

Prevalence and factors associated with condom use among people living with HIV/AIDS in Bayelsa state, Nigeria

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ABSTRACT

Epidemiological and laboratory studies have demonstrated that latex condoms effectively prevent HIV and other sexually transmitted diseases. However, inconsistent use or nonuse of condoms among people living with HIV/AIDS (PLWHAs) could propagate the spread of infection. The aim of the study was to determine the prevalence of condom use and identify the associated factors among PLWHAs in Bayelsa state, Nigeria. Six hundred (600) participants were recruited for this cross-sectional study from the HIV clinics at Federal Medical Centre (FMC), Yenagoa, and Otuasega Cottage Hospital, Ogbia in Bayelsa State, Nigeria after giving informed consent. An interviewer-administered questionnaire was used to collect data comprising socio-demographic characteristics, condom use and ART status of the respondents. The data obtained were analyzed and presented as frequencies and percentages. Chi-square and Binary logistic regression were used to test the association between variables with statistical significance set at $p < 0.05$. Results showed a mean age of 34.6 ± 6.4 years, comprising 160 males (26.7%) and 440 females (73.3%). The prevalence of condom use was 69.2%. There were statistically significant associations between age ($X^2 = 7.305$, $P = 0.007$), sex ($X^2 = 7.919$, $P = 0.005$; OR=1.6 (1.1-2.4), $P = 0.033$), religion ($X^2 = 12.238$, $P = 0.007$; OR=2.7 (1.1-6.8), $P = 0.039$), having skipped medication ($X^2 = 22.295$, $P < 0.001$; OR=2.1 (1.5-3.2), $P < 0.001$), revealed status to someone ($X^2 = 12.002$, $P = 0.001$; OR=2.7 (1.2-6.2), $P = 0.020$) and number of sexual partners ($X^2 = 14.684$, $P < 0.001$; OR=3.0 (1.7-5.4), $P < 0.001$) with condom use. In conclusion, condom use among PLWHAs in Bayelsa state is sub-optimal. There is a need to explore measures that target these factors to promote the attainment of the optimal prevalence of condom use among PLWHAs.

Keywords: PLWHA, HIV/AIDS, Condoms, Bayelsa State

INTRODUCTION

Human immunodeficiency virus (HIV) continues to be a major public health challenge thirty years after it was first reported in 1981. From its inception, HIV has claimed 40.1 million lives with an estimated 38.4 million people living with HIV at the end of 2021 (1). Furthermore, death from HIV-related causes was reported in 650,000 people with 1.5 million new HIV cases in 2021 (1). These new HIV cases continue to increase the global burden of HIV/AIDS with its imminent cost implication on healthcare, both regionally and globally, due to the chronic nature of the disease and its incurability. Sub-Saharan Africa accounts for two-thirds of the global HIV burden (1), making this region a focal point for disease control measures and interventions geared towards preventing transmission.

In 2018 when an estimated 1.7 million new HIV infections were reported globally, the WHO African region accounted for 1.1 million of these new infections (2), representing approximately 65% of the annual incidence of HIV infection in that year. By implication, Sub-Saharan Africa is a major contributor to both HIV infection incidence and the burden of HIV/AIDS disease. In Africa, Nigeria ranks as global third among countries with the highest HIV disease burden (3), with some states of the federation including Benue, FCT, Anambra, Bayelsa and Akwa Ibom contributing the highest numbers to this HIV prevalence (4). These regions have a high propensity to benefit from a better understanding of transmission dynamics and effective control measures. Epidemiological and laboratory studies have demonstrated that latex condoms are largely effective for the prevention of HIV and other sexually transmitted diseases (STDs) (5). However, inconsistent use or nonuse of condoms, especially among people living with HIV/AIDS (PLWHAs), minimizes the effectiveness of condoms in controlling the transmission of HIV and STDs (5). This is particularly imperative as transmission can occur with a single sex act with an infected partner (5). In Nigeria, the promotion of condom use as a means of protection against STDs and as a method of contraception is not particularly targeted at PLWHAs but towards the general public. Hence, there is a paucity of data regarding the prevalence and factors associated with condom use among PLWHAs in Nigeria, particularly in regions identified as high disease burden regions.

This present study aims to determine the prevalence of condom use among PLWHAs in Bayelsa state and identify the associated factors.

METHODS

Study Design and Study Site

This cross-sectional survey was carried out in Bayelsa state, Nigeria. One secondary and one tertiary health facility were selected for this study. The choice of the facilities where the study was carried out was achieved by independently balloting for the secondary and tertiary health facilities. Federal Medical Centre (FMC), Yenagoa was the tertiary health facility selected while Otuasega Cottage Hospital, Ogbia was the secondary health facility selected. The study was carried out between August and November 2021.

