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FACTORS INFLUENCING CLIENT SATISFACTION WITH ANTIRETROVIRAL THERAPY IN A TERTIARY HEALTH FACILITY, KEBBI STATE, NORTHWEST, NIGERIA: IMPLICATIONS FOR ONE HEALTH-ORIENTED HIV CARE

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Abstract

Client satisfaction is a measure of adherence to care and support, a health care outcome and a predictor of treatment utilization contributing to resilient health systems and improved population-level HIV outcomes; however, gaps have been identified in the level of client satisfaction in ART clinics across sub-Saharan Africa. This study aims to identify factors associated with client satisfaction with antiretroviral therapy.

A cross-sectional study was conducted among 213 clients attending the ART clinic of the facility. Respondents were selected using a systematic sampling technique from the age-sex register. Data were collected using a validated, interviewer-administered, semi-structured questionnaire. Descriptive and inferential analyses were performed using SPSS version 27, and a p-value less than 0.05 was considered statistically significant.

The overall level of satisfaction with ART services among the respondents was high, 207 (97.2%). Overall, 188 (88.3%) of the respondents were satisfied with ART. Family support and disclosure were the only factors statistically significantly associated with ART treatment satisfaction (p-value 0.002 and 95% CI: 0.109 – 0.627, p-value 0.039 and 95% CI: 0.140 – 0.907), respectively.

Family support and disclosure were statistically significant factors associated with satisfaction with ART treatment. ART care providers need to encourage disclosure of status to trusted individuals continually, and the government, NGOs and policymakers need to continually enlighten the populace on the need to provide support to HIV positive people to enhance their well-being and treatment success.

Keywords: Factors, Client satisfaction, Antiretroviral therapy

Introduction

Client treatment satisfaction is a construct that reflects clients' treatment expectations in addition to their experiences(Peltzer & Phaswana-Mafuya, 2012).Satisfaction with care is an outcome of client experiences and assessment of the service provider, which depends on cognition (rights and health literacy), affective status (expectations and emotionality), past experiences of clients, and access to healthcare (acceptability and availability) (Yakob & Ncama, 2016). The concept of 'access' includes client-based dynamics such as preferences and expectations, which are major variations in perceptions of the quality of care, treatment risks, and fairness of the cost of services (Yakob & Ncama, 2016). Therefore, client satisfaction is a necessary goal of health service provision (Yakob & Ncama, 2016). The technique care is provided and interactions with healthcare environments are the responsiveness of the health system, and are components of access that affect clients' experiences of healthcare (Peltzer & Phaswana-Mafuya, 2012). Despite client satisfaction being considered to be a measure of adherence to care and support, a health care outcome and a predictor of treatment utilization, a study in sub-Saharan Africa reported that about one in two clients were not satisfied with the level of care and services received in the ART clinic (Abdissa et al., 2024).

HIV/AIDS, being a complex health problem, requires client-centered, comprehensive, and effective treatment and care services (HATCS) to ensure that those infected benefit maximally from healthcare services (Yakob & Ncama, 2016). Recent studies have illustrated that retention in care, treatment adherence, and outcomes are affected by the level of client satisfaction and HATCS' responsiveness to their preferences and demands (Dang et al., 2013; Peltzer & Phaswana-Mafuya, 2012).

One Health approach involved a collaborative, multisectoral, and transdisciplinary approach—bringing diverse people together to achieve optimal health outcomes recognizing the interconnection between people, animals, plants, and their shared environment (Mackenzie & Jeggo, 2019). From a One Health perspective, enhancing client satisfaction with ART is essential not only for individual treatment adherence but also for broader HIV control and community health outcomes. Encouraging disclosure and family support strengthens adherence, contributing to resilient health systems and improved population-level HIV outcomes.

Satisfaction with services is a qualitative yet essential measure of the compatibility between the care provider and the client, and it also indicates treatment outcome (Yakob & Ncama, 2016). Thus, it enables healthcare facilities to quantify and improve their performance (Yakob & Ncama, 2016). Client satisfaction is the best predictor of the client's health service experience (Halili et al., 2024). Prompt client care and adopting a considerate and compassionate approach to enhancing client satisfaction will have a constructive impact on service delivery (Halili et al., 2024).

