

# Replacement of Missing Teeth: Comparing Factors That Motivate Male Denture Wearers with their Female Counterpart among Selected Group of Nigerian

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## Abstract

**Introduction:** A condition where one or more teeth are missing in the mouth is referred to as partial edentulism. These missing teeth could be replaced by removable partial denture (RPD) or fixed partial denture. Factors that determine choice of replacing missing teeth includes but not limited to; esthetic, mastication and prevention of further tooth loss. The aim of this study was to compare factor that motivate male denture wearers to replace their missing teeth with the female counterpart

**Method:** This cross-sectional self-administered questionnaire-based study was conducted in University of Calabar Teaching Hospital and Nigeria Navy Reference Hospital, Calabar. The respondents comprise of patients who presented at the dental clinic of both Hospital. Inclusion criteria were patients who requested for the replacement of their missing teeth and gave inform consent, while exclusion criteria were those who requested for tooth extraction etc. Questionnaires was delivered to each participant by hand and collected after it was filled. The questionnaire was divided into two sections. The first is for information of the respondents while the second was on reason for seeking tooth replacement.

**Results:** A total of 32 patients participated in this study, The male were 16 (50.0%) and female 16(50.0%). most of the study participants 9(28.2.2%) were between 20-30yrs with a mean age of  $45.6\pm 3.65$ .

**Conclusion:** Female denture wearers were more concern about esthetics while male denture wearers were more concern about mastication and prevention of tooth loss

**Keywords:** Female; Male; Partial Denture; Motivate

## Introduction

A condition where one or more teeth are missing in the mouth has been defined as partial edentulism. This condition is on the increase as there is an increase in oral health education and awareness which emphasis on preventive measure, thus a decline in complete edentulism [1, 2]. Factors associated with tooth loss includes but not limited to age, gender, economic status, educational background, cultural and attitudinal determinants. Other factors are dental caries, periodontal diseases, neoplastic disease, trauma, tooth impaction and tooth attrition [1, 2].

Removable partial denture (RPD), fixed partial denture (FPD) and dental implants are dental prosthesis that can be used to replace missing teeth [3]. RPD is the most popular and it can help restore form and functions of missing teeth. This denture, especially the acrylic base type, is cheap and easier to fabricate compare with the other two, although it has the disadvantage of accumulating plaques and calculus which affect other standing teeth in the mouth, thus resulting in further tooth loss [4]. FPD is more expensive, less popular among denture wearers compared with RPD. Even though it has the disadvantage of the dentist having to prepare other teeth in the mouth to act as an abutment, its more retentive and stable compared with RPD [5, 6]. Dental implants are prosthesis which are sunk into jaw bone with an abutment carrying a crown for replacement of missing teeth. It requires more expertise from the dentist and also more expensive than FPD and RPD [6, 7].

Studies [3, 8, 9] have showed factors that motivate partially edentulous patient to replace their missing teeth to includes; esthetic, mastication, prevention of further tooth loss, halitosis and advised by others. In one of this studies, male patients seeking for tooth replacement were more than their female counter, even though other studies have showed that female are more aesthetically conscious and more motivated to attend dental clinic compared to the male counterpart [7, 10] These studies did not compare these factors between male and female denture seekers. It has been reported that males are less concerned about their edentulism, less concern about restoring their carious tooth or replacing their missing tooth, thus less likely to visit the dental office compared to the female counterpart [11]. As there is dearth of information concerning this topic, this study therefore aims to find out whether there are differences between the factors that motivate male denture wearers compare with their female counterpart.

## Material and Method

This study was carried out at the University of Calabar Teaching Hospital and the Nigeria Navy Reference Hospital in Calabar, Nigeria. Self-administered questionnaire was used to collect data from patients attending the dental clinic of both institutions. The inclusion criteria were patients requesting for partial denture (fixed or removable) and gave informed consent while exclusion criteria were those requesting for full-full denture, composite filling, glass ionomer cement filling etc. The research was conducted in accordance with Helsinki declaration 1975, and revised in 2013.

Questionnaires were delivered to each participant by hand and collected after it was properly filled. The questionnaire was divided into two sections. The first is for information of the respondents and this included: age, gender, educational status, profession and monthly income.

The second section sought for information on jaw with missing teeth, type of missing teeth, type of denture requested for, reasons for seeking tooth replacement (aesthetics, mastication, prevention of further tooth loss, prevention of halitosis and advised by others). The mouth of each respondent was examined with mouth mirror and dental probe for type and number of missing teeth which the patient sought to replace. The respondents were divided into two groups: group A were male patients while group B were female patients.

## Sample Size

The sample size was calculated using the formula for comparative studies as stated below:<sup>12</sup>

$$n = 2z^2 pq$$

$$d^2$$

Where n=Sample size of each group

Z= the standard normal deviate, usually set at 1.96 which corresponds to the 95% confidence level

P= this was based on a prevalence of 1.8% reported in a particular study.<sup>13</sup>

$$q = 1.0 - p$$

d= an observed difference of 0.1 which is considered significant at the 0.05 level

$$n = 2 \times (1.96)^2 \times 0.018 \times 0.982 / 0.1^2 = 13.58, \text{ Approximately 14 patients per group.}$$

10% increase, approximated to 2 patients, would be added to each group to allow for attrition making minimum sample size of 16 patients per group.

## Data Analysis

Statistical analysis was done using Statistical Package for Social Science (SPSS) version 22 for windows. Tables were presented in form of frequencies and percentages. Chi-square statistics was used to determine if there was significant difference between factors that motivate male dentures wearers and female denture wearers to seek tooth replacement. P level of <0.05 was considered to be statistically significant.

