

**CLIENTS’ SATISFACTION WITH WAITING TIME IN HIV TREATMENT CENTRES:  
AN URBAN RURAL COMPARISON IN ANAMBRA STATE, NIGERIA.**

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**Abstract**

**Background:** Patient satisfaction is very important in healthcare because a satisfied patient will be more cooperative with the medical team. Management of a chronic disease like HIV also needs as much cooperation from clients as possible because the treatment is for life. Waiting time has been reported by several studies as a major determinant of satisfaction in health facilities. **Aim:** This study determined and compared clients’ satisfaction with waiting time at urban and rural HIV treatment centers in Anambra State, Nigeria. **Methods:** This is a comparative descriptive study. Data were collected using quantitative methods. A semi-structured, pre-tested, interviewer-administered questionnaire was used to obtain information on satisfaction with waiting time from clients at the urban and rural HIV treatment centers in Anambra State Nigeria. Data were analyzed with the SPSS version 20 software and summarized using proportions and means, and were presented in tables for easy appreciation. **Results:** A total of 1,100 respondents (550 each from the urban and rural HIV treatment centers) participated in this study. There were more females than males in both the urban 363(66.0%) and rural centers 355(64.5%). The commonest age group among the urban respondents was the age group 21-30 years, 170 (30.9%), the same age group was also the commonest among the rural respondents 240 (43.6%). The mean age of the urban respondents 37.09 ( $\pm 10.00$ ) was higher than the mean age of the rural respondents 34.99 ( $\pm 10.71$ ). A higher proportion of the respondents that were satisfied with waiting time were urban respondents 405(69.2%), compared with the 180(30.8%) rural respondents that were satisfied. ( $X^2 = 184.839, p = 0.000$ ). The urban respondents were four times more likely to be satisfied with waiting time compared with the rural respondents [OR: 4.139 (95% CI: 2.945-5.817)]. **Conclusion:** The clients in the urban HIV treatment centers were more satisfied with the waiting time than the clients in the rural HIV treatment centers. Appropriate interventions should be instituted to reduce the waiting time of clients in the rural centers.

**Keywords:** Satisfaction, waiting time, HIV treatment centers.

## Introduction

Understanding satisfaction and service quality are critical to developing service improvement strategies. The quality assurance work of Donabedian identified the importance of patient satisfaction as well as providing much of the basis for research in the area of quality assurance in healthcare.<sup>1</sup> Patient satisfaction surveys are a means of determining patients' views on healthcare.<sup>2-4</sup> These surveys are increasingly being promoted as a means of understanding healthcare service quality and the demand for these services in developing countries for various reasons. Firstly they highlight those aspects of care that need improvement in a healthcare setting.<sup>5,6</sup> Also they are simple, quick and inexpensive to administer. They are critical for developing measures to increase the utilization of health services. They can help to educate medical staff about their achievements as well as their failures, hence improving their ability to meet patients' needs. Finally, they allow managerial decisions to be taken based on evidence rather than guesswork.<sup>7</sup>

Surveys of patients' satisfaction have usually been fielded for one of two purposes. They are either used to evaluate provider services and facilities or to predict consumer behavior (eg use of services). The former is based on the assumption that patient satisfaction is an indicator of the structure, process, and outcomes of care, while the later is based on the assumption that the differences in satisfaction influence what people do.

Patient satisfaction is very important in order to retain patients. There are eight major dimensions of patient satisfaction.<sup>8</sup> These are Art of care; Technical quality of care; Accessibility/Convenience; Finances; Physical environment; Availability; Continuity of care; Efficacy/outcomes of care. “Waiting time” falls under “Accessibility/convenience”. It includes every single second the client spends at the

health facility. All over the world, several studies have been done on patients' satisfaction with waiting time in hospitals and clinics. Some studies quantify the time in terms of hours and minutes. But some authors believe that it is better to find out the patients' subjective feeling about the waiting time, rather than the hours and minutes. A study done in urban Malaysia reported that the patients were not satisfied with the waiting time in the public hospitals studied.<sup>9</sup> The researchers went further to investigate the relationship between satisfaction with waiting time and overall outpatient satisfaction using Pearson's correlation. They confirmed that the relationship between satisfaction with waiting time and overall outpatient satisfaction was significant. They concluded that patients who were satisfied with their waiting time tend to be satisfied with the overall outpatient service.<sup>9</sup> A study was done in an HIV care clinic in Sokoto, Nigeria also reported high levels of clients' satisfaction with waiting time.<sup>10</sup> The authors opined that the high level of satisfaction with waiting time could be because the center is a tertiary center with high manpower, hence being able to cater for a large number of clients within a reasonably short time. Similarly, there was a high level of satisfaction with waiting time among clients at an antiretroviral therapy clinic in Ethiopia.<sup>11</sup> This center is also a tertiary health facility which may have contributed to the speed of attending to clients because of availability of manpower.

