

## Pattern and Distribution of Patients' Dental Attendance in a Nigerian Tertiary Centre

Mofoluwaso Olajide<sup>1\*</sup>, Segun Babalogbon<sup>2</sup>, Adeola Ladeji<sup>1</sup>, Olakunle Fasasi<sup>3</sup>, Aderonke Abah<sup>1</sup>, Aliru Akinleye<sup>2</sup>, Kehinde Adebisi<sup>1</sup>

<sup>1</sup>Department of Oral Pathology and Oral Medicine, Faculty of Dentistry, Lagos State University College of Medicine, Ikeja, Lagos

<sup>2</sup>Department of Oral Pathology and Oral Medicine, Lagos State University Teaching Hospital, Ikeja, Lagos

<sup>3</sup>Department of Preventive Dentistry, Lagos State University Teaching Hospital, Ikeja Lagos

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\*Corresponding author: Mofoluwaso Olajide

### Abstract

**Background:** Dental attendance is one of the core indicators of oral health evaluation and awareness. Oral health has been demonstrated to be an integral component of general health, with a serious impact on quality of life and overall well-being. There are diverse reasons why patients seek dental care. Pain, bad breath (halitosis), tooth mobility, routine check-up, swelling, trauma and aesthetics are some major reasons for which patients attend out-patient dental clinic. **Objective:** This study seeks to determine the demographics of patients' attendance and distribution of their presenting complaints in a Nigerian tertiary dental centre. **Materials and methods:** This is a retrospective observational study carried out at the Dental Centre of the Lagos State University Teaching Hospital, Ikeja, Nigeria. The data was obtained from the Oral Diagnosis clinic attendance register and were those who, presented with new complaints to the Oral Diagnosis clinic, over a period of one year spanning July 2016 to June 2017. Data such as patients' age group, gender and presenting complaint(s) were retrieved from the register and recorded on data forms, categorizing their dental complaints into ten (10) categories. Data analysis was done using SPSS version 22. Descriptive statistics such as proportions were expressed as percentages. Data was presented in tables and charts. **Results:** A total of 3836 patients attended the Oral diagnosis clinic over the study period, but only 3636 patients who had a complete data were included in this study. More female patients, 1970 (54.2%) than male patients 1666, (45.8%) attended the clinic. People in the third and fourth decade of life accounted for the highest proportion seeking dental care, being 19.9% and 18.3% respectively. This is closely followed by those in the fifth decade (14.0%), and then, those aged below 20 years of age, who together accounted for 34.6%. Pain was the major complaint among patients attending the LASUTH Dental Clinic, accounting for 55.2%, followed by routine check-up/prophylaxis which accounted for 10.6%. **Discussion:** The female preponderance of patients seeking dental care is consistent with other studies within and outside Africa [1, 2]. This may not be unconnected with self-consciousness, typically associated with women. It has been previously observed that self-perception of need, particularly perceived severity of complaint, may inform utilization of oral health services [1, 3]. While some authors have corroborated that people within the third and fourth decade comprise the highest proportion of those who seek dental care, others have shown that though they form the age-group that may perceive the need but attend dental clinic less [4]. Similar to our study, pain is noted to account for as much as 60% to 72% of reasons for dental attendance in other African studies [2, 3]. Unlike in developed countries who record between 40% to 80% of routine dental visits among adults [1], our study reveal a dismal 10.6% for routine visits of all attending dental patients. **Conclusion:** Dental-related pain remains a significant reason for patients seeking dental care. There's relative oral health awareness in the Lagos metropolis and its feeder areas. Oral health education should be intensified and targeted at adolescents and young adults who are likely to inculcate lifelong health-seeking habits.

**Keywords:** Dental complaint, patient attendance, oral diagnosis.

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### INTRODUCTION

Dental attendance is one of the core indicators of oral health evaluation and awareness. Oral health has been demonstrated to be an integral component of general health, thus, regular dental attendance has been associated with better oral health status and oral health related quality of life [1, 2].

Dental attendance behavior is said to be markedly related to age and gender [3] and has been found to be influenced by several other factors such as socio-economic status, attitude towards dental care, family structure, cost and time, nature of job, mental health and so on [2-4]. Other factors may include culture and ethnicity. A Turkish study showed that

women and individuals with higher levels of education use dental services more than others [5].

A Nigerian study reports factors such as ignorance, self-medication and financial constraints as reasons for delay in dental attendance [6].

It is reported that in developing countries, people visit the dentist for pain relief rather than preventive care compared to developed countries where about 40-80% of adult population visit a dentist within a year [7].

There are diverse reasons for which patients seek dental care. Pain, bad breath (halitosis), tooth mobility, tooth restoration, soft tissue defects, routine check-up, swelling, trauma and aesthetics are parts of the major reasons why patients attend outpatient dental clinic.

