

# Patient Satisfaction with Orthodontic Services at the Lagos State University Teaching Hospital, Ikeja, Nigeria.

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## Abstract

**Background:** The aim of this study was to assess the level of satisfaction of the patients with the orthodontic treatment received at the Lagos State University Teaching Hospital, Ikeja and to compare the responses with the socio-demographic characteristics of the respondents.

**Method:** This was a cross-sectional study conducted at the orthodontic clinic of the Lagos State University Teaching Hospital, Ikeja. A structured self administered questionnaire was used for data collection. A 58-item satisfaction questionnaire was used to obtain information on 4 satisfaction subscales.

**Results:** Female respondents had higher mean satisfaction scores in the subscales of situational aspects; doctor-patient relationship and Dento-facial/psychosocial improvement. Male respondents however had higher mean scores in the dental function subscale. Satisfaction with orthodontic services was significantly associated with gender ( $p=0.031$ ), age ( $p=0.000$ ) and with level of education ( $p=0.005$ ). 34% of those that were dissatisfied complained of unbearable pain while 29.5% were uncomfortable with the long duration of treatment.

**Conclusions:** There is a need to improve the communication between dental staff and orthodontic patients, improve access to facilities and to reduce waiting time. There is also a need to educate the patients on the pain they may feel before the onset of treatment.

**Key words:** Patient satisfaction, Orthodontic treatment, Satisfaction questionnaire, Orthodontics Services.

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## Introduction

The evaluation of the quality of health care has emerged as a key issue in the delivery of health services.<sup>1</sup> The quality of treatment outcome has traditionally been assessed by applying professionally established metric or categorical scales with measurements obtained from dental casts, radiographs, and clinical examinations. However, since health services exist primarily to benefit the patient, an important variable for measuring outcome should be the overall patient satisfaction with the care provided.<sup>2</sup> It has been argued that the evaluation of the quality of care should take into account the distinct perspective of the users as well as managerial and professional perspectives.<sup>3</sup>

Patient satisfaction is not only concerned with the result of the treatment, but also includes the method of delivery of that care. Aspects of

patient satisfaction measured in dentistry include dentist-patient relationship, technical quality of care, access, patient waiting time, cost, facilities, availability, continuity, pain, staff-patient relationship and the office atmosphere.<sup>4</sup> It is important that treatment is delivered to meet patients' perceived needs and expectations, wherever possible.<sup>5</sup> Patients' perceptions of the quality of dental care and the likelihood of them seeking care are also related to their perception of the dentists as a caregiver.<sup>6</sup> Several studies have described perceived characteristics of dentists that are likely to increase care-seeking or satisfaction with care. These include communication skills, informing patients about treatment options and the dental teams' behavior during dental visits.<sup>7-9</sup>

Orthodontic treatment can improve the patient's quality of life and also result in physical, psychological and social changes.<sup>10,11</sup>

It is a specialty that relies heavily on patient cooperation for a successful end result. An acknowledgement of the patient's perspective of orthodontic treatment is thus critical in ensuring the development of a comfortable doctor-patient relationship<sup>12</sup> and it may help to improve the quality of orthodontic care.<sup>13</sup> Previous studies have

shown differences between patients' and professionals' perception on orthodontic treatment need and hence patient satisfaction.<sup>14,15</sup> A review by Richmond,<sup>16</sup> Lo and Yap<sup>17</sup> and Balakrishnan<sup>18</sup> demonstrated a high patient satisfaction with orthodontist-patient relationship, technical quality of care and the surgical atmosphere but satisfaction levels with access, facilities and waiting times were not satisfactory.

There is a dearth of published literature assessing the satisfaction of patients in Nigeria with Orthodontic services. The aim of this study was to assess the level of satisfaction of the patients with the orthodontic treatment received at the Lagos State University Teaching Hospital, Ikeja and to compare the responses with the socio-demographic characteristics of the respondents.

### Method

This was a cross-sectional study conducted from May, 2012 to June, 2013 among patients who attended the orthodontic clinic of the Lagos State University Teaching Hospital, Ikeja.

### Sample

The study population consisted of patients who were registered at the Orthodontic clinic of LASUTH and who had completed fixed or removable orthodontic appliance therapy for malocclusion.