In contrast, there were studies that reported patient dissatisfaction with waiting time in out-patient clinics. A study done in South Africa reported that there was a high level of dissatisfaction with waiting time.<sup>12</sup> A study was done in Abuja, Nigeria also reported that there was a high level of dissatisfaction with the waiting time.<sup>13</sup> Also, there was a statistically significant association between the patients' satisfaction with waiting time

and their overall satisfaction with services in the clinic. The dissatisfaction with waiting time may be because it was an outpatient clinic where there was no appointment system; hence the number of patients seen in a day was not regulated. Similarly, a study done in the USA reported a high level of dissatisfaction with waiting time.<sup>14</sup> There was also an association between waiting time and willingness to return to the clinics. The studies that reported high levels of satisfaction were mostly in tertiary centers where there is more available manpower, which will reduce patients' waiting time. Also, they were mostly in specialized clinics where there is the use of appointment system, while the studies that reported dissatisfaction with waiting time were more in centers where there was no appointment system.

The business world offers a framework for increasing retention by focusing on customer satisfaction. Marketing studies clearly show that high satisfaction levels have a positive impact on customer loyalty, repeat patronage and more extensive and favorable referrals.<sup>15</sup> Analogous to the business model of customer satisfaction and retention, patient satisfaction has been proved to be associated with retention in HIV care and adherence to HAART.<sup>16</sup> This was well elucidated in a study done in two HIV treatment centers in the United States of America, which reported that patients with adequate retention were significantly more satisfied with their HIV care than patients with inadequate retention.<sup>16</sup> Also, patients who had excellent adherence to their antiretroviral drugs were significantly more satisfied with their HIV care than patients who did not have excellent adherence to their antiretroviral drugs.<sup>16</sup> The study concluded that patient satisfaction is an important factor in improving HIV outcomes because of its influence on adherence to Highly Active Antiretroviral Therapy (HAART) and retention in HIV care. Both of which result in viral

suppression, which is the main goal of HIV care. Research indicates that provider and organizational factors play a large role in how patients evaluate their provider and overall clinic care.<sup>17, 18</sup>

Client satisfaction at HIV treatment centers is an important issue because HIV is a serious public health problem that must be tackled head on. Globally 34 million people were living with HIV at the end of 2011 (UNAIDS).<sup>19</sup> An estimated 0.8% of adults aged 15-49 years worldwide are living with HIV, although the burden of the epidemic continues to vary considerably between countries and regions.<sup>19</sup> According to 2011 WHO global summary of the AIDS epidemic 2011, 34 million people were living with HIV, 30.7 million adults, and 3.3 million children less than 15 years.<sup>20</sup> According to the 2012 UNAIDS report on the global AIDS epidemic, Sub-Saharan Africa is the most severely affected region with nearly 1 in every 20 adults (4.9%) living with HIV and accounting for 69% of the people living with HIV worldwide.<sup>19</sup> Nigeria has the second largest burden of HIV worldwide after South Africa.<sup>21</sup> The prevalence of HIV infection in Nigeria is 4.1%.<sup>21</sup> In the year two thousand and eleven, 1,449,166 people needed antiretroviral therapy in Nigeria.<sup>21</sup>

Furthermore, the location of people with HIV has been proved to affect their access to care. A study done in the USA reported that the rural HIV clients had less access to care compared with their urban counterparts.<sup>22</sup> Also adherence to antiretroviral therapy was found to be higher among urban HIV clients than rural HIV clients in another study.<sup>23</sup> Studies have indicated that rural-dwelling persons with HIV infection experience higher mortality than their urban counterparts, but the reasons are unclear.<sup>24, 25</sup> Rural persons with HIV infection face multiple barriers to care, including limited availability of expert HIV care providers, poor local access to health services etc.<sup>26, 27</sup>

It has been demonstrated that patient satisfaction is a major determinant of utilization of health care services and HIV care services in particular.<sup>3</sup> Unfortunately, there is a dearth of data on the level of patient satisfaction with ambulatory HIV care services in Nigeria. In order to reduce significantly the prevalence, morbidity, and mortality due to HIV/AIDS in Nigeria, it is necessary to achieve maximum client retention in HIV treatment centers. To achieve client retention, clients should be satisfied with services provided. Hence the need to determine clients' satisfaction levels and desires for improvement.