The pain may be from the tooth, tooth supporting structures or facial structures (like muscles of mastication or nerve damage). Pain and swelling are believed to be the reasons why patients typically present at Oral diagnosis clinic.

In Burkina Faso, 60% of all complaints causing patients to seek dental services were associated with pain [8]. In Nigeria, some studies on pattern of dental attendance have been documented. Most of these studies were done in teaching hospital or government dental centers having specific geo-political catchment areas different from ours [4, 9, 10]. Others were focused on specific population groups that cannot be generalized to an entire population [11-13].

Studies on the pattern of general dental attendance in southwest Nigeria is virtually unknown and none has been done in our center, Lagos State University Teaching Hospital. Our center is one of the key providers of dental services in its geo-political zone and is situated in the Ikeja metropolis of Lagos State. Lagos State is in the South Western geo-political zone of Nigeria; it was the former country capital and is currently its commercial nerve center.

This study thus aims to determine the demographics of patients' dental attendance and the distribution of their presenting complaints in a South Western Nigerian tertiary dental centre.

## METHODOLOGY

This is a retrospective observational study carried out at the dental center of the Lagos State University Teaching Hospital (LASUTH), Ikeja Nigeria.

The data was obtained from the Oral Diagnosis clinic attendance register and were those who, presented with new complaints to the Oral Diagnosis clinic, over a period of one year spanning July 2016 to June 2017. Data such as patients' age group, gender and presenting complaint(s) were retrieved from the register and recorded on data forms, categorizing their dental complaints into ten (10) categories. The data obtained were those of patients with complete information, who presented fresh complaints in Oral Diagnosis clinic. Patients with incomplete records were excluded.

The complaints of patients were categorized into ten (10) which are: Soft tissue defect, Trauma, Bad breath, Routine check-up & prophylaxis, Pain, Swelling, Gingival bleeding, Aesthetics, Tooth mobility, Tooth restoration/prosthetic replacement. Dental attendance was defined as a visit/visits to the dentist to utilize preventive and/or curative services with procedures documented in the case notes. All Data retrieved from oral diagnosis record register were entered into a personal computer. The independent variables were age and sex while the dependent variable was patients' complaint(s).

## DATA ANALYSIS

Statistical Package of Social Science (SPSS version 22) was used to analyze the data generated. Exploratory analysis was conducted to ensure data consistency. Descriptive analysis was conducted to determine the proportion of patients who attended the dental clinic according to age, gender and occupation. Descriptive statistics such as proportions were expressed as percentages. Data was presented in tables and charts.

Chi square analysis was also conducted to determine the association between age, gender and patients' complaint(s). P values <0.05 were considered to be statistically significant.

## RESULTS

A total of 3836 patients attended the Oral diagnosis clinic over the study period but only 3636 patients who had a complete data were included in this study.

**Table-1: Distribution of patients by Age Group and Gender**

Variables	Frequency	Percentage (%)
<b>Gender</b>		
Male	1666	45.8
Female	1970	54.2
<b>Total</b>	<b>3636</b>	<b>100.0</b>
<b>Age range</b>		
0-9	427	11.7
10-19	469	12.9
20-29	723	19.9
30-39	667	18.3
40-49	508	14.0
50-59	372	10.2
60-69	264	7.30
70-79	166	4.60
80-89	35	1.00
90-99	5	0.10
<b>Total</b>	<b>3636</b>	<b>100.0</b>

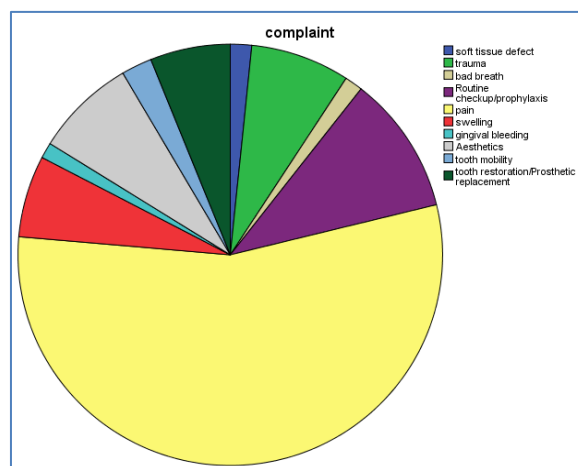
People in the 20-29 and 30-39 age groups together accounted for the highest proportion seeking dental care, being 19.9% and 18.3% respectively. This is followed by patients in the 40-49 age groups (14%). Attendance by patients < 20 years of age accounted for 24.6% of all patients. The Mean Age of attending patients was 34.39 ±19.73 SD years. There were slightly more females, 1970 (54.2%) than male patients 1666, (45.8%) with a Male: Female ratio of 1:1.2.

