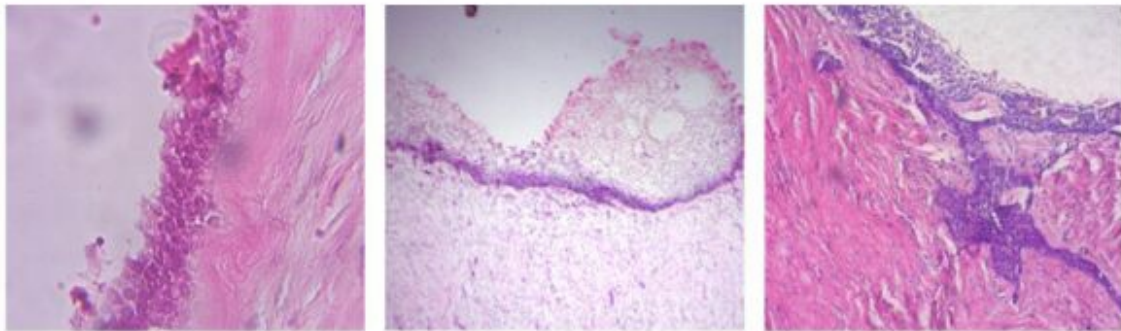


VOLUME 2, ISSUE 1, JUNE, 2017

NJDR

NIGERIAN JOURNAL OF DENTAL RESEARCH

Official Publication of the School of Dentistry, College of Medical Sciences, University of Benin, Benin City, Nigeria



Anterior Immediate Denture in a Tertiary Healthcare Setting: Prevalence and Pattern

*Henshaw IMASUEN (BDS), **Julie O. OMO (BDS, FWACS)

*Department of Restorative Dentistry, University of Benin Teaching Hospital, Benin City.

**Department of Restorative Dentistry, University of Benin, Benin City.

ABSTRACT

Objective: To determine the prevalence and pattern of use of anterior immediate removable partial denture.

Methods: This was a retrospective study of all patients requesting for immediate removable partial denture. The data of interest retrieved from patient's case notes were: age, gender, occupation, missing teeth, shade and arch involved. The data was analyzed using IBM SPSS version 21. The results were presented in the form of frequencies and table. Statistical level of significance was set at $p < 0.05$

Results: The prevalence of patients who requested for immediate dentures was 5.1%. The age range of the patients was 19 to 92 years with a mean age of 36 years while the male female ratio was 1:1. Majority (97.1%) of the patients requested for all anterior teeth replacement. Twenty five (74%) of the patients requested for maxillary anterior teeth replacement while nine (26%) of the patients requested for mandibular anterior teeth replacement. Shade A3 was the predominant shade.

Conclusion: The prevalence of immediate denture was low. Maxillary anterior teeth and shade A3 were the most requested.

Keywords: immediate replacement denture, prevalence, pattern.

Citation: Imasuen H, Omo JO. Anterior immediate denture in a tertiary healthcare setting: prevalence and pattern. *Nig J Dent Res* 2017; 2(1):16-20.

Correspondence

Dr. Henshaw Imasuen
Department of Restorative Dentistry
University of Benin Teaching Hospital, Benin
City.
E-mail: omoandese@yahoo.com.

INTRODUCTION

Immediate replacement partial denture is a dental prosthesis constructed to replace the lost dentition and associated structures of maxilla and mandible and inserted immediately following removal of the natural teeth.¹ For many years, immediate dentures were considered to be a resorption-increasing factor;² it was believed that the denture insertion should occur after partial healing of the sockets and stabilization of the alveolar ridge.³ However it has been shown that immediate replacement denture could help to improve the healing process of the extraction socket.^{1,3}

An immediate partial denture must be compatible both biologically and physiologically with the oral environment.¹ It must be aesthetically pleasing, help maintain patient occlusion, prevent super-eruption of the opposing dentition and drifting of the adjacent teeth into edentulous space and improve oral function like speech, deglutition and mastication.^{4,5} An immediate denture also has therapeutic and prophylactic therapy. It is used as a bandage for extraction wounds: it prevents bleeding, protects the wound against trauma,

prevents the entrance of food and liquid into the wound, protects blood clots and accelerates healing, and it also enables a more correct formation of the residual ridge.⁶ The denture has some disadvantages like inability to perform tooth try in, short service life, increase cost and increase number of visits.⁷ Immediate dentures are contraindicated in patients with poor general health, uncooperative and elderly patients, patients suffering from debilitating diseases and in patients with sound periodontal health.⁸ There are two types of immediate denture^{4,5}:-

1. Conventional immediate denture

2. Interim [transitional] immediate denture

The need for the replacement of a missing tooth is more in case of an anterior tooth loss.^{9,10} The prosthetic replacement of an anterior tooth is the most challenging, as it includes the patient's expectations such as, matching with proper color, shape and size, psychological value and utmost technique sensitivity.¹¹

A study showed that plastic removable partial denture is the main type of replacement offered; and edentulousness was less common to female patients and younger individuals.¹²

Removable partial denture (RPD) has been shown to be adequate method of treatment for patients with missing teeth.¹³ For patients who cannot go about with missing teeth, immediate RPD which is a type of removable partial denture has helped to restore the missing teeth, thereby improving the

patient quality of life.

