Patterns of Service Use and Payment Methods for the Treatment of HIV/AIDS in Nigeria: A Comparison of Evidence from Household Interview and Exit Survey

Ogochukwu Ibe[1,2*], Enyi Etiaba[2], Obinna Onwujekwe[1,2,3], Robert Chiegil[4], Benjamin Uzochukwu[1,5], Kwasi Torpey[4]

[1]Health Policy Research Group, Department of Pharmacology and Therapeutics, College of Medicine, University of Nigeria, Enugu, Nigeria
[2]Department of Health Administration and Management, Faculty of Health Sciences, University of Nigeria, Enugu, Nigeria
[3]Department of Pharmacology and Therapeutics, College of Medicine, University of Nigeria, Enugu, Nigeria
[4]FHI360, Abuja, Nigeria
[5]Department of Community Medicine, College of Medicine, University of Nigeria, Enugu, Nigeria

[*]Corresponding Author: mypaskie@yahoo.co.uk

Abstract

This study examined patterns of service use and payment methods for HIV/AIDS treatment using evidence from two data sources. The paper also compares the convergence of evidence from a household and exit survey among persons living with HIV/AIDS.

The study was undertaken in Akwa Ibom, Anambra and Adamawa states in south-south, south-east and north-east geopolitical zones of Nigeria respectively. Using a household survey and an exit interview, questionnaires were administered to persons living with HIV who were 18 years and above. The health seeking patterns and payment methods were analysed.

The findings showed some differences and similarities. In the exit survey, elicited check-up appointments were predominantly three monthly (35.5%) while about half (49.2%) of respondents from the household survey were on two monthly visits. During actual hospital visits, almost all respondents from exit (96.9%) and household survey (95.1%) received routine drugs for HIV/AIDS as appropriate. Out-of-pocket spending was the main method of payment in the two surveys.

Variations exist across states in the patterns of treatment seeking and payment methods for HIV/AIDS but the overall findings from household and exit survey yield similar patterns. Hence, either of the methods may be used in a similar setting to obtain valid responses. However, innovative interventions are needed to reduce the incidence of opportunistic infections to limit the additional burden of hospitalization to patients.

Keywords: HIV/AIDS, Household Interview, Exit Survey, Nigeria.

Introduction

The burden of HIV/AIDS in Nigeria is remarkably high and about 3.6 million people are living with HIV/AIDS [1]. This figure represents 9 percent of the global burden of the disease and places the country as second to South Africa in the number of people living with HIV/AIDS worldwide [2]. Annual AIDS deaths in Nigeria was 217,148 in 2012 [3] and about 220,393 new HIV infections occurred in 2013 [4]. HIV prevalence surveillance results however, suggest that prevalence has rather been on the decline, from 5.8 percent in 2001 to 4.6 percent in 2008 and 4.1 percent in 2010 [3]. The overall prevalence however masks the notable differences across states and geopolitical zones; five states have prevalence of 8% and above while another five have prevalence between 1-2%. The highest prevalence is in the South-South Zone (5.5%) and the lowest rates in the South East Zone, at 1.8% [5]. The burden of HIV/AIDS could be substantially reduced with improved care seeking and access to treatment [6]

The control of HIV/AIDS is a national priority in Nigeria with considerable efforts made at the policy and implementation level to improve access to care and treatment [7]. The guidelines for HIV/AIDS care and treatment recommend initiation of antiretroviral treatment (ART) after routine tests have established an infection with a CD4 cut off of ≤500 cells/mm3 [8], or with active tuberculosis (TB) irrespective of CD4 cell count amongst other conditions [9]. Patients ineligible for ART undergo clinical assessments and CD4 cell counts every three to six months. Follow-up of patients ARV therapy continues through-out the patient's lifetime. The visits are scheduled at a minimum interval of 3-6 months for stable patients. At treatment initiation or in the event of any treatment change, monitoring could be made more frequent [8].