**Table-2: Patients' complaint(s)/Reasons for attending oral diagnosis clinic**

Complaint	Frequency	Percentage (%)
Pain	2007	55.2
Routine checkup/prophylaxis	386	10.6
Aesthetics	280	7.70
Trauma	275	7.60
Soft tissue defect	59	1.60
Swelling	228	6.30
Bad breath	50	1.40
Tooth mobility	85	2.30
Tooth restoration/prosthetic	222	6.10
Gingival bleeding	44	1.20
<b>Total</b>	<b>3636</b>	<b>100.0</b>

Pain was the major complaint/reason for attendance among patients attending the LASUTH Dental Clinic, singularly accounting for 55.2%, followed by routine check-up/prophylaxis which accounted for 10.6%.

Very low proportion of patients was noted to complain of gingival bleeding, halitosis (bad breath), soft tissue defects and tooth mobility.



**Fig-1: Pie Chart showing distribution of complaints**

**Table-3: Pain and swelling distribution**

Variable	Frequency	Percentage (%)
<b>Pain</b>		
Toothache	1889	94.10
Gum pain	60	3.0
Facial pain	17	0.8
Tooth sensitivity	41	2.0
<b>Total</b>	<b>2007</b>	<b>100</b>
<b>Swelling</b>		
Extra-oral(jaw/facial)	76	33.3
Intra-oral(gingival/lip)	152	66.7
<b>Total</b>	<b>228</b>	<b>100</b>

Toothache was the commonest form of pain reported (94.1%) followed by a distant 3% gingival pain and 2% tooth sensitivity.

Intraoral swellings were twice more commonly reported than extra oral swellings.

**Table-4: Distribution of type of pain by age-group**

Age range	Pain				Total
	Toothache	Gum pain	Facial pain	Tooth sensitivity	
0 -9	135 (96.4%)	4 (2.9%)	0 (0.0%)	1 (0.7%)	140 (100.0%)
10- 19	217 (97.7%)	4 (1.8%)	1 (0.5%)	0 (0.0%)	222 (100.0%)
20- 29	454 (95.4%)	15 (3.2%)	4 (0.8%)	3 (0.6%)	476 (100.0%)
30- 39	353 (91.2%)	17 (4.4%)	6 (1.6%)	11 (2.8%)	387 (100.0%)
40-49	292 (92.7%)	7 (2.2%)	2 (0.6%)	14 (4.4%)	315 (100.0%)
50-59	199 (93.4%)	6 (2.8%)	1 (0.5%)	7 (3.3%)	213 (100.0%)
60-69	134 (93.7%)	6 (4.2%)	2 (1.4%)	1 (0.7%)	143 (100.0%)
70-79	83 (94.3%)	1 (1.1%)	1 (1.1%)	3 (3.4%)	88 (100.0%)
80-89	21 (95.5%)	0 (0.0%)	0 (0.0%)	1 (4.5%)	22 (100.0%)
90-99	1 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (100.0%)
Total	1889 (94.1%)	60 (3.0%)	17 (0.8%)	41 (2.0%)	2007 (100.0%)

Toothache was the most common form of pain complaint in all age groups. The 90-99 age groups had its only attendance due to toothache, while the 10-19 age groups had the next highest proportion of toothache (97.7%) within its attendants. Of all age groups, toothache was most commonly reported in the 20-29 age group followed by 30-39 age groups.

Gum pain was commonest among 30-39 age group followed by the 20-29 age groups. While Facial pain was most commonly reported in the 30-39 age groups, Tooth sensitivity was most commonly reported in 40-49 age group. There was however no significant association between type of pain complaint and age range ( $p = 0.493$ )

