

# Correlates of Socio-Demographic Variables and Attitude to Condom Use in HIV/AIDS Prevention among Students in Some Selected Nigerian Universities

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## Abstract

**Background:** Unprotected heterosexual sexual act has been correlated with unwanted pregnancy and sexually transmitted diseases (STDs) especially HIV/AIDS, which still has a high endemicity in Africa. This study aimed to determine the association between socio-demographic variables (SDVs), sexual experience, and the use of condom. **Setting and Design:** This was a cross-sectional study comprising 542 undergraduate students, randomly selected from three Nigerian universities. **Methodology:** Well-structured open-ended questionnaires were administered to respondents. Bivariate analysis was used to determine the association between SDVs and attitude to condom use and between the SDVs, sexual experience and the use of condom. Data were analyzed using Epi6 6.04 and SPSS 10.0 software packages. Pearson's Chi-square ( $\chi^2$ ) and Fisher's exact tests were used as applicable. The level of significance was set at  $P < 0.05$ . **Results:** Approximately 46% of the respondents were sexually active (consisting of about 71% of those 25–29 years old and 58% of the males [ $P < 0.001$ ]). About 50.4% had a single sexual partner and 86.7% had “ever used” condom. The most common reasons given for use of condom were prevention of pregnancy (91.7%) and STDs (89.1%). All the SDV except religion significantly ( $P < 0.05$ ) accounted for the disparity in sexual attitudes of the students. Those aged 25 years and above, males and Tiv tribe were more likely to indulge in sexual activities ( $P < 0.001$ ). More females (98%) compared to males (83%) had ever used condom in their sexual experience ( $P = 0.010$ ), while there was no significant association between any of the SDVs and use of condom in the last sexual exposure ( $P > 0.05$ ). **Conclusion:** SDVs play a role in determining the attitude of students towards condom use and sexual experiences. Programs regarding sexual and reproductive health including safe sex education especially among young Nigerian students should be developed or strengthened.

**Keywords:** Condom, HIV/AIDS, pregnancy, socio-demographic, students, unwanted pregnancy

## INTRODUCTION

According to the United Nations program on HIV/AIDS (UNAIDS), there were about 36.9 million [34.3 million–41.4 million] people living with HIV worldwide as at 2014,<sup>1</sup> with Nigeria having the third highest prevalence, after South Africa and Zambia, with an estimated 3.6% of Nigerian population living with HIV.<sup>2,3</sup> Approximately 80%–95% of HIV infections in Nigeria are a result of unprotected heterosexual intercourse.<sup>4,5</sup> Factors contributing to this include lack of information about sexual health and HIV, low level of condom use and high prevalence of sexually transmitted diseases (STDs). Between 2000 and 2014, about 38.1 million people have become

infected with HIV with about 25.3 million deaths from AIDS-related illnesses.<sup>1</sup> Approximately 14.8 million children have lost one or both parents to the pandemic.<sup>3</sup> This had led to a significant decline of life expectancy to an average of

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48 years for women and 46 years for men, from an average of 54 years for women and 53 years for men two decades ago.<sup>6</sup>

Condom forms an integral part of STD and HIV/AIDS prevention; plays a role in preventing unwanted pregnancy, and its use has increased significantly over the past decades.<sup>1</sup> The correct and consistent use of condoms cannot be overemphasized as it reduces effectively the risk of HIV transmission by almost 100%.<sup>1,7,8</sup> Therefore, condom promotion has received considerable attention. It has shaped a redoubtable tool in the fight against the AIDS pandemic.<sup>1,7</sup> This is particularly important in sub-Saharan Africa where the transmission is mainly through sexual contact with a ravaging scourge. Yet condom use is amongst the most difficult issues to address in designing programs to reduce the sexual transmission of HIV in Africa due to sociocultural factors.<sup>9,10</sup> The HIV/AIDS epidemic is a growing public health problem in Nigeria.<sup>11</sup> It is the leading cause of death among people 25–44 years old, with young women comprising the largest category of new AIDS cases.<sup>11,12</sup> Some surveys had indicated an average of 3.5 sexual partners amongst Nigerian University students.<sup>13,14</sup> This present study driven with the assumption that majority of university students are between 17 and 24 years of age might be vulnerable to HIV infection through risky sexual escapades.