Thus, the objective of this study is to identify the factors that are associated with clients' satisfaction with antiretroviral therapy at the Federal Teaching Hospital, Birnin Kebbi.

Methods

This cross-sectional study was conducted in the ART clinic of the Department of Community Health, Federal Teaching Hospital. The study was conducted among HIV-positive individuals who had consented to participate. Ethical clearance for the study was obtained from the Health Ethics Research Committee of the Federal Teaching Hospital, Birnin Kebbi, Kebbi State. Birnin Kebbi is the capital of Kebbi State, Nigeria, located in Nigeria's northwest geopolitical zone. It is one of the seven north-central states of Nigeria. It has a landmass of 1,037 km2 and is geographically located at latitude 12° 27' 36" North of the Equator and longitude 4° 11' 24" East of the Prime Meridian on the Map of the World. The FTH, initially a Federal Medical Center, is a tertiary health institution and is one of the MDAs (parastatal) under the Federal Ministry of Health. It was established under Decree 10 of 1985, i.e., the University Teaching Hospitals (Reconstitution of Boards) Act, Cap 462, on 6th June 2000, to provide specialized medical care for the people of Kebbi.

All HIV-positive clients who were at least 18 years old and had been on ART for at least a year were included in the study. All HIV-positive clients who were severely sick or with debilitating illness or who had visual, hearing or mental impairment were excluded from the study.

The sample size was determined using the sample size determination for a cross-sectional study

$n = \frac{Z_{1-\alpha/2}^2 P(1-P)}{d^2}$ (Charan & Biswas, 2013).

Where:

n= Sample size

z= Is standard normal variate (at 5% type 1 error (P<0.05). It is 1.96

p = Expected proportion in population based on previous studies or pilot studies.

d = Absolute error or precision – which is set at 5%

the sample size for this study was n = 1.96^2 x 0.55 (1 – 0.55)/0.05^2. which equaled 194 based on the proportion of clients who were satisfied with ART services, as found in a similar previous study to be 55%.(Abdissa et al., 2024). The sample size was adjusted to account for a non-response rate of 10%. Therefore, the minimum sample size for the study was 194 x 110/100 = 213. The respondents were selected using a systematic sampling technique from the age-sex register until the sample size was reached.

The study instrument was a validated interviewer-administered semi-structured questionnaire with sections on socio-demographic characteristics and clients' satisfaction. The study instrument included two questions about overall care received in the clinic: 1) "Overall, how do you feel about the care you got at this clinic in the past 12 months?" and 2) "Would you recommend this clinic to other patients with HIV?" These questions were adapted from validated patient self-report satisfaction study instruments (Andrew & Crandall, 1979; CAHPS, 2024).Each question was 50% for a yes answer, making a total of 100%. A score of 51% to 100% indicated a high level of satisfaction, and

50% and below indicated a low level of satisfaction. Also, the validated Treatment Satisfaction Questionnaire for Medications (TSQM) version 1.4 (Atkinson et al., 2004) was used to assess clients' treatment satisfaction. The purpose was to measure patient satisfaction with medication, either the last time the patient took it or during the previous 2 or 3 weeks. The TSQM (version 1.4) has 14 questions divided into four subgroups: effectiveness (items 1 to 3), side effects (items 4 to 8), convenience (items 9 to 11), and global satisfaction (items 12 to 14). The responses were measured on a Likert-type scale of 5 or 7 points, except for question 4 in the side effects subscale, which was a yes/no question about the presence of side effects. If the answer to this question is no (no side effects reported by the participant), other questions in the side effects subscale were asked (questions 5 to 8), and the total score for this subscale was automatically computed as the maximum of 100. The scores were calculated for each subgroup, ranging from 0 to 100, with higher scores indicating greater patient satisfaction with the medication. The study's instrument was pretested with at least 10% of the minimum sample size at a comprehensive ART facility at least 10 km away from the nearest selected comprehensive ART facility.

