

Partial edentulism and unmet prosthetic needs amongst young adult Nigeria

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Abstract

Introduction: Treatment options for missing tooth/teeth which are mostly commonly caused dental caries, periodontitis and trauma include partial dentures, bridge and implant. In developing countries, missing tooth/teeth replacement constitutes a high unmet dental need. The objective of the study was to determine the prevalence of partial edentulism and prosthetic unmet dental needs among young adults in Nigeria.

Materials and methods: A total of 244 medical students of college of medicine were recruited and studied using interviewer administered questionnaire which elicited information on sociodemographic, tooth loss and replacement. Data was analyzed with SPSS version 16.0 statistical software for windows.

Results: There were 98 males (40.2%) and 146 females (59.8%). A total of 35 participants out of the 244 studied participants had missing tooth/teeth giving a prevalence of 14.3%. The major reason of tooth loss was caries (48.6%). The upper left (16.7%) and right (16.7%) had the highest tooth mortality. Of the 35 participants with missing teeth, 4 (11.4%) of had replacement while 31 (88.6%) did not have any form of replacement. The teeth replaced were upper right, left anterior (75%) and upper right posterior (25%). Reasons for non-replacement were not being bothered - 14 (45.2%), ignorance of replacement therapy - 7 (22.6%), misinformation - 1 (3.2%) and lack of money - 2 (6.5%). Those that replaced 4/42 (9.5%) did so with removable partial dentures (100%). The majority that replaced were females 3/4 (75%). Half (50%) of those that replaced were satisfied and the reasons for non-satisfaction were pain from denture and unnatural feel of denture.

Conclusion: Data from this study revealed low prevalence of tooth loss with high unmet tooth replacement needs among the participants. Tooth/teeth replacement options should be incorporated in post-operative instructions after extraction and dental awareness should be improved among medical students.

Résumé

Introduction : Les options de traitement pour la dent/dents absente (s), généralement causé par la carie dentaire, la parodontite et les traumatismes, incluent les dentiers partiels, le bridge et l'implant. Dans les pays en voie de développement, le remplacement des dents manquantes est un besoin important mais non-satisfait. L'objectif de cette étude était de déterminer la fréquence de l'édentement partiel et des besoins dentaires prothétiques non satisfaits parmi de jeunes adultes au Nigéria.

Matériels et méthodes : Un total de 244 étudiants en médecine a été recruté et étudié utilisant un questionnaire administré pour obtenir des informations socio-démographiques, sur la perte de dent et leur remplacement. Les données ont été analysées avec le logiciel statistique SPSS version 16.0 pour Windows.

Keywords:
Edentulism,
partial denture,
unmet need,
young adults

Mots-clés :
Edentement,
dentier partiel,
besoin non-satisfait,
jeunes adultes

Résultats : Il y avait 98 hommes (40.2%) et 146 femmes (59.8%). Un total de 35 participants sur 244 participants étudiés avait une ou des dents absentes soit une fréquence de 14.3%. La principale raison de la perte de dent était la carie (48.6%). Les maxillaires gauche (16.7%) et droite (16.7 %) avaient la plus importante mortalité dentaire. Parmi les 35 participants avec des dents absentes, 4 (11.4 %) avait fait un remplacement tandis que 31 (88.6 %) n'avait aucun traitement de remplacement. Les dents remplacées étaient sur la maxillaire droite, antérieure gauche (75 %) et maxillaire postérieure droite (25 %). Les raisons au non-remplacement étaient : absence de gêne 14 (45.2 %), ignorance des traitements de remplacement, 7 (22.6 %), désinformation 1 (3.2 %) et le manque d'argent (6.5 %). Ceux qui ont eu un remplacement de dent 4/42 (9.5 %) l'ont fait par des dentiers partiels amovibles (100 %). La majorité qui a remplacé les dents absentes était des femmes (75%). La moitié (50%) de ceux qui ont remplacé une ou des dents manquantes a été satisfaite et les raisons de la non-satisfaction étaient la douleur du dentier et la sensation artificielle de dentier.