The initiation of free ART in Nigeria was primarily intended to improve access to treatment by reducing the cost of treatment to patients and prevent disease progression to severe levels [10]. The number of ART sites have also considerably increased from 393 in 2009 to 820 sites in 2013 [11] and while some progress has been made in providing health care services to all patients through expansion of treatment centres, the progress is uneven as many patients live in the areas difficult to reach with services. Patients also have to pay for other prescribed medication apart from ARVs and the health care they receive especially during hospitalizations for AIDS related complications [12], which may negatively affect their service seeking patterns.

Some studies describe health seeking behaviours and the utilization of health services especially in the context of HIV/AIDS in other developing countries [13-16]. However, there is a seeming dearth of studies in Nigeria on health seeking patterns for HIV treatment services although many studies have examined health seeking behaviour for malaria and other health conditions [17-19]. Another gap in knowledge is the relative validity of information that is collected using different quantitative methods for accurate presentation of health seeking behaviour. Hence, the comparability of information from the most commonly used exit and household survey has not been well studied.

Given this context, it is necessary to pay close attention to the appropriateness of the data collection methods in order to build an accurate picture of health seeking behaviour of the population. Studies have utilized exit or household survey [15] to explore patterns of service utilization for HIV/AIDS. Individually, each survey method has some advantages in terms of accuracy and completeness of data, amount of detail, recall period and potential bias. Household surveys have a unique advantage of convenience but are prone to recall bias which may affect the accuracy and completeness of data [21]. On the other hand exit surveys may be less expensive, minimise recall bias but may not be convenient given that patients may be too sick to provide meaningful responses, it is also often limited to data on single visit [22]. Exit surveys are in addition, more prone to courtesy bias as well as changes in provider behaviour in response to being observed [23].

This study examined patterns of service use and payment methods for HIV/AIDS treatment using evidence from two data sources. It contributes to knowledge by using data from both exit survey and household survey administered to HIV/AIDS patients to investigate the similarity and or differences in health seeking and payments for the residual costs (transportation, investigations etc) incurred by patients in the course of receiving subsidized HIV/AIDS treatment..

Methods

Study Setting

The study was undertaken in three states in Nigeria, namely: Akwa Ibom, Anambra and Adamawa states. These three states were chosen to obtain data from different settings of Nigeria on health seeking and payment mechanisms for HIV/AIDS. The prevalence of HIV/AIDS in Anambra, Akwa Ibom and Adamawa states are 8.7%, 10.9%, 3.8% for respectively [24]. The 2006 census put the estimated population of the three states at 4,177,828, 3,902,051 and 3,178,950 for Anambra, Akwa Ibom and Adamawa states respectively [25]. The three states are from three different geopolitical zones; Anambra is in the south-east, Akwa Ibom and Adamawa states are from the

south-south and north east geopolitical zones respectively.

Anambra state has 21 Local Government Areas (LGA) with Awka as its capital. The state is divided into 3 senatorial zones and each zone has 7 Local government areas. The indigenous ethnic groups in the state are the Igbo's and majorities are Christians. Uyo is the capital of Akwa-Ibom state and the state has 31 LGA's. Adamawa state has 21 LGA's. Its capital is Yola and it is bordered by the states of Borno to the north-west, Gombe to the west and Taraba to the south-west. Marghi and Fulani are the major ethnic groups. The major occupation of the people is farming.

Study Design

A cross sectional study involving household and exit interviews was conducted. For both surveys, pre-tested interviewer-administered questionnaire was used for data collection. The questionnaire contained information under four broad headings, the demographic information of respondents, details of treatment seeking for in-patient and out-patient visits and type of treatment received, payment mechanisms for HIV/AIDS and expenditures on food and non-food items.

