

Defaulting from Care and Quality of Life of Adults on Anti-Retroviral Treatment Program in Owo, Ondo State, Nigeria: A Case-Control Study

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Abstract

Background: In Nigeria, over 600,000 people living with HIV/AIDS (PLWHA) are on antiretroviral therapy (ART) as of 2020. Defaulters after commencing ART range between 10-36%. This study identified the factors associated with default from ART and quality of life among PLWHA.

Methods: An unmatched case-control study was conducted among 102 cases and 204 controls at the Federal Medical Centre, Owo, Ondo State, Nigeria. Cases were adults on ART who had defaulted from care and missed at least two consecutive appointments in the last year, while controls were adults on ART who had been consistent with clinic attendance for at least one year. Chi-square test, t-test, and binary logistic regressions were used to identify the predictors of default at a 95% confidence interval.

Results: Respondent's mean age was 41.4±10.3 years while 61.4% of the respondents were females. ART role in reducing viral load was described correctly by 66 (64.7%) cases and 155 (76.0%) controls (P=0.04). The quality of life in the physical domain was 15.3±3.4 among cases and 16.6±3.0 among controls (P=0.001). Defaulting from treatment was associated with non-disclosure of status to a partner (AOR: 2.8; CI 95%: 1.6-4.9), receiving fewer counseling sessions (AOR: 2.3; CI 95%: 1.3-4.2), poor perception of the quality of health care services (AOR: 2.6; CI 95%: 1.4-4.7), suboptimal quality of life (AOR: 2.7; CI 95%: 1.5-4.8) and the richer wealth index (AOR: 1.8; CI 95%: 1.01-3.18).

Conclusion: Inclusion of discussions on disclosure during counseling sessions was recommended to reduce default.

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Introduction

Antiretroviral therapy (ART) was a breakthrough in the management of people living with HIV and AIDS (PLWHA). ART has led to the reduction of mortality and the improvement of quality of life of PLWHA.^{1,2} About 19.5 million people living with HIV had received ART because of established HIV care and treatment programs as of 2016.³ This implies more than a 16-fold increase in

the number of people receiving ART between 2010 and 2016 in African countries.⁴ HIV/AIDS is a chronic illness and long-term retention in care is required.

Defaulting from care is associated with poor adherence to drug therapy and poor health outcomes, including rapid progression to an AIDS-defining illness and increased odds of mortality.⁵ HIV management aims to achieve near-perfect adherence leading to sustained virologic suppression.⁶ However,

virologic suppression is not achievable with poor compliance with treatment schedules.⁶ Failure to attend the clinic will lead to the inability to sustain life-long ART. Attendance at the clinic is challenging for many HIV patients for several reasons including long travel distances to health facilities. A meta-analysis involving 13 African countries found that approximately 40% of ART clients may have died or discontinued treatment within two years of initiating treatment.⁷ More than 36% of patients on treatment defaulted for 3 months in a treatment center in Nigeria.⁸

Findings of systematic reviews have revealed a decline in the proportion of defaulters from HIV care in Nigeria while they showed a critical strategy to sustain the 90:90:90 vision.⁹ Despite these improvements, defaulting from HIV care still exists.⁹ Defaulters are thus unable to benefit optimally from the improved quality of life which ART offers. The rate of fallout from the ART program is, therefore, of concern for the effective prevention and control of HIV/AIDS. To reduce defaulting from the ART program, the State government introduced tracing of defaulters, however, this could not be sustained due to limited resources. Hence, evidence-based information on the factors associated with default from care is required by program managers to address this problem and improve the quality of care. It will also guide clinicians with patient management and guide the content of counseling sessions. Thus, this study identified the factors associated with default and quality of care among adults on antiretroviral treatment programs in Ondo State.

Methods

Study Area

The study was carried out in the ART clinic of the Federal Medical Centre FMC, Owo. The clinic was established in February 2006. Persons registered in the ART clinic are individuals diagnosed to be HIV-positive. Pregnant women LWHA also join the adult ART clinic after being visited in antenatal clinic where prevention of mother to child transmission (PMTCT) takes place. Since the inception of the Clinic in 2013, between 20-25 new cases of HIV-positive patients have been visited each week. As of August 2020, about 1,713 PLWHA had enrolled for ART of which 1,330 continued the treatment without defaulting.