This study compares clients' satisfaction with waiting time in rural and urban HIV treatment centers in Anambra State, Nigeria. The results will form an evidence base data to guide HIV care services policy formulation and program implementation.

This aim of this study was to determine and compare clients' satisfaction with waiting time in the urban and rural HIV treatment centers in the Anambra State of Nigeria.

**Methodology**

**Study Area:** Anambra state is located in the South-east geopolitical zone of Nigeria. It has a population of 4,177,828 inhabitants

according to the 2006 national census report.<sup>62</sup> This study was conducted in 4 HIV treatment centers in the Anambra state of Nigeria. Two of the centers are located in urban Local Government Areas (LGAs): Holy Rosary Hospital and Maternity Onitsha and Anambra State University Teaching Hospital Awka. The two other centers are located in rural Local Government Areas: St Joseph's Hospital and Maternity Adazi-Nnukwu, and Centre for Community Medicine and Primary Healthcare, Nnamdi Azikiwe University Teaching Hospital, Ukpou.

**Study Design:** This was a descriptive cross-sectional comparative study.

**Study Population:** This comprised of clients accessing HIV care services at the four HIV treatment centers.

**Inclusion Criteria:**

- Clients who have accessed services at the centers on at least three occasions.
- Clients that are a minimum of 18 years old.
- Clients who gave informed consent.

**Exclusion Criteria:**

Clients who met all the inclusion criteria but are too sick to respond to the questionnaire.

**Sample Size Determination:**

Using the formula for calculating minimum sample size for comparison of two groups.<sup>28</sup>

$$n = \frac{2z^2pq}{d^2}$$

Where:

n = minimum sample size

z = standard deviate (1.96)

p = proportion of patients who perceived the quality of care in a General Outpatient Department in a tertiary health facility to be good<sup>29</sup> = 0.79

q = 1 - p = 1-0.79 = 0.21

d = level of precision = 0.05

calculation:

$$n = \frac{2 \times (1.96)^2 \times 0.79 \times 0.21}{0.05^2}$$

$$n = \frac{2 \times 3.84 \times 0.79 \times 0.21}{0.0025}$$

“Clients’ satisfaction with waiting time in HIV treatment centers: An urban rural comparison in Anambra state, Nigeria.”

$$n = \frac{1.27}{0.0025}$$

$$n = 508$$

Adjusting for non-response rate.

Adapting a response rate of 98% as reported in a study on patients' satisfaction with services in a tertiary health facility in Edo state, Nigeria<sup>15</sup> The non-response rate was 2%.

Therefore applying the formula for adjustment for non-response rate<sup>28</sup>

$$n_s = \frac{n}{1-f}$$

Where:

$n_s$  = adjusted minimum sample size

$n$  = calculated minimum sample size

$f$  = non-response rate

$$n_s = \frac{508}{1 - 0.02}$$

$$n = \frac{508}{0.98}$$

$$n = 518$$

To increase the power of the study this was rounded up to 1100

Therefore a total of 1,100 respondents were sampled. Hence 550 respondents were sampled in the urban centers and 550 respondents were sampled in the rural centers.

### Sampling Technique:

Two-stage sampling technique was used.

*Stage 1:* The HIV treatment centers in Anambra State were stratified into urban and rural based on their location. This comprised of 8 urban and 6 rural treatment centers. Then simple random sampling technique was used to select two centers from the urban centers and two centers from the rural centers. Holy Rosary Hospital and Maternity Onitsha and Anambra State University Teaching Hospital Awka were selected as the urban centers, while St Joseph's Hospital Adazi Nnukwu and Centre for Community Medicine and Primary Healthcare, Nnamdi

Azikiwe University Teaching Hospital Ukpo, were selected as the rural centers.

*Stage 2:* Systematic random sampling technique was used to select clients using the clinic attendance registers of the HIV treatment centers.

Based on preliminary investigations, it was discovered that the average monthly attendance of clients who have attained a minimum of 3 visits at the clinics was 500 clients per center per month.

