



www.ajbrui.org

Afr. J. Biomed. Res. Vol. 23 (Special Edition, July, 2020); 21- 30

Research Article

An Inquiry into Sexual Health Knowledge and Sexual Risks Among Students of Tertiary Institutions in Ibadan, Southwest Nigeria

Olaotan T.O. and Omokhodion F.O.

Department of Community Medicine, College of Medicine, University of Ibadan. Ibadan, Nigeria.

ABSTRACT

Sexual activity is rampant among female undergraduates with the consequence of unintended pregnancies, abortions and sexually transmitted infections. This study was conducted to assess the prevalence and predictors of unprotected sexual intercourse and abortion; the knowledge, access to and use of contraceptives; as well as the knowledge of and exposure to Sexually Transmitted Infections among undergraduates of the Polytechnic and University of Ibadan. It was a descriptive cross-sectional study that employed a multi-stage sampling method. A structured questionnaire was administered to undergraduates of the Polytechnic of Ibadan (PTI) and the University of Ibadan (UI). Data were collected on demographic profile; reproductive and sexual history; knowledge, attitude to and use of contraceptives; and knowledge of and exposure to Sexually Transmitted Infections. Analysis was done using SPSS version 15.0. Significantly more males than females (27% vs 18%) were sexually active and more (25%) students of PTI than UI (19%). Abortion was significantly more prevalent in the Polytechnic (5.3%) than the University (1.6%). The major reason pregnancies were aborted was that they were unplanned for and abortion seekers were not ready for consequent financial responsibilities (57%) of keeping the pregnancies. Knowledge of the various forms of contraception was poor. Males had better access to contraceptives than females and significantly more males (36%) than females (6%) used contraceptives always. Overall, self-pleasure was the single principal reason (75.4%) respondents had for sexual intercourse and significantly more females (21.6%) than males (12.5%) had sex to please their partner(s). Knowledge about sexually transmitted Infections was assessed as fair.

Keywords: *Unwanted pregnancy, abortion, Contraception, Sexually Transmitted Infections*

*Author for correspondence: Email: fomokhodion@yahoo.com; Tel: +234 8023424607

Received: September, 2019; Accepted: March, 2020; Published: July 2020

Abstracted by:

Bioline International, African Journals online (AJOL), Index Copernicus, African Index Medicus (WHO), Excerpta medica (EMBASE), CAB Abstracts, SCOPUS, Global Health Abstracts, Asian Science Index, Index Veterinarius

INTRODUCTION

The spate of unsafe sexual practices, resultant unwanted pregnancies and abortions in today's society is of public health concern. In Nigeria, induced abortion is illegal except when performed to save a woman's life. The penal code, generally applied in the country's northern states, and the criminal code, which applies generally in the southern states allow this exception, specifying similar criminal penalties for non-compliance (Nigeria, 2004); yet abortions are quite common, and because they are often performed clandestinely or by unskilled providers, most are unsafe (WHO, 2011). Worldwide, an estimated 25 million unsafe abortions are performed every year (WHO) (2017). About 80,000 deaths from abortions are reported globally. In addition, during 2010-2014, it was estimated that 56 million induced abortions occurred each year worldwide. The overall abortion rate in Africa was 34 per 1,000 women in 2010-2014 (Sedgh *et al*,

2016). An estimated 1.25 million induced abortions occurred in Nigeria in 2012, equivalent to a rate of 33 abortions per 1,000 women aged 15-49 (Bankole *et al.*, 2015).

One group of people who contribute significantly to this is the young unmarried, who are mostly still in pursuit of tertiary education. Tertiary education offers students opportunity for greater independence from home, new friendships, as well as romantic and sexual relationships (Aziken *et al.*, 2003). These new opportunities and freedom come with high risk behaviours such as unplanned and unprotected sex sometimes with multiple sexual partners and are due to curiosity, peer pressure and sexual maturation (Abiodun *et al.*, 2009; Ahmed *et al.*, 2016; Aziken *et al.*, 2003). Globally, youths are more sexually active than any subgroup of the population (Fagbamigbe *et al.*, 2011). The proportion that is sexually active has been on the increase worldwide including Nigeria (Abiodun *et al.*, 2009; Aliko,

2012; Fagbamigbe *et al.*, 2011) and this exposes large numbers of youths to the risk of unwanted pregnancies and sexually transmitted diseases including HIV/AIDS.

Adinma *et al.* (2012) found that 55% of abortion seekers were students and 97% of them had at least secondary education with the majority (62%) being within the 20-24 years' age range. Another study found that out of a total of 425 female students at the University of Ibadan, 29% had ever had sexual intercourse – of which 25% had ever been pregnant and 90% had terminated the pregnancy (Cadmus and Owoaje, 2011). Ojiyi *et al.* (2014) in a study conducted among female undergraduates in Imo State University showed that two-thirds of the students were sexually active and only 39.9% of them used emergency contraception while just 34.4% of those who were aware of emergency contraception actually knew the appropriate time interval for its effectiveness.

