

Tooth Loss Awareness and Reasons for Non- Replacement of Missing Teeth among Nurses at Jos University Teaching Hospital, Jos, Nigeria

*Enoch Abiodun IDOWU ** Olaniyan O. TAIWO ***Babatunde Oludare FAKUADE ****Adedapo Olanrewaju AFOLABI

*Faculty of Dental Sciences, University of Jos, Nigeria.
Intercountry Center for Oral Health (ICOR) for Africa, Jos, Nigeria. *Dental & Maxillofacial Department, Federal Teaching Hospital, Gombe, Nigeria. ****Dental Center, Federal Medical Center, Owo, Nigeria.]

Correspondence

Dr E.A. Idowu
Faculty of Dental Science
College of Health Sciences
University of Jos
Jos, Nigeria.
Email: eaidowu67@gmail.com

Citation: Idowu EA, Taiwo OO, Fakuade BO, Afolabi AO. Tooth loss awareness and reasons for non-replacement of missing teeth among nurses at Jos University Teaching Hospital, Jos, Nigeria. *Nig J Dent Res* 2020; 5(2):136-144.

INTRODUCTION

Replacement of lost tooth may be necessary depending on various factors, one of which is the positioning of the tooth on dental arch. Non-replacement of missing teeth may lead to speech defect, masticatory deformity, drifting of teeth, aesthetic embarrassment, negative impact on individuals health, psychological wellbeing and overall quality of life (QoL).¹⁻⁴ It is well documented that tooth loss may have a negative impact on Oral

ABSTRACT

Objective: Full complement and replacement of lost teeth improves oral health and quality of life. The objective of this study was to assess the level of awareness of factors that can prevent premature loss of teeth and the reason for non-replacement of missing/lost teeth among nurses in a tertiary health institution.

Methods: This study was a descriptive cross-sectional study, 251 nurses of the Jos University Teaching Hospital participated. Self-administered questionnaires were used for data collection. Analysis of data was done with IBM SPSS version 23.0.

Results: The mean age of the 251 nurses was 38±9.88. 174(69.3%) were females while 77(30.7%) were males. Out of 91(36.3%) that had missing teeth, 16(17.6%) actually replaced their missing teeth with the majority of them representing 81.3% adopting removable acrylic partial denture as modality. Among the 75(82.4%) that did not replace their missing teeth, the reason for the non-replacement by the majority- 40.0% was that they didn't feel replacement was necessary.

Conclusion: The awareness level on factors that can prevent premature loss of teeth was observed to be high among the participants, but many have missing teeth that needed replacement. Majority did not replace their missing teeth as a result of low level of awareness of the consequences and probably due to financial challenges and because of the non-coverage of prosthetic treatments by the National Health Insurance Scheme 'NHIS' in Nigeria.

Keywords: Tooth loss, Replacement, Non-replacement, Removable Partial Denture, Oral Health Quality of Life

Health Related Quality of Life OHRQoL of persons.⁵ Quality of life is a product of psychological wellbeing and nutritional status of an individual, both may be enhanced by the presence of properly aligned and functional teeth in the oral cavity.⁶ It has been widely reported that total or partial loss of teeth is difficult to accept by an individual.⁷⁻¹⁰ Apart from the psychological consequences of tooth loss, there are indications that partial or full edentulous person may experience limitation in the choice of food and

consequently, nutritional deficiency. An adult with a full complement of teeth is said to be 'Dentate' but edentulous when teeth are missing.¹¹ The prevalence of people with missing teeth and the reports on the awareness, knowledge and attitude towards prevention of premature loss of teeth among many adults in Northern Nigeria are not fully documented hence this study among the nurses; a large group of health workers.