Data collection was over a period of two months. Hence the number 1,000 was used as the sampling frame. The sample size was 275 per center.

Hence the sampling interval "k" was calculated thus:

$$K = \frac{\text{Sampling frame}}{\text{Sample size}}$$

$$K = \frac{1,000}{275}$$

$$K = 3.6 \overset{\sim}{\underline{\quad}} 4$$

Hence sampling interval = 4.

On every clinic day, simple random sampling by balloting was used to select the first client to be administered the questionnaire from the list of clients in the clinic attendance register. After selecting the first client, every "4th" client was selected. If any client did not meet the inclusion criteria, the next client was selected. This process was continued until the calculated minimum sample size was achieved.

**Study instruments:** A pre-tested, semi-structured, interviewer-administered questionnaire was used to interview the clients. This questionnaire was originally designed by the United States Department of Health and Human Services, for patient satisfaction surveys. This questionnaire was adapted.

**Data Management:** The dependent variable was: Clients' satisfaction with waiting time. The independent variables were: Socio-demographic characteristics: age, sex, marital status, educational level, occupation and location of treatment center (Urban and Rural).

**Statistical Analysis:** Data entry and analysis was carried out with the aid of International Business Machines-Statistical Package for the Social Sciences (IBM-SPSS) Version 20.0. Frequency distributions of all relevant

variables were developed. Relevant means and proportions were calculated. A client's satisfaction with waiting time was determined by finding the average score for the individual items under waiting time. An average score of  $\geq 4$  was interpreted as "satisfied", while an average scores of  $< 4$  were interpreted as unsatisfied. Association between the independent variables (sociodemographic characteristics) and the dependent variable (satisfaction with waiting time) was determined using logistic regression analysis. A p-value of  $< 0.05$  was considered significant.

**Ethical Considerations:** Ethical approval for this study was sought and obtained from the Nnamdi Azikiwe University Teaching Hospital Ethical Committee (NAUTHEC). Written informed consent was obtained from the respondents after explaining the purpose of the study and the procedure. Permission to conduct the study was sought for and obtained from the management of the HIV treatment centers.

#### Results

A total of 1,100 respondents (550 each from the urban and rural HIV treatment centers) participated in this study. The response rate was 100% because the questionnaires were interviewer-administered.

**Table 1a:** Socio-demographic characteristics of respondents by location

Variables	Urban N=550 n (%)	Rural N:550 n (%)	Total N=1100 n (%)	X <sup>2</sup>	p-value
<b>Sex</b>					
Male	187(34.0)	195(35.5)	382(34.7)	0.257	0.612
Female	363 (66.0)	355 (64.5)	718 (65.3)		
Total	550(100.0)	550(100.0)	1100(100.0)		
<b>Age (years)</b>					
≤ 20	0 (0.0)	25 (4.5)	25 (2.3)	52.002	0.000*
21-30	170 (30.9)	240 (34.6)	410 (37.3)		
31-40	194 (35.3)	152 (27.6)	346 (31.5)		
41-50	125 22.7	85 (15.5)	210 (19.1)		

51-60	60 (10.9)	48(8.7)	108 (9.8)		
>60	1 (0.2)	0 (0.0)	1 (0.1)		
Total	550(100.0)	550 (100.0)	1100(100.0)		
Mean (SD)	37.09 (10.00)	34.99 (10.71)	36.04 (10.41)		
<b>Marital status</b>					
Single	74 (13.5)	240 (43.6)	314 (28.5)	243.905	0.000*
Married	422 (76.7)	196 (35.0)	618 (56.2)		
Separated	0 (0.0)	60 (10.9)	60 (5.5)		
Divorced	0 (0.0)	12 (2.2)	12 (1.1)		
Widowed	54 (9.8)	42 (7.6)	96 (8.7)		
Total	550(100.0)	550(100.0)	1100(100.0)		
<b>Highest Educational Level</b>					
No formal education	36 (6.5)	97 (17.6)	133(12.1)	40.391	0.000*
Primary education	72 (13.1)	90 (16.4)	162 (14.7)		
Junior secondary	48 (8.7)	48 (8.7)	96 (8.7)		
Senior secondary	238 (43.3)	205 (37.3)	443 (40.3)		
Tertiary	156 (28.4)	110 (20.0)	266 (24.2)		
Total	550(100.0)	550(100.0)	1100(100.0)		

\*Statistically significant

Table 1a shows the socio-demographic characteristics of the respondents in urban & rural locations. There were more females than males in both the urban 363(66.0%) and rural centers 355(64.5%).