### Sample Selection

The subjects for the study were recruited from registered patients attending the Orthodontic clinic of the Lagos State University Teaching Hospital, Ikeja. A convenience sampling method was utilized to recruit the respondents and consecutive patients were screened for possible inclusion by set inclusion and exclusion criteria. One hundred and sixteen subjects were recruited for the study.

### Inclusion And Exclusion Criteria

Included patients were those who were 12 years old and above and those who were willing to give their informed consent.

Excluded were new patients, those who did not consent to participate or whose legal representatives did not authorize participation in the study. Patients with craniofacial deformities were also excluded from this study.

### Data Collection

A structured self administered questionnaire was used for data collection. The questionnaire consisted of questions on socio-demographic items including sex, age, and level of education, as well as questions on the respondents' satisfaction with the orthodontic care received at the LASUTH dental clinic.

### Satisfaction Questionnaire

A validated questionnaire was used to assess patient satisfaction. The questionnaire was divided into 4 subscales on the basis of item content. The First subscale contained 12 items about the satisfaction of situational aspects of the orthodontic clinic. The second subscale consisted of 19 items about the patients' satisfaction with the doctor-patient relationship. The third subscale consisted of 7 items about patients' satisfaction with their dentofacial improvement and psychosocial comfort while the fourth had 3 items on dental function. The items were answered on a 4-point scale with endpoints :4 (very satisfied) and 1:(dissatisfied) with no neutral point. The completed questionnaires were reviewed for completeness and consistency.

### Data Analysis

Data were entered in Microsoft Excel software and analyzed using the Statistical Package for Social Sciences (SPSS Inc.,Chicago, Illinois, USA) version 20. Descriptive statistics such as mean and standard deviation (SD) for continuous variables and frequency and percentage for categorical variables were determined. The chi-square test was used to compare the socio-demographic variables of patients such as gender, age and education levels with the level of patient satisfaction. A 95% confidence interval and a 5% level of significance were adopted.

## Results

### Socio-demographic characteristics of respondents

A total of one hundred and thirty (58- item) self-administered structured questionnaires were administered over a 13 month period. One hundred and sixteen were returned filled, giving a response rate of 89%. The age range of the subjects (n=116) was 12-41 with a mean age of 19.78 years (SD 7.63). 62.1 % of the respondents were in the 11-20 age category. Eighty three (71.6%) of the subjects were females and 81(69.8%) were from the Yoruba tribe. Female subjects in this study were slightly older than male subjects mean age [males] 16.85, SD 6.43, range 8; mean age [females] 20.95; SD 7.78.

Secondary school and University students made up 43.1% and 42.2% of the study population respectively. 81.9% of the subjects had fixed appliance therapy while the rest had removable appliance therapy. Ninety five (81.9%) were satisfied with the orthodontic services while 21 (18.1%) were not.

### Mean satisfaction scores of male and female subjects on four subscales.

Female respondents had higher mean satisfaction scores in the subscales of situational aspects [females] 24.35 S.D. 7.55, [males] 23.51 S.D. 8.06; doctor-patient relationship [females] 44.62 S.D.10.20, [males] 42.38 S.D. 13.18 and Dento-facial/psychosocial improvement [females] 15.71 S.D. 5.11 [males] 14.96 S.D. 5.12. Male respondents however had higher mean scores in the dental function subscale. [females] 7.12 S.D. 2.29 [males] 7.47 S.D. 2.45.

### Socio-demographic background of patients who were/were not satisfied with their orthodontic treatment.

Table 3 shows a comparison between the 95 patients who were and the 21 who were not satisfied with their orthodontic treatment. Satisfaction with orthodontic treatment was

significantly associated with gender ( $p=0.031$ ), age ( $p=0.000$ ) and with level of education ( $p=0.005$ ). Males, patients aged 21-30 years and University educated respondents were more dissatisfied with the orthodontic services received. There was no significant association between satisfaction and tribe/religion.

### Reasons for dissatisfaction with orthodontic treatment.

Twenty one (18.1) of the subjects were dissatisfied with the orthodontic services received at LASUTH. 34% of those that were dissatisfied complained of unbearable pain while 29.5% were uncomfortable with the long duration of treatment. 20.4% of them were dissatisfied with the cost of the treatment while the rest were opined that the appliance was unsightly or that their dentition was not improving.