Efforts must be made to preserved natural teeth, but when they are lost/missing, replacement is a viable option to enhance the overall health of an individual. Tooth loss may be due to condition which could be congenital, acquired or both. Among the widely reported acquired conditions are dental caries, periodontal diseases, trauma to the teeth or basal bones as a result of sport, fall, fights, domestic or road traffic accidents, complication from ablative jaw surgeries and orthodontic reasons.¹²⁻¹⁵ The most reported congenital anomaly that may present with missing teeth is ectodermal dysplasia.^{16, 17} This is a rare hereditary condition that may present with hypodontia which may manifest as anodontia (no teeth) or oligodontia (up to 6 and more missing teeth).^{16, 17} Whether due to congenital or acquired factor, loss of teeth may lead to a negative psychological feelings in an individual.^{18, 19} Therefore, rehabilitation after tooth loss is an important aspect of oral health care delivery. This form of oral health care is a strong challenge amongst the prosthodontist and other dental specialist.²⁰ Prosthetic treatment involves either the replacement of few missing teeth in an individual with incomplete dentition or all missing teeth where there is complete absence of teeth thereby leading to restoration of function and aesthetics.^{13, 21, 22, 23} This is achieved by means of removable partial dentures, fixed partial prosthesis (bridges), complete denture, over denture and implants or a combination of any of these.^{13, 21, 22, 23} While a study attributed the choice of modalities for replacement to depend on the socioeconomic status,¹³ another study indicated no significant relation.²³ It has also been reported that request for prosthetic rehabilitation among the elderly population is generally lower compared with the younger age group.¹³ This was attributed to a feeling of being old and lacking in motivation for better aesthetic appearance among the elderly. Despite the health benefits of tooth replacement and varieties of available treatment options, many people with missing teeth have reasons for non-replacement. Significantly, reports on challenges associated with

tooth loss, the reasons for replacement or non-replacement among Nigerian population are not yet fully investigated. While most of the available reports are from Southern Nigeria,^{24, 25} information on the prevalence of people with tooth loss, knowledge and attitude toward tooth loss and the level of awareness on how to prevent tooth loss among adult Nigerian in Northern Nigeria is scanty, hence this study from North-Central Nigeria. Report from this study shall complement the reports from other parts of Nigeria and the world at large. This study will also provide useful information in planning for oral health care delivery among Nigerians.

The aim of this study was to assess the level of awareness of factors that can prevent tooth loss and the reasons for non- replacement of missing teeth among the Nurses.

MATERIALS AND METHODS

This was a descriptive cross-sectional study conducted among Nurses at the Jos University Teaching Hospital (JUTH) Jos, Plateau state, North-Central, Nigeria. The sample size was calculated to be 250. Simple random sampling technique was adopted for the recruitment of the study participants. Folded ballot papers with either YES or NO written on each were presented to the nurses and anyone that picked NO was not recruited for the study. This study was conducted in all departments, clinics and wards where Nurses are stationed in JUTH.

Ethical approval was obtained from the JUTH health research ethical committee. With regard to our inclusion criteria, all nurses that were willing to participate in the study by completing the informed consent form, willing to undergo simple clinical oral examinations were recruited into the study. Participation was opened to all nurses irrespectively of age, groups, gender and cadre. Nurses who were not willing to participate were excluded. Missing upper or lower third molars were not accepted as part of the teeth that required replacement in this study. Data collection was by the use of self-administered questionnaires. The questionnaires were formatted into different sections that collected information on the Nurses bio data, awareness of tooth loss, a section to record the oral examination and reasons for the non-replacement of missing teeth. Basic oral examinations were conducted by the researcher with the participants seated under natural light. Data processing and analysis were done using the IBM SPSS version 23.0.

Tooth Loss Awareness and Reasons for Non-Replacement...

Some participants identified with oral health challenges were referred to and later treated at the dental out-patient clinic of JUTH.

RESULTS

At the time of this study, about 600 Nurses were documented as staff of JUTH. A total of 251 nurses participated in this study, 77 (30.7%) were male and 174 (69.3%) were female. The Age range was 19-64 years with the mean age 38.86 ± 9.88 .

Figure 1 shows that 231 (92.0%) participants agreed that tooth loss is preventable, 12 (4.8%) disagreed while 8 (3.2%) did not know if tooth loss is preventable or not.

Figure 2 shows the participants view on means of preventing loss of teeth. Majority agreed that good

oral hygiene practices among other factors can prevent loss of teeth.

In multiple response of the participants to reasons for the replacement of lost/missing teeth, the results shows that 212 (84.5%) participants were aware that replacement can restore masticatory functions, 192 (76.5%) can enhance aesthetics, 191 (76.1%) can improve speech, 148 (59.0%) prevent super-eruption of opposing tooth/teeth, drifting of adjacent teeth and 146 (58.2%) that early replacement of missing teeth can prevent collapse of dental arch. Consequently, 36 (14.3%) were not aware that non-replacement can hinder masticatory function, 99 (39.4%) and 96 (38.2%) were not aware that non-replacement can cause collapse of dental arch and super-eruption of opposing tooth respectively.