The link between socio-demographic characteristic variations and the use of condom is yet to be extensively explored as findings from different countries have generated sundry and conflicting results for instance in the varying age groups.<sup>15,16</sup> In sub-Saharan Africa, apart from the dearth of literature on this subject, this controversial findings cannot also be rule out. For instance, the link between ethnicity as a predominant social marker in Nigeria, and sexual behavior still remains indefinite, since this relationship has not been extensively explored in Nigerian youth. Moreover, the influence of ethnicity on sexual behavior in Nigeria has received little or no attention.<sup>17</sup>

The purpose of this research was to investigate the association between socio-demographic variables (SDV), the attitude toward condom use and sexual experiences among Nigerian University students. The study will help policy makers and program planners determine what issues need to be stressed both in the design of future HIV/AIDS awareness and campaigns against unwanted pregnancies in Nigeria.

## METHODOLOGY

The study was carried out as approved by Nigeria's National Health Research Ethics Committee (NHREC) on HIV/AIDS.<sup>18</sup> The study areas consist of three Nigerian Universities located in 3 geopolitical zones (South West, North West and South East) which were randomly selected. The study targeted students ( $n = 542$ ) registered at three campuses (Akoka campus, University of Lagos; Samaru campus, Ahmadu Bello University Zaria; and Nsukka campus, University of Nigeria Nsukka) and cut across all Faculties. They are government-own universities admitting students from all over the country but mainly from

the three major ethnic groups in Nigeria: Yoruba, Hausa and Igbo. The survey was conducted from February through July 2009, using a cross-sectional design. Participants were selected randomly using each site's list of registered students. As each campus site had different size, a stratified sampling technique according to campus site was used, a better representation of students residing in each site was expected using this procedure.

Data collection used a pretest anonymous short self-administered questionnaire written in English, filled out in the classroom during regular school hours. The pretest of the questionnaire was done among 30 students from a University (University of Ibadan, Oyo State, Nigeria) apart from those where the study was conducted. Kappa's intra-rater reliability coefficient was determined by administering the questionnaire to the 30 students and then re-administered to the same students 2 weeks later. Kappa's intra-rater reliability coefficient between the responses on each question on the two occasions ranged from 0.71 to 0.83 indicating that the questions were reliable (Kappa >0.7 is considered satisfactory). The content validity was done by a public health expert who ensured that the items in the questionnaire had a common relevant trend and also cover the full scope of attitude to condom use.

Questionnaire was developed based upon a review of previous research containing both structured and open-ended questions. It was administered to consenting respondents to obtain socio-demographic information and also information on attitude to condom use and sexual experience.

## Data analysis

Data were analyzed using Epi6 6.04 (United State Centre for Disease Control and Prevention, Georgia, 2001) and SPSS 10.0 (SPSS Inc, Chicago, 1983) software packages. Descriptive statistics and 95% confidence intervals (CI) were calculated. Values at  $P < 0.05$  were considered significant. Means and percentages were weighted by campus site for socio-demographic characteristics, behavioral, and perception variables. Pearson's Chi-square ( $\chi^2$ ) test was carried out to determine the association between SDV and condom use. Fisher's exact test was applied if at least one expected value was <5.

## Ethical approval

This research was carried out in accordance with the ethical standards of and approved by the NHREC on HIV/AIDS<sup>18</sup> and also in accordance with the Helsinki Declaration (1975 as amended in 2000). Informed consent was obtained from all participants and confidentiality was optimally ensured noting the sensitive nature of the research. No name, matriculation number, phone number, department or faculty was used in the questionnaires and adequate privacy was ensured as participants filled and submit the questionnaires.

## RESULTS

### Socio-demographic variables of respondents

The respondents were mostly male students (61.1%). Most of them fall within the age bracket of 20–24 years (57.6%), followed

by those 15–19 years (20.7%), and those 25–29 years (16.2%). Majority were mostly Christians (87.8%) and from the Yoruba (48.9%) tribe [Table 1].

