

Prosthetic status and need of psychiatric patients

Akinboboye BO¹, Ajayi YO¹,
Azodo CC², Oluwaniyi SO³

¹Department of Restorative Dentistry,
University of Lagos, Lagos, Nigeria.

²Department of Periodontics,
College of Medical Sciences,
University of Benin, Edo State, Nigeria.

³Federal Neuro-Psychiatric Hospital,
Yaba, Lagos, Nigeria.

Correspondence to:

Dr. Akinboboye BO

Department of Restorative Dentistry,

Faculty of Dental Sciences,

PMB 12003,

College of Medicine,

University of Lagos.

E-mail: bakinboboye@unilag.edu.ng

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Abstract

Objectives: Poor oral health result in tooth loss and it has been indicated in psychiatric patient. Tooth loss result in the need for prosthesis. This study aims at determining the prosthetic status and prosthetic need in psychiatric patient. **Materials and methods:** Patients attending Dental Clinic, Lagos University Teaching Hospital, Idi Araba (control group) and in-patients of Federal Neuro-psychiatric Hospital, Yaba, diagnosed and being treated for any type of mental illness (study group) were randomly selected for the study. Oral examination was performed on each patient after administering a structured questionnaire. Data collected was analyzed using SPSS version 16. **Results:** A total of 167 participants were seen with a mean age of 41.44 ± 14.98 years. The majority of participants in the study group (mental illness) were single (67.4%). The educational level attained by the majority of participants with mental illness was secondary education (44.2%, $p < 0.05$). About 91.7% of participants in the study group (mental illness) who needed prosthesis wore none while 51.9% of those who needed prosthesis in control group (dental patients) wore no prosthesis. This was found to be statistically significant ($p < 0.05$). Most of the study participants wear multiunit prostheses in both study and control groups (18.6% and 28.4%) respectively. This was found to be significant ($p < 0.05$). Prosthetic need in non-psychiatric patient was higher than psychiatric patient. **Conclusions:** There was a high unmet prosthetic need among psychiatric in-patients. This implies that amongst the psychiatric patient with tooth loss, their prosthetic need was neglected.

Tooth loss is the end result of oral diseases such as caries and periodontitis. The prosthetic need and status of an individual mirrors his attitude to dental care, availability of dental care and accessibility to dental care¹. Tooth loss significantly reduces the quality of life² and hence dental prostheses is usually employed to improve mastication, digestion, aesthetics, and quality of life³.

Psychiatric disorder affects people of all categories and also affects the general behavior of the person, awareness and level of performance⁴.

Many factors have been attributed to the poor oral health of psychiatric patients⁵. These factors include decrease saliva as a result of antipsychotic medication, poor diet and lethargic nature of psychiatric patients⁵. Furthermore, non-compliance to oral health practice by hospitalized psychiatric patients compared to the general populace has been reported and implicated as a major cause of poor oral health among these patients⁶. Poor oral health has been shown to contribute to tooth loss and hence high unmet need⁷⁻¹⁰.

Oral health is important because it is critical for overall systemic health. Poor oral health as in patients with periodontitis is a risk factor for poor glycemic control, cardiovascular disease and pneumonia. Oral diseases cause pain and discomfort which affects eating, nutritional uptake, quality of life and self esteem⁴. This could affect recovery from mental illness. It was therefore the aims of the study to explore the relationship between mental illness and oral health, the prosthetic need, and status of psychiatric patients and compare the findings to those without mental illness.

Materials and methods

A structured questionnaire was administered by one of the investigators to randomly selected in-patients of the Federal Neuro-psychiatric Hospital, Yaba. The admission list of in-patients who were mentally stable (calm patients in their right frame of mind) were used and the selection of every 3rd number was made using the serial number on the admission list. Patients were still on drugs such as risperidone, halidol and tegretol. Dental patients in the oral diagnosis clinic of Lagos University Teaching Hospital were also randomly selected. Ethical approval was obtained from the hospital ethical committee. The questionnaire sought information such as diagnosis, duration of illness, drug history, tooth loss, dexterity, reason for replacement and habits. The study groups were in-patient of psychiatric hospital (diagnosis was ascertained by a psychiatrist using mini international neuropsychiatry interview (M.I.N.I) questionnaire) and the control groups were patients in dental centre, Lagos University Teaching Hospital. The data regarding their oral health status was obtained through direct oral examination of the study participants using WHO oral health assessment form (Basic Oral Health Surveys, 1997)¹¹. The prosthetic status and prosthetic needs were assessed using the following criteria¹².