Conclusion : Les résultats de cette étude ont révélé la faible fréquence des pertes de dent avec d'importants besoins de remplacement non-satisfaits parmi les participants. Les options de remplacement des dents absentes devraient être incluses aux recommandations post-opératoires après extraction et les connaissances dentaires devraient être améliorées parmi les étudiants en médecine.

Introduction

Tooth loss, which is considered a good and sensitive indicator of overall dental health and access to dental care, can result from a variety of oral diseases such as dental caries, periodontitis and trauma (1, 2). In Nigeria, it is an accepted view that dental caries is the main cause of tooth loss in the young adulthood, whereas the most common cause of tooth loss in middle adulthood and elderly is periodontal diseases (3, 4). It has been established that the anterior teeth are more often missing in the maxillary than in the mandibular arch, while the molars are more often missing in the mandibular arch (4, 5).

The loss of tooth/teeth loss is known to exert negative effects on mastication, nutrition, dietary choices, speech, psychological well-being and social interaction (6, 7). It is associated with adverse oral health impact, worse physical functioning, and low perception in quality of life (8). Available data on edentulism in Nigeria was hospital based and assessed the associated socio-demographic characteristics of patients receiving prosthetic dental care (1). Another study among young Nigerians to determine the use of denture which is a treat-

ment option for tooth loss revealed the prevalence as being low (9). There has been no study on the prevalence of partial edentulism among young adults in Nigeria. Hence, this study was set to determine the prevalence of partial edentulism and the unmet prosthetic needs among young adults in Nigeria.

Materials and methods

A total of 244 medical students were randomly recruited from the College of Medicine, University of Lagos over a period of three weeks. All subjects were subjected to an interviewer-administered questionnaire.

The questionnaire elicited information on sociodemographic characteristics, history of tooth loss, reason for replacement, reason for non-replacement, type of replacement and satisfaction of tooth replacement option. Those that had being previously diagnosed of medical conditions like diabetes mellitus and those that did not consent to the research were excluded. Informed consent was obtained from participants after explaining the objective of the study to participants. Data collected were ana-

Table 1: Demographic characteristics of the participants

Characteristics	Frequency (n)	Percent (n)
Age (years)		
17 - 20	184	75.4
21 - 35	60	24.6
Gender		
Male	98	40.2
Female	146	59.8
Ethnicity		
Yoruba	176	72.1
Igbo	42	17.
Hausa	4	1.6
Minor ethnic group	22	9.0
Socioeconomic group of parent/guardian		
Professional	159	65.2
Non-professional	85	34.8
Total	244	100.0

Table 2: Prevalence and factors related to tooth loss among the participants

Characteristics	Missing tooth/teeth - n (%)		P-value
	Yes	No	
Age (years)			
17 - 20	28 (15.2)	156 (84.8)	0.496
21 - 35	7 (11.7)	53 (88.3)	
Gender			
Male	11 (11.2)	87 (88.6)	0.255
Female	24 (16.4)	122 (83.6)	
Ethnicity			
Yoruba	24 (13.6)	152 (86.4)	0.504
Igbo	8 (19.0)	34 (81.0)	
Hausa	1 (25.0)	3 (75.0)	
Minor ethnic group	2 (2.1)	20 (90.9)	
Socioeconomic group of parent/guardian			
Professional	18 (11.3)	141 (88.7)	0.065
Non-professional	17 (20.0)	68 (80.0)	
Total	35 (14.3)	209 (85.7)	

lyzed with statistical package for the social sciences (SPSS) version 16.0 statistical software's for windows (version 16.0 SPPS Inc, Chicago IL).

The statistical significance of outcomes was evaluated at 95% confidence level and significant association determined as $p < 0.05$.