### Responsiveness and attitude to condom use and source of information

There was high awareness among the respondents to condom use (97.8%) and 70.0% of them believed it is the responsibility of both sexes to use it [Table 2]. As regards the sources of information, the electronic and print media had higher percentages (radio, 90.4%; TV, 92.1%; and newspaper, 80.4%) while parents (47.4%), relatives (50.9%), and internet (49.1%) had lower percentages. The main reasons specified for use of condom were for prevention of unwanted pregnancy (91.7%) and HIV (86.4%) and other STDs (89.1%) [Table 2].

### Respondent's sexual partners and attitude to condom use in the last sexual experience

About half (50.4%) of the respondents had just a single sexual partner [Table 3]. The percentages of the students with multiple sexual partners reduced to 11.3%, 8.8%, and 3.8% as the numbers of sexual partners increased arithmetically to 2, 3, and 4, respectively [Table 3].

Majority of respondents have sexual contact with their usual partners in their last coitus [Table 3]: boyfriend/girlfriend (70.6%), casual friend (17.2%), husband/wife (6%), fiancé/fiancée (0.4%), and others (0.4%). Although 10.5% of respondents had their last coitus in  $\leq 2$  months, 5.5% in 3–6 months and 3.8% in  $> 6$  months, majority (80.2%) did not respond to this question. In their last sexual intercourse, 66% of the respondents

“used” condom while 26.9% “did not use it essentially due to its reduction of sexual pleasure (32.8%) [Table 3].

### Association between socio-demographic variables and condom use and sexual experience

On sexual experiences, 46.3% of the respondents had been sexually exposed as against 53.7% which had “never” had any form of sexual exposure [Table 4]. All the SDVs except religion were independently and significantly associated with the students’ propensity to sexual exposure [Table 4]. The Pearson’s  $\chi^2$  values for age, gender and ethnicity were 52.1, 51.6, and 45.7, respectively ( $P < 0.05$ ), showing strong associations across the groups [Table 4]. The percentage of respondents that had “ever” had sex was 46.8% within the age bracket 20–24 years; this constituted the highest percentage (57.6%) of students’ cohort.

Those students that “ever used” condoms had significantly higher percentage (86.7%) compared to those that “never used” it (13.3%) [Table 5]. The use of condom in sexual experiences was significantly gender-biased with a higher percentage (98.0%) of females ( $P < 0.05$ ) “ever” using it in their sexual experiences [Table 5].

In relation to condom use among those that “used” or “did not use” it in the last sexual exposure and the SDV [Table 6], there were no statistically significant associations with all the variables ( $P > 0.05$ ).

**Table 1: Sociodemographic variables of respondents**

Variable	Frequency (n=542), n (%)
Age (years)	
15- 19	112 (20.7)
20- 24	312 (57.6)
25- 29	88 (16.2)
30- 34	9 (1.7)
35- 39	3 (0.5)
No response	18 (3.3)
Gender	
Male	331 (61.1)
Female	207 (38.2)
No response	4 (0.7)
Ethnicity	
Yoruba	254 (48.9)
Tiv	125 (23.0)
Idoma	77 (14.2)
Igbo	39 (7.2)
Others	19 (3.5)
No response	28 (5.2)
Religion	
Christianity	476 (87.8)
Islam	59 (10.9)
Traditional	3 (0.6)
No response	4 (0.7)

**Table 2: Distribution of respondents by awareness and knowledge of condom use**

Variables	Frequency, n (%)
Awareness of condom	
Yes	590 (97.8)
No	9 (1.7)
No response	3 (0.5)
Total	542 (100.0)
Who should use condom	
Male	132 (24.9)
Female	4 (0.8)
Both males and females	371 (70.0)
No response	23 (4.3)
Total	530 (100.0)
Sources of information*	
Radio	479 (90.4)
TV	488 (92.1)
Newspaper/magazine	426 (80.4)
Internet	260 (49.1)
Lecture	409 (77.2)
Workshop/seminar	350 (66.0)
Friends	413 (77.9)
Parents	251 (47.4)
Relatives	270 (50.9)
Benefits of the use of condom	
Prevention of pregnancy	486 (91.7)
Child spacing	425 (80.2)
Limiting children number	393 (74.2)
Prevention of HIV	458 (86.4)
Prevention of other STIs	472 (89.1)