Prosthetic status

0- No prosthesis

1- Bridge

2- More than one bridge

3- Partial denture

4- Both bridge(s) and partial denture(s)

5- Full removable denture

9- Not recorded

Prosthetic need

0- No prosthesis needed

1- Need for one unit prosthesis

2- Need for multi unit prosthesis

3- Need for a combination of one-and/or multi unit prosthesis

4- Need for full prosthesis (replacement of all teeth)

9- Not recorded

The examination was conducted by a trained dentist. Consent was also sought and all patients who refused to grant their consent or not able to attend to questions were excluded.

Data collected was analyzed with SPSS 16 statistical software's for windows (version 16.0 SPPS Inc, Chicago IL). Test of logistic regression was also done. The statistical significance of outcomes was evaluated at 95% confidence level and significant association was determined if $p < 0.05$.

Table I. Demographic characteristics of participants

Variables	Grouping		P-value
	Cases n (%)	Control n (%)	
Age (years)			
21 – 30	24(27.9)	23(28.4)	0.714
31 - 40	21(24.4)	24(29.6)	
41 – 50	20(23.3)	12(14.8)	
51 – 60	10(11.6)	10(12.3)	
>60	11(12.8)	12(14.8)	
Gender			
Female	40(46.5)	48(59.3)	0.099
Male	46(53.5)	33(40.7)	
Marital Status			
Married	18(20.9)	48(59.3)	0.00* ^F
Single	58(67.4)	30(37.0)	
Divorced	7(8.1)	2(2.5)	
Widowed	3(3.5)	1(1.2)	
Educational Level			
Non-formal	4(4.7)	4(4.9)	0.00* ^F
Primary	8(9.3)	4(4.9)	
Secondary	38(44.2)	15(18.5)	
Tertiary	27(31.4)	56(69.1)	
Total	86 (100.0)	81(100.0)	

(*) = Statistically significant, (F)=Fisher's P

Results

A total of 167 participants were selected, interviewed and examined. The mean age was 41.44 ± 14.98 years. The majority of participants with mental illness were single (67.4%). Also, the highest educational level attained by the majority of participants with mental illness was secondary education (44.2%) while the majority of those in the control group (no mental illness) had tertiary education (69.1%). This was found to be statistically significant ($p < 0.05$). Seventy nine percent of those with mental illness were diagnosed with schizophrenia. The remaining 25% had other

psychiatric disorders such as depressive disorder, psychosis and bipolar disorder.

Table II showed that 91.7% of those in the study group (mental illness) who needed prosthesis wore none while 51.9% of those in the control group (no mental illness) wore no prostheses ($p < 0.05$). This was found to be statistically significant. The need for multiunit prosthesis was high in both the study group (18.6%) and control group (28.4%) ($p < 0.05$). Classification of the edentulous ridge showed that Kennedy Class III was the commonest in both study group (17.4%) and control group (28.4%), ($p < 0.05$).

The logistic regression showed older patients (> 40 years) had 1.951 odds of having prosthetics (removable & fixed partial denture) at 95% C.I value of 1.206-3.157 than the younger patients (≤ 40 years). The non-psychiatric had less odds (0.027) of having prosthetic status at 95% C.I value of 0.005 to 0.157 than the psychiatric patients. Older patients (> 40 years) had 2.024 odds of having prosthetic need at 95% C.I value of 1.474-2.778 than the younger patients (≤ 40 years). Those patients that ever worked had less odds (0.357) of having prosthetic need at 95% C.I value of 0.133-0.958 than those that never worked. The non-psychiatric had less odds (0.090) of having prosthetic need at 95% C.I value of 0.032 to 0.254 than the psychiatric patients (Tables IV and V).

Discussion

The study determined the prosthetic status and need amongst patients with mental illness and those without. This is with the view of determining the effect of mental status on prosthetic need among these populations.

The commonest mental illness observed was schizophrenia.

Table II. Characteristics of the psychiatry participants

Characteristics	n (%)
Psychiatry Diagnoses	
Schizophrenia	68 (79.0)
Bipolar disorder	10 (11.6)
Depressive disorder	4 (4.7)
Psychosis	4 (4.7)
Duration of illness	
1-5	38 (44.2)
6-10	12 (14.0)
11-15	8 (9.2)
> 15	28 (22.6)
Total	86 (100.0)

This is in agreement to previous studies¹³⁻¹⁵.

Prosthetic status of patient with mental illness was lower compared with participants with no mental illness. This finding is similar to the studies done in Teresina^{15,16}, and Zimbabwe¹⁷. Mental illness is perceived as more pressing problems than oral health problems. This might be the reason for this finding. Also there is no known oral health component in the management of patients with mental illness¹⁸. Although it could be argued that the use of prostheses among these patients may be detrimental to their health and could be a health hazard when they have crises. Financial constraints could also contribute to low prosthetic status.

