

---

**AN ASSESSMENT OF SEXUAL BEHAVIOUR AND ITS HEALTH OUTCOMES  
AMONG FEMALE STUDENTS OF A TERTIARY INSTITUTION  
ON THE PLATEAU, NORTH-CENTRAL NIGERIA**

---

**Egbodo CO,<sup>1</sup> Edugbe AE,<sup>2</sup> Bitrus J,<sup>2</sup> Kumbak F,<sup>3</sup> Pam VC,<sup>1</sup> Envuladu AE,<sup>3</sup> Banwat M,<sup>3</sup>  
Ocheke AN<sup>1</sup>**

<sup>1</sup>Department. of Obstetrics & Gynaecology, University of Jos/Jos University Teaching Hospital, Jos, Plateau State

<sup>2</sup>Department of. Obstetrics & Gynaecology, Bingham University, Jos campus Bingham University Teaching Hospital, Jos, Plateau State

<sup>3</sup>Department. of Community Medicine, University of Jos/Jos University Teaching Hospital, Jos, Plateau State

\*Correspondence: tufingers272@gmail.com

### **Abstract**

**Background:** Extant data suggest that negative consequences associated with sexual risk-taking are common in tertiary institutions worldwide and Nigeria is no exception.

**Objective:** To assess the sexual practices and health outcomes of risky sexual behaviour among the female students of a tertiary institution in north central Nigeria.

**Methodology:** This was a cross sectional study involving 400 female students of a tertiary institution on the Plateau. The subjects were selected from all the departments using a two-stage sampling technique. A pretested semi-structured self-administered questionnaire was used to obtain relevant information from the subject. Analysis was done using IBM-SPSS 22.0. Statistical significance was set at  $P \leq 0.05$ .

**Results:** Sixty-four percent of the respondents had their first sexual experience at age 19-23 years. About 48% had multiple partners within the last six months of the research while respondent's sexual partners were mostly male (98.8%). A large proportion (91.5%) of respondents practiced vaginal sex, with 6.2% practicing oral sex and 2.3% having anal sex. Only 23.1% used condom always and 38.7% of study participants did not negotiate for safer sex. The health outcomes included: unwanted pregnancies among 28.7% of them while abortion, STI and HIV were found in 28.7%, 28.2% and 16.7% of the respondents respectively.

**Conclusion:** Majority of the undergraduates in this study indulged in high-risk sexual behaviour with resultant adverse health outcomes of unplanned pregnancies, abortions and STIs.

**Key words:** Sexual behaviour, Female students, Health outcome, Tertiary Institution

### **INTRODUCTION**

There are consistent reports that majority of adolescents throughout the world are sexually active by the age of 19 years.<sup>1</sup> Reported mean age of onset of sexual activity for boys was 14.4 years and girls 15.9 years with majority of them by the end of adolescence.<sup>1</sup> This therefore exposes young unmarried people to sexually transmitted infections (STIs) including HIV/AIDS and Human Papilloma virus (HPV), unintended pregnancies and unsafe

abortions. They are also predisposed to increased risk of ectopic pregnancies, secondary infertility and genital tract malignancies in the future. Therefore, the sequelae of high-risk sexual behaviour remain a significant public health problem, especially among females aged 15-29 years.<sup>2</sup>

In Nigeria, many young people are sexually active and engage in high-risk sexual behaviour, such as early sexual debut, unprotected sex, multiple sexual partnerships, and anal sex, in the face of poor

knowledge about STIs.<sup>3,4,5</sup> As a consequence, there is a high reported rate of STIs of about 10% among young people between 15 and 24 years of age.<sup>6</sup> Of the 300,000 new HIV infections occurring annually in Nigeria, young people contribute 60% which was as a result of high-risk sexual behaviour.<sup>7</sup> Most young people often lack the skills and confidence necessary to negotiate for safer sex, while some erroneously perceive themselves not at risk of STIs, which are some of the vulnerability factors to HIV infection.<sup>8,9</sup> Therefore young people continuing to remain at the Centre of the global HIV epidemic in the face of other challenges that make them more vulnerable.<sup>10,11</sup>

The reported high rates of unwanted pregnancies and unsafe abortions in developing countries among adolescents and young-adults is an important cause of maternal mortality in the region, as such a critical public health problem.<sup>12,13</sup> This study assessed the sexual practices and the health outcomes of high-risk sexual behaviour among the female students of Plateau State Polytechnic.