Ethical Consideration

Ethical approval was obtained from the ethics committee of FMC, Yenagoa with the number FMCY/REC/ECC/2021/JUNE/365. Administrative approval/permission was also obtained from the Ministry of Health, Yenagoa, Bayelsa state. Written informed consent was obtained from all study participants after carefully explaining the study protocol and its significance. All materials used were de-identified by using randomly assigned research identifiers. The study participants were assured of the confidentiality of the information they provide.

Participants

Study participants were selected using a multistage sampling technique. Following the selection of health facilities by balloting, the list of PLWHA who visited the health facilities was generated from the database of the HIV clinics. PLWHAs who attended the ART clinic had been on ART for at least one year, women of reproductive age (15-49 years) were included while acutely ill persons who were unable to communicate were excluded. These comprised of one thousand five hundred (1500) patients who then constituted the sampling frame from which participants were drawn. The probability proportional to size (PPS) method was used to

determine the number of participants to be selected from each facility. This amounted to five hundred and forty (540) participants from FMC Yenagoa that had one thousand three hundred and fifty (1350) patients who visited the HIV clinic in the previous month, and sixty (60) participants from Otuasega Cottage Hospital, Ogbia that had one hundred and fifty (150) patients who visited the HIV clinic in the previous month. All patients on the sampling frame were assigned numbers and the random start number of 3 and an interval of 2 were applied for the selection of participants from the sampling frame. A total of six hundred (600) participants were recruited for this study.

Study Instrument and Data Collection

A pre-tested interviewer-administered semi-structured questionnaire was used to collect data in this study. The questionnaire was divided into three sections covering socio-demographic characteristics, condom use and ART status.

Statistical Analysis

The data obtained were entered into an excel file and cleaned before exporting into the software, IBM Statistical Product and Service Solution (SPSS) version 25 for analysis. Data obtained from the study were analyzed and presented as frequencies and percentages. Chi-square and Binary logistic regression were used to test the association between variables. Statistical significance was set at $p < 0.05$.

RESULTS

A total of 600 PLWHA were recruited and a response rate of 100% was recorded in this study. The study comprised 160 males (26.7%) and 440 females (73.3%). Most of the respondents 340 (56.7%) were between 31-40 years, 457 (76.2%) were married, 338 (56.3%) had vocational/technical education as their highest level of education and 284 (47.3) were of the Pentecostal religion. The mean age of the respondents was 34.6 ± 6.4 years. (Table 1)

The majority of the PLWHA had been aware of their status and on HAART for 2-4 years (309, 51.5% and 336, 56.0% respectively). Study participants mostly indicated that they always get their medications (584, 97.3%) yet a higher proportion indicated skipping medication (339, 56.5%), and 535 (89.2%) had revealed their status to someone else. Most of the study participants had been sexually active within 6 months before the study (577, 96.2%) with 178 (30.8%) indicating non-use of condom during sexual intercourse (Table 2 and Figure 1)

Test of association showed that the demographic characteristics, age ($X^2=7.305$, $P=0.007$), sex ($X^2=7.919$, $P=0.005$), and religion ($X^2=12.238$, $P=0.007$) were significantly associated with condom use. Furthermore, having skipped medication ($X^2=22.295$, $P<0.001$), revealed status to someone ($X^2=12.002$, $P=0.001$) and the number of sexual partners ($X^2=14.684$, $P<0.001$) were significantly associated with condom use. (Table 3)

Binary logistic regression analysis showed 1.6 (1.1-2.4) times higher odds of condom use among female PLWHAs compared to males. There were also significantly higher odds of condom use among PLWHAs who were Catholics compared to PLWHAs of other religious affiliations (OR: 2.7(1.1-6.8)). PLWHAs who had skipped medication had higher odds of condom use (OR: 2.1 (1.5-3.2)) than those who had not. The odds of condom use were higher among PLWHAs who had not revealed their status to someone else (OR: 2.7 (1.2-6.2)) than

those who revealed their status to someone else. A higher odd of condom use was observed among PLWHAs who had more than one sexual partner (OR: 3.0 (1.7-5.4)) compared to those who had one sexual partner. (Table 4)

Table 1: Social Demographic characteristics

Variable	Frequency(n=600)	Percent (%)
Sex		
Male	160	26.7
Female	440	73.3
Ages		
≤20 years	15	2.5
21-30 years	140	23.3
31-40 years	340	56.7
41-50 years	100	16.7
> 50 years	5	0.8
<i>Mean±SD</i>	<i>34.6±6.4</i>	
Education		
No formal education	10	1.7
Basic primary	15	2.5
Secondary	78	13
Technical/vocational	328	54.7
Undergraduate	30	5
Graduate	65	10.8
Postgraduate	74	12.3
Marital status		
Single	78	13.0
Married	457	76.2
Separated	24	4.0
Divorced	6	1.0
Widowed	13	2.2
Cohabiting	22	3.7
Religion		
Pentecostal	284	47.3
Protestant	87	14.5
Catholic	206	34.3
Islam	11	1.8
Traditionalist	8	1.3
Others	4	0.7

