

Willingness of People Living with Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome to Pay for Treatment and Preventive Services in Human Immunodeficiency Virus Care Centers in Osogbo, Osun State

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Abstract

Background: The global financial meltdown has led to donor countries and agencies cutting down on human immunodeficiency virus (HIV) funding and support to developing countries such as Nigeria, leading to a dire need to circumvent acute funds shortage. **Objectives:** To assess the willingness to pay (WTP) for HIV treatment and preventive services among people living with HIV (PLHIV)/acquired immunodeficiency syndrome in Osogbo, Southwestern Nigeria. **Materials and Methods:** This was a descriptive cross-sectional study among 300 PLHIV attending HIV treatment and care centers selected using the multistage sampling method. Research instruments used were semi-structured interviewer-administered pretested questionnaire. Data were analyzed using the Statistical Package for the Social Sciences software version 23.0. **Results:** The mean age of respondents was 36.9 ± 11.6 years, with 57.0% of the respondents having good knowledge of the sources of funding of HIV services. Only 153 (51.0%) were willing to pay for HIV treatment and care services, of which 123 (80.3%) were only willing to pay voluntarily and 10 (6.5%) willing to pay only if pushed. On binary logistic regression, predictors of WTP for HIV services include age above 40 years and being in a polygamous marriage. **Conclusion:** Only about half of PLHIV showing WTP underscore the need for stakeholders in HIV care to enlighten clients on the challenges facing HIV funding toward encouraging them to pay for some if not all services received.

Keywords: Funding, human immunodeficiency virus services, Nigeria, people living with human immunodeficiency virus, willingness to pay

INTRODUCTION

Over the past decade, there has been a dramatic expansion of services in developing countries to prevent and manage human immunodeficiency virus (HIV) infection and acquired immunodeficiency syndrome (AIDS). From 2000 to 2008, overall spending on HIV infection and AIDS in low- and middle-income countries increased approximately ten-fold to USD 13.7 billion.^[1] These rapid and comprehensive responses to the HIV pandemic have substantially improved the health and social well-being of populations in various settings. In addition, widespread scale-up of antiretroviral therapy (ART) has encouraged HIV testing and early access to healthcare services, thus improving the health status and quality of life among people living with HIV (PLHIV)

infection. Africa bears the highest burden of HIV infections and HIV/AIDS-related mortality in the world.^[2] In the countries of Sub-Saharan Africa that has been described as mostly affected, AIDS has raised death rates and lowered life expectancy, most especially among the economically productive population group.^[1]

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Prevention and treatment of HIV/AIDS have until recently been driven solely by development partners and donor agencies, particularly the provision of antiretroviral (ARV) drugs.^[1,3] Nigeria operates a decentralized health system which is largely financed through out-of-pocket spending, while most insurance schemes refused to cover the management of chronic illnesses, such as HIV and cancers. The need to target and place 90% of PLHIV on ARVs brought initiatives such as the test and treat initiatives, which largely depend on steady availability of ARVs. This is happening at a time when the poor economy of Nigeria has made the country not to pay counterpart funding for HIV services. With the increasing proportion of infected people and those on treatment, the need for increased funding arises. To this end, ensuring sufficient resources is central to the success and sustainability of HIV programs. However, budget constraints due to the global economic slowdown make it more difficult for donor governments to effectively fund multiple competing social and health issues.^[4]

In face of reducing donor assistance for health services delivery in Nigeria, program managers will be tasked with the responsibility of making rational price decisions concerning services for which user fees were removed in the past. With the current trend of dwindling funds from international donors, HIV treatment in Nigeria would require that the cost of ARVs be borne either fully or in part by the infected individuals.^[5] The aim of the study was to assess the willingness to pay (WTP) for HIV treatment and preventive services among PLHIV/AIDS in Osogbo, Southwestern Nigeria.

MATERIALS AND METHODS

Study area

The study was carried out in Osogbo, capital of Osun State, located in the southwestern part of Nigeria. The HIV prevalence in Osogbo is 2.7%.^[6] Osogbo has two major comprehensive HIV care centers – State Specialist Hospital, Asubiaro, Osogbo, and LAUTECH Teaching Hospital, Idi-Seke, Osogbo. The city had a population of about 156,694 people going by a recent projection of the 2006 Nigerian National Census.^[7] The total number of PLHIV in both centers was not known.