Furthermore, the absence of contraceptive services in tertiary institutions and poor attitude to use has further led to increased rates of unwanted pregnancy, unsafe abortions and STIs among undergraduates of these institutions (Nibabe *et al.*, 2014; Ugoji, 2013), as relatively high awareness about contraceptives has been consistently reported in different studies (Arowojolu *et al.*, 2000; Duru *et al.*, 2015; Oguntona *et al.*, 2013.). Awareness of sexually transmitted infections among Nigerian undergraduates is reported to be high (Edith and Ovaioza, 2014), however the prevalence is equally high - 17.16% (Obiajuru and Jude, 2007) - among undergraduates in Imo state and a huge 70.60% reported by Thairu *et al.* (2015) among students from tertiary institutions in Abuja.

Hence, we sought to assess the prevalence and predictors of unprotected sexual intercourse and abortion; the knowledge, access to and use of contraceptives; as well as the knowledge of sexually transmitted infections among undergraduates in Ibadan. Moreover, most studies had focused on female undergraduates alone but because sexual intercourse involves both male and female, it was important to also find out how male students could be contributing to the menace and to determine what other factors could be contributory.

MATERIALS AND METHODS

Study design and population: This cross-sectional descriptive study was carried out in 2017 among male and female undergraduate students of the University of Ibadan and the Polytechnic of Ibadan. The University of Ibadan is the premier University in Nigeria. It is located in the city of Ibadan which is the largest city in West Africa. The institution is located five miles (8 kilometres) from the centre of the city. It has about 35,000 postgraduate and undergraduate students with the population split 50/50. Around a third of all students live in the University provided halls of residence. There are 9 undergraduate halls of residence (6 male and 3 female halls respectively) – within the campus. The Polytechnic, Ibadan is an institution of higher learning in Ibadan in Oyo State, Nigeria. It was founded in 1970. It awards the National Diploma (ND), Higher National Diploma (HND), Post Graduate Diploma and other professional certificates to its graduates. The overall student population was about 19,000.

Study location: The study locations were halls of residence of undergraduate students in the University of Ibadan – Queen Elizabeth II, Queen Idia, Mellamby and Nnamdi Azikiwe; while at the Polytechnic of Ibadan – Olori and Orisun.

Queen Elizabeth II is located along Oduduwa road within the campus. It was the first female residential hall in the University and was named after Queen Elizabeth II upon her visit to the University in 1956. It has a capacity of over 1000 students. There are 9 blocks in the hall (A-I); blocks G, H and I house first year students. Four blocks, A-D were used for the study. Queen Idia hall has 4 blocks (A, B, C and Flat); block B exclusively houses first year students. Blocks A, C and Flat were used for the study. There was an average of 1-6 persons per room. Mellamby Hall is located to the north of the University court. It was the first residential hall in the University, named after Kenneth Mellamby, the first Principal of University College, Ibadan (1947-53). The hall has a capacity for well over 400 students with four blocks (A-D), A block being primarily for freshmen; all of the remaining blocks were used for the study.

Olori Hall is located along Polytechnic Road, North campus, Olori Hall Road, Ibadan. It has 6 blocks (A-F). Each block has about 38 rooms with 3 occupants each except for F block that has 2 occupants. All the blocks were used in the study as there was no block for freshmen. Orisun Hall is located along Polytechnic Road, South Campus. It has 5 blocks (A-E). Blocks C, D, and E have 45 rooms each while blocks A and B have about 30 rooms each. There was an average of 2-4 persons per room. Blocks A, D and E were selected randomly for the study.

Sample size determination:

The sample size for this study was determined using sample size formula of Kasiulevicius *et al.*, (2006). A total of eight hundred and fifty-four participants were enrolled.

Sampling method: A multi-stage sampling method was used. In the first stage, out of the total number of six male and three female undergraduate halls in the University; two were selected by stratified random sampling for each gender as the halls of residence are located on two ends of the campus. One female and male hall each were purposively selected in the Polytechnic based on the maximum number of occupants, out of the total number of 2 male and 3 female undergraduate halls in the institution.

Second stage sampling involved selecting which blocks to use in the halls. Freshmen blocks were excluded from the selection because we aimed at individuals who should have been fairly influenced by the community of the tertiary institutions. The choice of block was by simple random and stratified random sampling depending on the number of blocks remaining in the hall and the location of the blocks within the hall.

Third stage sampling involved selecting which rooms and participants to be recruited in the study. A systematic sampling method was used to select which rooms to administer the questionnaires and the number of persons chosen per room corresponded proportionately to the number of persons who lived in each room. This was to ensure that participants were from all parts of the blocks selected. The participants from

each room were however chosen based on their willingness to participate.

Inclusion and exclusion criteria: Participants included unmarried male and female undergraduates of the University of Ibadan and the Polytechnic of Ibadan. They were between 17 and 24 years of age (The minimum entry age of the University is 16). The physically challenged and first year students were excluded from the sample population.