The completed questionnaires were thoroughly checked. Errors were corrected, and cleaning was performed where necessary. Cleaned and edited data were entered into a personal computer and analyzed using SPSS/IBM software version 27 for Windows. Double data entry was performed to ensure accuracy. Data was presented in prose, frequency, proportion, tables, and charts. Variables were summarized with percentages, bar charts, mean, and standard deviation. Chi-square, Fisher's exact test, and two-sample t-tests were applied to test for significant associations between socio-demographic details and client satisfaction. A Chi-square was used to determine the socio-demographic factors associated with client satisfaction. A confidence interval of 95% was used, and a p-value of < 0.05 was considered statistically significant.

Results

Table 1 shows the sociodemographic characteristics of the respondents. The age group of the respondents ranged from 18 to 71 years, with a mean age ± SD of 35 ± 9.7. The majority of the respondents were in the age group 31 – 40 years, 85 (39.9%). Most of the respondents were female, 127 (59.6%). Married women were the majority of the participants, 167 (78.4%). Most of the respondents were Hausa, 144 (67.6%). The majority of the respondents were Muslims, 169 (79.3%). Most of the participants live in urban areas, 129 (60.6%). The majority of the respondents were unemployed, 117 (54.9%). The highest level of education for the majority of respondents was secondary school, 99 (46.5%). Most of the respondents have family support, 170 (79.8%). The majority of the respondents disclosed their HIV status, 178 (83.6%), and the disclosure was mainly to their spouse, 78 (43.8%). Most of the respondents had been on

antiretroviral for more than 36 months, 142 (66.7%). The majority of the respondents neither drink alcohol, 193 (90.6%) nor smoke cigarette, 194 (91.1%). Only few of the respondents were hypertensive, 12 (5.6%), or diabetes, 16 (7.5%).

Table 2 expresses the clients' satisfaction with the service received at the ART clinic. The majority of the clients feel good about the service they received at the ART clinic, 208 (97.7%), and 209 (98.1%) of the clients were willing to recommend the clinic to other HIV clinic clients. The overall level of satisfaction with ART services among the respondents was high, 207 (97.2%).

Table 3 shows that the majority of respondents, 126 (59.2%), were satisfied with ART's ability to prevent or treat their condition. Most participants were very satisfied with the ART's ability to relieve their symptoms, 170 (79.8%). The majority of respondents were very satisfied with the time it takes for ART to start working, 104 (48.8%). Only very few respondents complained of side effects of ART, 2 (0.9%). The majority of the respondents found it very easy to take ART in its current form, 148 (69.5%). The majority of participants found it very convenient to take ART as instructed, 117 (54.9%). Most of the respondents were very confident that ART is good for them, 152 (71.4). The majority of the respondents were very certain that the good things about ART outweigh the bad, 142 (66.7%). Taking everything into account, 146 (68.5%) were very satisfied with ART.

Overall, 188 (88.3%) of the respondents were satisfied with ART.

Table 4 show the bivariate analysis of the factors associated with ART treatment satisfaction among the respondents. The age, gender, marital status, ethnicity, religion, area of residence, occupation, educational level, alcohol intake, cigarette smoking, duration on ART, history of hypertension and history of diabetes were not statistically significantly associated with ART treatment satisfaction (p- value 0.479, p-value 0.635, p-value 0.680, p-value 0.763, p-value 0.778, p- value 0.351, p- value 0.269, p-value 0.645, p-value 0.313, p-value 0.558, p value 0.693 and p-value 0.444), respectively. Family support and disclosure were the only factors statistically significantly associated with ART treatment satisfaction (p-value 0.002 and 95% CI: 0.109 – 0.627, p-value 0.039 and 95% CI: 0.140 – 0.907), respectively.

Discussion and Implication

Our study revealed high overall client satisfaction with the ART services rendered at the Federal Teaching Hospital, Birnin Kebbi. Similarly, the overall treatment satisfaction was also high among the clients. Family support and disclosure were the factors which were statistically significantly associated with ART treatment satisfaction among the respondents.