Table 2: ART-related characteristics of the respondents

Variable	Frequency n=600	Percent (%)
Duration of status awareness		
≤1 year	29	4.8
2-4 years	309	51.5
≥ 5 years	262	43.7
Duration of ART		
≤1 year	32	5.3
2-4 years	336	56.0
≥ 5 years	232	38.7
Always get medication		
Yes	584	97.3
No	16	2.7
Ever skipped medication		
Yes	339	56.5
No	261	43.5
Revealed status to anyone		
Yes	535	89.2
No	60	10
Don't remember	5	0.8
Sexually active (in last 6 months)		
Yes	577	96.2
No	23	3.8

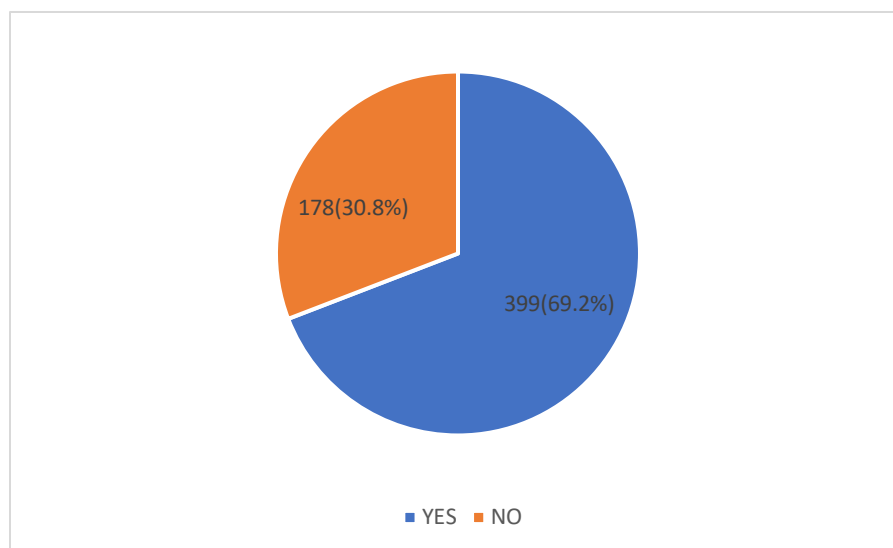


Figure 1: Prevalence of Condom use among sexually active HIV patients

Yes, represents the percentage of patients who used condoms consistently

No represents the proportion of patients who were either inconsistent with condom use or non-use

Table 3: Factors associated with condom use

Variable	Condom use		X ² (P-value)
	Yes n(%)	No n(%)	
Age			
<40 years	319(72.0)	124(28.0)	7.305(0.007)*
≥40 years	80(59.7)	54(40.3)	
Education			
Secondary education and below	313(70.7)	130(29.3)	2.2022(0.155)
Tertiary education	86(64.2)	48(35.8)	
Sex			
Males	96(60.4)	63(39.6)	7.919(0.005)*
Females	303(72.5)	115(27.5)	
Marital status			
Single/Divorced/Widowed	87(88.8)	11(11.2)	21.312(<0.001)*
Married/Cohabiting	312(65.1)	167(34.9)	
Religion			
Pentecostal	177(65.8)	92(34.2)	12.238(0.007)*
Protestant	70(82.4)	15(17.6)	
Catholic	141(70.1)	60(29.9)	
Others	11(50.0)	11(50.0)	
Duration of status awareness			
≤ 4 years	235(70.6)	98(29.4)	0.744(0.388)
>4 years	164(67.2)	80(32.8)	
ART Duration			
≤ 4 years	258(71.1)	105(28.9)	1.698(0.193)
>4 years	141(65.9)	73(34.1)	
Always gotten medication			
Yes	388(69.2)	173(30.8)	0.001(0.972)
No	11(68.8)	5(31.3)	
Ever skipped medication			
Yes	248(77.3)	73(22.7)	22.295(<0.001)*
No	151(59.0)	105(41.0)	
Revealed your status to others			
Yes	345(66.9)	171(33.1)	12.002(0.001)*
No	54(88.5)	7(11.5)	
Sexual partners			
One	301(65.4)	159(34.6)	14.684(<0.001)*
More than one	98(83.8)	19(16.2)	