Data Collection: Structured self-administered questionnaires were used to obtain data on the variables of interest. The participants were assured of confidentiality and made to understand the purpose of the research as being entirely scientific while they were encouraged to provide entirely true answers to the questions asked. The questionnaire used was adapted from the Nigeria Demographic Health Survey model (2008).

Data Analysis Method: Data obtained was coded and entered into spread sheets. Analysis was done using SPSS version 15.0. Descriptive statistics such as frequency counts, percentages, pie chart, bar chart, Mean \pm standard deviation were used to summarize the results. Inferential statistics were used to compare the difference between some variables at $\alpha = 0.05$.

Ethical considerations: The study protocol was reviewed and approved by the UI/UCH HREC and informed consent was obtained from every participant.

RESULTS

Socio-demographic profile of respondents

The profile of 734 respondents interviewed based on gender and institution is shown in Tables 1 and 2. Overall, the respondents' ages ranged from 17 to 24 years, with a mean of 20.4 years. The majority (45%) were second year students and most of the students (63%) were studying either a social science or purely science-based course; with just 13% studying medical science related courses. About 80% of the students were Christians and 18% Muslims and the predominant ethnic group was Yoruba (83%). Furthermore, most (61%) of the male students in the study were in 200 level while there was about even distribution of female students in second- and fourth-year classes (37% and 38%). Forty-one percent of the University students were in their fourth year, closely followed by 200 level students (33%); while most (70%) of the students sampled in the Polytechnic were in their second year of study. Fifty-three percent of the Polytechnic sample took social sciences courses predominantly while 47% took courses categorized as purely sciences. On the other hand, 30% of the University students took purely science courses predominantly while 26% were in the Arts. Eighteen percent of the University population mainly took medical science courses.

With respect to religious affiliation, the majority of students in both the University and Polytechnic were Christians. However, proportionately more Muslims were in the Polytechnic (30%) compared to the University (12%). The

predominant ethnic group in both institutions was Yoruba but there was proportionately a larger Igbo population in the University (14%) compared to the Polytechnic (2%)

Table 1
Socio-demographic characteristics of the respondents by gender

	Variable	Male (N = 289)	Female (N=485)	Total (N = 734)
Age	17-18	40 (16)	74 (15)	114 (15)
	19-20	104 (42)	189 (39)	293 (40)
	21-22	68 (27)	149 (31)	217 (30)
	23-24	36 (15)	73 (15)	109 (15)
Level	200	151 (61)	183 (38)	334 (45)
	300	42 (17)	91 (19)	133 (18)
	400	52 (21)	180 (37)	232 (32)
	500	3 (1)	31 (6)	34 (5)
Course	Art	38 (16)	89 (19)	127 (17)
	Science	109 (44)	151 (31)	260 (36)
	Soc science	52 (21)	149 (30)	201 (27)
	Med. science	39 (16)	51 (11)	90 (13)
	Education	7 (3)	45 (9)	52 (7)
Religion	Christianity	198 (81)	384 (79)	582 (80)
	Islam	41 (17)	91 (19)	132 (18)
	Others	5 (2)	8 (2)	13 (2)
Ethnic group	Yoruba	208 (83)	398 (82)	606 (83)
	Igbo	24 (10)	51 (11)	75 (10)
	Hausa	9 (4)	28 (6)	37 (5)
	Others	8 (3)	7 (1)	15 (2)

The % is in bracket.

Table 2
Demographic characteristics of the Respondents by Institution

	Variable	University of Ibadan (N = 489)	Polytechnic of Ibadan (N = 245)	Total (N = 734)
Gender	Male	178 (36)	75 (31)	253 (34)
	Female	310 (64)	170 (69)	480 (66)
Age	17-18	68 (14)	47 (19)	115 (16)
	19-20	168 (38)	105 (41)	273 (38)
	21-22	157 (32)	60 (24)	217 (30)
	23-24	76 (16)	33 (14)	109 (16)
Level	200	162 (33)	172 (70)	334 (45)
	300	94 (19)	39 (16)	133 (18)
	400	199 (41)	34 (14)	233 (32)
	500	33 (7)	0	33 (5)
Course	Art	127 (26)	0	127 (17)
	Science	145 (30)	115 (47)	260 (36)
	Soc. science	71 (15)	130 (53)	201 (28)
	Medical sciences	90 (18)	0	90 (12)
	Education	52 (11)	0	52 (7)
Religion	Christianity	413 (85)	169 (70)	582 (80)
	Islam	60 (12)	72 (30)	132 (18)
	Traditional	13 (3)	0	13 (2)
Ethnic group	Yoruba	378 (77)	228 (93)	606 (83)
	Igbo	70 (14)	5 (2)	75 (10)
	Hausa	33 (7)	4 (2)	37 (5)
	Others	8 (2)	8 (3)	15 (2)

The % is in bracket.