Recruitment and Training of Enumerators

In each state, data collectors and supervisors were carefully selected; they were those fluent in English and the native language, resident in the study localities, free of other job engagements during the survey period and hold a minimum of General Certificate of Education Ordinary level certificate. They were trained for three days on the study rationale, objectives and key concepts in addition to methods for administration of the data collection instruments. Standard Operating Procedures (SOPs) were prepared to guide the different activities and ensure uniformity in the conduct of survey. A field manual, detailing the study processes duties of data collectors and supervisors as well as how to complete the questionnaire was made available to every project staff. Supervisors directly monitored the data collectors and checked each questionnaire on a day to day basis while two quality assurance officers in each state monitored both the supervisors and the field activities through site visits and observations.

Sample Size Estimation and Data Collection

The target respondents were patients 18 years and above living with HIV/AIDS. Trained data collectors administered a pre-tested questionnaire to a sample of respondents recruited from ART facilities and consenting members of the association of PLWHA. The minimum sample size for exit survey was 96 per LGA, calculated to determine a 50% effect with a

10% precision. This sample size of 250 further narrows our precision to 6.2%. The figure was increased to 250 interviews per LGA to be amenable to sub-group analysis giving a total sample size of 1,500 for the three states. For the household survey, a total sample size of 1,200 for the three states was calculated using a power of 80% and 95% confidence interval, the figure was also increased to 1450 to enable sub-group analysis.

Data were collected on socio-demographics, health-seeking patterns, and methods of payment for various treatments. Data on Household assets and weekly food and non-food expenditure were collected to enable generation of socio-economic status (SES) status.

Participant recruitment

Household survey: Respondents for household surveys were identified through the support groups of PLWHA. These respondents were those 18 years and above who gave consent to be included in the survey. Those respondents were introduced to the research team, written individual consent was obtained from each respondent before the start of the interview. Enrolment into the study was voluntary. Minors were excluded from the study. Participants decided on where the interview should take place.

Exit survey: Exit survey respondents were recruited from selected ART facilities in the study LGAs. Health facilities were purposively selected based on patient load and geographic access. Health workers were responsible for obtaining initial consent from patients; written consent was obtained from consenting respondents prior to administering the questionnaire.

Data analysis

The frequency distributions of categorical variables were calculated. Means and standard deviations were determined for non-categorical variables.

Data were disaggregated by state and socio-economic status and areas of residence (urban/rural). The variables of interest were obtained and compared across state. Principal Component Analysis (PCA) was used to generate a socio-economic status (SES) index, which was divided into SES quintiles as has been previously done in the study area [26]. The main variables of interest were frequency of visit to a facility, treatment received and payment methods for out-patient and in-patient visits. Test of significance was set at 5% (P value <0.05).

Ethical Considerations

Ethical approval to conduct the study was granted by the ethics review boards of Family Health International (FHI360) as well as University of

Nigeria Health Research Ethics Committee. All project staff completed the FHI360 online ethics training before undertaking the surveys. For household survey, initial consent was obtained from the association of people living with HIV/AIDS (PLWHA) and individual written consent was obtained before interviews. In the exit survey anonymized written consent was obtained from respondents who had earlier given consent to the health workers to be included in the survey. All interviews were carried out discreetly to ensure minimal exposure of the respondents.

Results

Demographic characteristics of respondents

The findings show there were more females than males from both exit (n=1064, 68%) and household surveys (n=1047, 4%) as revealed in Table 1. The mean ages in both surveys were 37. Over 90% attended school and spent an average of 10 years schooling. Most respondents were self-employed. A greater number of respondents (51%) from exit survey were resident in urban areas compared to 47% in the household survey.