Study Design

An unmatched case-control study design was used.

Study Population

The population was HIV-positive clients on ART

not only those who defaulted from care but also HIV positive clients on treatment who were still in care. Cases were individuals who had missed at least two clinic appointments 12 months preceding the survey. Contacts of defaulters were obtained from the clinic records and was used for tracing study participants. Tracing of defaulter commenced with a telephone call to invite them to the hospital for counseling and recommencement of treatment. Defaulters who were unwilling to come to the ART clinic were visited at their homes. Controls were individuals who had been on ART for at least one year at the ART clinic and had never defaulted from care.

The inclusion criterion for cases was HIV-positive persons who were older than 18 years receiving ART at FMC, Owo, and had defaulted from clinic visits at least twice in 12 months preceding the study. The inclusion criterion for controls was HIV-positive persons receiving ART at FMC, Owo, aged 18 years and above. Respondents in this control group have been consistent with clinic attendance and had not defaulted in the last year. Persons who declined to give consent were excluded.

Sample Size Determination

A formula was used to determine sample size for a case-control study.¹⁰ The proportion of people on ART with secondary education who defaulted (0.36) was used for the sample size calculation.¹¹ The odds ratio used for the sample size calculation was 2, the standard normal deviate corresponding to 5% level of significance corresponding to a value of 1.96 was used, while power was set at 80%. A sample size of 102 was calculated for cases while the sample size for the control group was 204 (ratio 1: 2). Recruitment of one case to two controls continued until the sample size was attained.

Sampling Technique

Cases and controls were matched in a ratio of 1:2. Cases and controls that satisfied the inclusion criteria were matched using their year of enrolment in the ART program. For every case, two controls that joined the ART program of the Clinic at the same year were selected. The list of defaulters who have missed at least two clinic appointments was used to generate the case list. The recruitment of defaulters continued until the sample size was achieved.

Systematic random sampling was used to recruit controls. About 30 patients were visited per day in the ART Clinic. 10 out of 30 patients were recruited daily using a systematic sampling strategy. Hence, 10 cases were recruited daily and about 40 cases were recruited weekly as the clinic holds four days a week. Two hundred patients were recruited using the systematic sampling method as controls over five weeks.

Study Instrument

A semi-structured interviewer-administered questionnaire was used for data collection. The research instrument was translated to Yoruba, the predominant local language, to communicate easily and to promote respondents' understanding. The questionnaire had four sections and 79 items. The instrument collected the respondent's socio-demographic characteristics, social habits, interruption of treatment, knowledge on ART, reasons for missing clinic appointments, the effectiveness of ART, quality of life, and clinical parameters.

Quality of Life

Quality of life was assessed with the English version of the WHOQoL-HIV Bref instrument.¹² The instrument assessed QoL in six domains. The six domain scores denote respondent's perception of quality of life including Physical, Psychological, Level of Independence, Social Relationships, Environment, and Spirituality domains. Individual items are rated on a 5-point Likert scale, where 1 indicates low or negative perception and 5 indicates high or positive perception. For example, an item in the positive feeling facet asks, "How much do you enjoy life?" and the available responses are 1 (not at all), 2 (a little) 3 (a moderate amount), 4 (very much), and 5 (an extreme amount). Domain and facet scores are scaled in a positive direction where higher scores denote a higher quality of life. Some facets (pain and discomfort, negative feelings, dependence on medication, death, and dying) are not scaled in a positive direction, for these facets higher scores did not denote a higher quality of life. These facets were, therefore, recoded and rescored in reverse order so that high scores reflected better QoL. The WHOQOL-BREF has been validated in Nigeria; a reliability of greater than 0.8 was reported in a sample of Nigerians living with the human immunodeficiency virus.¹³

Data Collection

Before data collection commenced, the questionnaire was pretested at the State Hospital Owo ART clinic. Appropriate adjustments were made following the pre-test. Data collection took place in a private area at the ART clinic for persons retained in care (controls) while defaulters (cases) who did not agree to come to the hospital were interviewed at home. Questionnaires were administered by four trained research assistants, who could speak both English and Yoruba languages fluently. Research assistants were university graduates of both sexes with experience in data collection.

