

# An Audit of Oral Health Care among Young Adults Attending a Tertiary Health Facility in Nigeria

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## Abstract

**Introduction:** Oral diseases and the provision of dental treatment is strongly influenced by patient's belief, attitudes and values. The goal of dental service utilization research is to improve the oral health outcome of the population. This study was designed to audit the various dental disease conditions in young adults and treatment received.

**Methods:** This was a one year retrospective study of patients within the age group 20 - 40 years who visited the dental out-patient clinic of University of Benin Teaching Hospital from March 2011 to February 2012. The data of interest retrieved from the files were demographics (Gender, Age, Marital Status and Occupation), Presenting complaints, Diagnosis made and treatment rendered. All data collected was subjected to statistical analysis in form of frequencies, percentages, Mean and cross tabulations using Statistical Package of Social Science (SPSS) version 21.0.

**Result:** A total of 1,123 young adult case notes were retrieved for this study. There was a slight female preponderance with the commonest presenting complaint being pain. The most prevalent diagnosis made was chronic marginal gingivitis. There was statistically significant association between presenting complaints, gender, occupation as well as marital status of the young adults. There was a pattern with regards to age and type of treatment received among the young adult patients.

**Conclusion:** Utilization of oral health by young adults shows a pattern slightly different from the general population. Age, gender, marital status and socio-economic status have a role to play in type of dental treatment received by young adults.

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## Introduction

Oral health has been defined as a standard of health of the oral and related tissues which enables an individual to eat, speak and socialize without active disease, discomfort or embarrassment and which contributes to general well-being<sup>[1,2]</sup>. Oral diseases qualify as major public health problems owing to their high prevalence and incidence in all regions of the world. Oral diseases such as dental caries, periodontal disease, tooth loss, oral mucosal lesions and or pharyngeal cancers, human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS)-related oral disease and oro-dental trauma have been re-

ported to be major public health problems worldwide<sup>[3]</sup>.

Oral diseases and the provision of dental treatment is strongly influenced by patient's belief, attitudes and values<sup>[1-4]</sup>. The traditional concept of access to oral health care refers to a patient ability to obtain or make use of oral health care<sup>[5,6]</sup>. Similar to all diseases, the greatest burden of oral diseases is on disadvantaged and socially marginalized populations<sup>[5]</sup>.

The goal of dental service utilization research is to improve the oral health outcome of the population. Studies have been done to assess the dental service utilization of the general population<sup>[7-9]</sup>, elderly<sup>[10]</sup>, HIV positive adult<sup>[11]</sup>, secondary school students<sup>[12,13]</sup>, adolescents<sup>[14]</sup> and children<sup>[15]</sup>. There are



few studies on oral health services among young adults hence the purpose of this study which seeks to audit the various dental disease conditions in young adults and treatment received.

### Materials and Methods

This was a one year retrospective study of patients within the age group 20-40 years who visited the dental out-patient clinic of University of Benin Teaching Hospital from March 2011 to February 2012. Case note numbers of patients within this age group were identified and listed. A simple random technique involving picking one in every three case note numbers was used to select files for the study. The data of interest retrieved from the files were demographics (Gender, Age, Marital Status and Occupation), Presenting complaints, Diagnosis made and treatment rendered. Ethical approval was obtained from the Ethics and Research committee of the College of Medical Sciences, University of Benin. All data collected was subjected to statistical analysis in form of frequencies, percentages, mean, standard deviation cross tabulations and test of significance with chi square.  $P < 0.05$  was considered statistically significant using Statistical Package of Social Science (SPSS) version 21.0.

### Results

A total of 1,123 young adult case notes were retrieved for this study. All the case notes had the data of interest well documented. There was a slight female preponderance with females accounting for 52.2% giving a male female ratio of 1:1.09. Most (76.8%) of the respondents were single and 56.8% were dependents (students and unemployed). Those less than 30 years of age accounted for majority of the young adults studied (Table1).