Table 3
Reproductive and sexual history of respondents by gender

Variable		Male (N=289)	Female (N=485)	Total (N=734)
Ever received any sex education	Yes	220 (89)	464 (96)	684 (94)
	No	26 (11)	20 (4)	46 (6)
Most important source of education	Parents	53 (24)	206 (45)	259 (38)
	School	103 (47)	160 (35)	263 (39)
	Friends	16 (7)	18 (4)	34 (5)
	Church	21 (10)	27 (6)	48 (7)
	Mosque	6 (3)	3 (0)	9 (1)
	Health workers	18 (8)	31 (7)	49 (7)
	Internet	3 (1)	12 (3)	15 (2)
Had ever had girl / boyfriend	Yes	155 (63)	368 (76)	523 (71)
	No	92 (37)	117 (24)	209 (29)
Had ever had sex	Yes	66 (27)	85 (18)	151 (21)
	No	177 (73)	400 (75)	577 (79)
Number of sexual partners in last 12 months*	One	12 (24)	37 (57)	49 (45)
	Two or more	37 (76)	28 (43)	61 (55)
Frequency of having sex*	Weekly	15 (24)	13 (17)	28 (20)

Reproductive and Sexual History

The reproductive and sexual history of the students is shown in Tables 3 and 4. Overall, most of the students (94%) had

Table 4
Reproductive and sexual history of respondents by institution

Variable		University of Ibadan (N=489)	Polytechnic of Ibadan (N=245)	Total (N=734)
Ever received any sex education	Yes	470 (96)	214 (88)	684 (94)
	No	18 (4)	28 (12)	46 (6)
Most important source of education	Parents	169 (36)	90 (43)	259 (38)
	School	205 (44)	58 (28)	263 (39)
	Friends	23 (5)	11 (5)	34 (5)
	Church	21 (5)	27 (13)	48 (7)
	Mosque	5 (1)	4 (2)	9 (1)
	Health workers	28 (6)	21 (10)	49 (7)
	Internet	15 (3)	0	15 (2)
Had ever had girl / boyfriend	Yes	322 (66)	201 (82)	523 (71)
	No	167 (34)	45 (18)	211 (29)
Had ever had sex	Yes	90 (19)	61 (25)	151 (21)
	No	394 (81)	183 (75)	577 (79)
Number of sexual partners in last 12 months*	One	23 (41)	26 (48)	49 (45)
	Two or more	33 (59)	28 (52)	61 (55)
Frequency of having sex*	Weekly	12 (15)	16 (27)	28 (20)
	Fortnightly	7 (9)	6 (10)	13 (10)
	Monthly	11 (14)	14 (24)	28 (20)
	At least every three months	49 (62)	23 (39)	72 (51)
Main reason for having sex*	Self-pleasure	64 (79)	40 (70)	104 (75)
	To please partner	10 (12)	14 (25)	24 (71)
	Financial reasons	2 (3)	1 (2)	3 (2)
	Peer pressure	4 (5)	1 (2)	5 (4)
Had ever become or made someone pregnant*	Coercion	1 (1)	1 (2)	2 (1)
	Yes	10 (13)	14 (23)	24 (16)
	No	80 (87)	47 (77)	137 (85)
Had ever aborted or had pregnancy terminated for [@]	Yes	8 (89)	13 (93)	21 (88)
	No	1 (11)	1 (7)	3 (12)

* This refers to those who are sexually active.

[@] This refers to those who have either been pregnant or made someone pregnant.

The % is in bracket.

received sex education, although more female undergraduates (96%) had done so compared to their male counterparts (89%); and more students of the University (96%) had ever received sex education compared to the Polytechnic (88%). Furthermore, female undergraduates mainly received sex education from their parents (45%) as compared to male undergraduates (24%), as the male students were mainly sex-educated at school (47%). The University students had mainly received sex education at school (44%) compared to the Polytechnic students who mainly received sex education from their parents (43%).

A greater proportion of the female students (76%) had ever been in a romantic relationship compared to the male population (63%), and more (82%) of the Polytechnic students had ever had a boyfriend/girlfriend as compared to the University (66%). In addition, significantly more of the male students (27% vs 18%) proportionately had ever had sexual intercourse compared to their female counterparts while a greater proportion (25%) of the polytechnic students had experienced sexual intercourse relative to those of the University (19%) ($p < 0.05$). Of the male undergraduates who reported having sexual partners, 76% of them had multiple sexual partners within the previous 12 months whereas only 43% of the female students had more than one sexual partner in the same period.

Among those who reported frequency of sexual intercourse, only about a quarter male undergraduate had sexual intercourse weekly; majority of them (42%) had sex at least every 3 months. Similarly, most (60%) of the female students who reported frequency of sexual intercourse also had sex at least every 3 months while 17% of them had sex every week. Moreover, a greater proportion of Polytechnic students (27%) who had experienced sexual intercourse did so weekly when compared to those of the University (15%).

In total, the main reason for having sexual intercourse was self-pleasure (75%). Twelve percent of the male undergraduates that had ever had sex had impregnated at least a girl or woman while 19% of their female counterparts had ever been pregnant. Twenty-three percent of polytechnic students who had had sex had ever been pregnant relative to 13% of those of the University. In every case, about 90% of them had terminated the pregnancy.