Data Management

The independent variables included socio-demographic characteristics, age, sex (male, female),

level of education (no formal education, primary, secondary, tertiary), marital status (single, married, separated, divorced), occupation (civil servant, trading, farming, artisan, teaching, student). The wealth index was developed using principal components analysis based on ownership of a house and other key assets. Each member was assigned the wealth quintile score of his or her household. However, a median regression factor was used to categorize the respondents into lower and upper categories. This was done instead of using Wealth quintiles (Q1= Lowest, Q2=Second, Q3= Middle, Q4= Fourth, Q5=Highest). Respondents who answered correctly more than 50% of the questions related to knowledge of HIV care were categorized to have good knowledge. Living 45 km or more from an HIV care center was categorized as far distance. Those whose quality of life was above the mean score were categorized as having 'good' QoL. Perceived quality of received services was categorized as 'optimal' for persons who responded correctly to all four questions about the quality of services received, and 'suboptimal' for those who scored less than 4. Being a case (defaulter) or control (retained in care) was the outcome of the study.

Data Analysis

Each domain of the QoL instrument has a total of four facets except the Psychological (which has five) and Environment domains (which has eight). Each facet of the domain was assumed to contribute equally to the domain score. Domain scores were calculated by computing the mean of the facet score within the domain. Scores were then multiplied by four; so that, domain scores ranged between 4 and 20.

Data were first cleaned and then analyzed using SPSS version 21.¹⁴ Descriptive statistics were used to summarize the data, while inferential statistics were used to compare associations between cases and controls. Frequencies and proportions were generated. Chi-square test was used to test for association between socio-demographic characteristics and the outcome variables, treatment-related factors, and the outcome variables, clinical status, and quality of life treatment knowledge with the outcome variable. Quality of life was compared between cases and controls using the t-test. Binary logistic regression was used to determine the predictors of default. Adjusted odds ratios (AORs) at 95% confidence interval (95% CI) were used to identify the predictors of defaulting.

Ethical Considerations

Ethical approval was obtained from the Federal Medical Centre Owo, health research ethics committee (FMC/OW/380/VOL.XXIX/07). De-identifiers were used to ensure the anonymity of respondents, while confidentiality of information obtained from respondents was assured. No harm or injury was

inflicted on respondents because of participation in this study.

Definition of Terms

Defaulters/Loss to follow up: Patients were classified as lost to follow-up if they had missed two or more consecutive clinic appointments or had not been visited for at least 2 or 3 months.¹⁵⁻¹⁷

Transferred out: Patients who permanently and formally reassigned to another ART unit and thus assumed to be on therapy were classified as transferred out.^{18, 19}

Quality of Life: Quality of Life (QoL) was defined as individuals' perceptions of their position in life in the context of the culture and value systems in which they live considering their goals, standards, expectations, and concerns.²⁰

Body mass index (BMI): BMI was calculated by dividing weight in kilograms by the square of height in meters. The classification of BMI was done as follows: underweight <18.5 kg/m², normal 18.6-24.9 kg/m², overweight 25.0-29.9 kg/m², obese ≥30 kg/m². Weight was measured using a bathroom scale which

was corrected for zero error before each measurement. Height was measured using an inelastic tape mounted on wood and put against a wall. Participants were requested to stand erect against a wall bare-footed.

Results

The average age of cases was 41±10.6 years, while the average age of controls was 41±10.6 years (P=0.94). Age distribution of cases and control are shown in Table 1. Among the cases, 38.2% (39) were in the 30-40 age group compared to 39.2% (80) controls. The socio-demographic characteristics of cases and controls are shown in Table 1. The cases and controls were similar in socio-demographic characteristics. Of 102 cases, 42.2% (43 cases) were younger than 40 years. Also, out of 204 controls, 39.3% (80) were younger than 40 years (P=0.62). Among the cases, females were 57.8% (59) and 63.2% (129 cases) among the controls (P=0.36). A similar proportion 25.2% (26) among cases and 25.5% (52) among the controls had no formal or primary education. Concerning marital status, 54.9% (56) cases were married compared to 53.9% (121) controls (P=0.14). Only 13.7% of the cases were Muslim while 10.3% of

