

Sexual Activity and Unprotected Sex Among Treatment Seeking HIV/AIDS Patients: A Multi-Site Study in Nigeria

Research Article

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Abstract

Sexual activity without protection predisposes HIV infected individuals to re-infection of different strains and faster progression to AIDS. With advance treatment and sense of well being, sexual activities among patients, continues. The present study using a multivariate design examined prevalence of sexual activity, unprotected sex and associated factors. HIV related factors (e.g.; drug use combination; knowledge of duration of HIV diagnosis) and Socio demographic factors (e.g.; multiple spouse; age, gender, ethnicity) were involved in a model of unprotected sex among HIV/AIDS patients seeking treatment in three tertiary Hospitals in Nigeria. Five hundred and two, (187(37.3%) males and 315 (62.7%) females) HIV/AIDS patients participated in the study. Mean age and mean time in months since diagnosis were 36.73 ± 9.38 ; 19.42 ± 23.12 respectively. Two hundred and sixty four (48%) were sexually active. One hundred and fifty three (58%) engaged in unprotected sex. Two variables: educational status and marital status were related to unprotected sex at ($p < 0.05$). Median differences with Kruskal-Wallis H tests showed highest level of education, $p = 0.018$, and being currently married, $p = 0.009$ were associated with unprotected sex. Intervention to reduce unprotected sex among married patients with higher education should evolve among PLWHAs in Nigeria.

Keywords: Sexual Activity, Unprotected Sex, HIV/AIDS, Patients.

Introduction

Unprotected coital sex, in spite of HIV infection is a common activity among HIV-positive patients [1]. Consequently there have been reported new infections of HIV and emergence of different HIV strain or strains, which are resistant to antiretroviral drugs that potentially have been linked to increasing levels of sexual risk behaviors (SRB) among patients [2, 3].

Evidence from meta-analyses suggests that SRB is generally a common phenomenon among HIV patients on antiretroviral therapy (ART) [4-6]. Though with mixed results, where it was shown that ART does not necessarily increase sexual activity in patients [2], a significant reduction in unprotected sex, having multiple sexual partners and unprotected sex with HIV negative or unknown HIV status have been observed among patients on ART [4-6].

Studies outside Sub Saharan Africa suggested that certain socio demographic factors are associated with unprotected sex in HIV infection [7-9]. Some of the findings have been inconsistent; while being married and in long-term union have been associated with unprotected sex among HIV patients, other studies found that, unprotected sex was more common in unmarried as well as in HIV patients who had casual relationships [7-9].

Similar pattern exist among some sub-Saharan studies [10-13]. A study in South Africa, found 54.4% rate of unprotected sex among sexually active newly diagnosed HIV patients [13]. Unprotected sex was related to shorter duration of illness, having a partner, lack of knowledge of their partners HIV status, coping styles characterized by denial and use of substance [13].

A few studies in Nigeria have been mixed in terms of the factors associated with unprotected sex [14-23]. For example while, the initial study found that higher education and being married are

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protective to condom usage among PLWHA in Ibadan [14], the later study reported that patients who had primary education or lower and who were unmarried were more likely to engage in sex with non-regular partners [21]. Similarly, a study reported that about one third of sero concordance spouse attending a follow-up treatment in Kogi state of Nigeria did not use condom in their last sexual activity [15].

Mixed reports notwithstanding, evidences are replete that people living with HIV in Nigeria may continue to practice unprotected sex, usually in form non or consistent condom use, which may place them and their partners at risk [17-20]. One major correlates of unprotected sex among the patients is being in marital union [17]. The reasons why unprotected sex may be common among married HIV-positive is the need to keep and maintain marital relationship and on issues bothering on reproduction [17]. Other associated factors include, being a female, not aware of their partners HIV status, used condom prior to HIV infection; increase in age, had less than secondary school education, lack of disclosure and likely unmarried [17-20].