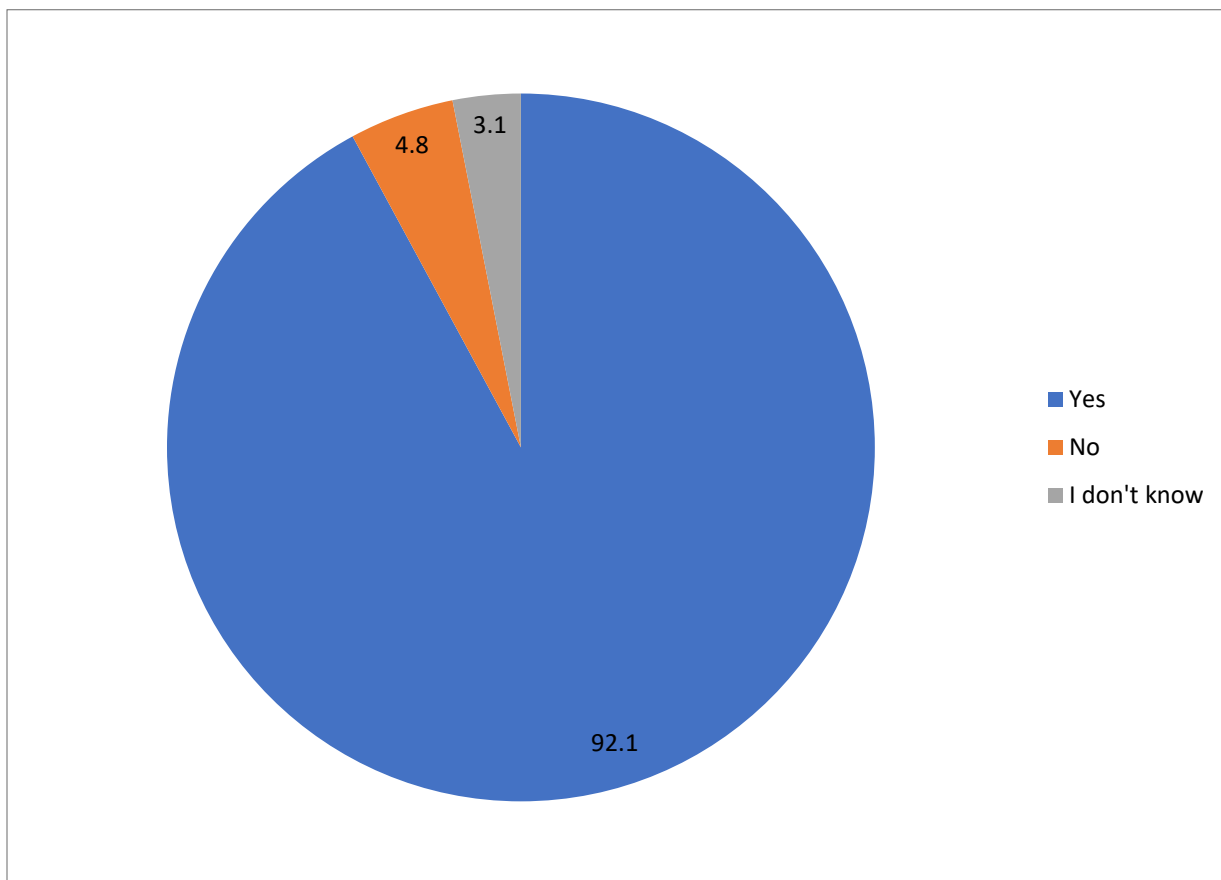


Figure 1: Preventability of tooth loss

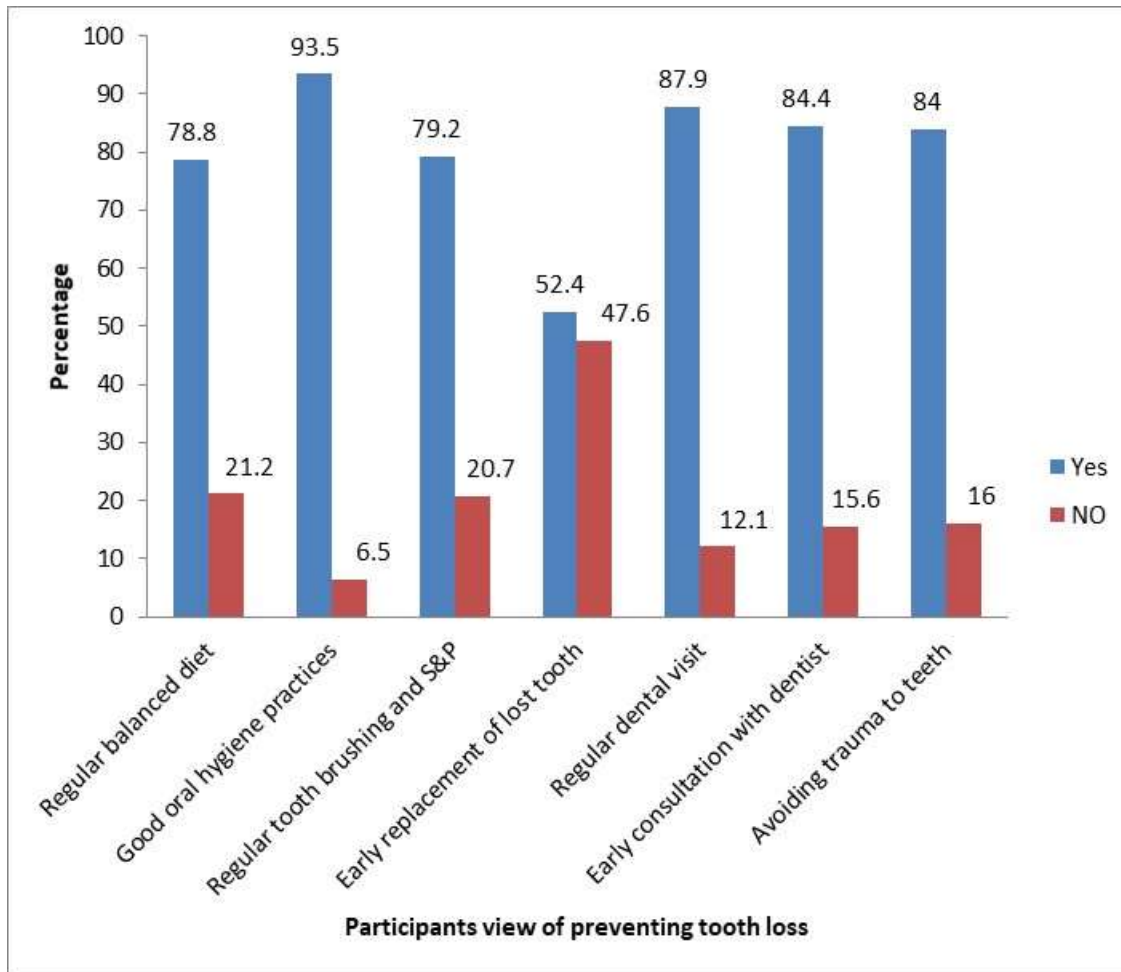


Figure 2 shows the views of the participants on how to prevent tooth loss.

Table 1 shows that out of 251 that nurses that participated in this study, 91 had missing teeth that needs replacement (excluding third molars) and this represents a prevalence of 36.3%. Out of the 91 participants that needed replacement, 68(74.7%) were female while 23(25.3%) were male with $p = 0.162$. the table also shows that missing teeth and the need for replacement increases with age $p = 0.001$.

Also, among the 91 participants that needed replacement, 16 (17.6%) actually had prosthesis while 75 (82.4%) did not $p = 0.001$. Although there was no strong association between both age and gender with replacement of missing teeth, it was revealed that 12(17.6%) female participants and 4 (17.4%) male participants replaced their missing teeth compared with 82.4% female and 82.6% male that had no replacement. Non-replacement of missing teeth was observed more among the older age groups. On the replacement modalities, 13(81.3%)

had acrylic removable partial denture (RPD) while 3 (18.8%) had fixed partial denture (Bridge) with $p = 0.012$. Among those with RPD, 4 were males and 9 were female and all those with FPD were females. None of the study participants had replacement with implant or over- denture and none was found to be using full- full prosthesis. The result also shows that among 16 the participants that had replacement, 10(62.5%) had replacement for the anterior teeth, 5(31.3%) for posterior teeth and 1(6.3%) for both the anterior and posterior teeth. Gender distribution shows 2 (50.0%) among males and 8 (66.7%) among female had replacement for the anterior teeth compared to 1(25.0%) male and 4(33.3%) female for the posterior teeth. Only 1 male participant had replacement for both posterior and anterior teeth. Assessment of the level of satisfaction among those with replacements shows 9 participants were satisfied while 7 were not satisfied.