Table 1: Demographic characteristics of respondents

Exit survey-Variables	Adamawa n (%)	AkwaIbom n (%)	Anambra n (%)	Total N (%)
Gender	507 (100.0)	514 (100.0)	536 (100.0)	1,557 (100.0)
Female	357(70.4)	359(69.8)	348(65.0)	1,064(68.3)
Mean Age in yrs (SD)	36.7(9.8)	35.2(10.1)	39.3(9.7)	37.1(10.0)
Attended school	411(81.2)	490(95.3)	512(95.5)	1,413(90.8)
Average Number of years spent schooling	10.7 (5.8)	10.5(3.8)	11.2(4.3)	10.8 (4.5)
Employment status	507 (100.0)	514 (100.0)	535 (100.0)	1,556 (100.0)
Government	78 (15.4)	43 (8.9)	45 (8.1)	168 (10.8)
Private sector	24 (4.7)	32 (6.7)	58 (104)	113 (7.3)
Self employed	331(65.3)	338 (69.8)	382 (68.7)	1,056 (67.9)
Retired	7 (1.4)	9 (1.9)	3 (0.5)	19 (1.2)
Unemployed	56 (11.1)	44 (9.1)	57 (10.3)	159 (10.2)
Student	6 (1.2)	12 (2.5)	7(1.3)	25 (1.6)
Refuses to answer	1 (0.2)	0 (0.0)	0 (0.0)	1(0.1)
Other	4 (0.8)	6 (1.2)	4 (0.7)	15 (1.0)
Residence	506 (100.0)	514 (100.0)	535 (100.0)	1,555 (100.0)
Urban	249 (49.2)	286 (55.6)	259 (48.4)	794 (51.1)
Rural	257 (50.8)	228 (44.4)	276 (51.6)	761 (48.9)
SES				
Quintile 1 (Most poor)	163 (32.2)	69 (13.4)	80 (14.9)	312 (20.05)
Quintile 2 (Poor)	104 (20.6)	104 (20.2)	103 (19.2)	311 (19.99)
Quintile 3 (Average)	95 (18.8)	110 (21.4)	106 (19.8)	311(19.99)
Quintile 4 (Least poor)	71(14.0)	109 (21.2)	131 (24.4)	311(19.99)
Quintile 5 (Rich)	73(14.4)	122 (23.7)	11 6(21.6)	311(19.99)
Household survey-Variables	Adamawa N=437	Akwa-Ibom N=456	Anambra N=516	Combined N=1409
Gender n (%)				
Female	340 (77.8)	320 (70.2)	387(75.2)	1047(74.3)
Age of respondents: Mean(SD)	35.6 (8.8)	35.7 (10.3)	39.5 (10.0)	37.1(9.9)
Attended school n(%)	355 (81.4)	433 (94.7)	491(95.3)	1279 (90.8)
Years spent schooling: Mean(SD)	10.2 (3.5)	10.1(3.6)	11.3 (4.0)	10.6 (3.8)
Employment n(%)				
Government	57(13.04)	38 (8.3)	39 (7.5)	134 (9.57)
Private sector	25 (5.7)	36 (7.8)	55(10.6)	116 (8.2)
Self employed	291(66.5)	309 (67.6)	334 (64.7)	934 (66.2)
Retired	3 (0.69)	10 (2.1)	2 (0.1)	15 (1.0)
Unemployed	50 (11.4)	52 (11.3)	78 (15.1)	180 (12.7)
Student	4(0.9)	7 (1.5)	6 (1.1)	17 (1.2)
Other	7(1.6)	5 (1.0)	1(0.2)	13 (0.9)
Residence				
Urban	199 (45.5)	213 (46.7)	252(48.8)	664(47.1)
Rural	238 (54.5)	243 (53.3)	264(51.2)	745(52.9)
SES distribution of respondents				
Quintile 1 (Most poor)	125 (28.7)	80 (17.5)	77 (14.9)	282 (20.04)
Quintile 2 (Poor)	76 (17.4)	95 (20.8)	110 (21.4)	281 (19.97)
Quintile 3 (Average)	83 (18.9)	87 (19.0)	112 (21.7)	282 (20.04)
Quintile 4 (Least poor)	71 (16.3)	99 (21.7)	111 (19.9)	281 (19.97)
Quintile 5 (rich)	82 (18.8)	95 (20.8)	104 (20.3)	281 (19.97)

Health seeking and HIV/AIDS treatment received on out-patient visit (OPV) for household and exit surveys