Results

The participants were aged between 17 and 35 years with a mean age of 19.84 ± 2.39 years. About three-quarters-184 (75.4%) of the participants aged between 17-20 years while the remaining 60 (44.6%) were 21-35 years old. There were 98 males (40.2%) and 146 females (59.8%). The majority (72.1%) of participants were of Yoruba ethnic group (Table 1). A total of 35 participants out of the 244 studied participants had missing tooth/teeth giving a prevalence of 14.3 %.

The prevalence of partial edentulism was higher among younger age group, females, and those whose parents/guardian were nonprofessionals (Table 2). The major reason of tooth loss was dental caries (48.6%) (Figure 1).The tooth loss from dental caries and trauma was higher among younger age group than the older age group (Table 3). The upper left (16.7%) and right anterior (16.7%) had the highest tooth mortality.

Of the 35 participants with missing teeth, 4 (11.4%) of had replacement while 31 (88.6%) did not have any form of replacement. The teeth replaced were upper right, left anteriors- 3 (75%) and upper right posterior - 1 (25%). Reasons for non-replacement were not being bothered - 14 (45.2%), ignorance of replacement therapy - 7 (22.6%), misinformation-1 (3.2%) and lack of money - 2 (6.5%) (Figure 2). Those that replaced 4/35 (11.4%) did so with removable partial dentures (100.0%).

Figure 1: Reasons for tooth loss among the participants

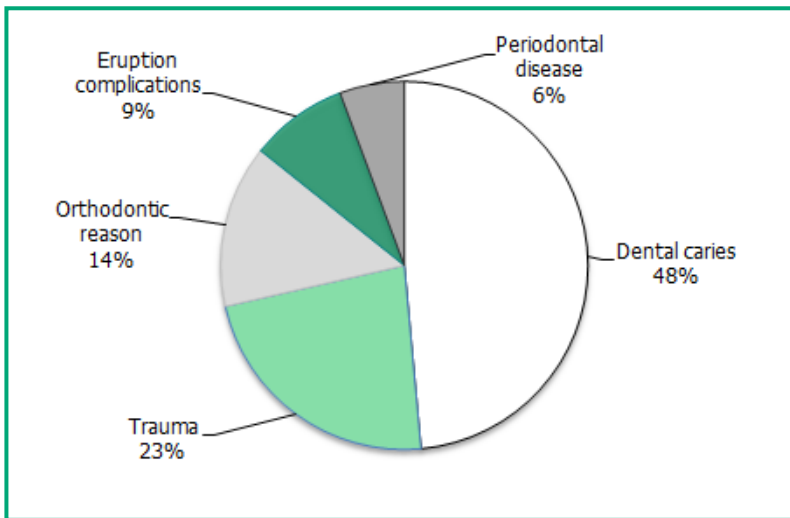


Figure 2: Reasons for non-tooth/teeth replacement among the participants

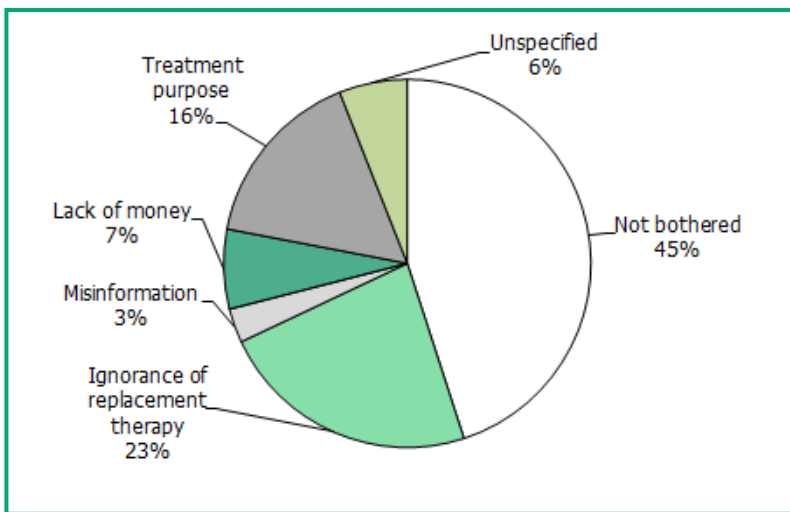


Table 3: Relationship between age and reasons for tooth loss among the participants