Factors associated with sexual activity among undergraduates in our sample population are illustrated by Tables 5 and 6. Significantly more males (27%) than females were sexually active than their female counterparts (18%) and more (25%) of the students of the Polytechnic were sexually active compared to the University (19%). Overall, there was no significant relationship between having had sex education and sexual activity of the students.

Table 4 also illustrate that overall self-pleasure was the single principal reason (75.4%) these young unmarried people had sexual intercourse and averagely 17.4% of them mainly had sexual intercourse to please their partners. Furthermore, prevalence of abortion in the Polytechnic (5.3%) was higher than in the University (1.6%), $p < 0.05$; and overall, the main reason for abortion was because the pregnancies were

unplanned for or the individuals were not ready for the consequent responsibilities (57%).

Table 6 shows that in total, 82% of the student population shared views which were against abortion while 12% of them were rather indifferent, with 6% of them being in support of abortion. The analysis based on gender however showed some slight difference in that more of the female students (89%) were against abortion as compared to 70% of their male colleagues. Twenty-three percent of the male population were indifferent about abortion while just 6% of the female students were.

Knowledge, Access and Use of Contraception

The proportion of students who knew about the female fertile period and various contraceptive methods is shown in Table 7. Only one-tenth of male students and 24% of the females knew that a girl/woman is more likely to be pregnant half way between two periods and just 35% and 29% of the male and female students respectively knew a girl/woman could get pregnant during her period. Generally, knowledge of the various forms of contraception was just fair as only four (Male condom, Female condom, Withdrawal method and Oral Contraceptive Pills) out of 13 listed methods were known by more than 50% of the respondents. Overall, there was no significant difference between the male and female students in their knowledge of the various forms of contraception. The male condom is the most known contraceptive method by both genders; an average of 72% of respondents admitted knowing about the male condom while foaming tablets or jelly was the least known also by both genders – an average of 10% of respondents.

Table 5

Factors associated with sexual activity among undergraduates of the University of Ibadan and Ibadan Polytechnic

Variable	Ever had sex		Statistics	
	Yes (%)	No (%)		
Gender	Male	66 (27)	177 (73)	< 0.05*
	Female	85 (18)	400 (82)	
Institution	University of Ibadan	90 (19)	394 (81)	< 0.05*
	Polytechnic of Ibadan	61 (25)	183 (75)	
Sex Education	Had sex education	144 (73)	53 (27)	> 0.05
	Did not have sex Education	7 (16)	38 (84)	

* The difference is significant; The % is in bracket.

Table 6

Reasons for terminating pregnancies and views about abortion among undergraduates of the University of Ibadan and Ibadan Polytechnic

Variable		Male	Female	Total	Statistics
		(N=7)	(N=14)	(N=21)	
Institution	University	3 (42)	5 (36)	8 (38)	P < 0.05*
	Polytechnic	4 (58)	9 (64)	13 (62)	
Fear of parents		1 (14)	2 (14)	3 (14)	
Concern for her future / Educational pursuit		3 (43)	1 (7)	4 (19)	
Unplanned for / Not ready for the responsibilities		3 (43)	9 (64)	12 (57)	< 0.05*
Pregnancy was delayed by partner		-	2 (14)	2 (10)	
	Support	12 (7)	6 (5)	18 (6)	
View about abortion	Indifferent	42 (23)	20 (6)	62 (12)	P < 0.05 [@]
	Against	130 (70)	282 (89)	412 (82)	P < 0.05 [£]

* Significantly predicts abortion @ Significant for male gender £ Significant for female gender; The % is in bracket

Table 7

Proportion of students with correct knowledge of female fertile period and contraceptive methods

Variable	Male (N=249)	Female (N=485)	Total (N=734)
A girl/woman is more likely to be pregnant half way between two periods	26 (10)	114 (24)	140 (19)
A girl/woman can become pregnant during her monthly period	88 (35)	139 (29)	227 (31)
Aware of Male sterilization	83 (33)	105 (22)	188 (26)
Aware of Female sterilization	79 (31)	127 (26)	206 (28)
Aware of Oral Contraceptive Pills	102 (41)	266 (55)	368 (50)
Aware of IUCD	45 (18)	114 (24)	159 (22)
Aware of Injectables	51 (20)	134 (28)	185 (25)
Aware of Implants	52 (21)	106 (22)	158 (22)
Aware of Emergency pills	65 (26)	153 (32)	218 (30)
Aware of Female Condom	129 (52)	314 (65)	443 (60)
Aware of Diaphragm	58 (23)	105 (22)	163 (22)
Aware of Foaming tablets/Jelly	29 (12)	42 (9)	71 (10)
Aware of Rhythm method	41 (16)	58 (12)	99 (13)
Aware of Withdrawal method	127 (51)	246 (51)	373 (51)
Aware of Male Condom	97 (79)	332 (68)	529 (72)