There were some similarities across the two surveys on the frequency of visits to facilities and type of treatment received for example, across the three states for the exit survey, check-up appointments were predominantly three-monthly (35.5%) followed by two-monthly (21.9%) and monthly (20.4%) check-ups (P=0.00) as revealed in Table 2. At their hospital visits, almost all respondents (n=1507, 96.9%) received routine drugs for HIV/AIDS as appropriate, few received treatment for tuberculosis (n=37, 2.4%) and almost half (n=666, 42.8%) were treated for opportunistic infections (OIs) across the states. However, treatment for OIs was a lot higher than average in Anambra (n=356, 66.4%) and much lower in Adamawa (n=118, 23.3%) states. A few

respondents also had laboratory tests carried out (n=78, 5.0%), again this was higher in Anambra state (n=41, 7.7%) and lowest in Adamawa state (n=3, 0.6%). About 56 (3.6%) of respondents were also treated for co-morbidities, the most common being malaria.

For household survey most respondents (n=689, 49.2%) were mainly on two monthly visit but with differences across states where most respondents from Anambra were on three monthly visit (P <0.001). As in the exit survey, 1325 (95%) of all respondents received routine treatment on their most recent out-patient visit (P=0.00), 40(2%) received treatment for TB (P=0.005) about half (n=721, 51%) were treated for other opportunistic infections (P <0.001) with the proportion significantly more in Anambra state. About 70 respondents (5%) were treated for co-morbidities (P= 0.004)

Table 2: Health seeking and HIV/AIDS treatment received on out-patient visit (OPV) for household and exit surveys

	Adamawa N=507 n (%)	Akwa-Ibom N=514 n(%)	Anambra N =536 n(%)	Chi2 (P value)	Total N=1,557 n (%)
Exit survey					
Frequency of visit to facility					
Monthly or less	78 (15.8)	168 (35.6)	63 (12.4)		309 (20.9)
Every 2 months	111 (22.6)	246 (51.6)	174 (34.1)		531 (35.9)
Every 3 months	267 (54.3)	18 (3.8)	36 (7.1)	844 (0.000)	321 (21.7)
Every 6 months	3 (0.6)	1 (0.2)	0 (0.0)		4 (0.3)
Other	19 (3.9)	0 (0.0)	4 (0.8)		23 (1.6)
Type of treatment received					
Routine drugs	506 (99.8)	491 (95.5)	510 (95.3)	21.52 (0.000)	1,507 (96.9)
Drugs for TB	1 (0.2)	20 (3.9)	16 (2.9)	16.32 (0.000)	37 (2.4)
Other OI's	118 (23.3)	192 (37.4)	356 (66.4)	208.36 (0.000)	666 (42.8)
Lab test	3 (0.6)	34 (6.6)	41 (7.7)	31.43 (0.000)	78 (5.0)
Co-morbidities	9 (1.8)	24 (4.7)	23 (4.3)	7.27 (0.03	56 (3.6)
Household survey	Adamawa N= 437	Akwa-Ibom N= 456	Anambra N= 516		Combined N=1,409
	n(%)	n(%)	n(%)	Chi^2 (P-Value)	n (%)
Frequency of visit to facility					
Monthly or less	106 (24.5)	154(33.7)	34 (6.6)		294 (21.0)
Every 2 months	307(71.2)	233 (51.1)	149 (29.0)		689 (49.2)
Every 3 months	2 (0.4)	46 (10.0)	214 (41.7)		262 (18.7)
Every 6 months	12 (2.8)	23 (5.0)	115(22.4)		150 (10.7)
Other	4 (0.9)	0 (0)	1(0.9)	524.0(0.000)	5 (0.3)
Type of treatment received					
Routine drugs	422 (98.1)	432(94.9)	471(92.9)	14.0 (0.001)	1325 (95.1)
Drugs for TB	4 (0.9)	21 (4.6)	15 (3.0)	10.7 (0.005)	40 (2.9)
Other OI's	110 (25.6)	208 (45.6)	403 (79.4)	282.5 (0.00)	721(51.8)
Lab test	10 (2.3)	111(24.3)	128 (25.2)	102.4 (0.00)	249 (17.9)
Co-morbidities	13 (3.0)	35 (7.7)	22 (4.3)	10.8 (0.004)	70 (5.0)