Study design and population

The study was a descriptive cross-sectional survey carried out among the PLHIV in Osogbo in Southwestern Nigeria. Target population consists of registered PLHIV who have been accessing care in the two comprehensive facilities for at least 2 years. Relatives or families of those who are positive and healthcare providers were excluded from the study.

Sample size calculation and techniques

The sample size was calculated using modified Leslie–Fisher's formula for the calculation of sample size for simple proportion in a population <10,000,^[8] leading to a minimum sample size of 290.41. This number was increased to 310 to account for nonresponse. A multistage sampling technique was used in sample selection. The two centers were used in the study and

research instrument were equally allocated to care centers. In Stage 1, two clinic days was selected from the daily clinics by simple random sampling employing simple balloting, and this yielded Tuesday and Thursday clinics. Questions were also equally allocated to clinic days. In Stage 2 and on a clinic day, the list of eligible respondents who came for clinic was obtained from the triage nurse. A systematic sampling of one in three clients on the sampling list or frame was carried out, and these clients received the research instrument for that day. Selection of the subjects continued until the desired sample size was obtained.

Research instrument and data collection methods

A semi-structured, pretested interviewer-administered questionnaire was used to obtain data from the respondents over 2 months. The questionnaire was a modification of an online-based standard WTP questionnaire, and it was reviewed by two HIV sites project coordinators. Data were collected with the assistance of four trained data assistants who were clinic volunteers. A native language (Yoruba) version of the questionnaire was prepared, translated, and back-translated to English and used for the illiterate respondents.

Ethical consideration

The study was conducted in accordance with the ethical principles that have their origin in the Declaration of Helsinki. The study protocol, the subject information, and consent form were reviewed and approved by the research ethics committee of the Osun State Ministry of Health, Osogbo, Nigeria. Permission was taken from the project coordinator of the HIV care clinic in the health facility used for the study, while all subjects gave written informed consent before taking part in data collection.

Data management

Raw data from the questionnaires were entered into the Statistical Package for the Social Sciences version 23 (SPSS Inc, Chicago, IL, USA) after data cleaning, and validity of data entered through double entry and manual checks. Descriptive statistics was used to establish frequency and proportions of respondents, and these were presented in tables and charts. Chi-square test was used to demonstrate bivariate association between variables of interest. Binary logistic regression was used to predict pattern of WTP for HIV services in relation to sociodemographic and other related variables of interest. $P \leq 0.05$ was considered significant for all inferential statistics.

RESULTS

The mean age of respondents was 36.9 ± 11.6 years with majority (97, 32.3%) being in the age group of 21–30 years. Larger proportions were females (67.3%) and were married (73.0%). Majority had (43.0%) secondary education, 34.3% were artisans, while 151 (50.3%) earned <10,000 Naira monthly as shown in Table 1.

Two hundred and seventy-one (90.3%) of the respondents were aware of the various services being rendered to PLHIV; the services identified were counseling (62.0%), testing (41.7%),

provision of ART (20.3%), provision of Prevention of mother to child transmission of HIV (PMTCT) services (11.0%), provision of family planning services (21.3%), and tuberculosis (TB) services 11.3%. The most common source of information about such program by the Federal Government of Nigeria (FGN) was the news media (88, 29.3%), while 57.0% of the respondents having good knowledge of sources of funding of HIV services though table is not shown.

Table 2 shows that 237 (79.0%) perceived the treatment and preventive services rendered by the clinic as effective and 36 (12.0%) as partially effective. A total of 233 (77.7%) considered the cost of ARVs and other services for HIV/AIDS as expensive. Only 153 (51.0%) were willing to pay for HIV treatment and care services, of which 123 (80.3%) were only willing to pay voluntarily, 10 (6.5%) willing to pay only if pushed, 46 (15.3%) were willing to forgo social things to pay for treatment, and 183 (61.0%) think that donor or government alone can sustain the funding of the HIV services.

Majority (203, 67.7%) of the respondents said that they can pay 10% if a month supply of ARVs cost 200 USD, 80 (26.7%)

respondents were willing to pay 100% if the cost of ARVs is <200 USD, 79 (26.3%) were willing to pay 20% of the cost if ARVs prices rise above 200 USD, while 186 (62.0%) thought that PLHIV should also have complimentary financial roles to play toward their care. About 55.5% were willing to pay for transportation, 40.3% were willing to pay for laboratory services, while 38.0% and 35.3% were willing to pay for healthcare volunteer allowances and consumables, respectively, as shown in Figure 1.