## Results

A total of 32 patients participated in this study, of which 16 (50.0%) were males and 16 (50.0%) were females. Age 20-30yrs 9(28.2%) were more, 19(59.4%) attended tertiary institution, 18 (56.3%) were skilled workers while 18(56.3%) received below 50 thousand naira (40 dollars) monthly. (Table 1). Among the participants, 16(50.0%) had missing teeth in their upper jaws and 16(50.0%) had missing teeth in their lower jaws. Table 2. Moreso, 12(37.5%) of the participants had missing teeth in the upper anterior, 4(12.5%) in the upper anterior and posterior, 8(25.0%) in the lower anterior, 4(12.5%) in the lower posterior, 4(12.5) in the lower anterior and posterior, while 21(65.6%) requested for RPD and 11(34.4%) requested for FPD (Table 2).

Gender	Frequency (%)	Percentage (%)
Male	16	50
Female	16	50
Total	32	100
Age (years)		
20-30	9	28.2
31-40	5	15.6

41-50	5	15.6
51-60>60	67	18.821.9
Total	32	100
<b>Educational status</b>		
Primary	2	6.3
Secondary	9	28.0
Tertiary	19	59.4
Post graduate	2	6.3
Total	32	100
<b>Profession</b>		
Professional	4	12.4
Skilled	18	56.3
Semi-skilled	6	18.8
Unskilled	4	12.5
Total	32	100
<b>Monthly income</b>		
	<b>Frequency</b>	<b>Percentage (%)</b>
>50 thousand	14	43.7
<50 thousand	18	56.3
Total	32	100

**Table 1:** Sociodemographic characteristics

Jaws	Frequency (n)	Percentage (%)
Upper	16	50.0
Lower	16	50.0
Total	32	100
<b>Missing teeth</b>		
	<b>Number of participants (n)</b>	<b>Percentage (%)</b>
Upper anterior	12	37.5
Upper anterior and posterior	4	12.5
Lower anterior	8	25.0
Lower posteriorLower anterior and posterior	44	12.512.5
Total	32	100
<b>Type of Denture</b>		
RPDPDTotal	21132	65.634.4100

**Table 2:** Jaw, missing teeth and type of denture

The females were more concern about esthetics 10(62,4%) compared to the males 5(31.2%), the males were more concern about esthetics and mastication 3(18.8%) compared to the females 1(6.3%). Moreso the males were more concern about esthetics plus mastication plus prevention of further tooth loss 8(50.0%) compared to the females 3(18.8%). The difference in factors that motivate patients to seek tooth replacement between the two groups was not statistically significant (p=0.681) (Table 3)

Reasons for seeking tooth replacement	Male denture wearers		Female denture wearers	
	Frequency (n)	Percentage (%)	Frequency (n)	Percentage (%)
Esthetics	5	31.2	10	62.4
Mastication	0	0.0	0	0.0
Prevention of further tooth loss	0	0.0	0	0.0
Esthetics + mastication	3	18.8	1	6.3
Mastication + prevention further tooth loss	0	0.0		0.0
Esthetic + mastication + prevention of further tooth loss	8	50	3	18.8
Prevention of halitosis (Mouth Oduor)	0	0.0	0	0.0
Advised by others	0	0.0	0	0.0
Esthetic + prevention of further tooth loos	0	0.0	2	12.5
Total	16	100	16	100P = <b>0.681</b>

**Table 3:** Comparing reasons for seeking tooth replacement between old denture wearers and new denture wearers

## Discussion

Partial denture (RPD or FPD) is an adequate means of replacing missing teeth. This form of tooth replacement has helped to restored form and function of missing teeth in partially edentulous patients, hence many of these patients opt for this form of treatment [12].

Most of the participants in this study are young adults which are very much concern about their esthetic when compared with older patients. They are more enthusiastic about their oral health hence present in the clinic more than the older age groups [8, 9]. Those that have tertiary education and skilled workers were more in this study which showed that they are more esthetically conscious and willing to replace their missing teeth. This is expected as they are more educated and know the important of maintaining good oral health.

Most of the participants in this study were educated people but their monthly income was below fifty thousand naira (33 dollars). This could be the reason why most of them opted for removable partial denture since its cheaper than the fixed partial denture. In addition, though equal number of participants were affected with either upper or lower jaw, participants with upper anterior missing teeth were more. This agree with previous studies [1, 3]. These teeth are prone to trauma, affect esthetic more than other set of teeth in the mouth, hence patients present early in the dental clinic for replacement.

This study showed that the females are more concern about aesthetic compared to their male counterpart. This corroborates other studies [1, 9]. Even though missing anterior may be more in the males because of their aggressive nature, but they are less concern about aesthetic when compared to the females. The females are more concern about their look hence present early to the dental clinic1,9. This study also showed that the males are more concern about aesthetic plus mastication plus prevention of further tooth loss when compared with the females. This shows that the males like food more than the females and they would not want anything that would make them not to eat. They exert more energy than the female hence the need for more food.

Even though there was no statistically significant difference between factors that motivate male denture wearers compared with the females, finding from this study showed that the females are more concern about aesthetic while the males are more concern about mastication.

In the fabrication of partial denture therefore, effort should be made to fabricate denture that is aesthetically pleasing for the female patients. Features like smile line, midline diastema and shade of the artificial tooth should be put into consideration so that the patient fully appreciate the dental prosthesis that was fabricated for her. For the males, setting the artificial teeth on the neutral zone and used of cusp artificial teeth should be consider since they are more concern about mastication, even though effort should be made to fabricate esthetically pleasing.

## Conclusion

Female denture wearers were more concern about esthetics while male denture wearers were more concern about mastication and prevention of tooth lossenture for them.

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