Age (years)	Reasons for tooth loss				
	Dental caries	Trauma	Periodontal disease	Eruption complications	Orthodontic reason
17 - 20	13	6	2	3	4
21 - 35	4	2	0	0	1
Total	17 (48.6)	8 (22.9)	2 (5.7)	3 (8.6)	5 (14.3)

The majority that replaced were females - 3 (75.0%). Half - 2 (50.0%) of those that replaced were satisfied and the reasons for non-satisfaction were pain from denture - 1 (50%) and unnatural feel of denture - 1 (50%).

Discussion

In this study, the prevalence of partial edentulism was 14.3%. This conforms to the small contribution of missing component (M) to decayed missing and filled teeth (DMFT) reported young Nigerians (10, 11).

However, this was higher than 10.0% and 6.45% among adult Canadian and Norwegian respectively (12, 13). This may be explained by the fact that tooth retention is reduced by poor accessibility to oral health services which leads to untreated diseased teeth or extraction to relieve pain or discomfort (14, 15).

The prevalence of partial edentulism was higher among the younger age group than the older age group (14.7% versus 13.3%) in this study. This could be explained by the fact that dental caries and trauma which are the principal causes of tooth loss in this study.

The prevalence of partial edentulism was higher among females than males (16.4% versus 11.2%) in this study. This supports the assertion in the literature that even though males have more oral diseases than females

that they are less likely to seek and receive dental care. The prevalence of partial edentulism was higher among participants with limitation in source of income such as whose parent are non-professional versus professional (20.2% versus 11.3%). This can be explained by the fact that treatment choices among patients for dental condition with varied treatment options are affected by the income earning power of the patients.

MORESO that dental treatment in Nigeria is majorly funded as out of pocket expenses. The prevalence of partial edentulism was also found to be varied among the different tribes among the studied participants with highest prevalence seen among the hausas. The reason for this variation was not readily discernible therefore further studies in this direction is suggested.

In this study, the proportion of those who replaced missing teeth was 11.4% and the choice replacement was removable partial denture. This substantiates the findings in previous study done amongst Nigerian undergraduates (9). The majority (75.0%) of those who replaced their missing teeth were females. This finding further buttress the findings in earlier study done in Israel (16) and also reflects the significantly better attitude and greater interest in oral health among females than males (17). The vast majority of participants with tooth loss had unmet tooth/teeth replacement need. The reason for non-replacement therapy connotes negative attitude to prosthetic treatment, ignorance, misinformation and poverty which must be addressed for met the replacement needs of young adults. The fact that the majority of those with unmet replacement need, lost their tooth/teeth as a result of den-

tal caries and reported not being bothered by the tooth loss reflects negative attitude to prosthetic treatment call among them and calls for concerted effort in facilitating favorable prosthetic oral health seeking care among young adults in Nigeria.

Ignorance and misinformation in relation to tooth replacement among participants with unmet prosthetic dental need necessitates comprehensive dental treatment which incorporates adequate information on tooth/teeth replacement options in extraction treatment plan. The commonest tooth/teeth loss were the upper left (16.7%) and upper right (16.7%) posteriors explaining the high unmet need as the pattern of replacement in Nigeria were majorly for aesthetics replacing only anterior teeth even when the posterior teeth are also missing (18). This is further buttressed by our findings of the pattern of replacement which was common in the upper left and right anterior (75%).

The dominant posterior teeth loss was similar to the findings in a study done in Ile-Ife (4) especially maxillary than mandibular (19) and the explanation lies in the fact that dental caries which is more common in posterior teeth due to plaque retentive fissures and pit was the major reason for tooth loss.

Conclusion

The prevalence of partial edentulism was low but there existed high unmet tooth replacement need amongst the participants. Comprehensive dental treatment which incorporates tooth/teeth replacement options in extraction treatment plan will help in overcoming this unmet dental need among young adults.

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