Tooth Loss Awareness and Reasons for Non-Replacement...

Table 2 shows the number of missing teeth per individual. While 83 persons representing 91.2% have lost between 1-5 teeth each, the other 8(8.8%) participants have lost >5 teeth each.

Table 3 shows the distribution of the missing teeth among the study participants excluding the third molars. While lower molar teeth were mostly

missing/lost, canines were less missing among the participants.

Table 4 shows reason for non-replacement among the 75 participants who did not replace their missing teeth. While majority of the study participants did not feel replacement is necessary, a very small proportion of 1(1.3%) stated that having artificial teeth is against their religious believe. $p = 0.001$

Table 1: Association between demographic variables and missing teeth excluding third molars

Demographic variables	Missing teeth		χ^2	P
	Yes	No		
Age group				
≤30	7(12.3)	50(87.7)	29.521	0.001
31-40	31(32.3)	65(67.7)		
41-50	31(50.0)	31(50.0)		
>50	22(61.1)	14(38.9)		
Total	91(36.3)	160(63.7)		
Gender				
Male	23(29.9)	54(70.1)	1.959	0.162
Female	68(39.1)	106(60.9)		
Total	91(36.3)	160(63.7)		

Table 2: Number of missing per study participant excluding third molars

Number of teeth	Frequency	Percentage
0	160	63.7
1	48	19.1
2	23	9.2
3	9	3.6
4	3	1.2
5	5	2.0
6	1	0.4
11	2	0.8
Total	251	100.0

Table 3: Distribution of missing teeth among the participants in each quadrant (n=91) excluding third molars

Tooth Loss Awareness and Reasons for Non-Replacement ...

Tooth	UR	Tooth	UL	Tooth	LR	Tooth	LL
11	7(7.7)	21	6(6.6)	31	2(2.2)	41	4(4.4)
12	4(4.4)	22	4(4.4)	32	1(1.1)	42	1(1.1)
13	2(2.2)	23	1(1.1)	33	1(1.1)	43	1(1.1)
14	4(4.4)	24	2(2.2)	34	2(2.2)	44	1(1.1)
15	9(9.9)	25	7(7.7)	35	2(2.2)	45	6(6.6)
16	14(15.4)	26	13(14.3)	36	19(20.9)	46	22(24.2)
17	10(11.0)	27	8(8.8)	37	18(19.8)	47	15(16.5)

Key: UR – Upper Right UL – Upper Left LR – Lower Right LL – Lower Left

Table 4: Reason(s) for non-replacement of missing teeth

Variables	Frequency	Percentage	χ^2	P value
Lack of finance	7	9.3	72.960	0.001
Lack of motivation	11	14.7		
Lack of time for prosthetic treatment	8	10.7		
Not aware it can be replaced	7	9.3		
Don't know where I can be treated	6	8.0		
I don't feel it is necessary	30	40.0		
I don't think replacement is hygienic	2	2.7		
Replacement is against my religious belief	1	1.3		
No response	3	4.0		
Total	75	100.0		

DISCUSSION

The participation of more female than male in this study was probably a reflection of the preponderance of female nurses as staff of JUTH. From this study the participants demonstrated high level of knowledge and awareness on the primary prevention of tooth loss with the majority agreeing that premature loss of teeth is preventable. This may be a reflection of relevant information on oral health acquired by them during their basic training. Majority were aware that good oral hygiene practices, regular dental visit, avoiding trauma to teeth, balance diet, regular teeth brushing, scaling and polishing and early

consultation with dentist will prevent premature loss of teeth. This findings conforms to reports from similar studies which demonstrated better awareness, oral hygiene practices, improve access to information, increase literacy and improved nutrition among Nigerians.^{26, 27} but in contrast with another report.²⁸ It was however discovered that despite this high level of awareness many participants have lost their teeth. It was discovered that 91(36.3%) have one or more missing teeth that needed one form of replacement or the other with the exclusion of missing third molars. Although the prevalence of people with missing teeth is considered to be high in

