reason behind the non-replacement of the lost teeth was found to be the financial problem or economic reasons followed by busy lifestyle and lack of awareness. There was a high ratio of lack of awareness in female patients compared to male patients. Abijeeth *et al*¹⁴ reported that busy lifestyle was the key reason for non-replacement but in this study, it is found that financial problem is the main hurdle in replacing the teeth.

Individuals with a higher level of education and monetary wealth have better access to dental care and furthermore, put a higher significance on oral health¹⁵. Inadequate education, the awareness about the significance of oral health, the requirement for preventive services and the outcomes of disregard seem to constitute a huge impediment to oral health^{16, 17}. Patients generally

give more importance to general health care than oral health care and also generally, in India, existing health insurance schemes are not covering the oral health as it comes under cosmetic treatment. When compared with the developed countries, only 17 percent of the Indian population are estimated to have access or preferred to avail health insurance schemes either by owing individually or it is provided by their employees¹⁸.

Replacement of missing teeth is dependent on the patient perception of either function or esthetics in their oral cavity. It is also noted that the esthetics is the major driving force for the patient to replace the missing teeth. The prospect of an upright esthetic result generally inspires the patient to have the prosthesis and esthetics can be more important than function for several individuals¹⁹. Indeed, even in nations with high propelled dental care frameworks, open spaces or edentulous zones in the molar region are acknowledged by the general population²⁰. In this study, males are more concerned with masticatory efficiency as they consider it to be more important than aesthetics and prefer functioning of their teeth, whereas females are concerned with the aesthetics of the dentition rather than function.

As indicated by Leake *et al.*, the individual requirement for prosthetic substitution of posterior teeth is frequently low, as such substitutions, rarely enhance the person's societal position²¹. This study showed that majority of the patients having missing posterior teeth had more than the one-year duration of edentulousness [90%]. It was also noted that as the duration of edentulousness increased, the individuals are getting accustomed to their compromised dentition and willingness towards the replacement of their missing teeth gets comparatively decreased. Moreover, as tooth loss for happens over some undefined time frame, it allows the person to change in accordance with the condition with no clear dissensions on their functioning of the teeth²². Subsequently, many older individuals may not recognize the requirement for substitution of the missing teeth despite losing substantial numbers of teeth as they have adjusted to their missing teeth over a period of time²³.

However, there are few limitations of this study like only the patients visiting the dental college were only selected and included in the

study and also the duration of the study is less when considering the huge population of the country. However, in near future, studies have to be conducted in a larger population to represent a bigger country like India.

CONCLUSION

Within the limitation of this study, out of the various reasons listed, the economic burden of replacing the missing teeth was found to be the key reason for non-replacement. It can be suggested that to reduce these problems and to create awareness of replacing the missing teeth, the Government of India and the insurance providers can include the dental treatment in their list of treatment covered by the health insurance. Vigorous campaigning in rural and suburban areas about the importance of replacing the missing teeth and the general oral health care may also improve the oral status of the population which in turn results in a healthy oral status.

REFERENCES

1. McMillan AS, Wong MC. Emotional effects of tooth loss in community-dwelling elderly people in Hong Kong. *Int J Prosthodont.*; **17**(2):172-6 (2004).
2. Davis DM, Fiske J, Scott B, Radford DR. The emotional effects of tooth loss: a preliminary quantitative study. *Br Dent J.*; **188**(9):503-6 (2000).
3. Beltran-Aguilar ED, Beltran-Neira RJ. Oral diseases and conditions throughout the lifespan. I. Diseases and conditions directly associated with tooth loss. *Gen Dent.*; **52**(1):21-7 (2004).
4. Jaafar N, Razak IA, Nor GM. Trends in tooth loss due to caries and periodontal disease by tooth type. *Singapore Dent J.*; **14**(1):39-41 (1989).
5. Kassebaum NJ, Smith AGC, Bernabé E, Fleming TD, Reynolds AE, Vos T, Murray CJL, Marcenes W; GBD 2015 Oral Health Collaborators. Global, Regional, and National Prevalence, Incidence, and Disability-Adjusted Life Years for Oral Conditions for 195 Countries, 1990-2015: A Systematic Analysis for the Global Burden of Diseases, Injuries, and Risk Factors. *J Dent Res.*; **96**(4):380-387 (2017).
6. Hirschfeld L, Wasserman B. A long-term survey of tooth loss in 600 treated periodontal patients. *J Periodontol.*; **49**(5):225-37 (1978).
7. Craddock HL. Consequences of tooth loss