Health seeking and HIV/AIDS treatment received on in-patient visit (IPV) for household and exit surveys
The results from Table 3 shows that 69(4.4%) respondents had been admitted at least once to one facility or the other within the past three months prior to the study but predominantly in a public facility

(P=0.004). It would appear that predominant admissions were for treatment of opportunistic infections across the three study states (P=0.03). In addition, 29 respondents (46.8%) were also treated for co-morbidities. Adamawa state significantly had the most admissions in the three months preceding

the study (P=0.02), but there was a higher proportion of co-morbidities and laboratory testing in respondents admitted in Akwa Ibom state and these were statistically significant.

Results from household survey show there were 35 respondents who were admitted (less than 3% of respondents) within the three months preceding the survey (P=0.00) with more than half of the admissions 17 (51%) in a public hospital (P = 0.02). More than two thirds of admissions were for the treatment of opportunistic infections although not statistically significant result (P=0.51)

Table 3: Health seeking and HIV/AIDS treatment received on in-patient visit (IPV) for household and exit surveys.

	Adamawa N=506	Akwa-Ibom N=513	Anambra N =536	Chi^2 (P value)	Total N= 1555
Exit survey					
Admitted in past 3 month: n(%)	33 (6.5)	20 (3.9)	16 (3.0)	8.2 (0.02)	69 (4.4)
Facility admitted for most recent admission n(%)					
Private facility	11 (34.4)	5 (27.8)	2 (14.3)		18 (28.1)
Public facility	20 (60.6)	5 (27.8)	8 (57.1)		33 (51.6)
Mission hospital	1 (3.0)	8 (44.4)	4 (28.6)	15.52 (0.004)	12 (18.8)
Type of treatment received n(%)					
Routine drugs	10 (30.3)	11 (61.1)	2 (14.3)	8.31 (0.02)	23 (35.4)
Drugs for TB	1 (3.2)	4 (22.2)	1 (7.1)	5.05(0.22)	6 (9.4)
Other OI's	21 (63.6)	9 (50.0)	3 (25.0)	7.0 (0.03)	33 (51.6)
Lab test	7 (21.2)	13 (72.2)	2 (14.3)	16.58 (0.000)	22 (33.9)
Co-morbidities	10 (34.5)	11 (38.0)	8 (27.6)	6.81 (0.03)	29 (100.0)
Household survey	Adamawa	Akwa-Ibom	Anambra	Chi^2(P-Value)	Combined
	N=437	N=456	N=516		N=1409
Admitted in past 3 month: n(%)	21(4.8)	4(0.8)	10(1.9)	15.2 (0.000)*	35 (2.6)
Facility admitted for most recent admission n(%)					
Private facility	6 (26.0)	0 (0)	2 (22.2)		8 (24.2)
Public facility	13 (69.5)	2 (50.0)	2 (18.1)		17 (51.5)
Mission hospital	1(4.3)	2 (50.0)	5 (55.5)	11.2 (0.02)*	8 (21.0)
Type of treatment received n(%)					
Routine drugs	8(39.1)	4 (100)	4 (33.3)	6.3 (0.13)*	16 (41.0)
Drugs for TB	0 (0)	3 (75.0)	2 (20.0)	15.2 (0.001)*	5 (13.6)
Other OI's	15(62.5)	3 (75.0)	9 (75.0)	1.33 (0.51)*	27(77.1)
Lab test	4(19.0)	4 (100)	4 (40.0)	9.97 (0.09)*	12 (34.2)
Co-morbidities	6(25.0)	1(25)	2 (20.0)	0.07 (1.00)*	9 (30.9)

fisher's exact

Use of different payment method for treatment received on out-patient visit (OPV) and in-patient visit (IPV) for HIV/AIDS