this study, it was smaller compared with other similar studies conducted among the elderly which was 43.6% in Port Harcourt South-south Nigeria,²⁷ 52% from Ibadan South-West Nigeria²⁹ and 75.0% needed one form of replacement or the other from same South-west Nigeria.²⁵ Outside Nigeria, 75.0% among the elderly in Hong Kong and in Thailand, 60% needed prosthesis. The findings in this study was higher than the report from a UK study where 31% of the elderly participants were reported to be denture wearers.³⁰ The lower prevalence in this study compared with similar studies above was probably due to the fact that this study was a cross-sectional study among many young adults and not patients based among elderly. Although, older age groups were discovered to have more missing teeth than the younger age groups in the present study, it was not statistically significant. This conform to previous reports that prosthetic treatment needs increases with age.^{30, 31, 32} Association between missing teeth and gender from this study was not statistically significant. It was discovered that posterior teeth were more missing than the anterior and analysis of number of replaceable teeth per person shows majority needed to replace only one tooth. The teeth mostly missing were lower first molars followed by lower second molars and then the upper molars and this conformed to report from similar studies.^{12, 13, 33, 34} The least missing teeth were canines and this is in contrast to a similar study which reported lower incisors as the least missing teeth.¹² The limited number of replaceable teeth per individuals coupled with the position of the teeth may be attributed to the smaller proportion that replaced their missing teeth compared with those that did not. Therefore, 'prosthetic treatment need' among the study participants was observed to be high and this conforms to reports from similar studies.^{25, 33, 34} Relationship between replacement of missing teeth and gender shows no significant difference statistically although more female participants were observed to have replacement than male. Replacement was observed more among younger age groups and this conformed to reports that the elderly display lack of interest in aesthetic and denture wearing.^{33, 35, 36} Other report from Helsinki, Finland showed a greater percentage (53%) of the elderly wearing removable dentures and 45% wearing fixed prosthesis.³⁷ Many participants indicated masticatory function as the major reason for teeth replacement followed by aesthetics and speech. This conformed to reports from similar studies.^{22,24} Many participants in this study were not

aware that replacement can also prevent facial collapse, drifting of adjacent teeth and supra-eruption of opposing teeth to the edentulous space. The findings in this study conforms to other reports from similar studies.^{24,38,39} Conversely, many participants were not aware of all the consequences of non-replacement of missing teeth which include; masticatory functions, speech defects, low esteem, poor appearance, psychological impairment, and poor oral health related quality of life. This finding was similar to other reports^{5,9, 24, 25, 31, 40-42}

Investigation on the reasons for non-replacement among those who had no tooth replacements, showed that majority felt tooth replacement was not necessary among other reasons and this was statistically significant. Replacement of one tooth was considered to be insignificant by the majority of the participants. Reasons for non-replacement from similar studies shows poor knowledge of consequences of non-replacement,²⁴ indifference,³³ poor individual economic,^{34, 43} lack of knowledge and awareness,^{33, 25, 44} busy lifestyle⁴⁵ and ignorance and poverty⁴⁶ as major reasons.

The overview of the replaced missing teeth shows that anterior teeth were replaced more compared with the posterior teeth despite more missing posterior teeth. Therefore, if posterior teeth are for functions and the anterior teeth for aesthetics, it suggests aesthetics may be a major reason for tooth replacement among the study participants. Other studies also attest to this.^{33, 47,48} However, this is in contrast to other studies where more people replaced missing posterior teeth^{13, 22} Majority of the participants in this study replaced their missing teeth with acrylic removable partial dentures (RPD) as with other studies.^{33, 49} Very few female participants replaced their missing teeth with fixed prosthesis (bridges). No male participant replaced missing teeth with bridges and there was no replacement of missing teeth with implants in this study. This may be due to relatively cheaper cost of acrylic RPD compared with fixed prosthesis and implants. Also, lack of accessibility to fixed prosthesis facilities which are relatively lacking in the northern part of Nigeria may be responsible. Furthermore, in Nigeria, the National Health Insurance Scheme 'NHIS' which many participants subscribed to does not cover tooth replacement. The implication is that individual have to bear the financial burden of tooth replacement. The level of satisfaction among the denture wearers in this study was higher than those not satisfied. The percentage of those not satisfied with their dentures was higher among the male participants.