Table 1: Socio-demographic characteristics of cases and controls on antiretroviral therapy in FMC, Owo-2015

Characteristics	Cases	Control	Total	Chi-square	P value
	102	204	306		
	n (%)	n (%)	n (%)		
Age group (in years)					
<30	13 (12.3)	16 (7.8)	29 (20.1)	0.25	0.62
30-39	27 (27.0)	70 (34.3)	97 (61.3)		
40-49	40 (39.2)	78 (38.2)	118 (77.4)		
50-59	16 (16.2)	30 (14.7)	46 (30.9)		
60+	6 (5.4)	10 (4.9)	16 (10.3)		
Sex					
Male	43 (42.2)	75 (36.8)	118 (38.6)	0.84	0.36
Female	59 (57.8)	129 (63.2)	188 (61.4)		
Highest level of education					
No formal/Primary	26 (25.5)	52 (25.5)	78 (25.5)	<0.001	1.00
Secondary/Tertiary	76 (74.5)	152 (74.5)	228 (74.5)		
Occupation					
Civil servant/Teaching	24 (23.5)	72 (35.3)	96 (31.4)	4.37	0.04*
Trading/Farming/Artisan	78 (76.5)	132 (64.7)	210 (68.6)		
Marital status					
Single	21 (20.6)	50 (24.5)	71 (23.2)	3.17	0.21
Married	56 (54.9)	121 (59.3)	177 (57.8)		
Separated/ Divorced / Widow/Widower	25 (24.5)	33 (16.2)	58 (19.0)		
Religion					
Christianity	88 (86.3)	183 (89.7)	271 (88.6)	0.79	0.37
Islam	14 (13.7)	21 (10.3)	35 (11.4)		
Living with spouse					
Yes	56 (54.9)	121 (53.9)	177 (57.8)	0.54	0.46
No	46 (45.1)	83 (40.7)	129 (42.2)		
Wealth index					
High	61 (59.8)	92 (45.1)	153 (50.0)	5.88	0.02*
Low	41 (40.2)	112 (54.9)	153 (50.0)		
Traveling time to hospital					
<30 minutes	27 (26.5)	69 (33.8)	96 (60.3)	1.71	0.19
30 minutes and above	75 (73.5)	135 (66.2)	210 (139.7)		

*Statistically significant

cases were Muslims among the controls (P=0.37). With regards to the wealth index, 59.8% of cases were of high status while only 45.1% belong to high status among controls (P=0.02).

The treatment knowledge of controls and cases on ART is shown in Table 2. Adequate knowledge of treatment was found in 86.3% of cases and 95.6% of controls (P=0.004). Knowledge of the importance of the CD4 count was by 52.9% of cases compared to 42.2% in the controls. Also, 27.5% of the cases thought ART can cure HIV compared to 29.4% of (60) controls. 52.0% of the cases (53) knew discontinuing ART affects the patients' health negatively while it was 44.1% for the controls (90).

Table 3 shows the clinical status and quality of life of case defaulters and non-defaulters on ART in

FMC, Owo-2015. 75.5% of cases, had less than three counseling sessions, while it was 58.3% among the control (P=0.003). Disclosure of status to the main caregiver was reported by 52.9% of cases and 74.5% of controls (P<0.001). Concerning the clinical stage at commencement of treatment, 82.4% of cases and 77.9% of controls were asymptomatic (P=0.37). Quality of life was suboptimal in 52 (51.0%) cases and 48 (23.5%) controls (P<0.001). Perceived quality of received treatment was poor in 39 (38.2%) cases and 50 (24.5%) controls (P=0.013).

The duration of time being on medication, where the diagnosis was made and satisfaction with the current health condition of defaulters and patients on ART are shown in Table 4. In more cases, 76 (65.7%) had spent less than five years on treatment compared to 119 (58.3%) controls. 186 patients (60.8%) did

Table 2: Correct knowledge on antiretroviral therapy Treatment by cases and controls in FMC, Owo-2015