For OPV, the exit survey from Table 4 showed that almost all respondents received free treatment for anti-retroviral therapy on out-patient visit; however, they incurred other direct medical and direct non-medical cost which was paid for by one mechanism or the other. Out-of-pocket payment was the commonest payment mechanism employed by respondents. It was highest in Akwa Ibom state with result being statistically significant. In the household survey, more than 90% of respondents from two states received free treatment while treatment was free for a little over half (60%) of the respondents from Anambra state (P=0.04). Out-of-pocket payment was common across states but significantly higher in Adamawa state (P <0.001).

For IPV, OOP was also the commonest payment mechanism in the exit survey. Adamawa significantly received more free treatment than the other states. For household survey, OOP payment was the predominant payment method across states with no record of payment reimbursements.

Table 4: Use of different payment method for treatment received from HIV/AIDS OPV and IPV from household and exit survey

	Free n(%)	Cash with reimbursement n(%)	OOP n (%)	Others n (%)
OPV Exit survey				
Adamawa n(%)	506 (100.0)	1(0.2)	191 (37.8)	8(1.6)
Akwa-Ibom n(%)	496 (97.5)	2 (0.4)	214 (42.0)	3 (0.6)
Anambra n(%)	533 (99.6)	0 (0.0)	143 (26.7)	1 (0.2)
Total n(%)	1,535 (99.0)	3 (0.2)	547(35.3)	12 (0.8)
Chi^2(p-value)	20.3(0.000)	2.08(0.32)	28.7 (0.000)	6.73 (0.04)
OPV Household survey				
Adamawa n(%)	408 (96.4)	0 (0.0)	290 (68.0)	30 (6.9)
Akwa-Ibom	448 (98.4)	1 (0.22)	208 (45.9)	0 (0.0)
Anambra	305 (60.1)	0 (0)	230 (45.5)	1 (0.2)
Chi2(p-value)	6.29 (0.00)	2.06 (0.35)	58.1(0.00)	31 (2.2)
Total	1163 (83.9)	1.0 (0.07)	728 (52.4)	64.3 (0.00)
IPV Exit survey				
Adamawa n(%)	18 (54.6)	0 (0.0)	29 (87.9)	4 (12.1)
Akwa-Ibom	5 (29.4)	1 (5.9)	13 (76.5)	3 (17.7)
Anambra	1 (7.7)	0 (0.0)	11(84.6)	3 (23.1)
Total n(%)	24 (38.1)	1(1.6)	53 (84.1)	10 (15.9)
Chi^2(p-value)	9.43 (0.008)	2.75(0.48)	1.10(0.60)	0.89(0.66)
IPV Household				
Adamawa n(%)	3 (15.8)	0 (0)	18 (94.7)	2 (9.5)
Akwa-Ibom	2 (50.0)	0 (0)	4 (100)	0 (0)
Anambra	1 (10.0)	0 (0)	8 (80.0)	2 (20.0)
Chi2(p-value)	3.2 (0.19)	0 (0)	2.1 (0.33)	1.31(0.74)
Total	6 (18.2)	0(0)	30 (90.9)	4 (12.1)

Overall comparison of some key variables in the Exit and Household surveys

Table 5 shows findings for the main variables from both surveys. More than two-thirds were female and mean age was the same. Both surveys showed that two monthly visits to facilities were the most common. Highest OOP payment on OPV and IPV were made in Akwa-Ibom and Adamawa state.