The commonest age group among the urban respondents was the age group 21-30 years, 170 (30.9%), the same age group was also the commonest among the rural respondents 240 (43.6%). The mean age of the urban respondents 37.09 ( $\pm 10.00$ ) was higher than the mean age of the rural respondents 34.99 ( $\pm 10.71$ ). A higher proportion of the urban respondents were married 422 (76.7%) compared with 196 (35.0%) among the rural respondents ( $p = 0.000$ ).

A higher proportion 156(28.4%) of the urban respondents had tertiary education compared with the rural respondents 110 (20.0%) ( $p = 0.000$ ).

**Table 1b:** Socio-demographic characteristics of respondents by location

Variables	Urban N=550 n (%)	Rural N:550 n (%)	Total N=1100 n (%)	X <sup>2</sup>	p-value
<b>Religion</b>					
Christianity	369 (67.1)	493 (89.6)	862 (78.4)	131.506	0.000*
Islam	145 (26.4)	12 (2.2)	157 (14.3)		
ATR	36 (6.5)	45 (8.2)	81 (7.4)		
Total	550(100.0)	550(100.0)	1100(100.0)		
<b>Ethnicity</b>					

Igbo	345 (62.7)	536 (97.5)	88 (80.1)	209.463	0.000*
Hausa	108 (19.6)	12 (2.2)	120 (10.9)		
Yoruba	61 (11.1)	2 (0.4)	63 (5.7)		
Others	36 (6.5)	0 (0.0)	36 (3.3)		
Total	550(100.0)	550(100.0)	1100(100.0)		
<b>Occupation</b>					
Civil servant	122 (22.2)	120 (21.8)	242 (22.0)	239.757	0.000*
Business owner	356 (64.7)	146 (26.5)	502 (45.6)		
Artisan	12 (2.2)	73 (13.3)	85 (7.7)		
Unemployed	48 (8.7)	78 (14.2)	126 (11.5)		
Student	12 (2.2)	133 (24.2)	145 (13.2)		
Total	550(100.0)	550(100.0)	1100(100.0)		

\*Statistically Significant

Table 1b shows more information on respondents' sociodemographic characteristics.

The proportion 145 (26.4%) of urban respondents that were Moslems was higher than the proportion 12 (2.2%) of rural respondents that were Moslems ( $p = 0.000$ ).

A higher proportion 108 (19.6%) of the urban respondents were of the Hausa tribe compared with the proportion 12(2.2) among the rural respondents ( $p = 0.000$ ).

A higher proportion 356 (64.7%) of the urban respondents were business owners compared with the rural respondents 146 (26.5) ( $p = 0.000$ ).

**Table 2: Respondents' satisfaction with waiting time by location**

Variables	Urban N=550 n (%)	Rural N=550 n (%)	Total N=1100 n (%)	X <sup>2</sup>	p-value
<b>Satisfaction with waiting time in getting registered</b>					
Satisfied	427 (77.6)	279 (50.7)	706 (64.2)	86.619	0.000*
Unsatisfied	123 (22.4)	271 (49.3)	394 (35.8)		
Total	550 (100.0)	550 (100.0)	1100 (100.0)		
<b>Waiting time before seeing doctor</b>					
Satisfied	438 (79.6)	180 (32.7)	618 (56.2)	245.808	0.000*
Unsatisfied	112 (20.4)	370 (67.3)	482 (43.8)		
Total	550 (100.0)	550 (100.0)	1100 (100.0)		
<b>Waiting time for tests to be done</b>					
Satisfied	427 (77.6)	180 (32.7)	607 (55.2)	245.808	0.000*
Unsatisfied	123 (22.4)	370 (67.3)	493 (44.8)		
Total	550 (100.0)	550 (100.0)	1100 (100.0)		
<b>Waiting time for test results</b>					
Satisfied	416 (75.6)	180 (32.7)	596 (54.2)	203.958	0.000*
Unsatisfied	134 (24.4)	370 (67.3)	504 (45.8)		
Total	550 (100.0)	550 (100.0)	1100 (100.0)		
<b>Waiting time to collect drugs</b>					
Satisfied	405 (73.6)	180 (32.7)	585 (53.2)	184.839	0.000*
Unsatisfied	145 (26.4)	370 (67.3)	515 (46.8)		
Total	550 (100.0)	550 (100.0)	1100 (100.0)		