Characteristics	Cases	Control	Total	Chi-square	P value
	102	204	306		
	n (%)	n (%)	n (%)		
Knowledge of ART					
Adequate	88 (86.3)	195 (95.6)	283 (92.5)	8.47	0.004*
Not adequate	14 (13.7)	9 (4.4)	23 (7.5)		
Importance of CD4					
Known	54 (52.9)	86 (42.2)	140 (45.8)	3.19	0.07
Not known	48 (47.1)	118 (57.8)	166 (54.2)		
ART can cure HIV					
Yes	28 (27.5)	60 (29.4)	88 (28.8)	0.13	0.72
No	74 (72.5)	144 (70.6)	218 (71.2)		
ART should not be stopped					
Yes	48 (47.1)	81 (39.7)	19 (42.2)	1.51	0.22
No	54 (52.9)	123 (60.3)	177 (57.8)		
Stopping ART affects health negatively					
Yes	53 (52.0)	90 (44.1)	143 (46.7)	1.68	0.20
No	49 (48.0)	114 (55.9)	163 (53.3)		

*Statistically significant

Table 3: Clinical status and quality of life of cases defaulters and controls patients on antiretroviral therapy in FMC, Owo-2015

Characteristics	Cases	Controls	Total	Chi-square	P value
	102	204	306		
	n (%)	n (%)	n (%)		
Number of counseling sessions attended before treatment					
<3	77 (75.5)	119 (58.3)	196 (64.1)	8.69	0.003*
3 and above	25 (24.5)	85 (41.7)	110 (35.9)		
Disclosure of status to the main caregiver					
Yes	54 (52.9)	152 (74.5)	206 (67.3)	14.38	<0.001*
No	48 (47.1)	52 (25.5)	100 (33.7)		
Clinical stage at the commencement of treatment					
Asymptomatic	84 (82.4)	159 (77.9)	243 (79.4)	0.81	0.37
Symptomatic	18 (17.6)	45 (22.1)	63 (20.6)		
Quality of life					
Optimal	50 (49.0)	156 (76.5)	206 (67.3)	23.29	<0.001*
Suboptimal	52 (51.0)	48 (23.5)	100 (32.7)		
Perceived quality of treatment received					
Good	63 (61.8)	154 (75.5)	217 (70.9)	6.21	0.013*
Poor	39 (38.2)	50 (24.5)	89 (29.1)		

*Statistically significant

Table 4: Comparison of health factors of cases and controls on antiretroviral therapy in FMC, Owo-2015

Characteristics	Cases	Control	Total	Chi- square	P value
	102	204	306		
	n (%)	n (%)	n (%)		
Duration on medication					
<5 years	67 (65.7)	119 (58.3)	186 (60.8)	1.54	0.21
5 years and above	35 (34.3)	85 (41.7)	120 (39.2)		
Where Diagnoses was made					
Routine screening when sick	61 (59.8)	125 (61.3)	186 (60.8)	4.41	0.22
Outreach session	23 (22.5)	31 (15.2)	54 (17.6)		
Antenatal clinic	8 (7.8)	29 (14.2)	37 (12.1)		
Screening point for blood transfusion	10 (9.8)	19 (9.3)	29 (9.5)		
Level of Satisfaction with health					
Dissatisfied	20 (19.6)	15 (7.4)	35 (11.4)	10.97	0.004*
Neither	9 (8.8)	14 (6.9)	23 (7.5)		
Satisfied	73 (71.6)	175 (85.8)	248 (81.0)		

*Statistically significant

Table 5: Mean Scores in the Domains of quality of life of defaulters and patients on antiretroviral therapy in FMC, Owo-2015

Domains (n=306)	Mean Score		t-Test	P value
	Cases Mean±SD	Control Mean±SD		
Physical	15.3±3.4	16.6±3.0	3.27	0.001*
Psychological	13.6±2.6	13.6±2.3	-0.12	0.91
Level of independence	15.8±2.5	16.6±3.0	2.39	0.02*
Social relations	15.3±3.0	15.7±2.8	1.17	0.24
Environment	14.8±2.9	15.0±2.8	0.64	0.55
Spirituality/Religion/Personal Beliefs	12.3±3.1	13.0±4.6	1.55	0.12

*Statistically significant

Table 6: Determinants of defaulting from antiretroviral therapy care in FMC, Owo-2015