The % is in bracket

Table 8 shows the access and attitude of male and female undergraduates to use of contraception. More male undergraduates (31%) had ever bought a condom compared to 8% of the female respondents ($p < 0.05$). Yet, more male students (50%) had received a condom for free than the female undergraduates (42%). Moreover, 76% of male respondents who were sexually active had ever taken a measure to prevent pregnancy while only 68% of the female respondents had ever done so. However, significantly, 36% of the male students use contraception always while just 6% of the female population used it frequently. Overall, majority (63%) believed condom is safe for use

Table 8: Access and attitude to use of contraception among undergraduates of the University and the Polytechnic of Ibadan

Variable	Male (N=249)	Female (N=485)	Total (N=734)	P
Ever bought a condom	Yes	73 (31)	37 (8)	110 (16) <0.05*
	No	165 (69)	426 (92)	591 (84)
Ever received a condom	Yes	119 (50)	191 (42)	310 (45) >0.05
	No	118 (50)	268 (58)	386 (55)
Ever used any contraceptive method*	Yes	50 (76)	58 (68)	108 (15) >0.05*
	No	16 (24)	27 (32)	620 (85)
Frequency of use of contraception#	Always	21 (32)	5 (6)	26 (17) <0.05*
	Usually	15 (23)	9 (11)	24 (16)
	Sometimes	10 (15)	45 (53)	55 (36)
	Never	20 (30)	26 (31)	46 (31)
View about condom	It is appropriate for young people	36 (21)	44 (16)	80 (18)
	It is not available	3 (2)	7 (2)	10 (2)
	Sex is not enjoyable when you use it	8 (5)	10 (4)	18 (3) <0.05
	It is safe for use	105 (62)	181 (64)	286 (63)
	It is difficult to use	4 (2)	12 (4)	16 (4)
	It is not appropriate for young people	14 (8)	29 (10)	43 (10)

*This refers to those who are sexually active; The % is in bracket
#This refers to those who had ever used contraception; & significant

Knowledge of and Exposure to Sexually Transmitted Infections

The awareness of some Sexually Transmitted Infections (STIs) among undergraduates of the University and the Polytechnic of Ibadan is depicted by Figure 1. Over 90% of undergraduates of both institutions are aware of HIV/AIDS; while Gonorrhoea (85%) and syphilis (70.4%) were the other most recognised STIs. Hepatitis B was the least known STI by both students of the University (40%) and the Polytechnic (20%). There is a greater awareness of all the STIs among the students of the University than those of the Polytechnic. Table 9 shows that undergraduates are scarcely aware of symptoms of STI in women by both genders are genital discharge and Vulvar itch (57%) while the most recognized symptom in the male gender is dysuria (64%). The students were required to complete a table that suggested preventive measures against STIs (Table 10). About 44% and 39% of the respondents knew that the male condom and the female condom respectively are protective against STI. Although 79% of the respondents knew that abstinence was protective against STIs, as many as 32%, 22% and 15% thought that using antibiotics, douching immediately after sexual intercourse and praying to God were also protective.

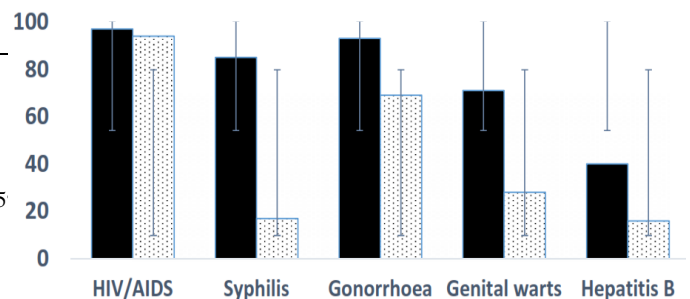


Figure 1: Awareness of Sexually Transmitted infections among undergraduates of the University and the Polytechnic of Ibadan in percentage

Table 9:

Knowledge of symptoms of STIs among male and female undergraduates of the University and the Polytechnic of Ibadan

Gender	Symptom of STI	Male (N=249)	Female (N=485)	Total (N=734)
Women	Lower abdominal pain	103 (44)	251 (53)	354 (50)
	Genital discharge	125 (54)	280 (60)	405 (57)
	Genital ulcers/sores	121 (52)	242 (51)	363 (51)
	Groin swelling	92 (40)	176 (37)	268 (38)
	Vulvar itch	125 (54)	277 (59)	402 (57)
	Painful sexual intercourse	129 (56)	268 (57)	397 (56)
Men	Genital discharge	132 (56)	195 (41)	327 (46)
	Burning pain on urination	162 (69)	288 (61)	450 (64)
	Genital ulcers/sores	137 (59)	212 (45)	349 (49)
	Groin swelling	135 (58)	210 (46)	345 (48)
	Penile itch	152 (65)	244 (52)	396 (56)
	Painful sexual intercourse	148 (63)	240 (51)	388 (55)

The % is in bracket

Table 10:

Views about preventive measures against STI among male and female undergraduates of the University and the Polytechnic of Ibadan