This study is to bring to the awareness of the dentist the prevalence, the arch and the type of teeth mostly replaced as far as immediate replacement RPD is concerned. The knowledge from this study will also help the dentist to educate and encourage more patients who need to benefit from the use of immediate RPD to do so. The objective of this study was to determine the prevalence and pattern of use of anterior immediate removable partial denture.

MATERIALS AND METHODS

This retrospective study was done at the Prosthodontics Clinic of the University of Benin Teaching Hospital. Patient's record from January 2012 to May 2015, were retrieved from the log book and case note and subsequently analyzed. A total of thirty four (34) patients were found to have requested for immediate removable partial denture of a total of 663 patients that attended the clinic requesting for removable partial denture during this period.

Inclusion criteria were; voluntary request for restoration of yet to be extracted teeth, teeth that cannot be restored with direct restoration and severely compromised periodontal tooth/teeth that should be extracted. Exclusion criteria were request for obturator, mouth guard and patient with already extracted teeth.

The data of interest retrieved were age, gender, occupation, missing teeth, arch involved, and shade.

The data obtained was analyzed with IBM SPSS version 21. The frequencies of data obtained were tabulated. The pattern of immediate denture use was tabulated against age, gender, missing teeth and arch, occupation and shade using analysis of variation. Statistical level of significance was set at $p < 0.05$.

RESULTS

A total of 34 patients received immediate replacement denture (IRD) over the period under review giving a prevalence of 5.1% as a total number of 663 patients sought treatment for RPDs over the study period. The age of the patients ranged from 19 to 92 years with mean age of 36.18 ± 16.47 years.

The age group with the highest frequency was the 30-39 year age group accounting for 35.3% and this was closely followed by the 20 to 29 years age group with 32.4%. (Table 1) There was equal proportion of both genders. Unemployed accounted for the most prevalent occupation (44.1%) among the patients (Table 2).

Table 1: Sociodemographic distribution of patients

Age (years)	Frequency (n)	Percent (%)
<20	2	5.9
20-29	11	32.4
30-39	12	35.2
40-49	4	11.8
50-59	2	5.9
>60	3	8.8
Total	34	100.0

Table 2: Occupation of the patients

Occupation	Frequency (n)	Percent (%)
Professional	2	5.9
Skilled worker	4	11.8
Semi-skilled worker	7	17.6
Unemployed	15	44.1
Total	34	100.0

Table 3: Relationship between socio-demography and the arch replaced

Characteristics	Arch		P-value
	Maxilla n (%)	Mandible n (%)	
Age (years)			0.317
<20	2 (100.0)	0 (0.0)	
20-29	8 (72.7)	3 (27.3)	
30-39	9 (75.0)	3 (25.0)	
40-49	3 (75.0)	1 (25.0)	
50-59	0 (0.0)	2 (100.0)	
>60	3 (100.0)	0 (0.0)	
Sex			1.000
Males	12 (70.6)	5 (29.4)	
Females	13 (76.5)	4 (23.5)	
Occupation			0.888
Professional	2 (100.0)	0 (0.0)	
Skilled	3 (75.0)	1 (25.0)	
Semi-skilled	5 (83.3)	1 (16.7)	
Unskilled	4 (57.1)	3 (42.9)	
Unemployed	11 (73.3)	4 (26.7)	
Total	25 (73.5)	9 (26.5)	

Table 4: Tooth shade of patients

Sex	Shades	Frequency (n)	Percent (%)
Male	A2	4	23.5
	A3	13	76.5
Female	A2	11	64.7
	A3	6	35.3

Only anterior teeth were replaced with immediate RPDs and consisted of central incisors mainly (Figure 1) with the maxillary arch receiving 73.5% of the immediate RPDs (Figure 2). The most frequent shade sought by the patients was A3 accounting for 58.8% (Figure 3).

There was no statistically significant association between the socio-demographic characteristics of the patients and the arch that received immediate RPDs. In like manner, there was no statistically significant association between the socio-demographic characteristics of the patients and the shade of the tooth replaced with immediate RPDs.

