

Consistent Condom Use and Its Associated Factors Among HIV Patients in a Tertiary Hospital in Southwest Nigeria

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Abstract: The objective was to determine the rate of consistent condom use and the associated factors in HIV patients attending adult HIV clinics in Federal Teaching Hospital, Ido-Ekiti, Nigeria. The study was a cross-sectional study of consecutive 212 HIV patients, 18 years and older attending adult ART clinics of Federal Teaching Hospital, Ido-Ekiti, for follow up from April to June 2016. Consistent condom use before and after commencement of ART was 21.7% and 43.4% respectively. About half (50.9%) of the participants did not know the HIV status of their sexual partners. The proportion of participants who were sexually active reduced from 90.9% to 64.1% after commencement of antiretroviral therapy. Gender, duration of ART, knowledge of partner's HIV status and having more than one current sexual partner were significantly associated with consistent condom use. The study shows that consistent condom use increased after the commencement of ART. It also reveals that consistent use of condom of 43.4% after commencement of antiretroviral therapy is significantly associated with male gender, knowledge of partner's HIV status, more than one current sexual partner and longer duration on ART.

Keywords: Condom Use, Associated Factors, HIV Infection, Antiretroviral Therapy, Nigeria

1. Introduction

Human immunodeficiency virus (HIV) /Acquired immune deficiency syndrome (AIDS) continues to be one of the greatest public health challenges in this generation. In 2015, there were 36.7million people living with HIV/AIDS (PHAs) globally. There were 2.1 million new infections and 1.1 million AIDS-related deaths. In Western and Central Africa, 6.5 millions were living with HIV infection in 2015 [1]. Nigeria has the third and second highest burden of the

disease globally and in sub-Saharan Africa respectively and it is responsible for most of the infections in Western and Central Africa [1]. The most recent national prevalence survey for HIV in Nigeria in 2014 by the National AIDS and STI Control Programme of the Federal Ministry of Health put overall HIV prevalence in Nigeria to be 3.0% [2]. About 3.5 million people were estimated to be living with HIV infection in Nigeria and the estimated number of new

infections and AIDS-related deaths in 2013 was 390,000 and 217, 000 respectively in 2013 [2].

Globally, there is increasing access to antiretroviral treatment (ART). In the world most affected region, Eastern and Southern Africa, the number of people on treatment has more than doubled since 2010 [1]. This expanding access to ART has significantly and positively affected the HIV/AIDS statistics. The gains in treatment are largely responsible for a 26% decline in AIDS-related deaths globally since 2010 from about 1.5millions in 2010 to 1.1million in 2015 [1]. Antiretroviral therapy has reduced morbidity and mortality from HIV infection, improving the quality of life of PHAs and enabling normal living including sexual activity. This may result in treatment optimism, risk compensation or behavioural disinhibition with inadequate adherence to safe sex. However, unprotected sex in PHA on ART is associated with risk of transmission to a sero-negative partner and risk of acquiring drug-resistant strains from a sero-positive partner resulting in multiple infections [3]. Although ART has significantly reduced the risk of sexual and mother to child transmissions, new infections are still occurring [1, 4, 5]. Thus, there is need for concerted efforts at prevention of transmission of new infections through promotion of consistent condom use among persons living with HIV infection.

Condom use is a key strategy for prevention of new HIV infection in PHAs on ART [6]. Condoms act as a barrier in preventing body fluids containing HIV from coming into contact with parts of the body vulnerable to HIV infection [7, 8]. There are two main types of condom: the external (male) and the internal (female) condoms. The external condom is placed on erect penis and the internal condom is placed within the vagina or rectum. Condom is the only HIV prevention strategy that can also reduce the risk of sexually transmitted infections (STI) and pregnancy [9].

Although, continuous condom use counseling and promotion campaign is part of the standard of care in HIV management, data on condom use in persons living with HIV infection on ART appear to be scarce in Ekiti State, southwest Nigeria. The objective was to determine the rate of consistent condom use and the associated factors in HIV patients attending adult HIV clinics in Federal Teaching Hospital, Ido-Ekiti, Nigeria.

2. Methods

Study Area

The study was conducted in the adult out-patient ART clinic of the Federal Teaching Hospital (FETH), Ido-Ekiti. The FETH started as a Federal Medical Centre in 1998 from the former Ido General Hospital. The FETH, Ido-Ekiti, is a 169 bed facility situated in Ekiti state, south west Nigeria, and functions as a primary, secondary and tertiary health centre for people in Ekiti State and adjoining states of Osun, Ondo, Kwara and Kogi. The hospital commenced HIV prevention, treatment and care services in 2006 and the

programme has enrolled more than 2000 HIV patients. The adult out-patient ART clinic provides comprehensive prevention, treatment and care services to the HIV patients which include regular counseling on HIV prevention measures and methods.