**Table-5: Distribution of Patients' Complaint by Age Group**

Age range	Patients' complaint										
	Soft tissue defect	Trauma	Bad breath	Routine check-up/prophylaxis	Pain	Swelling	Gingival bleeding	Aesthetics	Tooth mobility	Tooth restoration/prosthetic replacement	Total
0 -9	20 (4.7%)	36 (8.4%)	8 (1.9%)	51 (11.9%)	140 (32.8%)	33 (7.7%)	8 (1.9%)	118 (27.6%)	6 (1.4%)	7 (1.6%)	427 (100.0%)
10- 19	3 (0.6%)	37 (7.9%)	4 (0.9%)	55 (11.7%)	222 (47.3%)	37 (7.9%)	7 (1.5%)	92 (19.6%)	3 (0.6%)	9 (1.9%)	469 (100.0%)
20- 29	9 (1.2%)	47 (6.5%)	4 (0.6%)	58 (8.0%)	476 (65.8%)	45 (6.2%)	10 (1.4%)	34 (4.7%)	7 (1.0%)	33 (4.6%)	723 (100.0%)
30- 39	9 (1.3%)	51 (7.6%)	8 (1.2%)	62 (9.3%)	387 (58.0%)	45 (6.7%)	8 (1.2%)	23 (3.4%)	17 (2.5%)	57 (8.5%)	667 (100.0%)
40-49	4 (0.8%)	41 (8.1%)	14 (2.8%)	43 (8.5%)	315 (62.0%)	27 (5.3%)	4 (0.8%)	8 (1.6%)	13 (2.6%)	39 (7.7%)	508 (100.0%)
50-59	5 (1.3%)	37 (9.9%)	8 (2.2%)	45 (12.1%)	213 (57.3%)	23 (6.2%)	2 (0.5%)	1 (0.3%)	9 (2.4%)	29 (7.8%)	372 (100.0%)
60-69	4 (1.5%)	16 (6.1%)	3 (1.1%)	43 (16.3%)	143 (54.2%)	11 (4.2%)	3 (1.1%)	0 (0.0%)	17 (6.4%)	24 (9.1%)	264 (100.0%)
70-79	4 (2.4%)	7 (4.2%)	1 (0.6%)	25 (15.1%)	88 (53.0%)	6 (3.6%)	2 (1.2%)	4 (2.4%)	9 (5.4%)	20 (12.0%)	166 (100.0%)
80-89	1 (2.9%)	2 (5.7%)	0 (0.0%)	4 (11.4%)	22 (62.9%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	2 (5.7%)	4 (11.4%)	35 (100.0%)
90-99	0 (0.0%)	1 (20.0%)	0 (0.0%)	0 (0.0%)	1 (20.0%)	1 (20.0%)	0 (0.0%)	0 (0.0%)	2 (40.0%)	0 (0.0%)	5 (100.0%)
Total	59 (1.6%)	275 (7.6%)	50 (1.4%)	386 (10.6%)	2007 (55.2%)	228 (6.3%)	44 (1.2%)	280 (7.7%)	85 (2.3%)	22 (26.1%)	3636 (100.0%)

The 20-29 age groups had the highest frequency of pain, swelling and gingival bleeding complaints. The commonest age group where aesthetics was reason for attendance is 0-9 years. 30-39 age groups had the highest frequency of Trauma, Restoration/prosthetics replacement. Tooth Mobility was most commonly reported in the 30-39 age group followed by 60-69 age group. The 30-39 age group also had the highest frequency of Routine check/Prophylaxis followed by 20-29 age group.

Within the age groups, the commonest reason for attendance in patients < 20 years old was pain followed by aesthetics. Patients within the 20-39 age

groups reported pain and then routine check-up as reasons for attendance. In Patients 40≥ to 59 years, pain followed by routine check-up, trauma and then restorative treatment was the order of reason for attendance. Patients between 60 and 89 reported pain, routine check-up, restoration/replacement, tooth mobility in order of reason for attendance. Patients > 90 had tooth mobility as the most frequent reason for attendance.

There was a statistically significant association between the age groups and patients' reasons for attendance/complaints (p value= 0.000).

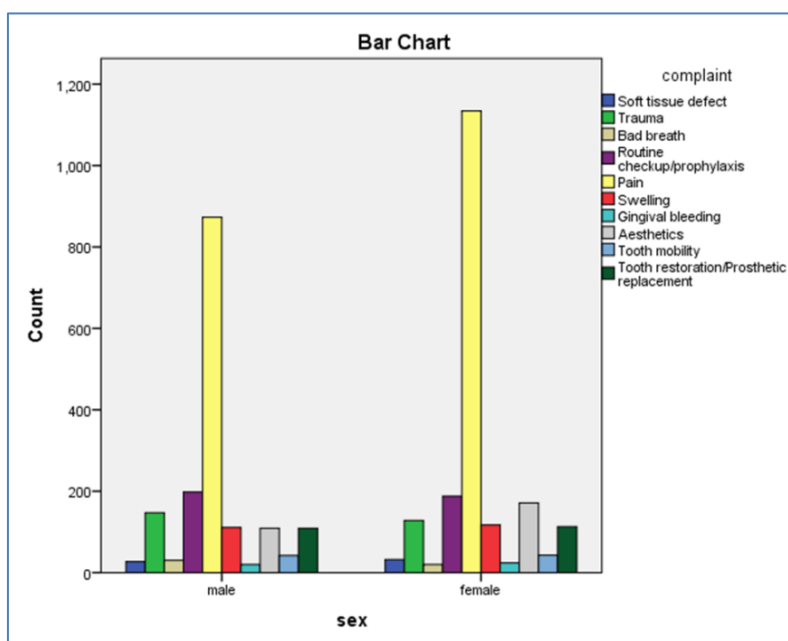
**Table-6: Distribution of complaints/reason for attendance by gender**