### Duration of treatment and dissatisfaction with orthodontic services.

A long duration of treatment was significantly associated with dissatisfaction with orthodontic services ( $p=0.008$ ) 11% (9 out of 80) of those who completed their treatment at 2 years were dissatisfied with the services received compared with 40% of those who completed their treatment at 3 years and 50% of those who completed theirs at 4 years.

### Relationship of patients with other dental personnel.

35.5% of the respondents had an average relationship with the other dental personnel. 44.8% had a cordial relationship while 19.8% had a very cordial relationship. This was in contrast to 94.8% of the respondents who stated that they had a very cordial relationship with their orthodontist. The relationship with the clinic staff was significantly associated with patient satisfaction ( $p=0.03$ ) with 34% of those with an average relationship with the staff dissatisfied with orthodontic services. Patients were generally more comfortable in their relationship with their dentist.

**TABLE 1: Socio-demographic Characteristics of the Respondents.**

Variable	Frequency	Percentage
<b>Age category</b>		
11 – 20 years	72	
21 – 30 years	33	62.1%
31 years and above	11	28.4%
Total	116	9.5%
		100%
<b>Tribe</b>		
Yoruba	81	69.8%
Hausa	1	.9%
Ibo	15	12.9%
Efik	2	1.7%
Others	17	14.7%
Total	116	100.0%
<b>Gender</b>		
F	83	71.6%
M	33	27.6%
Total	116	100.0%
<b>Religion</b>		
Christian	106	91.4%
Islam	10	8.6%
Total	116	100.0%
<b>Education</b>		
None	0	0%
None	2	1.7%
Primary school only	15	12.9%
Secondary school only	50	43.1%
Tertiary education	49	42.2%
Total	116	100.0%
<b>Marital status</b>		
Single	110	94.8%
Married	6	5.2%
Total	116	100.0%

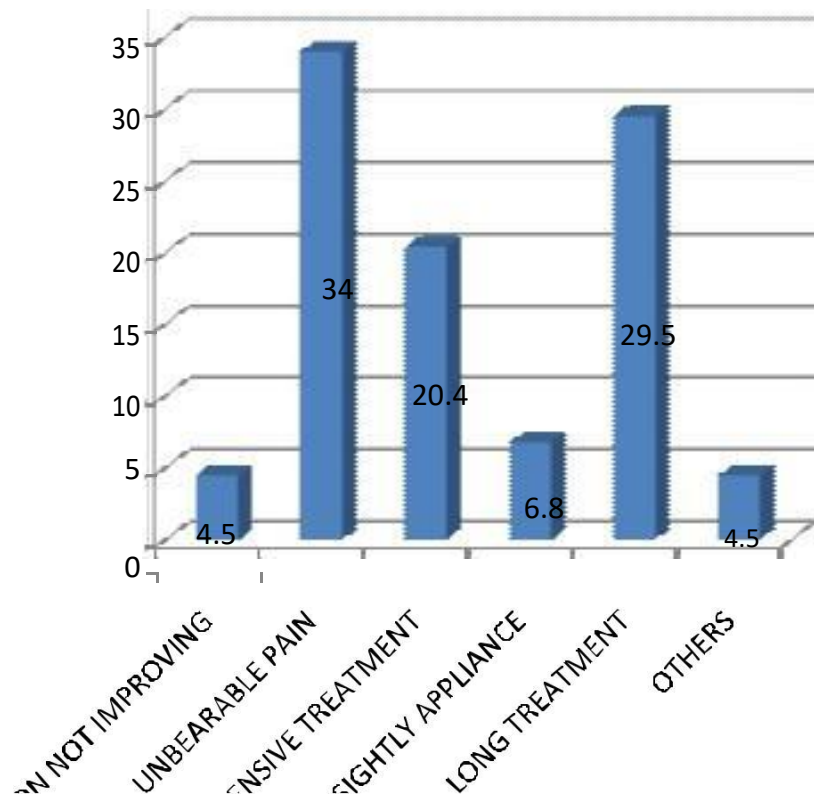
**TABLE 2: Mean satisfaction scores of male and female subjects for four subscales.**