Overall, 97.2% of the respondents were satisfied with ART services. The high level of satisfaction in this study was consistent with that of a study in Bamenda, Cameroon (91.2%), (Wung et al., 2016) Tigray region, Ethiopia (89.6%), (Tessema & Adane, 2015) Addis Ababa public hospitals (85.5%),(Mindaye & Taye, 2012) and Sidamma hospital, southern Ethiopia (85.5%).(Belay, 2013). However, this study found a much higher level of satisfaction among the clients. This difference may be related to the differing domains used in assessing client satisfaction levels. Our study used only two domains, whereas others used multiple domains, with some of these domains providing a similarly high level of client satisfaction. The measurement of patient satisfaction has vital implications for service providers and planners in identifying gaps and enhancing the quality of healthcare services.(Adissu et al., 2020).

HIV treatment satisfaction is a vital measure for assessing PLWH responses to health services (Akbulut et al., 2024). In this study, the participants' responses to the Treatment Satisfaction Questionnaire indicate high levels of satisfaction with their current antiretroviral therapy. Our finding is consistent with that of a similar study conducted in Türkiye (Akbulut et al., 2024). This high level of treatment satisfaction is not surprising because HIV treatment is supported by implementing partners with extensive donor funds, ensuring treatment and care are provided by well-trained, experienced healthcare providers who follow the national guidelines adopted from the World Health Organization recommendations. Moreover, the speed and effectiveness in viral suppression, the enhanced ease of use, and reduced adverse effects of the current regimen may be important in greater satisfaction with the present ARTs compared to older treatments (Hikasa et al., 2024).

Analysis of the factors related to respondents' satisfaction with ART treatment revealed that family support and disclosure were statistically significant factors associated with satisfaction. These findings highlight the importance of family support and HIV status disclosure for treatment success and overall health outcomes in HIV-positive individuals. Patients are expected to be supported and managed by their respective family members, allowing them to understand the management of the disease and providing an environment free from stigma.(Oche et al., 2013) It is also important to recognize that social support has been reported as effective in managing chronic diseases, even when these effects are not statistically significant.(Oche et al., 2013)

One of the strengths of our study is that we utilized skilled health workers who are thoroughly trained on the data collection process to collect qualitative data from the respondents. Another strength is the very high rate of client satisfaction with the services and ART medication. This provides credence and insight into the success so far recorded nationally for the epidemic control of HIV.

The limitations of the study include the conduct of the study in a single tertiary facility which makes it difficult to generalize the findings. It will be necessary to conduct a multicenter study to enable the generalization of the study. Additionally, as the study is a cross-sectional study, a causal relationship could not be established between the factors associated with treatment satisfaction. To establish causality, a prospective study is necessary to examine treatment satisfaction in relation to the measured variables.

Conclusion

Overall, this study demonstrated a high level of satisfaction with both the services provided at the ART clinic and the treatment received. Family support and disclosure were identified as statistically significant factors associated with ART treatment satisfaction. From a One Health perspective, enhancing client satisfaction is critical not only for individual adherence but also for community-level HIV control and health system resilience. HIV programs should continue to promote family involvement and support, as well as encourage HIV-positive individuals to disclose their status to trusted persons, thereby strengthening adherence, reducing viral transmission, and contributing to integrated, sustainable HIV care.

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Table 1a: Socio-demographic characteristics of the respondents

Variables	Frequency n= 213	Percentage % = 100
Age group		
18 - 30	77	**36.2**
31 - 40	85	**39.9**
41- 50	42	**19.7**
51 - 60	7	**3.3**
>60	2	**0.9**
Mean ± SD	35 ± 9.7	
Gender		
Female	127	**59.6**
Male	86	**40.4**
Marital status		
Married	167	**78.4**
Single	29	**13.6**
Divorce	17	**8.0**
Ethnicity		
Hausa	144	**67.6**
Fulani	29	**13.6**
Zuru	21	**9.9**
Yoruba	12	**5.6**
Igbo	3	**1.4**

Others	4	**1.9**
Religion		
Islam	169	**79.3**
Christianity	42	**19.7**
Traditional	2	**0.9**
Resident		
Urban	129	**60.6**
Rural	84	**39.4**
Occupation		
Unemployed	117	**54.9**
Civil servant	54	**25.4**
Privately employed	42	**19.7**
Educational level		
Secondary	99	**46.5**
Primary	51	**23.9**
None	41	**19.2**
Tertiary	22	**10.3**
Family support		
Yes	170	**79.8**
No	43	**20.2**