Sex	Complaint										Total
	Soft tissue defect	Trauma	Bad breath	Routine checkup/prophylaxis	Pain	Swelling	Gingival bleeding	Aesthetics	Tooth mobility	Tooth restoration/Prosthetic replacement	
Male	27 (1.6%)	147 (8.8%)	30 (1.8%)	198 (11.9%)	873 (52.4%)	111 (6.7%)	20 (1.2%)	109 (6.5%)	42 (2.5%)	109 (6.5%)	1666 (100.0%)
Female	32 (1.6%)	128 (6.5%)	20 (1.0%)	188 (9.5%)	1134 (57.6%)	117 (5.9%)	24 (1.2%)	171 (8.7%)	43 (2.2%)	113 (5.7%)	1970 (100.0%)
Total	59 (1.6%)	275 (7.6%)	50 (1.4%)	386 (10.6%)	2007 (55.2%)	228 (6.3%)	44 (1.2%)	280 (7.7%)	85 (2.3%)	222 (6.1%)	3636 (100.0%)

In both genders, pain was the most frequent reason for attendance (52.4% and 57.6% in males and females respectively) followed by routine attendance (11.9% and 9.5% in males and females respectively). More females than males attended because of pain, aesthetics, restoration and soft tissue defects while more

males than females attended for routine checkup, bad breath and trauma.

There was a statistically significant association between gender and complaint (p=0.001)



**Fig-2: Bar Chart showing distribution of Complaints by Gender**

**Table-6: Distribution of Patients' Complaint by Age Group**

Age range	Patients' complaint										
	Soft tissue defect	Trauma	Bad breath	Routine check-up/prophylaxis	Pain	Swelling	Gingival bleeding	Aesthetics	Tooth mobility	Tooth restoration/prosth etc replacement	Total
0 -9	20 (4.7%)	36 (8.4%)	8 (1.9%)	51 (11.9%)	140 (32.8%)	33 (7.7%)	8 (1.9%)	118 (27.6%)	6 (1.4%)	7 (1.6%)	427 (100.0%)
10- 19	3 (0.6%)	37 (7.9%)	4 (0.9%)	55 (11.7%)	222 (47.3%)	37 (7.9%)	7 (1.5%)	92 (19.6%)	3 (0.6%)	9 (1.9%)	469 (100.0%)
20- 29	9 (1.2%)	47 (6.5%)	4 (0.6%)	58 (8.0%)	476 (65.8%)	45 (6.2%)	10 (1.4%)	34 (4.7%)	7 (1.0%)	33 (4.6%)	723 (100.0%)
30- 39	9 (1.3%)	51 (7.6%)	8 (1.2%)	62 (9.3%)	387 (58.0%)	45 (6.7%)	8 (1.2%)	23 (3.4%)	17 (2.5%)	57 (8.5%)	667 (100.0%)
40-49	4 (0.8%)	41 (8.1%)	14 (2.8%)	43 (8.5%)	315 (62.0%)	27 (5.3%)	4 (0.8%)	8 (1.6%)	13 (2.6%)	39 (7.7%)	508 (100.0%)
50-59	5 (1.3%)	37 (9.9%)	8 (2.2%)	45 (12.1%)	213 (57.3%)	23 (6.2%)	2 (0.5%)	1 (0.3%)	9 (2.4%)	29 (7.8%)	372 (100.0%)
60-69	4 (1.5%)	16 (6.1%)	3 (1.1%)	43 (16.3%)	143 (54.2%)	11 (4.2%)	3 (1.1%)	0 (0.0%)	17 (6.4%)	24 (9.1%)	264 (100.0%)
70-79	4 (2.4%)	7 (4.2%)	1 (0.6%)	25 (15.1%)	88 (53.0%)	6 (3.6%)	2 (1.2%)	4 (2.4%)	9 (5.4%)	20 (12.0%)	166 (100.0%)
80-89	1 (2.9%)	2 (5.7%)	0 (0.0%)	4 (11.4%)	22 (62.9%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	2 (5.7%)	4 (11.4%)	35 (100.0%)
90-99	0 (0.0%)	1 (20.0%)	0 (0.0%)	0 (0.0%)	1 (20.0%)	1 (20.0%)	0 (0.0%)	0 (0.0%)	2 (40.0%)	0 (0.0%)	5 (100.0%)
Total	59 (1.6%)	275 (7.6%)	50 (1.4%)	386 (10.6%)	2007 (55.2%)	228 (6.3%)	44 (1.2%)	280 (7.7%)	85 (2.3%)	22 (26.1%)	3636 (100.0%)

The 20-29 age groups had the highest frequency of pain, swelling and gingival bleeding complaints. The commonest age group where aesthetics was reason for attendance is 0-9 years. 30-39 age groups had the highest frequency of Trauma, Restoration/prosthetics replacement. Tooth Mobility was most commonly reported in the 30-39 age group followed by 60-69 age groups. The 30-39 age groups also had the highest frequency of Routine check/Prophylaxis followed by 20-29 age groups.