	Female		Male	
	Mean	S.D.	Mean	S.D.
Situational aspects (12 items)	24.35	7.55	23.51	8.06
Doctor-patient relationship (19 items)	44.62	10.20	42.38	13.18
Dento-facial/psychosocial improvement (7 items)	15.71	5.11	14.96	5.12
Dental function (3 items)	7.12	2.29	7.47	2.45
Total satisfaction score (58 items)	91.80	25.14	88.32	28.80

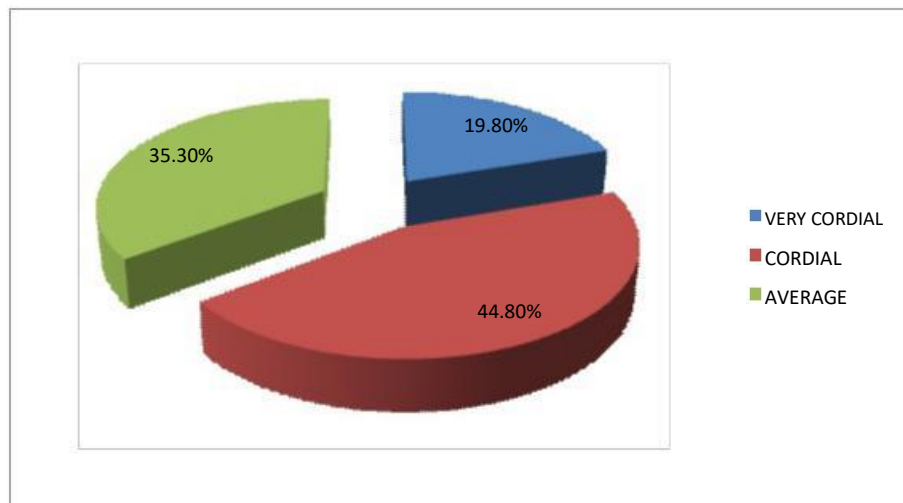
**TABLE 3: Socio-demographic background of patients who were/were not satisfied with their orthodontic treatment.**

Variables	Satisfied	Not Satisfied	? 2 statistics	P value
<b>Age group (years)</b>				
11-20	61	11		
21-30	25	8	8.175	0.000
30 years and above	9	2		
<b>Gender</b>				
Male	22	11	4.630	0.031
Female	73	10		
<b>Education</b>				
None				
Primary school only	2	0		
Secondary school only	15	0	12.969	0.005
Tertiary education	45	5		
	33	16		

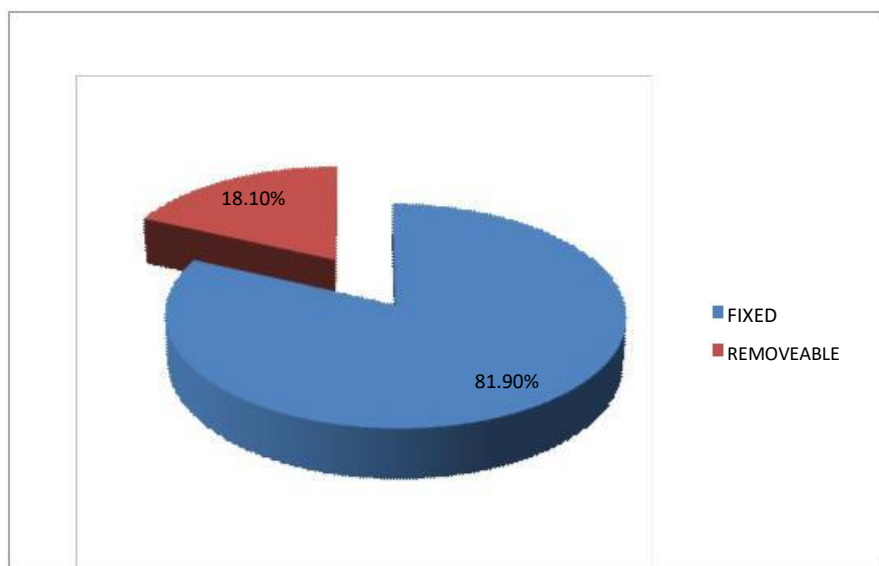
**FIGURE 1: Reasons for dissatisfaction with orthodontic treatment.**