CONCLUSION

There was strong awareness of primary prevention of tooth loss among the study participants, but non-replacement of lost teeth was a big challenge among the participants. Majority did not replace their missing teeth and there was a huge unmet prosthetic treatment need among the participants. Majority felt replacement was not necessary probably because they were not well informed of the consequences of not doing so. Therefore, there is a need to educate patients on the benefit of tooth replacement and different tooth replacement options available

Source of Support

Nil.

Conflict of Interest

None declared.

REFERENCES

1. Davis DM, Fiske J, Scott B, Radford DR. The emotional effect of tooth loss in a group of partially dentate people: a qualitative study. *Eur J Prosthodont Res Dent* 2001; 9:53-57.
2. Craddock HI. Consequences of tooth loss (part 1): The patient perspective-aesthetic and functional implications. *SADJ* 2010; 65(6):242-244.
3. Nirmal R, Naveen R, Sanajay J, Mathew T, Roshan U. Knowledge, Attitude towards Prosthodontic Rehabilitation and Utilization of Dental Services among Songadh and Amargadh population. *J Dent Medic Med Sci* 2014;3(1): 1-6.
4. Craddock HI. Consequences of tooth loss (part 2): dentist consideration-restorative problems and implications. *Dent Update* 2010; 37(1):28-32.
5. Gerrisen AE, Finba PS, Witter DJ, Bronkhorst EM, Creuger Nico HJ. Tooth loss and oral health-related quality of life; a systemic review and meta-analysis. *Health and Utility of Life Outcome* 2010; 8: 126.
6. Suresh S, Sharma S. A Clinical Survey to determine the awareness and prevalence of needs of a complete denture among complete edentulous patients. *J Int Oral Health* 2010; 3(2): 65-70.
7. Davis DM, Fiske J, Scott B, Radford DR. The Emotional Effect of tooth loss: A preliminary qualitative study. *Br Dent J* 2000; 188:503-506.
8. Vipul Y, Vaighav T, Sumit P, Ravishan K, Harsimran K, Muinmun M. Oral health knowledge, attitude and practice among adult towards tooth loss and utilization of dental services in Moradabad district. *J Orofac Res* 2012; 2(4):192-197.
9. Omar R, Tashkandi E, Abdul Jabbar T, Abdullahi MA, Akeel RF. Sentiment expressed in relation to tooth loss; a qualitative study among edentulous Saudis. *Int J Prosthodont* 2003; 16:515-520.
10. Amjau F, Aziz S. Trend, Awareness and attitude of patients towards replacement of missing tooth at University College of Dentistry. *Pak Oral Dental J* 2014; 34(1):190-193.
11. Hayes M, Burke F, Mckenna G, Madden J. An analysis of the attitude of dental patients attending general dental practice in Galway. *J Irish Dent Assoc* 2013; 59(4):179-182.
12. Sanya BO, Ng'ang'a PM, Ng'ang'a RN. Causes and pattern of missing permanent teeth among Kenyans. *East Afr Med J* 2004; 81(6):322-326.
13. Kuldeep Singh S, Prasanya R, Senthil M, Arunima C. Replacement of missing teeth among patients- factors determining the attitude. *J Sci Dent* 2016; 6(2):25-29.
14. Bruce I, Nyako EA, Adobo J. Dental service utilization at the Kork Bu Teaching Hospital. *Afr Oral Health Sci J* 2001; 3:63-67
15. Kaimayi JT, Sachdeva P, Patel S. Causes of tooth mortality at the dental unit of Kenyatta National Hospital. *Trop Dent J* 1998; 11:17-20.
16. Sheikh M, Sadegh MA, Ghrbanizadeh S. Prevalence of congenitally missing permanent teeth in Iran. *Dent Res (Isfahan)* 2012; 9(1):105-111.
17. Rakhshan V. Congenitally missing teeth (hypodontia). A review of the literature concerning the etiology, prevalence, risk factor, pattern and treatment. *Dent Res J* 2015; 12(1):1-13.
18. Mcmillan AS, Wong MC. Emotional Effect of tooth loss in community- dwelling elderly people in Hong Kong. *Int J Prosthodont* 2004; 17(2):172-176.
19. Davis DM, Fiske J, Scott B, Radford DR. The emotional effect of tooth loss; a preliminary qualitative study. *Br Dent J* 2000; 188(9):503-506
20. Carlson GE, Omar R. Trends in Prosthodontics. *Medic Principles and Pract* 2006; 15(3):167-17.
21. Makatash GN, Al-Rousan M, Al-Salama B. Needs and Demand of Prosthetic treatment among two groups of individuals. *Indian J Dent Rest* 2010; 21(4):564.