\*Multiple responses. STIs - Sexually transmitted infections

**Table 3: Distribution of respondents by last sexual experience and number of sexual partners**

Variable	Frequency, <i>n</i> (%)
Time of last sexual intercourse (months)	
≤2	25 (10.5)
3- 6	13 (5.5)
>6	9 (3.8)
No response	191 (80.2)
Total	238 (100.0)
Partner in the last sexual intercourse	
Boyfriend/girlfriend	168 (70.6)
Casual friend	41 (17.2)
Husband/wife	14 (5.9)
Fiancé/fiancee	1 (0.4)
Others	1 (0.4)
No response	13 (5.5)
Total	238 (100.0)
Condom use in the last sexual intercourse	
Used condom	157 (66.0)
Did not use condom	64 (26.9)
No response	17 (7.1)
Total	238 (100.0)
Reasons for not using condom in last sexual intercourse	
Do not like it	4 (6.3)
Reduces enjoyment	21 (32.8)
Partner does not like it	13 (20.3)
Not easily available for purchase	3 (4.7)
No response	23 (35.9)
Total	64 (100.0)
Number of sexual partners	
1	120 (50.4)
2	27 (11.3)
3	21 (8.8)
4	9 (3.8)
≥5	16 (6.7)
No response	45 (19.0)
Total	238 (100.0)

## DISCUSSION

The tendency to engage in risk-related sexual intercourse is a prominent feature in the formative years of youths and this is responsible for the higher risk of contracting and transmitting sexually transmitted infections (STIs) especially HIV/AIDS infection among this age group.<sup>13,19</sup> There is high awareness of condom use among the study population (97.8%). The source of information was predominantly through the media (radio, television). This indicates the need to specifically broaden the sources of information in our Universities to achieve better awareness index.

On account of consistency with accessible data, some of the results were not anticipated. For instance, results in this present study showed a high (53.2%) late sexual debut, i.e., “never” been sexually exposed between 20 and 24 years of students and most (50.4%) had single sexual partners since their sexual

debut, which were inconsistent with results from other African countries.<sup>16,20</sup> Furthermore, the study by Adam,<sup>21</sup> had much earlier reported liberal sexual attitudes as it relates with age at first sexual encounter. Although 83.6% of the students had “ever” used a condom during sexual exposure, irregular condom use was as high as 41.2%, as against 55.8% habitual users. These findings lead one to inquire why students engage in unsafe sexual intercourse. The answer may not be farfetched as freedom from parental behavioral exclusions and a default sexual health education might have been a predominant factor. The likelihood of parental influence and persuasion were stronger in the teenage years 15–19 years,<sup>22</sup> which was why percentages as high as 77.5% that “never” had any form of sexual experience were recorded compared to 20–29 years which constitute the greater proportion of students’ population that had higher sexual escapades. Consequently, these students’ population was vulnerable and their community at higher risk of contracting STIs and spread of HIV infection.

As regards who should use condoms, although 70.0% believed it is the responsibility of both sexes, a combined percentage of 25.7% believe it is the task of either sex to use it. It is a major concern to note that these students had a high awareness risk of contracting STIs or HIV/AIDS. Among the more than 80% of respondents that reported condom use was good during sexual intercourse; a more significant population favored prevention of unwanted pregnancy, 91.7% and STIs 89.1%, (including preventing HIV 86.4%) as major reasons for its usage. This percentage is higher when compared to the 50% reported for similar reason among Nigerian students in previous study.<sup>23</sup> This variation may not be unconnected with the now increasing awareness of the consequences of indulging in unprotected sexual intercourse. Some reasons for not using condoms among the respondents in this study were similar to those cited in other studies among Kenyan and Nigerian students’ populations.<sup>16,24</sup> These include being embarrassed when going to buy condoms; not happy with using it; not readily available or accessible at the time of sexual intercourse; partner’s refusal, etc.

In this study, among students within the teenage bracket 15–19 years, only 22.5% of them had been sexually exposed compared to their South African counterparts, where more than 50% were already sexually active at the age of 16 years.<sup>20</sup> This shows a delayed sexual debut among our study population and this finding is also contrary to that found among Malagasy students whose median age at sexual debut was 19 years.<sup>25</sup> In addition, it is probable that some Nigerian students did not want to engage in premarital sexual activity because of religious convictions.