**FIGURE 2: Relationship of patients with other dental personnel.**



**FIGURE 3: Type of orthodontic appliance used.**



**Discussion**

Studies on patient satisfaction with orthodontic services have shown a wide range of satisfaction levels, ranging from 34%<sup>19</sup> to 74.75%.<sup>20,21</sup> The level of satisfaction with orthodontic services in this study was 81.9%. This is in contrast to a study by Birkeland et al<sup>22</sup> with a higher level of satisfaction (95.4%). A

very high level of patient's satisfaction with the dentist-patient relationship was also observed which is in agreement with earlier findings.<sup>23,24</sup> Satisfaction in this subscale has been found to be a predictor of contentment in other aspects. The subjects in this study had the highest scores in the dental function subscale. They however had the least

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satisfaction with access, facilities and waiting times in agreement with previous reviews.<sup>15-17</sup> Patients in the 10-20 age bracket were more satisfied than those in the 20-30 age category in agreement with Birkeland<sup>22</sup> and Bos.<sup>25</sup> It has been reported that higher levels of compliance may be expected from younger orthodontic patients compared with older patients.<sup>26</sup>

Gender has been found to be a significant predictor of the patient's satisfaction with the dentist-patient relationship and the situational aspects of treatment.<sup>27,28</sup> Females in this study had higher mean satisfaction scores than males in all aspects except in the dental function subscale similar to the observation by Bergstrom et al.<sup>27</sup> Bos et al.<sup>25</sup> in their study however found males more satisfied with orthodontic services than female respondents. Another study<sup>22</sup> found that boys had more satisfaction with their dental appearance than girls whereas the parents were less satisfied with the dental appearance in boys than in girls. The predominance of female respondents in this study could have had an effect on the outcome. Girls are more likely to recognize dental irregularities and place more importance on this than boys,<sup>29,30</sup> and are consequently more likely to seek orthodontic treatment.<sup>31</sup> Further studies with equal spread of respondents in both genders may be needed to refute this observation.

There was a significant association between the level of education and dental satisfaction. The more highly educated patients were less satisfied with the orthodontic services received. A previous study similarly correlated the level of discontent with orthodontic service with a high level of parental education.<sup>27</sup> It is possible that the more-educated patients have higher expectations of the service.<sup>32</sup> Other studies however demonstrated that highly educated people were more satisfied than those with a lower level of education.<sup>33,34</sup> There was no significant association between satisfaction level and fixed or removeable orthodontic therapy.

Unbearable pain was the commonest reason cited for dissatisfaction. Pain and discomfort experienced may predict the compliance with treatment and hence the level of patient satisfaction.<sup>35</sup> Detailed counseling on the level of pain expected during treatment, empathy from the orthodontist and evidence based pre-procedural analgesics could however improve this.<sup>36</sup> There was also a significant association between the level of patient dissatisfaction and the relationship of the subjects with other dental personnel. The study was done when this cadre of staff were few and overworked. There may be the need to explore other variables that could have contributed to this relationship.

Some limitations of our study must however be noted. The study focused on the immediate post treatment satisfaction and not the long-term stability of orthodontic treatment and patient satisfaction. The study did not obtain data on patient compliance with orthodontic treatment. This could have accounted for dissatisfaction in subjects who had a long duration of treatment.

### Conclusion

The gender, age and educational level of respondents was found to be associated with satisfaction in this study. There is a need to improve the communication between dental staff and orthodontic patients, improve access to facilities and to reduce waiting time. There is also a need to counsel patients beforehand on the pain they may feel during treatment. A longitudinal follow up of these patients is also required to compare the long-term stability of their orthodontic treatment with satisfaction.

### Contributors

Oyapero A was responsible for the conceptualization of the study, study design, statistical analysis, interpretation of results, critical review and editing. Ogunbanjo BO was responsible for the conceptualization of the study, study design, interpretation of results, critical review and editing. Adegbite KO was responsible for the study design, interpretation of results, critical review and editing. Victor-Osho OO was responsible for

the study design, interpretation of results, critical review and editing. Oludare YS was responsible for the study design, data collection and interpretation of results.

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