STI preventive measures	Male (N=245)	Female (N=489)	Total (N=734)
Abstain from sex	135 (84)	362 (77)	497 (79)
Have only one sexual partner	98 (61)	281 (60)	379 (60)
Use antibiotics	52 (32)	149 (32)	201 (32)
Douche immediately after sex	29 (18)	67 (14)	96 (15)
Pray to God	46 (29)	92 (20)	138 (22)
Female Sterilization	29 (12)	35 (7)	64 (9)
Male Sterilization	28 (11)	25 (5)	53 (7)
Use Oral Contraceptive Pills	12 (5)	30 (6)	42 (6)
Use Intra-uterine device	4 (2)	9 (2)	13 (2)
Use Injectables	8 (3)	22 (5)	30 (4)
Use implants	4 (2)	12 (3)	16 (2)
Use Emergency pills	7 (3)	9 (2)	16 (2)
Use Female Condom	83 (33)	206 (43)	289 (39)
Use Diaphragm	6 (2)	20 (4)	26 (4)
Use Foam/Jelly	1 (0)	5 (1)	6 (1)
Use Rhythm method	1 (0)	4 (1)	5 (1)
Use Withdrawal method	12 (5)	35 (7)	57 (8)
Use Male Condom	111 (45)	213 (44)	324 (44)

The % is in bracket

DISCUSSION

Our respondents were unmarried undergraduate students of the University of Ibadan and the Polytechnic, Ibadan whose ages ranged from 17-24 years with a mean of 20.4 years, thus adolescents and young adults. The mean age in our study was

lower than previously reported by among University of Ibadan undergraduates, which was 22.57 ± 3.43 . That study however included individuals in the age range 16-39 years (Bello *et al.*, 2016). We purposively sampled more female than male undergraduates in this study (600 female and 300 male students) as females are mainly affected by the reproductive health issues in this study. Majority of the students were in their second and fourth year of study because the first year students were excluded and the second year represented the final class of the Ordinary National Diploma (OND) programme of the Polytechnic while the fourth year represented the final year class for most courses in the University as well as the final class of the Higher National Diploma programme (HND) of the Polytechnic. It is likely that many third-year students reside off campus.

Most of the students in the University took mainly science courses and these were students from the Faculties of Science, Agriculture, Technology and Renewable Natural Resources. Students from the Faculties of Arts and Law were categorised as Art students and represented the next largest category after Science in the University. Students who mainly took Medical Science courses were from the Faculties of Basic Medical Sciences, Public Health, Pharmacy and Veterinary Medicine. Moreover, faculties in the Polytechnic were categorised as Science - including Faculties of Engineering and Science, Social Science which includes Faculties of Business and Communication studies, Environmental studies, and Financial and Management studies.

Majority of the students were Christians, and there were more Muslims in the Polytechnic than in the University. This is perhaps due to the fact the Polytechnic is a more indigenous institution. Oyo state has many historically Muslim towns, including large cities like Oyo and Ogbomoso, it is believed that the University of Ibadan has attracted a number of Christian residents since the 1960s (Nolte *et al.*, 2016). Our respondents were mainly Yoruba, being the major ethnic group in South-Western Nigeria. This is consistent with another study among the same population as ours (Bello *et al.*, 2016).

The evidence in this study shows that more female undergraduates (96%) had sex education than their male counterparts (89%) and more students of the University (96%) had received sex education than those of the Polytechnic (88%). This may be because girls are more likely to seek for and be volunteered information about reproductive health as they are invariably more affected by the burden of reproductive health morbidity (STI, unwanted pregnancy, abortion). Boys are presumably expected to learn somehow through experimentation, as we equally found that female students mainly received sex education from their parents as compared to the male students who mainly obtained information at school. In fact, most studies on sex education of adolescents and young people focus on females.

Quite a number of the students (71%) admitted to have ever been in a romantic relationship. Moreover, more female students (76%) than the male students (63%) were in a relationship and more students of the Polytechnic (82%) than the University (66%). This is comparable to a study in which 86% of female undergraduates of the University of Lagos were in relationships that predisposed to sexual intercourse

(Alabi, 2014) and another which reported that an average of 52% of the undergraduates of the University of Port Harcourt were in similar relationships (Imaledo *et al.*, 2012). Moreover, more male (27%) than female students (18%) had ever had sex. A greater proportion of the Polytechnic students (25%) were sexually active relative to the University (19%). This is however very low when compared to sexual activity among female undergraduate students of the university of Lagos - 87.8% had experienced sexual intercourse (Alabi, 2014). More so, Eze *et al.* (2018) reported that 73.4% male and 73.9% female undergraduates had initiated sex in Delta state. Bello *et al.* (2016) among the same population as our study reported sexual exposure to be as high as 77.9% although married students were about 25% of the study population. However, Cadmus and Owoaje (2011) reported 28.7% sexual exposure among female undergraduates in the University of Ibadan, which more closely mirrors our result; although it is not improbable that we underestimated this variable in our study. Twenty-one percent of our respondents had ever had sexual intercourse and about 60% of these had more than one sexual partner over the previous 12 months. More so, 16% of those who were sexually active had ever been pregnant while almost 90% of resultant pregnancies were terminated, This is consistent with the report by Cadmus and Owoaje, (2011) in which out of a total of 425 female students at the University of Ibadan, 29% had ever had sexual intercourse – of which 25% had ever been pregnant and 90% had terminated the pregnancy.