In Table 3, bivariate analysis shows that a statistical significant association was found between age and WTP for HIV services ($P < 0.05$). On binary logistic regression as shown in Table 3, the respondents with age below 40 years were 2.5 (1/0.37) times less likely to be willing to pay for HIV services compared to those above 40 years of age, and this observation was found to be statistically significant (odds ratio [OR] 0.37, 95% confidence interval [CI] 0.20–0.68, $P = 0.001$). Furthermore, the respondents in monogamous marriages were two (1/0.52) times less likely to be willing to pay for HIV services compared to those in polygamous marriages though this observation was found not to be statistically significant (OR 0.52, 95% CI 0.26–1.06, $P = 0.07$). Thus, predictors of WTP for HIV services include age above 40 years and being in a polygamous marriage.

Table 1: Sociodemographic characteristics of inhabitants ($n=300$)

Variable	Frequency, n (%)
Age (years), mean age $\pm$ SD	36.9 $\pm$ 11.6
11-20	13 (4.3)
21-30	97 (32.3)
31-40	87 (29.0)
41-50	63 (21.0)
≥ 50	40 (13.3)
Gender	
Male	98 (32.7)
Female	202 (67.3)
Marital status	
Ever married	219 (73.0)
Single	81 (27.0)
Type of marriage ($n=219$)	
Monogamous	134 (61.2)
Polygamous	85 (38.8)
Educational status	
Primary education	59 (19.7)
Secondary education	129 (43.0)
Tertiary education	82 (27.3)
No formal education	30 (10.0)
Occupation	
Civil servant	67 (22.3)
Self-employed	92 (30.7)
Unemployed	38 (12.7)
Artisan	103 (34.3)
Monthly earning (Naira)	
<10,000	151 (50.3)
10,000-50,000	94 (31.3)
51,000-100,000	43 (14.3)
>100,000	12 (4.1)

SD: Standard deviation

DISCUSSION

This study examined how much PLHIV/AIDS who have been receiving treatment free of charge would be willing to pay for their ARVs should the need arise.

It was found that larger percentage of the respondents were aware of the various services being rendered to PLHIV; the services they were aware of included counseling, testing, provision of ART, PMTCT service, TB service, and family planning. Similar finding was observed in the study carried out in a similar Nigerian study,^[9] where it was found that constant training and retraining of healthcare provider coupled with frequent counseling of PLHIV made the clients to be aware of services available.

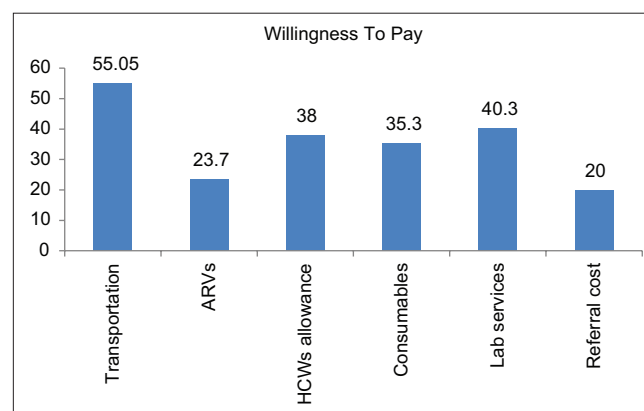


Figure 1: Services that people living with human immunodeficiency viruses are willing to pay for

Table 2: The readiness to pay for human immunodeficiency virus treatment and preventive service (n=300)

Variable	Frequency, n (%)
Perceived the treatment and preventive services rendered by HCWs in the clinic as	
Very effective	237 (79.0)
Partially effective	36 (12.0)
Not effective	27 (9.0)
Consider the cost of ARVs drugs and other services for HIV as expensive (yes option only)	233 (77.7)
Willing to pay for HIV treatment and care services	
Yes	153 (51.0)
No	147 (49.0)
Condition for payments (n=153)	
Voluntarily	123 (80.3)
If pushed	10 (6.5)
Only when services are withdrawn	11 (7.2)
If other conditions comes up	9 (6.0)
Willing to forgo social things in order to pay for treatment (yes only)	46 (30.3)
Think that donor or government alone can sustain the funding of the HIV services (yes only)	183 (61.0)
If a monthly supply of ARVs drugs is expected to cost you ₦7200, how much on the average per month would you like to pay (n=153)	
10%	126 (82.4)
50%	22 (14.3)
100%	5 (3.3)