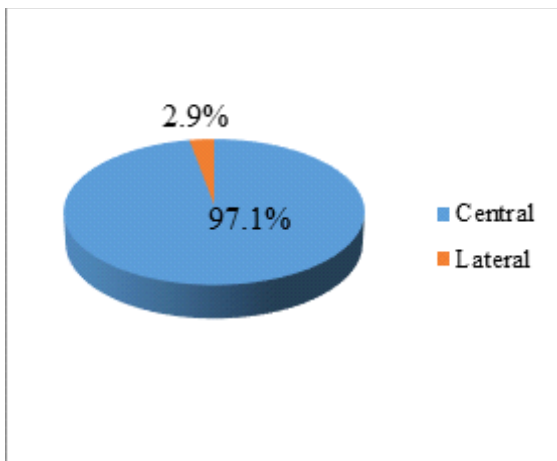


Figure 1: Distribution of teeth replacement

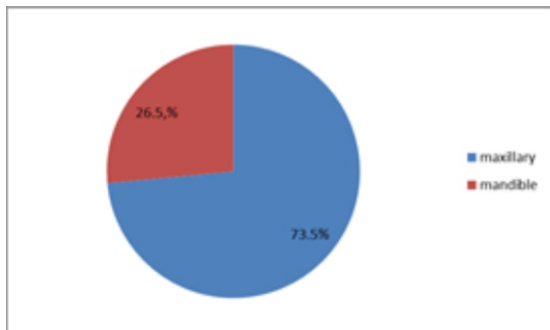


Figure 2: Distribution of teeth replaced with immediate RPD in the arch

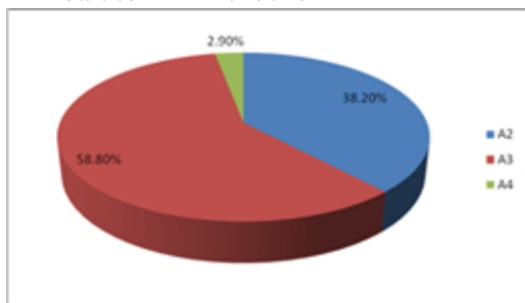


Figure 3. Shade distribution

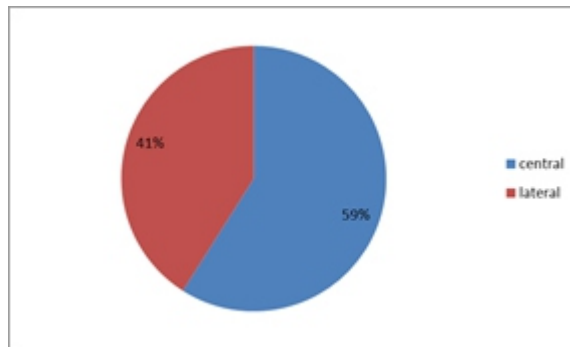


Figure 4: Distribution of maxillary central and lateral incisors

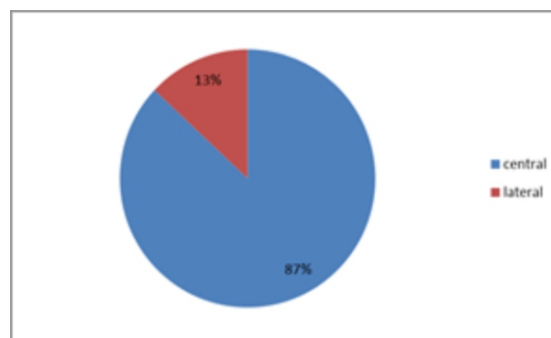


Figure 5: Distribution of mandibular central and lateral incisors

DISCUSSION

Removable partial dentures have been considered a useful, cost effective and reversible treatment method for partially edentulous patient of any age.¹¹ Immediate replacement denture is one of the several methods by which tooth loss can be replaced.¹ It's use has helped to improve patient quality of life especially those that cannot afford to be seen to be edentulous immediately after tooth extraction considering their personality and nature of their job.

There appear to be dearth of information and reports on immediate partial denture use.

It was observed in this study that most of the patients who requested for immediate replacement denture were the young adults (< 40 years) which are mainly the unemployed. This may be because the younger ones are more aesthetically and socially conscious than the elderly. This finding was earlier reported in a Nigeria study.¹⁴

The prevalence of immediate removable partial denture use was quite low. This may be attributed to the fact that most patients present for prosthetic replacement of missing teeth after tooth loss. Also, ignorance of immediate replacement and lack of access to health care facility may also have contributed to this low prevalence. There is the need to educate patient about immediate denture before extractions. Cost may not be a factor since

this type of denture is not more expensive than the conventional one in this center, but cost cannot totally be ruled out because more visits for denture modification is required.