Average satisfaction with waiting time					
Satisfied	405 (73.6)	180 (32.7)	585 (53.2)	184.839	0.000*
Unsatisfied	145 (26.4)	370 (67.3)	515 (46.8)		
Total	550 (100.0)	550 (100.0)	1100 (100.0)		

\*Statistically significant

Table 2 shows respondents' satisfaction with waiting time by location. Among the urban respondents, 427 (77.6%) were satisfied with the waiting time to get registered, compared with only 50.7% that were satisfied among the rural respondents. (p=0.000). Among the urban respondents, 438 (79.6%) were satisfied with the waiting time before seeing a doctor, compared with 32.7% of the rural respondents. (p=0.000). Among the urban respondents, 427 (77.6%) were satisfied with the waiting time for tests to be done, compared with 32.7% of the rural respondents. (p=0.000). Among the urban respondents, 416 (75.6%) were satisfied with the waiting time for test results, compared with 32.7% of the rural respondents. (p=0.000). Among the urban respondents, 405 (73.6%) were satisfied with the waiting time to collect drugs, compared with 32.7% of the rural respondents. (p=0.000). Taking an average score for waiting time, a greater proportion of the urban respondents were satisfied with waiting for time 405 (73.6%), compared with 32.7% of the rural respondents. (p=0.000).

**Table 3:** Association between respondents' socio-demographic characteristics & their satisfaction with waiting time

Variables	Satisfaction with waiting for time frequency (%)			X <sup>2</sup>	p-value
	Satisfied	Unsatisfied	Total		
<b>Location</b>					
Urban	405(69.2)	145(28.2)	550(50.0)	184.839	0.000*
Rural	180(30.8)	370(71.8)	550(50.0)		
Total	585(100.0)	515(100.0)	1100(100.0)		
<b>Sex</b>					
Male	163(27.9)	219(42.5)	382(34.7)	25.971	0.000*
Female	422(72.1)	296(57.5)	718(65.3)		
Total	585(100.0)	515(100.0)	1100(100.0)		
<b>Age (years)</b>					
≤30	192(32.8)	243(47.2)	435(39.5)	27.431	0.000*
31-40	192(32.8)	154(29.9)	346(31.5)		
41-50	133(22.7)	77(15.0)	210(19.1)		
≥51	68(11.6)	41(8.0)	109(9.9)		
Total	585(100.0)	515(100.0)	1100(100.0)		
<b>Marital status</b>					
Single	119(20.3)	195(37.9)	314(28.5)	84.488	0.000*
Married	394(67.4)	224(43.5)	618(56.2)		
Separated	16(2.7)	44(8.5)	60(5.5)		
Divorced	1(0.2)	11(2.1)	12(1.1)		
Widowed	55(9.4)	41(8.0)	96(8.7)		
Total	585(100.0)	515(100.0)	1100(100.0)		
<b>Highest Education Level</b>					

No formal education	53(9.1)	80(15.5)	133(12.1)	34.168	0.000*
Primary	98(16.8)	64(12.4)	162(14.7)		
J.sec	59(10.1)	37(7.2)	96(8.7)		
S.sec	262(44.8)	64(12.4)	162(14.7)		
Tertiary	113(19.3)	153(29.7)	266(24.2)		
Total	585(100.0)	515(100.0)	1100(100.0)		
<b>Religion</b>					
Christianity	396(67.7)	466(90.5)	862(78.4)	89.130	0.000*
Islam	133(22.7)	24(4.7)	157(14.3)		
ATR	56(9.6)	25(4.9)	81(7.4)		
Total	585(100.0)	515(100.0)	1100(100.0)		
<b>Ethnicity</b>					
Igbo	406(69.4)	475(92.2)	881(80.1)	97.742	0.000*
Hausa	100(17.1)	20(3.9)	120(10.9)		
Yoruba	57(9.7)	6(1.2)	63(5.7)		
Others	22(3.8)	14(2.7)	26(3.3)		
Total	585(100.0)	515(100.0)	1100(100.0)		
<b>Occupation</b>					
Civil servant	136(23.2)	106(20.6)	242(22.0)	127.501	0.000*
Business	325(55.6)	177(36.4)	502(45.6)		
Artisan	28(4.8)	57(11.1)	85(7.7)		
Unemployed	74(12.6)	52(10.1)	126(11.5)		
Student	22(3.8)	123(23.9)	145(13.2)		
Total	585(100.0)	515(100.0)	1100(100.0)		

\*Statistically Significant

Table 3 shows the association between respondents' sociodemographic characteristics and their satisfaction with waiting time. A higher proportion of the respondents that were satisfied with waiting time were urban respondents 405(69.2%), compared with the 180(30.8%) rural respondents that were satisfied. ( $p = 0.000$ ).