HCWs: Health care workers, ARV: Antiretroviral, HIV: Human immunodeficiency virus

Table 3: Relationship between respondents' sociodemographic characteristics and willingness to pay (readiness to pay) for human immunodeficiency virus treatment and preventive services

Variables	Willingness to pay (RTP) for HIV treatment and preventive services						P
	Willing, n (%)	Not willing, n (%)	Pearson (χ^2)	OR	LCI	UCI	
Age (years)							
≤40	24 (8.0)	173 (57.7)	10.62	0.37	0.20	0.68	0.001**
≥40*	28 (9.3)	75 (30.2)					
Gender							
Male	18 (6.0)	80 (26.7)	0.11	1.11	0.59	2.09	0.74
Female*	34 (11.3)	168 (56.0)					
Marital status							
Married	37 (12.3)	182 (60.7)	0.11	0.89	0.46	1.74	0.74
Single*	15 (5.0)	66 (22.0)					
Educational status							
Formal	47 (15.7)	223 (74.3)	0.01	1.05	0.38	2.89	0.92
No formal*	5 (1.7)	25 (8.3)					
Occupation							
Government	11 (3.7)	56 (18.7)	0.05	0.92	0.44	1.91	0.82
Nongovernment*	41 (13.7)	192 (64.0)					
Monthly earning							
≤₦50,000	41 (13.7)	204 (68.0)	0.33	0.80	0.38	1.69	0.56
≥₦51,000*	11 (3.7)	44 (14.7)					

**Significant, *Reference category. RTP: Readiness to pay, HIV: Human immunodeficiency virus, OR: Odds ratio, LCI: Lower class interval, UCI: Upper class interval

In this study, all the respondents were accessing various services from health centers that provide HIV services to PLHIV. Among the services being accessed, about two-third of the respondents were accessing ARVs, an observation which differs from another,^[3] where only one-third of HIV-infected people were on treatment. This still calls for concern because the World Health Organization has recommended immediate that all PLHIV should be on ART,^[10]

if HIV epidemic control is to be achieved. Furthermore, the study showed that half of the respondents were willing to pay for HIV care and treatment services. Although in another previous study,^[11] only one-third of their participants expressed the WTP for their own treatment and this was due to financial constraint. Affordability of healthcare services is still a challenge in Nigeria as many people live below the poverty line.^[12]

This study revealed lesser percentage of respondents in this study expressed their likeness to pay voluntarily: for transportation, ART drugs, healthcare workers volunteer allowance, consumable, referral cost, and laboratory expenses. Less than one fifth of our respondents were ready to forgo social things in order to pay for treatment, and this is in agreement with a study^[1] in which respondents were of the opinion that social expenses of the PLHIV may be reduced to copay for HIV treatment. More than average respondents of this study also believed that factors influencing the WTP include transport cost to HIV centers, very low government spending on health, poor service delivery, as well as inconsistent and unsustainable sources of income. More than half of respondents in this study believed that donor or government alone could sustain the funding for HIV services. It is high time the government of Nigeria scaled up her Health Insurance Scheme to cover all and sundry across the country; that way, the citizens would understand their role and that of the government/regulators in contributing to the payment of health services including HIV services.

Respondents' age was found to be significantly related to the WTP for HIV care and treatment services in this study with more proportion of those older than 40 years willing to pay. This is similar to findings in another study,^[13] where age was also found to be related to the WTP for HIV services. While only gender of the respondents was significantly related to knowledge of the respondents about type of services PLHIV received, their utilization and respondents' age were significantly related to their WTP for HIV treatment and preventive services, but this disagreed with another study,^[13] as they reported that age is related with WTP.

CONCLUSION

This study showed that about half of the respondents living with HIV were willing to pay for their care and treatment. With the dwindling funds from donor countries and limited resources, it is important for PLHIV to understand that they may be saddled with the responsibility of paying for HIV services with time. The government of Nigeria should scale up her health insurance program so that citizens will not have to pay for health services out of pocket.

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Conflicts of interest

There are no conflicts of interest.

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