Table 5: Overall comparison of some key variables in the Exit and Household surveys

Variable	Exit Survey	Household Survey
Gender (Total)		
Female	68.30%	74.30%
Age (In years)	37.1	37.1
Residence		
Urban	51%	47%
Rural	49%	53%
SES		
Most poor (Q1)	Adamawa state	Adamawa state
Most rich (Q5)	Akwa Ibom state	Anambra
Frequency of facility visit		
Most frequent (< monthly-2 months)	Akwa Ibom (P=0.000)	Akwa Ibom (P=0.000)
Less frequent (3 monthly)	Adamawa (P=0.000)	Anambra (P=0.000)
Treatment received for OIs	Anambra (66%)	Anambra (79%)
Highest OOP payment		
Out-patient visit	Akwa Ibom (P=0.00)	Akwa Ibom (P=0.00)
In-patient visit	Adamawa (0.63)	Adamawa (0.33)

Discussions

Our study shows that both household and exit interviews can yield similar results in the patterns of service use and payment mechanisms for the treatment of HIV/AIDS in Nigeria. Most notably, the proportion of respondents who sought treatment from the poorest quintile, visited facility on two-monthly basis, were treated for OI's and had the highest OOP payments were similar across the survey thus confirming patterns of health service use.

There were similarities in the demographic characteristics of respondents from both surveys suggesting that the samples were representative of the population. The finding that majority of respondents in both survey were females could be explained by the higher prevalence of HIV in females than males in Nigeria and the fact that women generally tend to have better health seeking behaviour once ill [27]. This finding however, is in contrast with a study which report a predominance of male patients and which attributed the lower number of females to stigma and fear of being ostracised [28].

Treatment for HIV/AIDS follows the national treatment guidelines in terms of timing of treatment and frequency of check-up monitoring which may explain why similar types of treatments were received across surveys. According to the guidelines, patients are placed on 3-6 months routine monitoring but could be on two months basis when there is a need to monitor other potential clinical issues. It is however, interesting to see the comparability of the estimates for example the proportions of people receiving routine drugs, treated for TB and other opportunistic infections were similar in the surveys. The significant variations noted across states in some of the findings may however be attributed to the marked differences in the prevalence's of HIV/AIDS in the different states

The predominant use of public facilities in the two surveys could be because ART treatment services unlike other healthcare services are provided at designated facilities hence this could be a limitation in the scope of facilities to patronise. The cost of care at private facilities may have also deterred patients from using them.

The finding that only a small proportion of patients were hospitalized in the three months preceding the survey may be indicative of improvements in treatment adherence and early diagnosis in Nigeria. Studies elsewhere report a high level of hospitalisation and even death among HIV/AIDS patients [29]. The debilitating effect of HIV/AIDS to the immune system give rise to opportunistic infections and in both surveys, OI's were the main reason for more than half of hospitalizations. This is similar to previous study that found an association between presence of OI and hospitalization [30]. The authors noted that OIs are more likely to occur in cases where patients did not properly adhere to their ARVs as indicated, had no prior knowledge of their HIV status and in cases of immunologic failure [30].

Routine drugs for HIV/AIDS treatment is provided free of charge in ART facilities. Most respondents reported free treatment, however, other direct medical and non- medical costs associated with HIV/AIDS are paid by the patients. This often add to the burden on patients especially where payments are made out of pocket [31-32].

In all, the findings from the household and exit survey show similar patterns in the demographic characteristics of respondents, their treatment seeking patterns and the methods of payment for treatment received for HIV/AIDS hence either of the survey type could conveniently be used to assess similar issues in similar contexts.

A limitation of the study is that it lacks a qualitative constituent which may have provided a deeper insight into aspects of care seeking process and its determinants. A further limitation is that the study was not specifically designed to measure the level of agreement between the variables in the two data sources. Future studies should take that into consideration to provide a statistical justification for using either household or exit survey..

Conclusion

In conclusion, there are notable variations across states in the patterns of treatment seeking and payment methods for HIV/AIDS but the overall findings from household and exit surveys are comparable. Hence, any one method or the other can be employed in further studies. However, innovative interventions are needed to reduce the incidence of opportunistic infections to limit the additional burden of hospitalization to patients.

Acknowledgement

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