Some studies have reported findings that religious activity is significantly related to sexual attitudes, initiations and behaviors in different settings.<sup>26,27</sup> The more frequent religious activities, the more conservative the sexual attitudes of students.<sup>27</sup> When percentages of the religious were compared to non-religious students, it showed the latter to be significantly more sexually active. This finding suggests that religion may make the students to delay sexual debut, increased age at first sexual intercourse and the like. Religion may provide the students with



**Table 4: Association between socio-demographic variables and sexual experience**

Variables	Ever had sexual experience, <i>n</i> (%)			$\chi^2$	df	<i>P</i>	Fishers exact <i>P</i>
	Yes	No	Total ( <i>n</i> )				
Age							
15- 19	25 (22.5)	86 (77.5)	111	52.05	3	<0.001	
20- 24	139 (46.8)	158 (53.2)	297				
25- 29	60 (70.6)	25 (29.4)	85				
≥30	10 (83.3)	2 (16.7)	12				
Total	234 (46.3)	271 (53.7)	505				
Gender							
Male	185 (58.4)	132 (41.6)	317	51.6	1	<0.001	
Female	52 (25.7)	150 (74.3)	202				
Total	237 (45.7)	282 (54.3)	519				
Ethnicity							
Yoruba	84 (34.6)	159 (65.4)	243	45.68	4	<0.001	
Tiv	86 (70.5)	36 (29.5)	122				
Idoma	38 (50.0)	38 (50.0)	76				
Igbo	13 (35.1)	24 (64.9)	37				
Others	6 (33.3)	12 (66.7)	18				
Total	227 (45.8)	269 (54.2)	496				
Religion							
Christianity	208 (45.3)	251 (54.7)	459				0.15
Islam	24 (42.1)	33 (57.9)	57				
Traditional	3 (100.0)	0 (0)	3				
Total	235 (45.3)	284 (54.7)	519				

 $\chi^2$  - Chi-square test, df - Degree of freedom**Table 5: Association between socio-demographic variables condom use**

Variable	Ever used condom in sexual experiences, <i>n</i> (%)			$\chi^2$	df	<i>P</i>	Fishers exact <i>P</i>
	Yes	No	Total ( <i>n</i> )				
Age							
15- 19	21 (91.3)	2 (8.7)	23				0.97
20- 24	115 (85.8)	19 (14.2)	134				
25- 29	51 (86.4)	8 (13.6)	59				
≥30	9 (90.0)	1 (10.0)	10				
Total	196 (86.7)	30 (13.3)	226				
Gender							
Male	149 (83.2)	30 (16.8)	179	6.07	1	0.01	
Female	49 (98.0)	1 (2.0)	50				
Total	198 (86.5)	31 (13.5)	229				
Ethnicity							
Yoruba	72 (88.9)	9 (11.1)	81				0.29
Tiv	73 (86.9)	11 (13.1)	84				
Idoma	29 (80.6)	7 (19.4)	36				
Igbo	12 (92.3)	1 (7.7)	13				
Others	3 (60.0)	2 (40.0)	5				
Total	189 (86.3)	30 (13.7)	219				
Religion							
Christianity	174 (76.3)	27 (11.8)	201				0.49
Islam	21 (87.5)	3 (12.5)	24				
Traditional	2 (66.7)	1 (33.3)	3				
Total	197 (86.4)	31 (13.6)	228				