Within the age groups, the commonest reason for attendance in patients < 20 years old was pain followed by aesthetics. Patients within the 20-39 age

groups reported pain and then routine check-up as reasons for attendance. In Patients 40≥ to 59 years, pain followed by routine check-up, trauma and then restorative treatment was the order of reason for attendance. Patients between 60 and 89 reported pain, routine check-up, restoration/replacement, tooth mobility in order of reason for attendance. Patients > 90 years had tooth mobility as the most frequent reason for attendance.

There was a statistically significant association between the age groups and patients' reasons for attendance/complaints (p value= 0.000).

**Table-7: Distribution of type of pain by gender**

Gender	Pain				Total
	Toothache	Gum pain	Facial pain	Tooth sensitivity	
Male	819 (93.8%)	29 (3.3%)	5 (0.6%)	20 (2.3%)	873 (100.0%)
Female	1070 (94.4%)	31 (2.7%)	12 (1.1%)	21 (1.9%)	1134 (100.0%)
<b>Total</b>	<b>1889 (94.1%)</b>	<b>60 (3.0%)</b>	<b>17 (0.8%)</b>	<b>41 (2.0%)</b>	<b>2007 (100.0%)</b>

Twice more females than males presented on account of facial pain. However, there was no

statistically significant association between gender and types of pain presented.

**Table-8: Distribution of type of swelling by gender**

Gender	Swelling		Total
	Extra oral (jaw/facial) swelling	Intraoral (gingival/lip) swelling	
Male	45 (40.5%)	66 (59.5%)	111 (100.0%)
Female	31 (26.5%)	86 (73.5%)	117 (100.0%)
	76 (33.3%)	152 (66.7%)	228 (100.0%)

In both genders, patients presented more frequently on account of intraoral swellings than extra-oral swellings (59.5% and 73.5% in males and females respectively). While more males than females presented on account of extra-oral swellings, more females than males presented on account of intraoral swellings. There was however no statistically significant association between the swellings and genders.

## DISCUSSION

In this study, 3636 patients with complete records attended the dental clinic in our center in the span of 1 year; this number is more than twice the number documented in similar studies from other regions of Nigeria [4, 9]. The suggested reason for this may be due to relative better awareness of oral health and easier access to dental services in the Lagos metropolis.

Our study also found the preponderance of Female attendance compared to Males, with Male: Female ratio of about 1:1.2. This agrees with most other studies within and outside Nigeria [4, 6-8, 10, 14, 15]. In a study on self-reported dental visits twice as much female as males attended clinic within a year [14]. This may not be unconnected with self-consciousness, typically associated with women. It has been previously observed that self-perception of need, particularly perceived severity of complaint, may inform utilization of oral health services [7, 8]. It has also been documented that higher female attendance may be due to gender differences in health perceptions or reporting of symptoms and illnesses, higher rates of morbidity in women or the likelihood that women seek help for prevention and illnesses [4]. However a few Nigerian studies showing more male than female dental attendance were mostly from Northern Nigeria [9, 16]. This may partly be due to religious or socio-cultural practices in such regions where women's movements may be restricted or they may not allowed taking independent decisions on issues which include their health. Attendance of males has been reported to be higher than those of females in two separate studies in the UK, focused on regular dental visits and emergency dental care respectively [3, 17]. The reason for this disparity with our study and those from other places is unknown, but may not be unconnected to some unclear socio-cultural factors in the western world.

The mean age of patients in this study is  $34.39 \pm 19.73$  years. This is similar to those found in previous studies;  $33.2 \pm 18$  years by Akaji *et al.* [4],

$33 \pm 4.2$  years by Anyanechi *et al.* [6] and  $37.85 \pm 5.38$  years by Ajayi *et al.* [18]. A slightly lower mean of  $28.6 \pm 16.2$  years (Median 28 years) was found by Taiwo *et al.* [9]

Young to middle aged adults formed the bulk of patients seeking dental care in this study with the 20-29 age group having the highest frequency (19.9%) followed by 30-39 age group (18.3%). This is in agreement with several other studies [4, 9, 10, 15, 17], with slight variations or overlap of these age groups in some studies [7, 10, 14]. It has been proffered that younger adults are more conscious of their appearance and typically have higher incidence of dental caries, hence seeking dental care [10]. While it has been shown that these age groups comprise the highest proportion of those who seek dental care, it has also been shown that among those who may perceive the need for dental care, they form the age-group that may attend dental clinic less, due to other barriers to dental care utilization such as cost [7].