**Table 1:** Socio-demographic distribution of the patients.

Characteristic	Frequency	Percent
<b>Gender</b>		
Male	537	47.8
Female	586	52.2
<b>Marital status</b>		
Single	862	76.8
Married	261	23.2
<b>Occupation</b>		
Students/unemployed	638	56.8
Unskilled	160	14.2
Semi-skilled	64	5.7
Skilled	96	8.5
Managers/Professionals	165	14.7
<b>Age group (years)</b>		
20 - 24	359	32.0
25 - 29	407	36.2
30 - 34	220	19.6
35 - 39	137	12.2
<b>Total</b>	1123	100.0

The commonest presenting complaint was pain accounting for 42.8% while routine dental visit accounted for 26.9% (Table2).

Table 2 depicts the various diagnosis made with the most prevalent diagnosis made being chronic marginal gingivitis (31.5%) followed by acute apical periodontitis accounting for 22.9%. The least diagnosis made was dentine hypersensitivity (1.4%).

**Table 2:** Distribution of presenting complaint and diagnosis made.

Presenting complaint	Frequency	Percent
Pain	481	42.8
Hole in tooth	144	12.8
Want to clean my teeth	302	26.9
Scattered teeth	8	0.7
Facial swelling	40	3.6
Trauma	28	2.5
Missing tooth	60	5.3
Shocking sensation	8	0.7
Other complaints	52	4.6
<b>Diagnosis</b>		
Chronic marginal gingivitis	354	31.5
Dental caries	84	7.5
Dentine hypersensitivity	16	1.4
Reversible pulpitis	72	6.4
Irreversible pulpitis	100	8.9
Acute apical periodontitis	257	22.9
Dentoalveolar abscess/facial space infection	60	5.3
Missing teeth for prosthetic replacement	64	5.7
Orthodontic diagnosis	8	0.7
Halitosis/ulcerations	36	3.2
Cysts/tumours	20	1.8
Maxillofacial/dental traumatic injuries	52	4.6
<b>Total</b>	1123	100.0

Table 3 shows statistically significant association between presenting complaints and gender as well as between presenting complaints and marital status of the young adults. A higher percentage of female young adults presented with pain, hole in tooth and shocking sensation while a higher proportion of male young adults presented with trauma and missing teeth.

A higher percentage of single young adults presented with pain, hole in tooth, need to clean their teeth, scattered teeth, facial swelling and missing teeth while more of those that presented with shocking sensation and trauma were married young adults.

Table 4 shows statistically significant association between occupation of young adults and presenting complaint. A higher percentage of those who presented with pain, hole in tooth and need to have their teeth professionally cleaned were students/unemployed. All those who presented with scattered teeth were students/unemployed. More of those who presented with missing teeth were students/unemployed and unskilled workers. Shocking sensation as a complaint was observed only among unskilled workers and professionals.