 $\chi^2$  - Chi-square test, df - Degree of freedom

**Table 6: Association between socio-demographic variables and condom use in the last sexual intercourse**

Variables	Condom use in last sexual intercourse, <i>n</i> (%)			$\chi^2$	df	<i>P</i>	Fisher's exact <i>P</i>
	Yes	No	Total ( <i>n</i> )				
Age							
15- 19	18 (75.0)	6 (25.0)	24				0.08
20- 24	98 (76.0)	31 (24.0)	129				
25- 29	35 (62.5)	21 (37.5)	56				
≥30	4 (44.4)	5 (55.6)	9				
Total	115 (64.6)	63 (35.4)	178				
Gender							
Male	120 (69.8)	52 (30.2)	172	0.28	1	0.60	
Female	36 (75.0)	12 (25.0)	48				
Total	156 (70.9)	64 (29.9)	220				
Ethnicity							
Yoruba	53 (70.7)	22 (29.3)	75				0.66
Tiv	58 (71.6)	23 (28.4)	81				
Idoma	23 (65.7)	12 (34.3)	35				
Igbo	7 (53.8)	6 (46.2)	13				
Others	5 (83.3)	1 (16.7)	6				
Total	146 (69.5)	64 (30.5)	210				
Religion							
Christianity	139 (70.9)	57 (29.1)	196				0.33
Islam	15 (75.0)	5 (25.0)	20				
Traditional	1 (33.3)	2 (66.7)	3				
Total	155 (70.8)	64 (29.2)	219				

$\chi^2$  - Chi-square test, df - Degree of freedom

a value system, which ostensibly encourage responsible sexual behavior in the form of abstinence. Researchers have shown that religion is not associated with condom use as in agreement with data obtained from research on Malagasy women.<sup>28</sup> This is also in tandem with our findings as there were no religious biases as to its usage. Similar results were also seen with the ethnicity or tribe of origin of the students.

Multiple sexual partners are an important factor considered during the transmission and prevention campaign of HIV/AIDS. The number of sexual partners an individual has is therefore significant in evaluating the risk of sexual indulgence.<sup>29</sup> It was also noted in a previous study that Nigerian students were unwilling to use condoms in their steady relationships.<sup>30</sup> This is consistent with findings from this present study in that a significant number of students (50.4%) had only a single sexual partner, 41.2% were occasional users while 26.8% of students did not use condom at all in their last sexual exposure. The main reasons given were that it reduces sexual pleasure (32.8%) and that their partners (mostly boyfriend/girlfriend) often refuted its usage (20.3%). The reason for this bias is unknown, but this may not be unconnected with the fact that the study was undertaken in a student-based community. Thus, indicating the need to specifically target these groups of students in HIV prevention programs and also relevant messages tailored towards students are required in defining condom promotion strategies on campuses.

In the aspect of sexual behaviors of students defined by the time of last sexual exposure, the result showed the proportion

of students that had sexual intercourse within the last 6 months ( $\leq 6$  months) to be higher ( $> 5.5\%$ ) than those students who did not (3.8%) for more than 6 months. Those who did not therefore show more likely conservative sexual attitude and should be noted that being conservative as a young individual may help in prompting positive sexual behaviors such as delay at first sexual experience, reduce number of sexual partners and indulge in regular and correct use of condom or even total abstinence.<sup>27</sup> In determining whether female respondents would be more conservative in their attitudes to condom use in their sexual experiences than their male counterparts, the result showed significant gender disparity. There was a higher percentage of female "ever" using condoms in their sexual experiences in contrast to another study which showed only 16% of the females as against 43% of the males.<sup>17</sup> However, more males (58.4%) were sexually active compared to females (25.7%). This observation may be ascribed to the likelihood of different environmental background where sexual point of references (or perception of sexuality) may not be similar due to socio-cultural factors.

## CONCLUSION

This study provides data which assessed the association between the major SDV and the common predictor variables of sexual attitudes usually discussed in most studies. Female gender and teen age group (15–19) are more likely to delay their exposure to sex and to use condoms in their sexual experiences. Quiet a high proportion (46%) of the students was sexually active and

the proportion varies directly with age with age, gender and ethnicity having significant influences on the sexual behavior of the students. This justifies the recommendation that more time should be spent in the delivery of adequate strategies to indulge in safe sexual practices and the implementation of an HIV prevention program in the Nigerian student community. It is useful for an immediate local HIV intervention, or for further youth sexual health research. This needs to be complemented by long-term HIV projects among students. School students who are more at-risk ought to take necessary precautions to protect themselves from HIV/STDs and should therefore be enlightened through socio-culturally appropriate intervention methods beginning from home. The rate of condom use by both sexes should be increased, particularly with a steady partner.

Some limitations of this study include possible bias (recall or others) in responding to the questions, avoidance of some of the questions, exaggeration or under-reporting of sexual activities by the respondents; collation of the data where some of the data may be missing and some communication barriers in terms of language differences.

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### Conflicts of interest

There are no conflicts of interest.

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