Our study further reveals a steady increasing proportion of attendance with increasing age, until the 20-29 age groups after which it steadily declines. This is somewhat at variance with reports of the 1998 UK adult dental survey where young adult males < 34 years were the least likely to go for a dental check-up while older adults (>55 years) went for check-ups more [3]. Similar to our study, the study in Tehran showed a decline in dental attendance in about a decade older age group compared to ours [7]. These differences are due to a greater perceived need for oral health among older age groups in developed countries.

Clinic attendance by patients less <20 years of age was quite low in this study, ranking a distant fourth in attendance by age group. This is corroborated by previous studies in Nigeria [4, 19]. Reasons such as misinterpretation of dental problems in children by parents or other caregivers and time constraints of the caregivers to take their children to clinic have been suggested for this trend. Other possible reasons are lack of awareness of the importance of primary dentition to the overall well-being of the child or the earliest age to seek dental care [10, 12] Sote *et al.*, [20] further explained that inherent fear of dentists is typically expressed in children and may persist into adulthood, creating a barrier to early dental attendance. In the UK it was found that most of the young adults aged 16-24 years, abandoned regular dental visits because they did not perceive a need to, and about 53% of same claimed they had dental visits in childhood by coercion [3]. This

demonstrated that coercion is not an effective oral health promotion method. Furthermore, as reported by a previous study, severely anxious adults who had dental treatment under general anaesthesia were found to have subsequent irregular dental attendance pattern, further compromising their oral health. It has thus been suggested that rather than label a patient as anxious by a universal method, patients' symptoms of anxiety should be individualized and appropriate treatment strategies devised to abolish persistent fear of dental visits [6].

Pain was ranked highest reason for dental attendance in our study with a proportion of 55.2 % of all patients. This proportion of patients was followed by those who came for routine check-up or prophylaxis (10.6%), Aesthetics (7.7%), Trauma (7.6%), Swelling (6.3%), and Tooth structural restorations or prosthetic replacements (6.1%). Of the proportion who presented on account of pain, 94.1 % was specifically toothache, 3% presented with Gum pain, 2% with tooth sensitivity and facial pain was 0.8%. Facial pain was the rarest pain in this study, as also noted by Taiwo *et al.* [9] despite the high prevalence of periodontal disease among adults in our environment, it is surprising to note that indices such as gingival bleeding and tooth mobility together accounted for only 3.5% of the attendance. This may also reflect the decline in patient attendance in older age groups as seen in this study since the elderly comprise age groups that typically have periodontal diseases [21]. A slightly similar proportion of patients (7.6%) who attended on account of swelling were reported by Akaji *et al.* [4] Contrary to our proportion of 6.1% attendance for tooth restoration, a previous Nigerian study indicated 36% of patients reported attendance for obvious cavity requiring restoration. This figure may have included those who also had pain as a result of pulpal involvement and not just those asymptomatic, requiring simple restorations alone [22].

Other Nigerian studies, have corroborated the finding of pain being the major reason for dental attendance. Such studies have given similar proportions such as 55.8% and 49.2% [4, 18]. Uguru *et al.* [22] found 72% visited the dental clinic due to toothache, in a study in South East Nigeria. However, Omitola *et al.* [15] found that orofacial pain accounted for 18.5% of dental attendance in a hospital based survey in South-South region of Nigeria, with dental caries involving the pulp and tooth fracture accounting for 73.4% of these. The disparity in the prevalence of orofacial pain among patient attendance may be due to differences in the conduct of study - while most are single center hospital based studies using hospital records, others are cross-sectional studies. It has also been noted that self-reported and actual attendance of patients may vary [23].

In a British study of patient attendance for emergency dental care, 77% patients were found to

have attended on account of pain. [17] Akaji *et al.* [4] observed that pain being reason for attendance leaves room for neither preventive nor restorative interventions but encourages more extractions. Taiwo *et al.* [9] in a study in Northern Nigeria however observed that though most patients presented with features of dental caries and its sequelae, more conservative treatment than surgical procedures were sought by patients. In agreement with these authors, preventive and early restorative interventions should be encouraged as a better approach to dental care in resource limited settings, as it avoids the need for much advanced restorations and prostheses.