**Table 3:** Association between gender, marital status and presenting complaint/diagnosis.

Presenting complaint	Gender (p = 0.002)		Marital status (p = 0.0001)		Total n (%)
	Male n (%)	Female n (%)	Single n (%)	Married n (%)	
<b>Pain</b>	213 (44.3)	268 (55.7)	344 (71.5)	135 (28.5)	481 (100.0)
<b>Hole in tooth</b>	56 (38.9)	88 (61.1)	140 (97.2)	4 (2.8)	144 (100.0)
<b>Want to clean my teeth</b>	157 (52.0)	145 (48.0)	262 (86.8)	40 (13.2)	302 (100.0)
<b>Scattered teeth</b>	4 (50.0)	4 (50.0)	8 (100.0)	0 (0.0)	8 (100.0)
<b>Facial swelling</b>	20 (50.0)	20 (50.0)	28 (70.0)	12 (30.0)	40 (100.0)
<b>Trauma</b>	20 (71.4)	8 (28.6)	12 (42.9)	16 (57.1)	28 (100.0)
<b>Missing tooth</b>	40 (66.7)	20 (33.3)	40 (66.7)	20 (33.3)	60 (100.0)
<b>Shocking sensation</b>	3 (37.5)	5 (62.5)	0 (0.0)	8(100.0)	8 (100.0)
<b>Other complaints</b>	24 (46.2)	28 (53.8)	28 (53.8)	24 (46.2)	52(100.0)
<b>Diagnosis</b>	P = 0.001		P = 0.001		
<b>Chronic marginal gingivitis</b>	169 (47.7)	185 (52.3)	302 (85.3)	52 (14.7)	354 (100.0)
<b>Dental caries</b>	32 (38.1)	52 (61.9)	84 (100.0)	0 (0.0)	84 (100.0)
<b>Dentine hypersensitivity</b>	7 (43.8)	9 (56.3)	8 (50.0)	8 (50.0)	16 (100.0)
<b>Reversible pulpitis</b>	20 (27.8)	52 (72.2)	60 (83.3)	12 (16.7)	72 (100.0)
<b>Irreversible pulpitis</b>	56 (56.0)	44 (44.0)	80 (80.0)	20 (20.0)	100 (100.0)
<b>Acute apical periodontitis</b>	129 (50.2)	128 (49.8)	176 (68.5)	81 (31.5)	257 (100.0)
<b>Dentoalveolar abscess/facial space infection</b>	20 (33.3)	40 (66.7)	40 (66.7)	20 (33.3)	60 (100.0)
<b>Missing teeth for prosthetic replacement</b>	40 (62.5)	24 (37.5)	44 (68.8)	20 (31.3)	64 (100.0)
<b>Orthodontic diagnosis</b>	4 (50.0)	4 (50.0)	8 (100.0)	0 (0.0)	8 (100.0)
<b>Halitosis/ulcerations</b>	20 (55.6)	16 (44.4)	16 (44.4)	20 (55.6)	36 (100.0)
<b>Cysts/tumours</b>	12 (60.0)	8 (40.0)	12 (60.0)	8 (40.0)	20 (100.0)
<b>Maxillofacial/dental traumatic injuries</b>	28 (53.8)	24 (46.2)	32 (61.5)	20 (38.5)	52 (100.0)
<b>Total</b>	537 (47.8)	586 (52.2)	862 (76.8)	261 (23.2)	1123(100.0)

A little less than half (49.0%) received oral prophylaxis, 39.3% extraction, 20.7% restorative filling and 7.2% endodontic treatment. Almost equal proportion of males and females had oral prophylaxis and extraction. Higher proportion of single young adults received oral prophylaxis and restorative fillings while higher proportion of those that were married had extraction and this was statistically significant (p < 0.05).

**Table 4:** Association between presenting complaint, diagnosis and occupation of the patients.

Presenting complaint P ≤ 0.0001	Occupation					Total n (%)
	Students/unem- employed n (%)	Unskilled n (%)	Semi-skilled n (%)	Skilled n (%)	Professional n (%)	
<b>Pain</b>	272 (56.5)	92 (19.1)	28 (5.8)	28 (5.8)	61 (12.7)	481 (100.0)
<b>Hole in tooth</b>	104 (72.2)	12 (8.3)	4 (2.8)	8 (5.6)	16 (11.1)	144 (100.0)
<b>Want to clean my teeth</b>	194 (64.2)	16 (5.3)	4 (1.3)	36 (11.9)	52 (17.2)	302 (100.0)
<b>Facial swelling/trauma</b>	16 (23.5)	12 (17.6)	12 (17.6)	12 (17.6)	16 (23.5)	68 (100.0)
<b>Missing tooth</b>	24 (40.0)	20 (33.3)	8 (13.3)	4 (6.7)	4 (6.7)	60 (100.0)
<b>Other complaints</b>	28 (41.2)	8 (11.8)	8 (11.8)	8 (11.8)	16 (23.5)	68 (100.0)
<b>Diagnosis p ≤ 0.0001</b>						
<b>Chronic marginal gingivitis</b>	222 (62.7)	28 (7.9)	8 (2.3)	40 (11.3)	56 (15.8)	354 (100.0)
<b>Dental caries</b>	64 (76.2)	4 (4.8)	4 (4.8)	0 (0.0)	12 (14.3)	84 (100.0)
<b>Reversible pulpitis</b>	40 (55.6)	4 (5.6)	0 (0.0)	12 (16.7)	16 (22.2)	72 (100.0)
<b>Irreversible pulpitis</b>	68 (68.0)	12 (12.0)	4 (4.0)	4 (4.0)	12 (12.0)	100 (100.0)
<b>Acute apical periodontitis</b>	140 (54.5)	56 (21.8)	12 (4.7)	20 (7.8)	29 (11.3)	257 (100.0)
<b>Dentoalveolar abscess/facial space infection</b>	28 (46.7)	20 (33.3)	4 (6.7)	4 (6.7)	4 (6.7)	60 (100.0)
<b>Missing teeth for prosthetic replacement</b>	28 (43.8)	20 (31.3)	8 (12.5)	4 (6.3)	4 (6.3)	64 (100.0)
<b>Halitosis/ulceration</b>	12 (33.3)	4 (11.1)	8 (22.2)	4 (11.1)	8 (22.2)	36 (100.0)
<b>Others</b>	36 (37.5)	12 (12.5)	16 (16.7)	8 (8.3)	24 (25.0)	96(100.0)
<b>Total</b>	638 (56.8)	160 (14.2)	64 (5.7)	96 (8.5)	165 (14.7)	1123 (100.0)