- (Part 1): The patient perspective—esthetic and functional implications. *SADJ.*; **65**(6):242, 244-5 (2010).
8. Gerritsen *et al.*: Tooth loss and oral health-related quality of life: a systematic review and meta-analysis. *Health and Quality of Life Outcomes*; **8**: 126 (2010).
 9. Craddock HL. Consequences of tooth loss (part 2): dentist considerations—restorative problems and implications. *Dent Update.*; **37**(1):28-32 (2010).
 10. Müller A, Hussein K. Meta-analysis of teeth from European populations before and after the 18th century reveals a shift towards increased prevalence of caries and tooth loss. *Arch Oral Biol*; **73**:7-15 (2017).
 11. Müller F, Naharro M, Carlsson GE. What are the prevalence and incidence of tooth loss in the adult and elderly population in Europe? *Clin Oral Implants Res.*; **18** Suppl 3:2-14 ((2007)).
 12. Zitzmann NU, Haggmann E, Weiger R. What is the prevalence of various types of prosthetic dental restorations in Europe? *Clin Oral Implants Res.*; **18** Suppl 3:20-33 (2007).
 13. Simhachalam Reddy.N. Edentulism-An Epidemiological Survey of Population in Chennai, India. *J Orofac Sci*, **2**(1): page 14- 18 (2010).
 14. Abhijeeth R Kore, Shoba A kore, Siddharth Gosavi, Mubshira Siddiqui, Sulekha Gosavi. Assessment and evaluation of reasons for not replacing the missing teeth in karad population: a cross sectional survey.; **1**(3):1-6 (2016).
 15. Macek MD, Cohen LA, Reid BC, Manski RJ. Dental visits among older U.S. adults, The roles of dentition status and cost. *J Am Dent Assoc* 2004; **135**: 1154-62 (1999).
 16. Kamal Shigli, B.D.S., M.D.S.; Mamata Hebbal, B.D.S., M.D.S.; Gangadhar Shivappa Angadi, B.D.S., M.D.S. Attitudes Towards Replacement of Teeth Among Patients at the Institute of Dental Sciences, Belgaum, India. *Journal of Dental Education*, **71**(11); 1467-1475 (2007).
 17. Locker D, Maggirias J, Quiñonez C. Income, dental insurance coverage, and financial barriers to dental care among Canadian adults. *J Public Health Dent*. 2011 Fall; **71**(4):327-34.
 18. Narayanan Devadasan, Bart Crie, Wim Van Damme, Kent Ranson and Patrick Van der Stuyft. Indian community health insurance schemes provide partial protection against catastrophic health expenditure. *BMC Health Services Research*, **7**: 43 (2007).
 19. Nita M. Mazurat, DDS, Randall D. Mazurat, BSc, DDS, MEd. Discuss Before Fabricating: Communicating the Realities of Partial Denture Therapy. Part I: Patient Expectation. *Journal of the Canadian Dental Association*. **69**(2); 90-94 (2003).
 20. Nevalainen MJ, Närhi TO, Siukosaari P, Schmidt-Kaunisaho K, Ainamo A. Prosthetic rehabilitation in the elderly inhabitants of Helsinki, Finland. *J Oral Rehabil.*; **23**(11):722-8 (1996).
 21. Leake JL, Hawkins R, and Locker D. Social and functional: impact of reduced posterior dental units in older adults. *J Oral Rehabil*; **21**:1-10 (1994).
 22. Pallegedara C, Ekanayake L. Tooth loss, the wearing of dentures, and associated factors in Sri Lankan older individuals. *Gerodontology*; **22**:193-9 (2005).
 23. Ferreira RC, de Magalhães CS, Moreira AN. Tooth loss, denture wearing and associated factors among an elderly institutionalised Brazilian population. *Gerodontology*.; **25**(3):168-78 (2008).