## METHODOLOGY

### Study Area

This study was conducted at Plateau State Polytechnic, Jos Campus. The school was established in 1978 and it has a total of eight departments. The population of female students is 1700.

### Study Population

The study population comprised of female students of the Plateau State Polytechnic, Jos campus

### Study Design

This was a cross sectional study.

### Sample Size Determination

Sample size was calculated using Cochran formula [ $n = z^2pq/d^2$ ]

Where n = appropriate sample size

z= normal standard deviation at alpha level of 0.05= 1.96

p= the proportion of students having sex without condom in a similar study (57.0%).<sup>14</sup>

q= estimate of variance (0.31)

d= acceptable margin of error set at 0.05.  $n = z^2pq/d^2$

$n = [(1.96)^2 \times 0.57 \times 0.43] / (0.05)^2$

n = 377

An estimated 5% (19) was added to make up for incomplete responses or non-response. Total study participants were 400

### Sampling Technique

The study participants were selected from all the departments using a two-stage sampling technique. All 8 departments were included since all of them have female students. **Stage one:** Selection of classes; each department has students in different levels of academic pursuit: HND (first and second year) and OND (also first and second year). Using Simple random sampling by balloting, one of the classes was selected in each of the academic levels (HND/OND). **Stage two:** Selection of female students; a list of all the female students in all the classes selected was generated, (516). Proportion to size technique was used to determine the number of female students to be selected from each of the classes by dividing the number of eligible female students (A) in each class by the cumulative total of all the students in all the selected classes (B = 516) multiplied by the sample size (n) for the study, {i.e. number per class (c) = (A/B) x n}. 'A' for the various departments is as follows; Public administrations department-89, Accounting department-66, Legal and general studies department-69, Marketing department-73, Office technology department-63, Banking and finance department-54, Mass communication department-41, Business administration and management department-61.

Following which the serialized list of the eligible students in each of the classes selected (3 OND-1, 4 OND-2, 3 HND-1 and 3 HND-2 classes) was taken as the sampling frame from which random sampling technique using table of random numbers was used to select the participants for the study.

### Date Collection

A pretested semi-structured self-administered questionnaire was used to obtain information from the study subjects. This questionnaire was developed by the researcher based on the objectives of the study after extensive literature search

(Cronbach's alpha reliability,  $\alpha = 0.839$ ) and was pretested on students of University Jos among 10% of the estimated sample size. The research team comprised the researcher and research assistants. Two data collectors were recruited and trained by a Public health consultant on how to administer the questionnaires and address any concerns from the respondents. The questionnaires were shared in a hall to the selected students spaced apart and supervised to fill the information independently while maintaining confidentiality. All shared questionnaires were retrieved immediately by the trained data collectors.

Information that was obtained include; socio-demographic characteristics, sexual conduct and practices, and health outcomes. Information was also sought on use of alcohol and other substances.

### **DATA ANALYSIS**

Analysis was done using IBM-SPSS version 22.0. The level of statistical significance was set at  $P \leq 0.05$ . Simple descriptive statistic was used to present sociodemographic profile, sexual behaviour and health outcomes of the respondents in frequencies and percentages. Bivariate analysis was analysed for the overall sexual behaviour (risky/non-risky) and health outcomes. Number of sexual partners, condom use and safe sex negotiation were used to assess sexual behaviour while negative or unfavourable response to any such as multiple sexual partners, non-consistent use of condoms and non- negotiation of sex at all times was adjudged as risky sexual behaviour. Overall only if all three components were non-risky was it categorised as non-risky. Safe sex negotiation refers to a partner's ability to not only communicate the intention to either use condom or abstain to a partner, but also the other partner's reaction to such a proposal.<sup>9,15</sup>

### **Ethical Considerations**

Ethical clearance for this study was obtained from the Research and Ethics Committee of Jos

University Teaching Hospital (JUTH). Written informed consent was obtained from all students who met the criteria for inclusion in the study. Written permission was obtained from the school authority before commencement of the study.