Though there has been an appreciable knowledge of the predictors of unprotected sex among HIV positive in Nigeria, all the studies have been conducted within a single health facility. Thus a multi cite study with variable cultural context may further enrich and enlarge the frontiers of knowledge of the factors associated with sexual risk behaviors among HIV positive receiving antiretroviral therapy in Nigeria. The aims of this study were: (1) to describe the level of sexual activity and unprotected sex (non-use of condom) among HIV patients on follow-up treatment and to (2) to identify those factors associated with non condom use.

Methods

Participants/Setting

Participants were clinically diagnosed HIV patients on routine ARV drug follow-up treatments at the Infectious Disease Hospital (IDH), Calabar; the State Specialist Hospitals Akure and the Ladoko Akintola University of Technology, Teaching Hospital Oshogbo. All patients were consecutively selected from among daily attendees to the hospitals. This study received ethical approval from the Social Sciences University of Ibadan Ethics Board (SSUIEB). A total of 502 patients (37.3%; males and 62.7%; females) who consented to participate in this study completed a set of questionnaire. From this, 264 (48%) who were sexually active (as indicated by having sex in the three months prior to study) were used for the current report. They include 109 (41.2%) males, 111 (42%) with tertiary education, and 111 (42%) with current marriage. They were predominantly of the Yoruba ethnic (47.3%) group and 123 (46.5%) were on a three drug combination ART. Demographic data for total sample are described below.

Measures

Demographic and health characteristics

The socio-demographic information such as age, gender, marital status, ethnic grouping, and duration of knowledge of HIV infection, years of education, religion, and employment status

was obtained from the patients. Other clinical information that was obtained includes history of admission due to HIV-related conditions and whether the HIV patients were currently taking any antiretroviral (ARV) medications or a combination of ARV drugs.

Procedure

At the ART clinic, medical records of the participants were reviewed to identify potential participants that meet the inclusion and exclusion criteria. Thereafter they were interviewed and a discussion held to explain the purpose of the study as well as present a detailed informed consent document. Patients were included if they have been diagnosed with HIV and are 18 years of age and older. Patients were excluded if they were too sick to participate in the study and the visit was their first appointment at the clinic. Only willing and consenting PLWHA in consecutive attendance at the clinic were recruited as research participants. They were allowed to read the questionnaire and respond accordingly.

A total of 550 fulfilled the inclusion criteria, and included as participants. Of these, 502 questionnaires were correctly and completely filled. Two hundred and sixty four (48%) who were sexually active (as indicated by having sex in the three months prior to study) got their data entered into the Statistical Package for Social Sciences (SPSS version 17.0) for data analysis. Test of proportions with Mann U Whitney was also done.

Data Analysis

Firstly, Cramer V chi-square tests for categorical variables were conducted in order to examine strength of association between demographic variables. Thereafter median differences between the associated variables with unprotected sex were done using Kruskal-Wallis H tests. Test of proportions with Mann U Whitney was also done. The Statistical Package for Social Sciences (SPSS version 17.0) was used for data analysis.

Results

Bivariate Analysis: Bivariate analysis with Cramer v test of the association between socio-demographic variables with unprotected sex of the PLWHA was done. Two variables: patients higher educational status (Cramer $\Phi = .21$, $p = 0.017$) and being married (Cramer $\Phi = .21$, $p = 0.009$) were significantly associated with unprotected sex. Gender, ethnicity, multiple spouse, number of partners, ARV drug combination and perceived quality of life were not significantly associated with unprotected sex.

Further analysis of the median differences (as shown in Table 2) in unprotected sex based on marital status and educational level was carried out using Kruskal-Wallis H tests. Results showed a significant difference in unprotected sex based on marital status, $\chi^2(2) = 11.46$, $p = 0.009$, with a mean rank engagement of 134.70 for married, 124.44 for singles, 91.6 separated/divorced and 192.50 for widowed respectively. The Mann U Whitney (Table 3) result demonstrated that the proportion of separated/divorced PLWH who engaged in unprotected sex is higher compared to the married, single and the widowed respectively. Married patients reported higher unprotected sex compared to the widowed, while

Table 1 . Showing Cramer, V analysis of the association between Socio-demographic Variables and engagement in unprotected sex among PLWHA.