A higher proportion of the respondents that were satisfied with waiting time were females 422 (72.1%), compared with the 163 (27.9%) males that were satisfied. ( $p = 0.000$ ).

A higher proportion of the respondents that were satisfied with waiting time were between the ages of 31-40 years 192 (32.8%), compared with those that were 51 years or older 68 (11.6%). ( $p = 0.000$ ).

A higher proportion of respondents that were satisfied with waiting time were married 394 (67.4%), compared with those that were single 119 (20.3%). ( $p = 0.000$ ).

A higher proportion of respondents that were not satisfied with waiting time had senior secondary education 262 (44.8%), compared with those that had no formal education 53 (9.1%). ( $p = 0.000$ ).

A higher proportion of the respondents who were satisfied with waiting time were Christians 396 (67.7%), compared with those who were Moslems 133 (22.7%). ( $p = 0.000$ ).

A higher proportion of the respondents who were satisfied with the waiting time were of the Igbo ethnic group 406 (69.4%), compared with those who were of the Yoruba ethnic group 57 (9.7%). ( $p = 0.000$ ).

A higher proportion of the respondents who were satisfied with the waiting time were business owners 325 (55.6%), compared with those who were artisans 28 (4.8%). ( $p = 0.000$ ).

**Table 4:** Adjusted odds ratio for predictors of satisfaction with waiting time.

Variable	Satisfaction with waiting time		
	Odds ratio	95% Confidence Interval	P-value
<b>Location</b>			
Urban	4.139	2.945 – 5.817	0.000*
Rural	1.000		
<b>Sex</b>			
Female	3.153	2.270 – 4.380	0.000*
Male	1.000		
<b>Age (years)</b>			
>40 years	1.528	1.079 – 2.165	0.017*
≤40years	1.000		
<b>Marital status</b>			
Currently married	1.663	1.219 – 2.268	0.001*
Currently unmarried	1.000		
<b>Highest Educational Level</b>			
≥ S. Sec	1.590	1.180 – 2.143	0.002*
≤ J. Sec	1.000		
<b>Religion</b>			
Christianity	0.332	0.202 – 0.547	0.000*
Others	1.000		
<b>Tribe</b>			
Igbo	1.072	0.618 – 1.861	0.804
Others	1.000		
<b>Occupation</b>			
Employed	1.452	1.030 – 2.047	0.033*
Unemployed / students	1.000		

\*Statistically Significant

Table 4 shows adjusted odds ratios for predictors of satisfaction with waiting time.

The urban respondents were four times more likely to be satisfied with waiting time compared with the rural respondents [OR: 4.139 (95% CI: 2.945-5.817)].

The female respondents were thrice likely to be satisfied with waiting time compared with the male respondents [OR: 3.153 (95% CI: 2.270-4.380)].

The respondents who were greater than 40 years of age were more likely to be satisfied with waiting time compared with those who were 40 years or less [OR: 1.528 (95% CI:1.079-2-165)].

The respondents who were currently married were more likely to be satisfied with waiting time compared with those who were not married [OR: 1.663 (95% CI:1.219-2.268)].

Respondents who had at least senior secondary education were more likely to be satisfied compared with those who had the only junior secondary education or less [OR: 1.590 (95% CI:1.180-2.143)].

Respondents who were Christians were less likely to be satisfied with waiting time compared with those who were not Christians [OR: 0.332 (95% CI: 0.202-0.547)].

Respondents who were employed were more likely to be satisfied with waiting time compared with those who were unemployed [OR: 1.452 (95% CI: 1.030-2.047)].