### **RESULTS**

Table one shows that most of the study participants were in the OND programme (52.6%), 30 years or below (43.3%), non-indigenous tribes on the plateau (62.1%) and Christians (91.3%). Table two shows that most of the respondents had their first sexual experience at age 19-23 years (64.1%), had sex with only one partner within the last six months (52.3%), sexual partners were mostly male (98.8%) and practiced vaginal sex (91.5%). Oral sex and anal sex accounted for 6.2% and 2.3% respectively. Less than half (41.8%) of the respondents used condom occasionally, while about 42.1% of the study participants sometimes negotiate for safer sex. Table three shows that 47.7%, 76.9% and 80.8% of the study participants had risky sexual behaviour with respect to number of sexual partners, condom use and safe sex negotiation respectively. The combined analysis of sexual behaviour showed that 99% of respondent's sexual behaviour was risky. Table four shows that the prevalence of pregnancy amongst study participants was 28.7% while that of Abortion, STI and HIV were 28.7%, 28.2% and 16.7% respectively. Table 5 shows that amongst those with non-risky sexual behaviour in all the three outcomes, none had any of the outcomes studied. This finding was however not statistically significant. For the risky sexual behaviour group, there were double the number of those without the health outcomes than those with the health outcome. This also proved not to be statistically significant. The participants engaged in sex for various reasons in the six months prior to this study with sex for expression of love, for pleasure, to obtain favour, for monetary gain and to please someone accounting for 91 (23.3%), 89 (22.8%), 74 (19.0%), 71 (18.2%) and 65 (16.7%) respectively. These reasons were also expressed in various combinations as some respondents had more than one reason for engaging in sexual intercourse.

**TABLE 1: SOCIODEMOGRAPHICS OF THE RESPONDENTS**

SOCIODEMOGRAPHICS	(n) TOTALS=390	PERCENTAGE
<b>DEPARTMENT</b>		
<b>Public Admin</b>	67	17.2
<b>Mass Communication</b>	50	12.8
<b>Accounting</b>	52	13.3
<b>Legal and General Studies</b>	55	14.1
<b>Marketing</b>	48	12.3
<b>Office Technology Management</b>	41	10.5
<b>Banking and Finance</b>	31	7.9
<b>Business Administration and Management</b>	46	11.8
<b>TYPE OF PROGRAMME</b>		
<b>OND*</b>	205	52.6
<b>HND*</b>	185	47.4
<b>AGE(YEARS)</b>		
<b>≤ 20</b>	135	34.6
<b>21 – 29</b>	169	43.3
<b>30 – 39</b>	71	18.2
<b>40 – 49</b>	15	3.8
<b>ETHNICITY</b>		
<b>Plateau Indigenous Tribes</b>	148	37.9
<b>Non-indigenous Tribes</b>	242	62.1
<b>RELIGION</b>		
<b>Christianity</b>	356	91.3
<b>Islam</b>	34	8.7