Variables	Adjusted Odds Ratio	95% Confidence Interval for AOR		P value
		Lower	Upper	
Occupation				
Civil servants/teaching	1			
Trading/farming/artisan	1.52	0.82	2.80	0.18
Disclosure of HIV Status				
Disclosed	1			
Not disclosed	2.78	1.57	4.92	<0.001*
Wealth Index				
Rich	1.79	1.01	3.18	0.047*
Poor	1			
Knowledge of treatment				
Average and above	1			
Below average	2.57	0.96	6.93	0.06
Quality of life				
Optimal	1			
Suboptimal	2.70	1.52	4.79	0.001*
Perception of quality of services received				
Good	1			
Poor	2.58	1.42	4.69	0.002*
Counseling sessions attended				
3+	1			
<3	2.29	1.26	4.19	0.007*

*Statistically Significant

routine screening while 61 out of 186 (59.8%) were cases and 125 out of 186 (61.3%) were controls. A lower proportion of cases (71.6%) were satisfied with their health compared to 85.8% among the controls (P=0.004).

The mean scores in the six domains of quality of life are shown in Table 5. The quality of life in the physical domain was 15.3±3.4 and 16.6±3.0 among cases and controls respectively (P=0.001). In the independence domain, cases had a mean score of

15.8±2.5, while controls had 16.6±3.0 (P=0.02). In all other domains, controls had slightly higher mean scores in the quality of life, however, the differences were not statistically significant.

Table 6 shows the determinants of defaulting from care among persons on ART. Defaulting from treatment was associated with non-disclosure of status to a partner; participants who did not disclose their status had 2.8 odds of defaulting (AOR: 2.8; 95%CI: 1.6-4.9). The odds of defaulting among participants who reported that they had a sub-optimal quality of life was 2.7 (AOR: 2.7; CI 95%: 1.5-4.8). Respondents who perceived that the quality of received service was poor had 2.6 odds of defaulting (AOR: 2.6; 95%CI: 1.4-4.7). Individuals who received fewer counseling sessions had 2.3 odds of being a case i.e. defaulting (AOR: 2.3; CI 95%: 1.3-4.2), while persons in the richer wealth index had 1.8 odds of being a case i.e. defaulting (AOR: 1.8; CI 95%: 1.01-3.18).

Discussion

This study found that knowledge levels on HIV treatment differed between defaulters and non-defaulters. Generally, respondents in both groups had adequate knowledge about treatment and the consequences of defaulting from care. However, controls were more knowledgeable about the treatment of HIV than cases. This finding is not surprising because enrolment to receive care should improve an individual's knowledge base regarding such care. In addition, the acquisition of knowledge regarding the benefits of HIV treatment is more likely to improve retention in HIV care. This, therefore, implies that patients with adequate knowledge of treatment were less likely to default from ART. Similar to our findings, the result of a cross-sectional study among HIV positives receiving care in another tertiary health facility in Nigeria showed that 75.2% had good knowledge of ART.²¹ The similarity of our findings with the reference study implies that the possession of good knowledge on ART will empower PLWHA to make informed decisions on adherence to treatment and clinic visits. Adherence to treatment and clinic visits would in turn reduce the risk of mother-to-child transmission of HIV and in the general reduce the risk in population.²² This finding highlights the importance of maintaining clinic appointments that offer good knowledge via education and counseling sessions. Regular education during clinic attendance is also crucial in this regard.

Though a slightly higher proportion of females defaulted compared to males, this study did not show a significant association between gender and defaulting from care. The findings obtained from this study are, however, contrary to previous studies which reported an existing association between the male gender and defaulting from care.^{23,24} The disparity obtained from these studies contradicts the notion that females were

more likely to seek care compared to males. Several factors could be responsible for this finding; one of them is the lack of partner support for ART adherence among females. The lack of partner support could deter ART compliance among many women in the African setting. This finding, however, indicates the need for spousal involvement for the provision of support for improved adherence to ART among PLWHIV.

Findings of this study revealed that defaulting from ART was associated with non-disclosure of HIV status to a partner. PLWHA who did not disclose their status to their partners were less likely to receive support to maintain the appointment.²⁵ Non-disclosure and lack of home-based support continue to be a critical barrier to retention and adherence in ART programs.²⁶ Also, stigma and rejection have been documented as a common experience of PLWHA, especially in developing countries. Stigma is a barrier against disclosing status and getting access to available support and care services for many PLWHA.⁷ The findings of the present study were corroborated in a study conducted in Ethiopia where non-disclosure of HIV-status to a partner led to non-adherence to ART. One of the main reasons for disclosing HIV status to a partner was to ensure that a trusted person could assist in seeking care in the event of an illness. The findings obtained from this study thus imply that status disclosure to a spouse could improve treatment adherence and hospital visits for drug refills.