2.1. Study Design

The study was a descriptive cross-sectional study of consecutive 212 HIV patients, 18 years and older attending adult out-patient ART clinic of FETH, Ido-Ekiti, for follow up from April to June 2016.

2.2. Study Instrument

Pre-tested, structured interviewer administered questionnaire was used to collect data from the participants. The questionnaire consisted the independent variables such as age, sex, occupation, marital status, education, number of sexual partners, ART use, ART duration, sexual orientation and knowledge of partner's HIV status. The dependent variable was consistent condom use. The questionnaire administrators were trained HIV counsellors and HIV clinic staff.

2.3. Ethical Consideration

The ethical clearance was obtained from the Health Research Ethics Committee of FETH, Ido-Ekiti. Informed consent was obtained from participants after the trained administrators had explained the objective, methodology and benefits of the study to the participants. They were also informed that they were at liberty to withdraw from the study at any point in time if they so wished without any consequence.

2.4. Data Analysis

The data were entered and analysed using the SPSS (IBM, Corp. NY) statistical software version 20 for Windows. Frequency distributions were presented using descriptive statistics. Bivariate and multiple logistic regression analyses were used to show the factors associated with consistent condom use. P value <0.05 was considered statistical significance.

3. Results

3.1. Socio-demographic Characteristics

The study participants were 212. The mean age was 36.4±10.1 years with age range of 18-72 years. There were more females (59.0%) than males (41.0%). One hundred and fifty five (73.2%) participants had at least secondary education while only 18 (8.5%) had no formal education. More than half of the participants (54.2%) were married. Other socio-demographic characteristics are highlighted in Table 1.

Table 1. Socio-demographic characteristics of participants.

Characteristics	Frequency (%)
Sex	
Male	87(41.0)
Female	125(59.0)
Age	
18-29	24(11.3)
30-39	85 (40.1)
40-49	65(30.7)
50-59	28(13.2)
≥60	10(4.7)
Education	
None	18(8.5)
Primary	39(18.4)
Secondary	72(34.0)
Postsecondary	83(39.2)
Occupation	
Civil/public service	49(23.1)
Artisans	30(18.4)
Professionals	28(13.2)
Trading/Business	53(25.0)
Farming	18(8.5)
Others	13(6.1)
Unemployed	21(9.9)
Marital status	
Single	26(12.3)
Married	115(54.2)
Divorced/Separated	39(18.4)
Widowed	32(15.1)

3.2. Sexual, HIV and Antiretroviral Therapy Characteristics

Consistent condom use before and after commencement of ART was 21.7% and 43.4% respectively. About half (50.9%) of the participants did not know the HIV status of their sexual partners, while. Among the participants that new their partners' HIV status, 48.1% were in sero-concordant relationship, while 51.9% were in sero-discordant relationship. About a third (33.0%) of the participants had more than one current sexual partners. One hundred and sixty eight (84.9%) had being on ART for more than 12 months before the study was conducted. The proportion of participants who were sexually active reduced from 90.9% to 64.1% after commencement of ART. Table 2 below shows other sexual, HIV and antiretroviral characteristics of the participants.

Table 2. Sexual, HIV and antiretroviral therapy characteristics of the participants.

Characteristics	Frequency (%)
Number of current sexual partners	
1	142(67.0)
>1	70(33.0)
Sexual orientation	
Heterosexual	201(94.8)
Homosexual	4(1.9)
Bisexual	7(3.3)
ART use	
Yes	198(93.4)
No	14(6.6)
Condom use before ART(n=198)	
Yes	43(21.7)
No	137(69.2)

Characteristics	Frequency (%)
Abstinence	18(9.1)
Condom use after ART(n=198)	
Yes	86(43.4)
No	41(20.7)
Abstinence	71(35.9)
Partners' HIV status	
HIV positive	50(23.6)
HIV negative	54(25.5)
Not known	108(50.9)
Duration on ART since initiation (months)	
6-12	30(15.1)
13-36	50(25.3)
>36	118(59.6)

3.3. Factors Associated with Consistent Condom Use

Gender, duration of ART, knowledge of partner's HIV status and having more than one current sexual partner were significantly associated with consistent condom use (Table 3).

Table 3. Factors associated with condom use after commencement of antiretroviral treatment.