\*OND  
=

Ordinary National Diploma                      \*HND = Higher National Diploma

**TABLE 2: SEXUAL BEHAVIOUR OF THE RESPONDENTS**

SEXUAL BEHAVIOUR	(n) TOTALS= 390	PERCENTAGE (%)
<b>AGE AT FIRST INTERCOURSE</b>		
≤ 18	83	21.3
19 – 23	250	64.1
24 – 28	57	14.6
<b>NUMBER OF SEXUAL PARTNERS IN PAST SIX MONTHS</b>		
1	204	52.3
2	90	23.1
3	54	13.8
4	42	10.8
<b>SEX OF SEXUAL PARTNER</b>		
Male	366	93.8
Female	22	5.6
Both	2	0.5
<b>TYPE OF SEXUAL INTERCOURSE PRACTICED</b>		
Vaginal Sex	349	89.49
Oral Sex	22	5.64
Anal Sex	8	2.05
Vaginal and oral	8	2.05
Vaginal and anal	2	0.51
Vaginal oral and anal	1	0.26
<b>CONDOM USE DURING SEXUAL INTERCOURSE</b>		
Do not use	137	35.1
Use Occasionally	163	41.8
Use always	90	23.1
<b>SAFER SEX NEGOTIATION WITH PARTNER(S)</b>		
At all times	75	19.2
Sometimes	164	42.1
At no time	151	38.7

**TABLE 3: SEXUAL BEHAVIOUR CATEGORISED: RISKY/NON-RISKY**

SEXUAL BEHAVIOUR COMPONENT	FREQUENCY (n)	PERCENTAGE (%)
TOTALS= 390		
<b>NUMBER OF SEXUAL PARTNERS</b>		
Non-Risky behaviour	204	52.3
Risky behaviour	186	47.7
<b>CONDOM USE</b>		
Non-Risky behaviour	90	23.1
Risky behaviour	300	76.9
<b>SAFER SEX NEGOTIATION</b>		
Non-Risky behaviour	75	19.2
Risky behaviour	315	80.8
<b>OVERALL SEXUAL BEHAVIOUR</b>		
Non-Risky behaviour	4	1.0
Risky behaviour	386	99.0

**TABLE 4: HEALTH OUTCOMES OF RESPONDENTS**

HEALTH OUTCOMES	FREQUENCY (n)	PERCENTAGE
TOTALS = 390		(%)
PREGNANCY (LAST SIX MONTHS)	112	28.7
ABORTION (LAST SIX MONTHS)	112	28.7
STI* (LAST SIX MONTHS)	110	28.2
Positive HIV* STATUS	65	16.7

\*self-

reported status based on the last test before the onset of this study

**TABLE 5: RELATIONSHIPS BETWEEN SEXUAL BEHAVIOUR AND HEALTH OUTCOMES**

CHARACTERISTIC	UNWANTED PREGNANCY		$\chi^2$	p-value
	YES	NO		
<b>OVERALL SEXUAL BEHAVIOUR</b>				
Non-Risky	0	4	1.624*	0.203
Risky	112	274		
CHARACTERISTIC	TERMINATION OF PREGNANCY		$\chi^2$	p-value
	YES	NO		
<b>OVERALL SEXUAL BEHAVIOUR</b>				
Non-Risky	0	4	1.624*	0.203
Risky	112	274		
CHARACTERISTIC	STI		$\chi^2$	p-value
	YES	NO		
<b>OVERALL SEXUAL BEHAVIOUR</b>				
Non-risky	0	4	1.584*	0.208
Risky	110	276		

\* = chi-square

## DISCUSSION

Of the 400 students that participated in this study, 390 (97.5%) reported to have had at least one sexual intercourse at the time of this study. This high level of sexual activity reported among this group of adolescent is similar to those reported in other higher institutions across Nigeria and other part of the world.<sup>1,2,10</sup> A significant proportion had sexual debut before the age 18 years which is bothersome considering the immediate and future health consequences of such practices.<sup>1,16,17</sup> Although early onset of sexual activity reported in this study is lower than the earlier reported prevalence in related studies across Nigeria and neighbouring countries, the health risk could be enormous when individualised.<sup>17</sup> The lower prevalence may be attributable to level of awareness, liberality and influence of money which may be higher in southern Nigeria when compared to the North.<sup>18</sup> North-central Nigeria is predominantly civil a service and agrarian region where such exposure may be delayed.<sup>19</sup>

Nearly half of the Respondents had multiple sexual partners which is similar to reports from other studies across Nigeria.<sup>20</sup> This unhealthy lifestyle may not be unconnected to the fact that adolescents and young person often engage in sexual experimentation and are often times ignorant of the associated negative consequences. Evidence to this could be deduced from the findings that as high as 89 (22.8%) and 90 (23.1%) of the studied respondents indulged in sexual activity for “pleasure and to express love respectively”, a situation which is even more worrisome. This practice if not stemmed down through sex education and other reproductive health services portend future danger.