There was a significant association between the age group of patients and the reason (s) for attendance, in this study. The 20-29 age groups had the most frequent complaint of pain. This is similar to the report of a British study [17]. Furthermore, toothache was the commonest of all types of orofacial pain and it was most commonly reported in the 20-29 age groups, followed by 30-49 age groups. As shown in other studies, the highest proportion of orofacial pain is derived from caries and its sequelae and these have a higher prevalence among young adults [9, 10, 15]. The 30-39 age groups had the most frequent occurrence of Routine check/ prophylaxis, followed by the 20-29 age groups. Similarly, the 30-39 age groups had the most frequent occurrence of trauma and restoration. Most other complaints such as swelling, gingival bleeding and bad breath were mostly reported in the 20-49 age groups. The age groups 20-49 comprise the largest oral health seeking group in this study, owing to the frequency of their dental attendance. Along with earlier indicated prevalence of dental caries within that group, they are likely the most physically active age groups and most appearance –conscious, hence their much varied and frequent reasons for attendance. Aesthetics was most sought in the 0-9 age group decreasing gradually in proportion with increasing age group. It was the second most frequent reason for attendance in the 0-9 age group. This shows that the motivation for parents seeking dental care for their wards is to obtain good dental/ facial appearance for them. This appears to be a prospective pivot for oral health promotion among children, offering them aesthetics as a potential benefit for routine dental visits.

In relating the complaints/ reasons for attendance to gender in this study, there was a significant association between these ( $p=0.001$ ), and it was observed that more females than males attended the clinic for reasons of pain and aesthetics. This may not be unconnected to the submission that females tend to have a lower threshold for pain and seek medical attention earlier and higher prevalence of caries with pulpal involvement has been reported in females [15, 24, 25]. However, a departure to this was found in the British study where more males than females attended



emergency dental care on account of pain, though there was no significant difference between the genders [17].

Routine check-up / prophylaxis which typically includes preventive oral hygiene measures at such visits, ranked second reason for dental attendance by this study, though accounting for 10.6% of patients. This is higher than 5.7% reported in a similar study in another part of the country, in a cross-sectional study [4]. Okunseri *et al.* [14] had earlier indicated 26% of the population attended the clinic for routine dental visit in a year. Another Nigerian study showed 9% of households utilized dental services in a year [22]. This is a far cry from 61% of the population in Britain who attend for routine dental visits in a year. Benefits highlighted for regular dental attendance include less untreated decay, decreased rate of tooth loss, higher number of functioning teeth and less pain [26]. Adult dental surveys in UK indicated an increase in regular dental attendance by the public over the last 4 decades [3, 26]. It has been noted that though the 6-monthly dental visit is a popular concept of what constitutes the most appropriate interval between visits, the evidence base for this has been called to question and a maximum period of 1 year interval for routine dental check-ups has been suggested [3].

More males (11.9%) than females (9.5%) attended the clinic for routine dental check-up. This is consistent with the findings of a UK Dental Survey, where adult males of all ages except those aged >75 years, went for routine dental check-up more than adult females [3]. Contrary to our findings that routine check-up had the highest frequency in the 30-39 age group, the UK survey found that males less than 34 years were the least likely to attend routine dental visit. By that study, older adults above 55 years went for dental check-ups more perhaps in response to a greater perceived need [14]. Barriers to routine dental check-ups are similar to those that prevent utilization of dental services or cause delay in attendance, but differ in different parts of the world. As was identified in the UK adult dental survey, barriers to routine dental visit in more developed countries include, planning treatment cost rather than cost of treatment itself, organisation of appointment and long waiting time. Fear and anxiety were less indicated, Ignorance of the long term benefit of oral health care was not common and its presence differentiated regular attenders from in-trouble attenders [3]. From previous studies in Nigeria, factors such as education, perceived severity and the experience of dental staff have been positively associated with utilization of dental services, while cost of treatment was negatively associated. Cost has been particularly found to be a determinant for utilization in people of low socio-economic status [6, 22]. However, Ajayi *et al.* [18] ranked fear of dental injection as the most common barrier to oral health service utilization, reported by patients, while a significant association of age groups with the feeling of insecurity during

treatment was reported by the same author. Low educational level, poor perception of oral health needs and poor awareness of existing services are key determinants of dental attendance and utilization in low income countries. These submissions are consistent with the findings of an Iranian study [7].

## CONCLUSION

Dental-related pain remains a significant reason for patients seeking dental care. It is important to advocate routine oral health visits to harness the inherent benefits. Though there's relative oral health awareness in the Lagos metropolis and its feeder areas as shown in our center, compared to the rest of the country, a larger cross-sectional study across the country is desirable to show the proportion of the population who attend dental clinics for routine oral health check. Oral health education should be intensified and targeted at adolescents as well as, young to middle aged adults who are confirmed by this study to be the age groups who most perceive the need for dental care and are thus, likely to inculcate lifelong health-seeking habits.

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