Characteristics	Condom use after ART		OR(95%CI)	P value
	Yes	No		
Sex				
Male	54(62.1)	26(29.9)	4.85(2.94-6.35)	0.001
Female	32(25.6)	15(12.0)	1.00	
Age				
18-29	5(20.8)	9(37.5)	1.00	
30-39	33(38.8)	11(12.9)	0.96(0.82-1.52)	0.083
40-49	28(43.1)	8(12.3)	0.89(0.76-1.40)	0.462
50-59	18(64.3)	10(35.7)	0.62(0.55-1.28)	0.501
≥60	2(20.0)	3(30.0)	0.56(0.31-1.15)	0.724
Education				
None	5(27.8)	9(50.0)	1.00	
Primary	5(12.8)	8(20.5)	1.08(0.79-1.29)	0.091
Secondary	32(44.4)	11(15.3)	1.16(0.85-1.40)	0.084
Postsecondary	44 (53.0)	13(15.7)	1.21(0.82-1.46)	0.062
Marital status				
Married	45 (39.1)	15(13.0)	1.00	
Single	16 (61.5)	14(53.8)	0.98(0.81-1.52)	0.214
Divorced/Separated	13 (33.3)	8(20.5)	0.91(0.53-1.30)	0.425
Widowed	12 (37.5)	4 (12.5)	0.85(0.32-1.36)	0.489
Partners' HIV status				
HIV positive	10 (20.0)	12 (24.0)	2.09(1.87-3.25)	0.018
HIV negative	17 (31.5)	7 (13.0)	1.00	
Unknown	59 (54.6)	22 (20.4)	3.89(2.94-6.58)	0.001
Number of current sexual partners				
1	57 (40.1)	28 (19.7)	1.00	
>1	29 (41.4)	13 (18.6)	1.22(0.87-1.58)	0.040
Duration on ART since initiation (months)				
6-12	6 (20.0)	6 (20.0)	1.00	
13-36	18 (36.0)	9 (18.0)	2.25(2.02-3.40)	0.002
>36	62 (52.4)	26 (22.0)	4.40(3.56-7.30)	0.001

4. Discussion

Antiretroviral therapy remains an important method of reducing the risk of HIV transmission [10]. However, studies have shown that HIV risk compensation can occur in patients on ART with rates of unprotected sex increasing [11].

The study revealed that there were more females than

males (59.0% versus 41.0%) attending the adult out-patient HIV clinic in Ido-Ekiti, Nigeria. The finding is similar to that from several studies conducted in sub Sahara Africa [3, 12-19]. This might be due to relatively more female than male with HIV infection in Africa where heterosexual contact is by far the most frequent mode of transmission; and also to women having better health care-seeking behaviour than men [20, 21]. Women in sub Saharan Africa bear a disproportionate burden of HIV infection, which is exacerbated by their role in society and biological vulnerability [22, 23].

The study showed that consistent condom use among the participants before and after ART commencement was 21.7% and 43.4% respectively. This might be due to the effect of continuous counseling which is part of the standard of care in HIV prevention, treatment and care services. It might also be due to the fact that some HIV patients do not take their sero-status seriously until after commencement of ART. The 43.4% of condom use after ART is similar to 45.5% reported by Salaudeenet *al* [24], 48.8% reported by Oladele *et al* [12] and Oyebola *et al* [25] and many other Nigerian studies [26, 27]. However, it is lower than 78.9% reported by Shewamene *et al* [3] in Ethiopia. This wide difference might be due to cultural differences and beliefs which can produce varied behavioural inclinations and risk perceptions.

The study also revealed that consistent condom use among participants was affected by gender because significantly more males used condom than females (OR 4.85; 95%CI 2.94-6.35; $p=0.001$). This result corroborates that of other studies [3, 12, 24, 28, 29]. This might be due to several factors. In most African communities, females do not have the capacity to negotiate and insist on condom use by their male partners during sexual intercourse due to cultural, religious and socioeconomic reasons. In addition, female condom which should be complimentary in circumstances when male condom is not available or accepted by the male partners is also mostly unavailable.

The study also showed that participants with post secondary education (OR 1.21; 95%CI 0.82-1.46) were more likely to use condom compared with others with less formal education. This result is consistent with that reported in several studies [3, 12, 24-27]. This might be due to effect of education on positive behavioural changes and better knowledge of health risk among individuals with HIV infection.

The age of the participants and their marital status were not significantly associated with the use of condom. This is consistent with result of a Nigerian study reported by Oladele *et al* [12] and contrary to that of an Ethiopian study reported by Shewamene *et al* [3].

The duration of ART was also found to be significantly associated with consistent condom use. The participants who had been on ART for more than 36 months were more likely to report consistent condom use than those on ART for lesser duration. The result is similar to that found in the study by Shewamene *et al* [3]. This might be due to continuous counseling on safer sex practices which is part of the

standard of care in an effective HIV preventive and treatment programme.

In the study, other factors significantly associated with consistent condom use were knowledge of partner's HIV status and having more than one current sexual partner.

5. Conclusion

The study shows that consistent condom used increased after the commencement of ART. It reveals that consistent use of condom of 43.4% is significantly associated with male gender, knowledge of partner's HIV status, more than one current sexual partners and longer duration on ART. The major limitation of the study is that it was done in a single tertiary facility which makes its generalizability to be constrained. However, the study produces important data on the low rate of consistent condom use among HIV patients on ART and the factors associated with it. This data is useful to develop new measures to reduce HIV transmission from patients on ART.

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