Respondents engaged in a variety of sexual acts to satisfy their sexual drive ranging from vaginal intercourse, oral to anal and combinations of different acts. This is in line with the report of Marshall in 2010 that people engage in a variety of sexual acts, ranging from activities done alone (masturbation) to acts with another person (sexual intercourse, non-penetrative sex, oral sex, anal sex etc.) in varying patterns of frequency, for variety of reasons.<sup>21</sup> This study has also exposed some trend that most local studies did not address. That is the practice of anal sex and the oral sex which contributed to 5.2 and 6.2% respectfully. This study also revealed high prevalence of unwanted

pregnancies, subsequent pregnancy terminations and sexually transmitted infections (STIs) among respondents in the last six of this study. The lower prevalence reported in this study when compared to earlier ones may be due to the higher rate of condom use compared to the previous study.<sup>17</sup> However, this rate cannot be neglected as the complication of STI if not properly treated which is the case most times as the respondent may not visit qualified personnel who may have given them the right treatment. This rate is also higher than what was reported in the developed country where there was high level of condom use.<sup>22</sup> Early age at coitarche is associated with the risk of developing cancer of the cervix in the future and this was reported in 21.3% of the respondents. This study also revealed that sex for pleasure is the commonest factor among female students of the Polytechnic have sex followed by money. Majority of the respondent are youths which means that it is not surprising that the reasons for having sex are for pleasure and expression of love. It is also not surprising that money is the third reason because the economic hardship may have forced some of the students to have sex in order to raise money for their upkeep in school. Sexual behaviour is a sensitive topic. Information obtained from the respondents were self-reported and may not reflect their exact sexual behaviour in all cases.<sup>23</sup> The HIV status of the respondents was also self-reported. Those who said they were HIV negative reported based on their last actual test.

## CONCLUSION AND RECOMMENDATIONS

Majority of the undergraduates in this study indulge in unprotected intercourse and often with multiple partners and most did not negotiate for safer sex. This constitutes high risk sexual behaviour. This high risk sexual behaviour was also reflected in their health outcome such as high level of unwanted pregnancy with its attendant termination of pregnancies as well as sexually transmitted infections. There was also high rate of HIV infections among the respondents. Safe sex sexuality education is recommended for students in tertiary educational institutions to minimize this ugly trend. Youth friendly reproductive health services should also be provided in higher institutions where students can easily access care without fear of discrimination.

**ACKNOWLEDGMENT:** We wish to appreciate all the students who participated in this research. We also want to thank the leadership of Plateau State Polytechnic for granting us the permission to undertake this study in the institution. Lastly, we want to acknowledge the efforts our research assistants who helped us in data collection.