Most of the patients who sought for immediate dentures had missing anterior teeth. This corroborates with reports of earlier study.^{9,10} This showed that Patients are very conscious about the way they look¹⁵ and the presence or absence of anterior teeth goes a long way to contribute to the appearance of an individual. The maxillary anterior teeth were the most commonly replaced teeth in this study when compared with the mandibular. These finding may due to the fact that maxillary anterior teeth are more susceptible to trauma than the mandibular teeth, hence the increase in maxillary anterior teeth replacement. This finding is in agreement with that of an earlier report.¹⁴

The patients in this study requested for acrylic base removable partial denture. This type of denture is most popular among partial denture users.¹⁶ This finding agrees with another study that showed acrylic denture is the main type of denture use by patients.¹⁶ Acrylic denture is easy to fabricate and also readily affordable by the patient.

From this study though A3 was the predominant shade requested by the patients, shade A2 (64.7%) was more among the female while A3 (76.5%) was more among the male. Table 4. This study agrees with that which was done in Belgaum were the prevalent shade was in the range of A2-A3.¹⁷ Another study also shows that females have lighter teeth shades while males had darker teeth shades.¹⁸ Darker shades among the male may be due the type of diet, substance been consumed and the poor oral hygiene among the male folks when compare to the female.

CONCLUSION

The prevalence of immediate denture was low (5.1%) and the unemployed constitute most of the patients. Maxillary anterior teeth and shade A3 were the most requested.

REFERENCES

1. Vinaya B, Sriram SB. Immediate partial denture prosthesis - a case report. *Nitte Univ J Health Sci* 2013; 3(4):120-124.
2. Campbell RL. A comparative study of the resorption of the alveolar ridges in denture-wearers and non-denture-wearers. *J Am Dent Assoc* 1960; 60:143-153.
3. Paryag A, Seerattan P, Reisha NR, Mankee M. Mandibular anterior immediate denture using visible light cure acrylic. *Mat Sci Appl* 2015; 6:1054-1060.
4. Deepak Nallaswamy, *Textbook of Prosthodontics*. 6th ed. New Delhi: Japee Brothers; 2011:472.
5. Shukla S, Bharathi SS, Nair C, Kumar A. Immediate Denture. *J Dent Sci Oral Rehab* 2015; 6(1):41-44.
6. Kraljević S, Pandurić J, Badel T, Čelić R. Complete immediate denture. *Acta Stomat Croat* 2001; 35(2):281-285.
7. St George G, Hussain S, Welfare R. Immediate dentures: 1. Treatment planning. *Dent Update* 2010; 37(2):82-84,86-88,91.
8. Demer WJ. Minimizing problems in placement of immediate dentures. *J Prosthet Dent* 1972; 27(3):275-284.
9. Aleksandr S, Manjunath K. Remote tooth in immediate partial denture: a case report. *J Clin Diagn Res* 2011; 5(6):1318-1320
10. Satapathy SK, Pillai A, Jyothi R, Annapurna PD. Natural teeth replacing artificial teeth in a partial denture: a case report. *J Clin Diagn Res* 2013; 7(8):1818-1819.
11. Osagbemi BB, Akadiri OA, Arigbede AO. Patients' attitude towards anterior teeth extraction and prosthetic replacement at the UPTH Dental Center Port, Harcourt. *Niger J Med* 2011; 20:52-56
12. Hikmat JA. The incidence of frequency of various removable partial edentulism cases. *MDJ* 2009; 6:172-177.
13. Dula LJ, Ahmedi EF, Lila-Krasniqi ZD, Kujtim SS. Clinical evaluation of removable partial dentures on the periodontal health of abutment teeth: a retrospective study. *Open Dent J* 2015; 9:132-139.
14. Ogunrinde TJ, Gbadebo SO. Removable partial dentures: Patterns and reasons for demand among patients in a teaching hospital in southwestern Nigeria. *Eur J Prosthodont* 2014; 2:82-85
15. Tadi DP, Atluri AD, Kadiyala DRP, Suraneni S. Maxillary immediate denture: A case report. *Int J Basic Appl Med Sci* 2013; 3(2):186-189.
16. Zwiad AA. New clinical technique for

- fabrication immediate partial denture.
Dent Hypotheses 2013; 4:139-142.
17. Herekar M, Fernandes A, Mangalvedhekar M. The most prevalent tooth shade in a particular population: a survey. *JIDA* 2010; 4(12):499-502.
 18. Dosumu OO, Dosumu EB. Relationship between tooth colour, skin colour and age: An observational study in patients at the Ibadan dental school. *Afr J Biomed Res* 2010; 13(1):9-14.