	Categories	Unprotected sex		Cramer's V	Sig.
		YES	NO		
Gender	MALE	65 (24.6%)	44(16.7%)	0.029	NS
	FEMALE	88 (33.3%)	67(25.4%)		
Education	PRIMARY	6(2.3%)	16 (6.1%)	0.213	0.017
	SECONDARY	71(26.9%)	49 (18.6%)		
	HIGHER	71 (26.9%)	40 (15.2%)		
	PRIMARY NOT COMPLETED	1 (.4%)	3 (1.1%)		
	NEVER	4 (1.5%)	3 (1.1%)		
Ethnicity	YORUBA	77(29.2%)	48 (18.2%)	0.114	NS
	IGBO	23(8.7%)	13(4.9)		
	HAUSA	10(3.8%)	7(2.7%)		
	Others	43(16.3%)	43(16.3%)		
Marital status	MARRIED	103(39.0%)	8(30.3%)	0.209	0.009
	SINGLE	41(15.5%)	23(8.7%)		
	SEPARATED/DIVORCED	8(3.0%)	1(.4%)		
	WIDOWED	1(.4%)	7(2.7%)		
Multiple spouse	YES	68 (25.8%)	47 (17.8%)	0.021	NS
	NO	85 (32.2%)	64 (24.2%)		
	No response	1(.4%)	2(.8%)		
Drug combination	MORE THAN 3	9(3.4%)	5(1.9%)	0.13	NS
	THREE	68(26.0%)	55(21.0%)		
	LESS THAN 3	58(22.1%)	31(11.8%)		
	NONE	16(6.1%)	17(6.5%)		
Quality of life	EXCELLENT	65(12.9%)	50(10.0%)	0.06	NS
	GOOD	110(21.9%)	95(18.9%)		
	POOR	60(12.0%)	43(8.6%)		
	VERY POOR	49(9.8%)	30(6.0%)		

Table 2 . Kruskal-Wallis H test showing the effect of marital status on unprotected sex.

	Marital status	N	Mean Rank	Chi-Square	df	Sig.
Unprotected sex	MARRIED	183	134.7	11.463	3	0.009
	SINGLE	64	124.44			
	SEPARATED/DIVORCED	9	91.67			
	WIDOWED	8	192.5			
	Total	264				

Table 3 . Mann U Whitney multiple comparison test based on marital status.

	Marital status	N	1	2	3	4
Unprotected sex	MARRIED	183	-	1.08	1.92	2.42*
	SINGLE	64		-	1.47	2.77*
	WIDOWED	8			-	3.05*
	SEPARATED/DIVORCED	9				-
	Total	247				

Table 4 . Kruskal-Wallis H test showing the effect of educational attainment on unprotected sex.

	Marital status	N	Mean Rank	Chi-Square	df	Sig.
Unprotected sex	PRIMARY	22	173	11.95	4	0.018
	SECONDARY	120	130.9			
	HIGHER	111	124.57			
	PRIMARY NOT COMPLETED	4	176			
	NEVER	7	133.57			
	Total	264				

Table 5 . Mann U Whitney multiple comparison test based on education.

	Marital status	N	1	2	3	4	5
Unprotected sex	PRIMARY	22	-	2.75*	3.17*	0.09	1.42
	SECONDARY	120		-	0.74	1.35	0.11
	HIGHER	111			-	1.57	0.36
	PRIMARY NOT COMPLETED	4				-	0.33
	NEVER	7					
	Total	247					

differences was not observed between the single and married patients.