The proportion of those who received oral prophylaxis was highest among the unemployed and students and lowest among the semi-skilled while those who had extractions were more among the unskilled young adults and this was statistically significant ( $p < 0.05$ ). No semi-skilled young adult had endodontic treatment while skilled and managers/professionals made up the bulk of those who received endodontic treatment and this was statistically significant ( $p < 0.05$ ).

**Table 5:** Association between presenting complaint, diagnosis and age group of the patients.

Presenting complaint $P \leq 0.0001$	Age group (years)				Total n (%)
	20 - 24 n (%)	25 - 29 n (%)	30 - 34 n (%)	35 - 39 n (%)	
<b>Pain</b>	151 (31.4)	181 (37.6)	92 (19.1)	57 (11.9)	481 (100.0)
<b>Hole in tooth</b>	68 (47.2)	44 (30.6)	20 (13.9)	12 (8.3)	144 (100.0)
<b>Want to clean my teeth</b>	88 (29.1)	126 (41.7)	48 (15.9)	40 (13.2)	302 (100.0)
<b>Facial swelling/trauma</b>	20 (29.4)	20 (29.4)	24 (35.3)	4 (5.9)	68 (100.0)
<b>Missing tooth</b>	8 (13.3)	16 (26.7)	24 (40.0)	12 (20.0)	60 (100.0)
<b>Other complaints</b>	24 (35.3)	20 (29.4)	12 (17.6)	8 (17.6)	68 (100.0)
<b>Diagnosis <math>p \leq 0.0001</math></b>					
<b>Chronic marginal gingivitis</b>	112 (31.6)	138 (39.0)	52 (14.7)	52 (14.7)	354 (100.0)
<b>Dental caries</b>	56 (66.7)	28 (33.3)	0 (0.0)	0 (0.0)	84 (100.0)
<b>Reversible pulpitis</b>	24 (33.3)	20 (27.8)	12 (16.7)	16 (22.2)	72 (100.0)
<b>Irreversible pulpitis</b>	16 (16.0)	48 (48.0)	16 (16.0)	20 (20.0)	100 (100.0)
<b>Acute apical periodontitis</b>	75 (29.2)	93 (36.2)	68 (26.5)	21 (8.2)	257 (100.0)
<b>Dentoalveolar abscess/facial space infection</b>	28 (46.7)	20 (33.3)	8 (13.3)	4 (6.7)	60 (100.0)
<b>Missing teeth for prosthetic replacement</b>	8 (12.5)	20 (31.3)	24 (37.5)	12 (18.8)	64 (100.0)
<b>Halitosis/ulceration</b>	4 (11.1)	12 (33.3)	16 (44.4)	4 (11.1)	36 (100.0)
<b>Others</b>	36 (37.5)	28 (29.2)	24 (25.0)	8 (8.3)	96 (100.0)
<b>Total</b>	359 (32.0)	407 (36.2)	220 (19.6)	137 (12.2)	1123 (100.0)

There was a pattern with regards to age and type of treatment received among the young adult patients. A higher proportion of those aged 20 - 24 years and 35 - 39 years received oral prophylaxis and restorative fillings. Endodontic treatment depicted a different pattern with an increase in proportion of those that received endodontic treatment as age increased from 20 to 29 years, a decline between 30 - 34 years and highest proportion from 35 - 39 years and this was statistically significant ( $p < 0.05$ ).