The need for multiunit prosthesis in psychiatry patient was 18.6% compared to that of non-psychiatry patient, this signifies low multiple tooth loss. This finding is similar to the report of a study done in India¹³ and studies elsewhere^{13,19}. Another study²⁰ showed the percentage of those needing multi unit prosthesis as 37.8%. In Zimbabwe¹⁷ the percentage was reported to be 30.5%. The reason for the difference in findings might be attributed to the age distribution of the participants as 58% of participants were below the age of 40 years. It has been reported that tooth loss increases with age²¹. It is therefore expected that increase tooth loss will occur with increase in age²¹. An increase in tooth loss with age will result in an increase in prosthetic need²². This can invariably results in an increase of prosthetic status.

Age and psychiatric status were found to be the determinants of prosthetic status in this study. The probability of prosthetic status was higher in those above the age of 40 years^{23,24}. Psychiatric status also determined prosthetic status since psychiatry patients are prone to tooth loss that subsequently leads to tendency for tooth replacement¹⁷⁻¹⁹.

The determinants of prosthetic need were found to be age, occupation and psychiatric status. Increase in age has been shown to be associated with increase in tooth loss due to cumulative effect of caries, periodontal disease, trauma and

Table III. Prosthetic status and needs of psychiatric and non-psychiatric patients

Variables	Grouping		P-value
	Cases n (%)	Control n (%)	
Prosthetic status			
No prosthesis	22	28	0.00* ^F
Partial denture	2	22	
Bridge	0	4	
Not applicable	62	27	
Prosthetic need			
No prosthesis	64	33	0.00* ^F
Need for 1 unit	5	21	
Need for multiunit	16	23	
Combination	1	4	
Kennedy Classification			
Class I	1	6	0.021* ^F
Class II	4	3	
Class III	15	23	
Class IV	2	6	
Not applicable	64	43	
Total	86	81	

(*) = Statistically significant, (F)=Fisher's P

dental treatment²¹. It has been reported that an abrupt increase in tooth loss occurs after 35-44 years group. Furthermore, age has been reported to be a predictor of poor oral health^{25,26}, tooth loss¹⁴ and invariably prosthetic need²⁷.

Those that never worked had higher prosthetic need. Socio-demographic status have been linked with tooth loss. People

Table IV. Determinant of prosthetic status among the participants

Variable	B	S.E.	Wald	Exp(B)	95% C.I.	P-value
≤40 years (REF)						
>40 years	.669	.245	7.423	1.951	1.206-3.157	.006
Female (REF)						
Male	-.937	.555	2.849	0.392	0.132-1.163	0.091
Yoruba (REF)						
Others	-.223	.513	.189	0.800	0.293-2.187	0.664
Ever married(REF)						
Never married	.301	.721	.175	1.352	0.329-5.559	0.676
Ever worked (REF)						
Never worked	-.196	.613	.102	0.822	0.247-2.733	0.749
<Tertiary education(REF)						
Tertiary education	-.211	.586	.130	0.810	0.257-2.554	0.719
Control (REF)						
Case	-3.604	.893	16.302	0.027	0.005-0.157	0.000
Constant	-.052	2.561	.000	0.950		0.984

Table V. Determinant of prosthetic needs among participants

Variable	B	S.E.	Wald	Odd ratio	95% C.I.	P-value
≤40 years (REF)						
>40 years	.705	.162	19.007	2.024	1.474-2.778	0.000
Female (REF)						
Male	-.196	.391	.252	0.822	0.382-1.768	0.616
Yoruba (REF)						
Others	.468	.385	1.474	1.597	0.750-3.399	0.225
Ever married (REF)						
Never married	.405	.452	.804	1.500	0.648 3.638	0.370
Ever worked (REF)						
Never worked	1.030	.504	4.182	0.357	0.183 0.958	0.041
<Tertiary education(REF)						
Tertiary education	.491	.437	1.265	1.635	0.694 3.849	0.261
Control (REF)						
Case	2.405	.528	20.740	0.090	0.082 0.254	0.000
Constant	-1.969	1.842	1.143	0.140		0.285

of low socioeconomic status have been said to be prone to edentulism²⁸. Sociodemographic, cultural and financial determinants are known as important ingredients of prosthetic needs²⁹. This may proffer a possible explanation for the result of this study. The probability of having prosthetic need however is more in non- psychiatry patient. This finding might indicate other social factor contributing to increase prosthetic need.

Conclusions

This study found a lower prosthetic status of those in need of prosthesis in psychiatric patient. However, a higher prosthetic need was seen among the non-psychiatric patients compared to the psychiatric in-patients.

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