Table 1b: Socio-demographic characteristics of respondents

Variables	Frequency n = 213	Percentage % = 100
Disclosure		
Yes	178	**83.6**
No	35	**16.4**
The person to whom the HIV status was disclosed		
Spouse	78	**43.8**
Family member	74	**41.6**
Other relative	21	**11.8**
Friend	5	**2.8**
Duration on ART		
12 – 24 months	14	**6.6**
25 – 36 months	57	**26.8**
Greater than 36 months	142	**66.7**
Alcohol intake		

Yes	20	**9.4**
No	193	**90.6**
Cigarette smoking		
Yes	19	**8.9**
No	194	**91.1**
History of hypertension		
Yes	12	**5.6**
No	201	**94.4**
History of diabetes		
Yes	16	**7.5**
No	197	**92.5**

Table 2: Clients' satisfaction with the service received

Variable	Frequency n = 213	Percentage % = 100
Overall, how do you feel about the care you got at this clinic in the past 12 months?		
Good	208	**97.7**
Bad	5	**2.3**
Would you recommend this clinic to other patients with HIV?		
Yes	209	**98.1**
No	4	**1.9**
Level of client satisfaction with the ART service		
High	207	**97.2**
Low	6	**2.8**

Table 3a: clients' treatment satisfaction

Variables	Frequency n = 213	Percentage % = 100
How satisfied or dissatisfied are you with the ability of the ART to prevent or treat your condition		
Extremely dissatisfied	5	**2.3**
Very dissatisfied	5	**2.3**
Dissatisfied	5	**2.3**

Somewhat satisfied	4	**1.9**
Satisfied	126	**59.2**
Very satisfied	61	**28.6**
Extremely satisfied	7	**3.3**
How satisfied or dissatisfied are you with the way ART relieve your symptoms		
Extremely dissatisfied	1	**0.5**
Very dissatisfied	1	**0.5**
Somewhat satisfied	7	**3.3**
Satisfied	22	**10.3**
Very satisfied	170	**79.8**
Extremely satisfied	12	**5.6**
How satisfied or dissatisfied are you with the time ART starts working		
Extremely dissatisfied	3	**1.4**
Dissatisfied	2	**0.9**
Somewhat satisfied	6	**2.8**
Satisfied	89	**41.8**
Very satisfied	104	**48.8**
Extremely satisfied	9	**4.2**
Do you feel any side effect from the medication		
No	211	**99.1**
Yes	2	**0.9**
How bothersome are the side effect n = 2		
Somewhat bothersome	1	**0.5**
A little bothersome	1	**0.5**
To what extent does the side effect interfere with physical health n = 2		
Minimally	1	**0.5**
Not at all	1	**0.5**

Table 3b: clients' treatment satisfaction

Variables	Frequency n = 213	Percentage % = 100

To what extent does the side effect interfere with your mental health n = 2		
Minimally	1	**0.5**
Not at all	1	**0.5**
To what extent does the side effect affect your overall satisfaction with ART n = 2		
Minimally	1	**0.5**
Not at all	1	**0.5**
How easy or difficult is it to take ART in the current form		
Extremely difficult	1	**0.5**
Difficult	6	**2.8**
Easy	37	**17.4**
Very easy	148	**69.5**
Extremely easy	21	**9.9**
How easy or difficult is it to plan to take ART		
Difficult	4	**1.9**
Somewhat easy	6	**2.8**
Easy	111	**52.1**
Very easy	74	**34.7**
Extremely easy	18	**8.5**
How convenient or inconvenient is it to take ART as instructed		
Extremely inconvenient	1	**0.5**
Inconvenient	3	**1.4**
Somewhat convenient	22	**10.3**
Convenient	47	**22.1**
Very convenient	117	**54.9**
Extreme convenient	23	**10.8**
How confident are you taking ART is good for you		
A little confident	7	**3.3**
Somewhat confident	13	**6.1**
Very confident	152	**71.4**
Extremely confident	41	**19.2**