**CONFLICT OF INTEREST:** We declared that, we do not have conflict of interest.

## REFERENCES

1. Bamidele OA. Rampant Sexual Intercourse among Female Undergraduates in Nigeria and Induced-Abortion Related Morbidity. *Journal of Studies in Social Sciences* 2014; 8(1): 61-80.
2. Marianne JJ. Sexual behavior in the general population-factors associated with sexual risk behavior. PhD Dissertation, Health Aarhus University 2014.
3. Federal Ministry of Health. National HIV&AIDS and Reproductive Health Survey (NARHS), Abuja, Nigeria, Federal Ministry of Health. 2012; 141-8.
4. Ejembi CL, Otu A. Sexual behavior, contraceptive practice and reproductive health outcomes among Nigerian University students. *J Community Med Pri Health Care*. 2004;16(2):8-16.
5. Okonkwo PI, Fatusi AO, Ilika AL. Perceptions of peers' behavior regarding sexual decision making among female undergraduates in Anambra State, Nigeria. *Afr Health Sci*. 2005;5(2):107-13.
6. Onayade AA, Abiona TC, Ugbala C, Alozie G, Adetuyi O. Determinants of consistent condom use among adolescents and young adults attending a tertiary educational institution in Ile-Ife, Nigeria. *Niger Postgrad Med J*. 2008; 15(3): 185-91
7. National Agency for the Control of HIV & AIDS (NACA). Global AIDS Response: Nigeria Country Report. Abuja, Nigeria, NACA. 2012;17-9.
8. Othero DM, Aduma P, Opil CO. Knowledge, attitudes and sexual practices of University students for advancing peer HIV education. *East Afr Med J*. 2009; 86:11-5.
9. Regassa N, Kedir S. Attitudes and practices on HIV preventions among students of higher education institutions in Ethiopia: the case of Addis Ababa University. *East Afr J Public Health*. 2011; 8(2):141-54.
10. Tobin-West C, Akani Y. Sexual Risk Practices of Undergraduate University Students in the Niger Delta Region of Nigeria: Implications for Planning Interventions. *British Journal of Medicine & Medical Research* 2016; 13(7): 1-9. Article no. BJMMR. 23587 ISSN: 2231-0614, NLM ID: 101570965
11. Ebeniro CD. Knowledge and beliefs about HIV/AIDS among male and female students of Nigerian universities. *J Comp Res Anthropol Soc*. 2010; 1(1): 21-31.
12. Ibe, SN. "HIV/AIDS Awareness study of fresh study in Tertiary Institutions in Rivers state of Nigeria". *Journal of Applied Sciences and Environment*. 2005; 9(1): 11 – 13. <http://www.bioline.org.br/ja>.
13. World Health Organization (WHO). *Unsafe Abortion: Global and Regional Estimates of Incidence of and Mortality Due to Unsafe Abortion with a Listing of Available Country Data*, 3rd Edition, Geneva. 1998.
14. Kotloff KL, Tacket CO, Wasserman SS, Bridwell MW, Cowan JE, Clemens JD et al. A voluntary serosurvey and behavioral risk assessment for human immunodeficiency virus infection among college students. *Sex. Trans. Dis.* 1991; 18: 223-227
15. Isiugo-Abanihe UC, Erinosho O, Ushie B, Aderinto A, Sunmola G, Joseph R. Age of sexual debut and patterns of sexual behaviour in two Local Government Areas in Southern Nigeria. *Int J Health Geogr*. 2012; 16(4): 81-94.
16. Kabir M, Iliyasu Z, Abubakar IS, Kabir AS. Sexual behavior among students in tertiary institutions in Kano, northern Nigeria. *J Community Med Pri Health Care*. 2004; 16(2):17-22.
17. Ugboma HAA, Nwagwu VO, Orazulike NC. Sexual characteristics and Risk for Sexually Transmitted Diseases among Female Undergraduates in a Federal University in South-South Nigeria. *Inter J Trop Med*. 2016; 11(6): 200-203
18. Odimegwu C, Somefun OD. Ethnicity, gender and risky sexual behaviour among

- Nigerian youth: an alternative explanation.  
Reproductive Health. 2017; 14:16 - 31.  
DOI 10.1186/s12978-017-0284-7
19. Nigeria Demographic and Health Survey  
2013. Abuja, Nigeria, and Rockville,  
Maryland, USA: NPC and ICF  
International. 2014. Available online at:  
<http://dhsprogram.com/publications/publication-fr293-dhs-final-reports.cfm>
  20. DeLamater J. and Friedrich, W. (2000).  
Human Sexual Development. Journal of  
Sex Research, 2000; 39:10-14.
  21. Marshall C. Human Sexuality. Sex and  
Society. 2010; 2: 384
  22. Sui WHS, Li P-R, See L-C. Rate of condom  
use among sexually active adolescents: a  
nationwide cross-sectional study in Taiwan  
from 2012 to 2016. BMJ Open 2021;  
11:e047727. doi: 10. 1136/bmjopen-2020-  
047727
  23. Fenton KA, Johnson AM, McManus S,  
Erens B. Measuring sexual behavior:  
methodological challenges in survey  
research. Sex transm inf. 2001; 77: 84-92