## Discussion

In this study, there were more female respondents (65.3%) than male respondents (34.7%). This is similar to the findings in an HIV treatment center in Enugu, Nigeria.<sup>30</sup> Also in other HIV treatment centers in Nigeria.<sup>31,32,33</sup> This may be due to the higher prevalence of HIV among females in Nigeria than males, as reported in the 2012 National HIV and AIDS and Reproductive Health survey (NARHS 2012) conducted by the Federal Ministry of Health.<sup>34</sup>

The commonest age group in this study was the 21-30 years age group (37.3%). This is dissimilar to the findings at an HIV treatment center in Oyo, Nigeria was the commonest age group was the 30-39 age group<sup>33</sup>. Oladapo et al also reported 30-39 years age group as the commonest age group at an HIV treatment center in Ogun state, Nigeria.<sup>32</sup> According to the 2010 National HIV seroprevalence sentinel survey, the age group 30-34 years had the highest prevalence both in the Southeast zone of Nigeria and nationally.<sup>35</sup>

The majority of the respondents in this study were married (56.2%) this is similar to the findings of a study done in Enugu<sup>30</sup> and a study done at Ibadan.<sup>31</sup> This is dissimilar to the 2010 National HIV Seroprevalence sentinel survey which reported that the prevalence of HIV was higher among the single women than the married.<sup>35</sup> This higher proportion of married respondents may be because married HIV positive individuals that are concordant may feel less stigmatized to access care compared with single people who will feel more stigmatized because of the fear of losing possible partners. The commonest highest educational qualification among the

respondents in this study is secondary education (40.3%). This is dissimilar to the finding among HIV-positive clients at a tertiary hospital in Anambra State which reported that majority of the respondents had primary education.<sup>36</sup> It is also dissimilar to the finding of a study among HIV-positive respondents at Uyo, Southern Nigeria where the majority of the respondents had tertiary education.<sup>37</sup> The difference in the highest educational level of the respondents compared with the previous study by Nwabueze et al in the same state may be because of increased acceptance of education over time considering that the previous study was done in 2009. As high as 45.6% of the respondents in this study are business owners. This is similar to the finding of a study in Enugu also in Southeast Nigeria,<sup>30</sup> but dissimilar to the finding of a study in Ibadan Southwest Nigeria.<sup>33</sup> This may be because the people of Southeast Nigeria are known to engage in trading more than the other geo-political zones in the country.

In this study, a higher proportion of the respondents were satisfied with the waiting time (53.2%). This is much higher than the finding of a study done in a rural HIV treatment center in Oyo State, Nigeria where only 28.6% of the respondents were satisfied with the waiting time.<sup>38</sup> Similarly, a study was done in urban Abuja, Nigeria also reported that only 27.4% of the patients were satisfied with the waiting time.<sup>13</sup> A very similar satisfaction with waiting time (50%) was reported in an urban center in Sokoto, Nigeria.<sup>39</sup> A study in urban Ethiopia reported that 57.2% of the respondents were satisfied with waiting time<sup>40</sup> which is similar to the finding of the index study but much

higher than the 29.6% reported by a study in rural Mozambique.<sup>41</sup> The differences in the proportion of respondents satisfied with waiting time in the different study sites may be due to different staff strengths, differences in protocols and staff attitudes to work. In the index study, more respondents were satisfied with waiting time in the urban (73.6%) centers than in the rural centers. This may be because urban areas in Nigeria have more health facilities hence less population of clients in each facility. Also, health workers tend to concentrate more in urban areas than rural areas hence the rural centers may be understaffed. This study has shown that the respondents in the urban HIV treatment centers were more satisfied than the respondents in the rural HIV treatment centers with the waiting time in the HIV treatment centers.

We, therefore, recommend as follows:

To the Government:

1. The government should provide more HIV treatment centers in the rural areas so that fewer clients will access care in each of the centers, this will surely reduce waiting time of clients.
2. The government should create special incentives for health workers in the rural areas so as to attract more health workers to the rural areas. An example could be, paying them a substantial rural allowance that will be significant enough to encourage health workers to decide to relocate to the rural areas and work in the rural facilities. If there are more health workers in the rural centers, the clients will likely spend less time at the centers.

To the management of HIV treatment centers:

1. More health workers should be employed especially in the pharmacy section so as to reduce the waiting time in the centers.
2. Management of HIV treatment centers should organize periodic client satisfaction surveys in their centers to

find out areas that need attention in order to improve clients’ satisfaction with their services.

### Competing Interests

Authors have declared that no competing interests exist. We also want to declare that this study was part of a bigger study which was conducted in partial fulfillment of the requirements for the award of the Fellowship of the West African College of Physicians. The remaining parts of the big study are also in different stages of the process of publication.

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