Table 4: Predictors of Condom use

Variable	AOR (95% C.I.)	P-value
Age		
<40 years	1.2(0.8-1.8)	0.463
≥40 years ^R		
Sex		
Females	1.6(1.1-2.4)	0.033*
Males ^R		
Religion		
Pentecostal/Protestants	2.1(0.8-5.4)	0.095
Catholic	2.7(1.1-6.8)	0.039*
Others ^R		
Ever skipped medication		
Yes	2.1(1.5-3.2)	<0.001*
No ^R		
Revealed your status to others		
No	2.7(1.2-6.2)	0.020*
Yes ^R		
Sexual partners		
More than one	3.0(1.7-5.4)	<0.001*
One ^R		

*Significant at p<0.05

DISCUSSION

This present study determined the prevalence of condom use among PLWHAs in Bayelsa state and identified the associated factors. The prevalence of condom use among sexually active PLWHAs observed in this study was 69.2%, similar to 70.6% reported in Kogi state, Nigeria (6). However, our finding is contrary to the report that 80.6% of sexually active PLWHAs studied in Maiduguri, Nigeria never used condoms (7) as well as the report of condom utilization by 45.2% of PLWHAs attending ART clinics in Addis Ababa, Ethiopia (8). Although these differences from other studies may be a result of multifactorial dissimilarities in the populations studied but it also demonstrates a higher level of compliance in the present study population. Nevertheless, given the transmissibility of HIV by a single unprotected sexual contact, there remains more to be done to ensure complete compliance among PLWHAs in Bayelsa state.

This study found significant associations between age, sex, religion, having skipped medication, revealed status to someone and number of sexual partners with condom use among the PLWHAs studied. The odds of condom use by female PLWHAs were 1.6 times the odds of condom use by male PLWHAs. This is contrary to previous reports that more males than female PLWHAs used condoms Salaudeen, Musa (6) and that male PLWHAs were more likely to utilize condoms than female PLWHAs respectively (8). These previous studies had opined that women were less powerful to negotiate condom use, had less ability to decide on sexual life or were constrained by economic problems indicating subtle inequalities in sexual relationships. The difference observed in this present study may be an indication of a more positive attitude towards safe sex and practice of safe sex among female PLWHAs who may now be advancing a

course towards more equitable relationships. However, further studies are required to confirm these suggestions. It also depicts the importance of understanding the distinctness of various populations to ensure that interventions are reasonably adaptable for better outcomes.

Our finding of an association between religion and condom use contradicts the report of Salaudeen and Musa (6) that there was no association between religion and condom use. However, there were only two religious affiliations considered in the study by Salaudeen, Musa (6) which were Christianity and Islam but in this present study, due to the preponderance of the Christian religion in the area of study, the various sub-affiliations of the Christian religion were taken into consideration. Compared to other religious affiliations, PLWHAs who were Catholics had 2.7 times odd condom use. This finding may be due to the open support of the Roman Catholic Church for the use of condoms whenever a sexual act threatens to endanger the life of one of the partners in a sexual relationship (9), while the position of other religious affiliations is either conditional or controversial. This underscores the influence of religious belief/affiliation on individual actions and the need for collaboration with religious bodies in the fight against the spread of HIV infection.

This present study observed that PLWHAs who had skipped medication had 2.1 times odd of condom use than those who had not skipped medication. Antiretroviral therapy (ART) effectively suppresses HIV replication within an infected host resulting in reduced viral activity and improved health (10). Lower odds of condom use among PLWHAs who do not skip medication observed in this present study may be due to the impression of non-infectiousness due to reduced viral load or improved health. Our finding supports the report of a previous study that people who believe that they are less infectious when their blood viral load is undetectable as a result of treatment adherence reduce condom use and increase unprotected sex (11). This study also found that PLWHAs who had not revealed their status to someone else had 2.7 times the odds of condom use than PLWHAs who had. This corroborates the findings of previous studies (7, 8) and indicates that disclosure of HIV status could help keep PLWHAs reminded and conscious of the need to practice safe sex. A higher odd of condom use (3 times) was observed among PLWHAs who had more than one sexual partner compared to those who had one sexual partner. This is contrary to the report of Geleta and Tiruneh (8) that PLWHAs who had multiple sexual partners were 85% less likely to utilize condoms but agrees with the report of Deuba, Kohlbrenner (12) that PLWHAs having a regular partner HIV-positive and unknown status was associated with inconsistent condom use. Hence there is a need to encourage PLWHAs to use condoms irrespective of the status of the number or status of their sexual partners.

In conclusion, the prevalence of condom use among PLWHAs in Bayelsa state is still suboptimal. Sex, religion, having skipped medication, revealed status to someone and number of sexual partners were significantly associated with condom use among PLWHAs in Bayelsa state. There is a need to explore measures that target these factors as a means to promote the attainment of the optimal prevalence of condom use among PLWHAs.

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