22. Idowu EA, Agara R, Oladotun FO, Denloye O. Non-syndromic congenital, oligodontia; management of a case in a Nigeria child. *J IMAB* 2019; 25(4):2862-2867.
23. Kalk W, Koysen AF, Witter DJ. Needs for tooth replacement. *Int Dent J* 1993; 43:41-49.
24. Dosumu OO, Ogunrinde JT, Bamigboye SA. Knowledge of consequences of missing teeth in patients attending prosthetic clinic in UCH Ibadan. *Ann Ibd, Pg. Med* 2014; 12(1):42-48.
25. Olabisi AA, Ifeanyi CM. Teeth retention, prosthetic status and need among a group of elderly in Nigeria. *Dentistry* 2012; 2(1):1000117
26. Esan TA, Olusile OO, Oziegbe EO, Udoye CI, Olasoji HO. Pattern of tooth loss in Nigerian children: A national survey. *Pediatr Dent J* 2009; 19(2):165-173
27. Braimoh OB, Alade GO. Prevalence, causes and pattern of tooth loss among Elderly people on Port Harcourt Nigeria. *Central Afri J Pub Health* 2019; 5(2):98-101
28. Esan TA, Olusile AO, Ojo MA, Udoye CI, Oziegbe EO, Olasoji HO. Tooth loss among Nigerians Treated in Teaching Hospitals; A national pilot study. *J Contemporary Dent Pract* 2010; 11(6):017-024
29. Taiwo JO, Omokhodion F. Pattern tooth loss in an elderly population from Ibadan, Nigeria. *Geriodontol* 2006; 23:117-122.
30. Kuo HC, Yang YH, Lai SK, Yap SF, Ho PS. The association between health related quality of life and prosthetic status and prosthetic needs In Taiwanese adult. *J Oral Rehabil* 2009; 36:217-225.
31. Krall EA, Garvey AJ, Garcia RI. Alveolar bone loss and tooth loss in male Cigar and pipe smokers. *J Am Dent Assoc* 1999; 130: 57-64.
32. Adeyemo WL, Oderinu HO, Oluseye SB, Taiwo AO, Akinwande JA. Indication for extraction of permanent teeth in Nigerian Teaching Hospital- a 16 year follow up study. *Nig Q J Hosp Med* 2008; 18:128-132.
33. Akinboboye BO, Sulaiman, AO, Bamigboye SA, Akeredolu PA, Dosumu OO. Impact of tooth loss on individual with unrestored partially edentulous arch in southwestern Nigeria- A preliminary survey. *Afri J Biomed Res* 2016; 19:149-153.
34. Natarajan P, Madhankumar S, Jeyapalan K, Natarajan S, Anand Kumar V, Sruthi R. Reasons and Associated Problems for Not Replacing Lost Teeth: A Cross-sectional survey. *Biomed Pharmacol J* 2018; 11(2): 965-969.
35. Al Quran FA, Al Ghalayini RF, Al-Zubi BN. Single-tooth replacement: factors affecting different prosthetic treatment modalities. *BMC Oral Health* 2011; 11:34.
36. Ferreira RC, de Magalhaes CS, Moreira AN. Tooth loss, denture wearing and associate factors among elderly institutionalized Brazilians population. *Geriodontology* 2008; 25(3):168-178.
37. Nevalainen MJ, Narhi TO, Siukosaari P, Schmidt Kaunisho K, Ainamo A. Prosthetic rehabilitation in the elderly in Hong -Kong. *J Oral Rehabil* 2003; 23:722-728.
38. Kini SK, Mahya VS. Restoration of an endodontically treated premolar with limited inter-occlusal clearance. *Indian J Dent Res* 2013; 24:518-520.
39. Martin-Junior PA, Marques IS. Clinical implication of early loss of lower deciduous canine. *Int J Orthod Milwaukee* 2012; 23(3):23-27.
40. Butt B, Eklund SA. *Dentistry, Dental Practice and Community* 5th Ed, W.B Sanders C Philadelphia 2005, 203-211.
41. Okoje VO, Dosumu OO, Alonge TO, Onyeanor CO. Tooth loss; are the patients prepared? *Niger J Clin Pract* 2012; 15:172-1