Regarding the role of educational status, the Kruskal-Wallis H test (Table 4) showed a significant difference in patients unprotected sex ($\chi^2(4) = 11.95, p = 0.018$), with a mean rank engagement of 173 for primary, 130.90 for secondary school attainment, 124.57 for Higher education, 176.00 for primary and uncompleted primary education and 133.57 for no education respectively. The Mann U Whitney (Table 5) demonstrated that the proportion of the patients with primary education with unprotected sex is lesser compared to those with secondary and higher education respectively, while there was no observed differences between primary, part primary with patients with no formal education.

Discussion

The study examined prevalence of sexual activity, unprotected sex and correlates among HIV positive individuals receiving antiretroviral treatment in some facilities in Nigeria. Significant findings were: (i) about half of the HIV patients seeking treatment were sexually active (ii) more than half did not use condom in their last sex, (iii) highest level of education and being currently married were risk factors for non condom use.

Consistent with previous study in South Africa, where prevalence of non condom use among HIV patients was 54.4% [13] and among Nigerian patients with 71.1% and 41.2% inconsistent condom use respectively [17, 18, 19], we found 58% of non condom use rate among the current cohort. Though there were differential rates across studies, it is clearly indicated that non condom use is a common practice among PLWHA.

Previous work has indicated that PLWHA in married relationship are unlikely to practice safe sex [17, 19, 20]. This is similarly confirmed in the current study. The need to maintain the marriage relationship and the purpose of procreation may be a strong push towards unprotected sex among married PLWHA. Nevertheless, the importance of safe sex particularly within the marriage union

among PLWHA should be a continuous program implementation among married couples with HIV/AIDS.

Furthermore we found that the highest level of education of the HIV patients is associated with unprotected sex. This is contrary to the findings that less than secondary school education among their HIV cohort was related to unprotected sex [19]. Higher education increases the tendency for job mobility and career development, which may increase long term absence from home thereby increasing the susceptible to casual friendships and acquaintances. While this assertion may not be true for the educated alone, it increases the proneness to unsafe sex as documented in this study.

We were unable to corroborate previous findings of a relationship between gender, age, ART drug combination, asymptomatic HIV stage, duration of HIV diagnosis, and unprotected sex in HIV patients [13, 15, 17]. Methodological differences with respect to subject selection and outcome measures may account for these inconsistent reports. Notwithstanding that, a rigorous intervention to promote safer sexual practices may be needed to address this inherent problem among HIV/AIDS patients in Nigeria.

There were limitations inherent in the interpretation of the results of this study. First, a reliance on self-report accounts for response on unprotected sex is susceptible to response bias. Yet anchoring the behaviour to the most recent instance of sexual intercourse may have helped minimize patient recall bias and memory loss. While an individual's most recent sexual encounter may not reflect the actual average behaviour, limiting our enquiry had two other advantages: it was an unbiased selection of an event, and on a population level it should have reflected the true distribution of the sample population's behaviour. Secondly, although the sample for the study was selected from among treatment-seeking HIV patients in different sites in Nigeria, they still may not be representative of HIV-positive individuals in Nigeria as a whole.

Finally, the data presented in this study are cross-sectional and do not permit causal interpretations of the model. This also needs

to be considered when interpreting the results. Nevertheless, this data suggests that unprotected sex is common among PLWHA receiving ARV treatment across Nigeria, and is associated to being married and higher education. Nonetheless, the results underscore the need for continuous evaluation of risk sexual behaviour, particularly among HIV/AIDS patients receiving treatment, and psychosocial care for patients living with HIV.

Conclusions and Recommendations

Being married and higher education increased the likelihood that HIV and AIDS patients will practice unprotected sex. Therefore it is recommended that psycho education that will be targeted towards the highly educated and married couple be emphasized as an important aspect of antiretroviral treatment and that specific issues relating to procreation should be urgently considered as a major reproductive health issue in the HIV/AIDS phenomenon in Nigeria.

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