We found that continuous use of health care facilities depends on the perceived quality of care. Patients receiving ART care may be unwilling if the perceived quality of care received is not optimal. Unwillingness to receive ART care was also reported to be associated with the perception of suboptimal care in a study conducted in southwest Nigeria.²⁷ The similarity in these findings implies the need for improvement in the quality of care provided for patients on ART. Such care improvements may contain reviews of the content of counseling to include training on disclosure techniques. Training of all health workers in counseling skills will similarly enhance their ability to offer holistic care to the patients who are entrusted to their care. The use of an electronic reminder system can be explored to improve care provision. This can be in the form of coded messages that can be understood by the recipients alone. The clinic teams should be empowered to trace defaulters. Community follow-up and patient support systems should be strengthened to improve adherence to ART and the quality of care provided. Community outreaches should be used to ensure strong linkages between health facilities and families. The activity of clinics in weekend will allow busy persons to receive care. Other effective measures include HIV/AIDS awareness campaigns through information, education, and communication

materials dissemination, training and advocacy for PLHIV, and radio programs focusing on stigma and discrimination. These measures will encourage PLHIV to adopt and maintain positive living practices, increase the disclosure of HIV status among sexual partners, and improve community involvement in HIV/AIDS services.

Receiving fewer counselling sessions before commencing ART was found to increase the likelihood of defaulting. Fewer counseling sessions among PLWHA have been documented to increase the likelihood of defaulting.²⁸ This indicates a need for more frequent counseling sessions before the commencement of ART among PLWHIV in health facilities. We also found that respondents in richer wealth index are more likely to default from ART. This elucidates the opportunity for improved health outcomes among wealthy individuals than the poor on most measures of health status including malnutrition, morbidity, mortality, and health care utilization.²⁹ Poverty increases an individual's vulnerability to HIV/AIDS and the likelihood of defaulting from care. This stems from the unaffordability of adequate nutritious meals which would serve to boost the immunity of individuals. Also, the unaffordability of the cost of transportation could be an outplay of poverty and could promote non-adherence to HIV care.

We found that persons with suboptimal quality of life were more likely to default from ART care. Sick individuals were more likely to be defaulters. This occurrence could be explained by the need for care enrolment across many departments in hospital facilities. Thus, care-seeking in multiple centers at health facilities could necessitate non-adherence to scheduled ART visits in some instances. It was, therefore, suggested that patients with compromised immunologic status are at greater risk of being lost to follow-up, perhaps because repeated illness interferes with clinic appointments and leads to defaulting.³⁰ This finding, therefore, highlights the need for rescheduled ART appointments for the sick who are more likely to default from scheduled clinic appointments.

Limitations

The self-reporting nature of this study may be compromised by recall bias. This was, however, minimized by assessing the quality of life in the last two weeks before data collection. Despite this limitation, the study provides useful information about the factors associated with defaulting from care among patients on ART in Nigeria by using a case-control design and adequate sample size of the study.

Conclusion

The knowledge of HIV treatment was good among

PLWHA in Ondo State. Defaulters (cases) had less knowledge compared to non-defaulters (controls). More defaulters had a suboptimal quality of life. Factors associated with defaulting from ART care were non-disclosure of status to a partner and receiving fewer counseling sessions. PLWHA of higher socioeconomic status were at higher risk of defaulting from care. We, therefore, recommend active spousal involvement to enable improved adherence to ART among PLWHIV. In addition, regular reviews of counseling training among health care workers should be commenced to ensure the delivery of holistic care to patients. In addition, community follow-up and patient support systems should be strengthened to ensure adequate communication between health facilities and concerned families. Moreover, an enlargement of the capacity of health facilities involved in the ART care is required to ensure improved adherence to ART visits among HIV-positive persons with underlying health conditions.

Conflict of Interest: None declared.

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