## Discussion

Oral health is an integral component of overall health and well-being giving the fact that poor oral health can lead to decreased general health, limited social functioning, and decreased quality of life<sup>[3-16]</sup>. Previous studies<sup>[7,8]</sup> of dental patient population showed that the 21 - 30 years age group were the highest users of oral health services. Therefore it is not surprising to find this same age group being the most frequent set of young adults seen in this study. Giving the fact that this group of young adults make up majority of oral health care users assessing their oral health utilization is important for future planning and provision of oral health services.

This study showed a slight female preponderance which is different from studies<sup>[7-9]</sup> on the general population where males had a higher frequency of seeking oral health care but close to that on elderly that showed a female preponderance<sup>[10]</sup> and another study<sup>[17]</sup> carried out among the general population in Benin City. This may be because young female adults tend to be more conscious of their appearance, demonstrates greater interest in health and have better health seeking behaviors.

Relief of pain has been noted to be the major motivating factor for seeking oral health care<sup>[7-9]</sup> and this is not any different among young adults as observed in this study. It has been reported that women are more sensitive to pain with a lower pain threshold and less pain tolerance<sup>[18]</sup> so it is not unexpected to find a higher percentage of female young adults presenting with pain in this study. Males have been seen to be associated with more activity hence a higher proportion of them presented with trauma. The treatment needs of young adults have been reported to be low because of their improved oral hygiene and reduced dental diseases when compared to older adults<sup>[19-22]</sup>. Findings of this study tend to support this as the most prevalent diagnosis made was chronic marginal gingivitis.

In the general population it has been shown that oral prophylaxis as a dental treatment is low<sup>[7]</sup> but this study reveals that, this is not the case with young adults as they tend to receive more oral prophylactic treatment. The sources of the barriers that the patient experiences in relation to accessing oral health care are said to arise from their life experiences and psycho-social factors<sup>[5-23]</sup>. It is important for preventive oral services to be emphasized for young adults so they can inculcate better oral health seeking behaviors which may translate into better oral health when they grow older.

A previous study<sup>[7]</sup> on the general population observed a predisposition towards extraction among females and male inclination for restorative procedures and another study on elderly<sup>[10]</sup>, showed female bias towards extraction and male preference for periodontal treatment. This study showed no gender predilection with regards to treatment received.

Socio-economic class of patients has been demonstrated to have an effect on utilization of oral health services<sup>[24]</sup>. It

is believed to be linked to the financial status of the individual. A higher percentage of those who presented with pain were students. Students may tend to seek solutions to pain probably to prevent interference with their academic work. Also students seem to also want to prevent an occasion of pain with attendant more cost of treatment and opt for oral prophylaxis. Endodontic treatment cost more than extractions, due to this extra financial burden, professionals and skilled workers were found to be the group who received endodontic treatment.

Marital status had an effect on pattern of treatment received. Single young adults seemed to be more concerned about their hygiene and looks hence they opted for more oral prophylaxis and fillings while married young adults seemed to be more concerned about their functionality and presented for more tooth extractions.

The pattern with regards to age and type of treatment received among the young adult patients is suggestive of the pattern of oral disease suffered by this age group. Oral diseases tend to progress over time and this is depicted in this study as the younger age groups had simpler treatments and as age increases the more complex the oral treatment received. It is important therefore to institute preventive oral care early to prevent progression of oral diseases.

## Conclusion

Utilization of oral health by young adults shows a pattern slightly different from the general population. Age, gender, marital status and socio-economic status have a role to play in type of dental treatment received by young adults.

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