Table 3c: clients' treatment satisfaction

Variables	Frequency n = 213	Percentage % = 100
How certain are you that the good things about ART outweigh the bad		
A little certain	5	**2.3**
Somewhat certain	17	**8.0**
Very certain	142	**66.7**
Extremely certain	49	**23.0**
Taking everything into account, how satisfied or dissatisfied		
Very dissatisfied	1	**0.5**
Dissatisfied	2	**0.9**
Somewhat satisfied	16	**7.5**
Satisfied	20	**9.4**
Very satisfied	146	**68.5**
Extremely satisfied	28	**13.1**
Overall treatment satisfaction (satisfaction > 50)		
Satisfied	188	**88.3**
Unsatisfied	25	**11.7**

Table 4a: Bivariate analysis of factors associated with treatment satisfaction

Variables	Not satisfied n = 213 (%)	Satisfied n = 213 (%)	Chi-square	P- value	95% CI
Age				0.479	
18 - 30	7 (3.3)	70 (32.9)			
31 - 40	12 (5.6)	73 (34.3)			
41 - 50	6 (2.8)	36 (16.9)			
51 - 60	0 (0.0)	7 (3.3)			
61 - 71	0 (0.0)	2 (0.9)			
Gender			0.225	0.635	0.341 – 1.929
Male	9 (4.2)	77 (36.2)			
Female	16 (7.5)	111 (52.1)			
Marital status			0.771^{LR}	0.680	

Variables	Not satisfied	Satisfied	Chi-square	P-value	95% CI	
Single	4 (1.9)	25 (11.7)				
Married	18 (8.5)	149 (70.0)				
Divorced	3 (1.4)	14 (6.6)				
Ethnicity			2.589[LR]	0.763		
Hausa	18 (8.5)	126 (59.2)				
Fulani	2 (0.9)	27 (12.7)				
Zuru	2 (0.9)	19 (8.9)				
Yoruba	1 (0.5)	11 (5.2)				
Ibo	1 (0.5)	2 (0.9)				
Others	1 (0.5)	3 (1.4)				
Religion			0.502[LR]	0.778		
Islam	20 (9.4)	149 (70.0)				
Christianity	5 (2.3)	37 (17.4)				
Traditional	0 (0.0)	2 (0.9)				
Residence			0.870	0.351	0.291 – 1.554	
Urban	13 (6.1)	116 (54.5)				
Rural	12 (5.6)	72 (33.8)				
Occupation			2.628	0.269		
Unemployed	10 (4.7)	107 (50.2)				
Civil servant	8 (3.8)	46 (21.6)				
Privately employed	7 (3.3)	35 (16.4)				
Educational level			1.143[LR]	0.767		
None	4 (1.9)	37 (17.4)				
Primary	5 (2.3)	46 (21.6)				
Secondary	12 (5.6)	87 (40.8)				
Tertiary	4 (1.9)	18 (8.5)				
Family support			9.968	**0.002**	0.109 – 0.627	
Yes	14 (6.6)	156 (73.2)				
No	11 (5.2)	32 (15.0)				

Table 4b: Bivariate analysis of the factors associated with the respondents' treatment satisfaction

Variables	Not satisfied n = 213 (%)	Satisfied n = 213 (%)	Chi-square	P- value	95% CI

Alcohol intake			0.213^{LR}	0.645	0.372 5.059	–
Yes	3 (1.4)	17 (8.0)				
No	22 (10.3)	171 (80.3)				
Cigarette smoking			1.018^{LR}	0.313	0.050 3.083	–
Yes	1 (0.5)	18 (8.5)				
No	24 (11.3)	170 (79.8)				
Disclosure			4.263^{LR}	**0.039**	0.140 0.907	–
Yes	17 (8.0)	161 (75.6)				
No	8 (3.8)	27 (12.7)				
Duration on ART			1.380	0.502		
12 – 24mth	3 (1.4)	11 (5.2)				
25 – 36mth	6 (2.8)	51 (23.9)				
>36mth	16 (7.5)	126 (59.2)				
History of hypertension			0.155^{LR}	0.693		
Yes	1 (0.5)	11 (5.2)				
No	24 (11.3)	177 (83.1)				
History of diabetes			0.586^{LR}	0.444		
Yes	1 (0.5)	15 (7.0)				
No	24 (11.3)	173 (81.2)				

*LR: likelihood Ratio