The spate of unsafe sexual practices and abortion among young undergraduates has a dual-gender drive. It had been much reported that female students were largely involved in this menace but we found that the male students are rather equally contributing to the untoward situation. As evidence, even though a larger number of the female students (76%) as compared to the male students (63%) had ever had a boyfriend or a girlfriend, remarkably more of the male students had ever had sexual intercourse and of the male students who were sexually active over three-quarters had multiple partners within the previous 12 months while less than half of the female students had multiple partners within the same period. This however contrasts with finding among undergraduates in Enugu in which 85.4 % of the females and 62.3% of males had more than one sexual partner (Igwebueze & Obi 2005). Twelve percent of the male undergraduates who were sexually active had ever impregnated a girl or woman while 19% of the sexually active female students had ever been pregnant. This is explainable by the fact that the male students had better access to contraception and thus made use of it more than the female students who got pregnant and consequently terminated the pregnancies. Our society yet has a bias or leniency towards young male persons having sex than females. In much of sub-Saharan Africa including Nigeria, premarital sex is considered a symbol of masculine prowess (Kaler, 2003) but for females, sexual activity outside of marriage is discouraged and the social costs of reporting it are higher (Poulin, 2010). In fact, men have consistently reported higher levels of pre-marital sex and risky sexual activity than women in the DHS and other surveys (Curtis and Sutherland, 2004; Luke *et al.*, 2011). This bias explains why boys are less

likely to be sexually educated by their parents and are more likely to buy or receive condom.

Moreover, it is clear from our results that ready access to contraceptives promotes its use among students as the male students who had better access to condoms significantly had ever bought a condom compared to the female students and made greater use of it. One is poised to submit that the societal bias against involvement of young females in sexual activity and lack of access to contraception plays a major role in the prevalence of unsafe sexual practices and abortions among young females.

Again, more students of the Polytechnic had ever been in a relationship and significantly more were sexually active. They were also more involved in unsafe sexual practices and abortion than the University students, indicating a greater need for sex education in the Polytechnic

As already alluded to, we recognized that significantly more males (27% were sexually active than their female counterparts (18%) and more of the Polytechnic undergraduates were sexually active compared to those of the University. Overall, self-pleasure was the single principal reason (75.4%) our respondents had sexual intercourse and next, 17.4% of them mainly had sexual intercourse to please their partners - significantly more females than males (21.6% versus 12.5%). This partly resonates with Envuladu *et al.* (2017) who found that adolescents who were in school mostly had sex for pleasure but then also due to peer pressure. The top reasons given by adolescents who partook in a national survey across 12 States in Nigeria for their sexual activity were: the show of love (which would equate wanting to please partner), to derive pleasure and to satisfy curiosity. Others said they were coerced or had sex for financial and material gain (Chihurumnanya *et al.*, 2016; Folayan *et al.*, 2014). Moreover, we did not identify having had sex education as a negative predictive factor for involvement in sexual activity.

The identified predictors for terminating pregnancies in this study included being a polytechnic student and that pregnancies were unplanned for. It appears that young people were not ready for the financial responsibilities of not terminating the pregnancies. We also found out that significantly less male than female students (70% vs 89%) had views against abortion and more were indifferent about the act (23% vs 6%).

Majority of undergraduates do not have correct understanding of the female sexual cycle as only 24% and 10% of the female and male students respectively correctly knew when a girl/woman can most likely get pregnant. In a study done by Adeokun *et al.* (2009), although among secondary school students in North Eastern Nigeria, most of the students (96% males and 87% females) did not know when in the menstrual cycle is an unsafe period and only 3.1% of them knew when ovulation occurs. These essentially reflect defective sexual health education as young persons who have begun menstruation should have good understanding of the menstrual cycle. Moreover, the knowledge of the various contraceptive forms was only fair as we found that male condom (the most known) was known by 72% of respondents. This is not quite consistent with findings by Oguntona *et al.* (2013) among undergraduates of the University of Lagos where the condom was the most known contraceptive method

with 95.88% followed by the pills with 79.40%, and abstinence – 64.84%. This may be explained by the fact that Lagos is a more cosmopolitan city and as such resident youths are probably better informed about sexual health and it is also possible that respondents underreported knowledge about contraceptive methods in our study as at least 82% of undergraduate students of a tertiary institution in Kano state know about condoms, pills, injectable and abstinence as contraceptive methods (Ahmed *et al.*, 2017).

Moreover, we found that significantly more male undergraduates have access to (either bought or received) condoms than females. This may partly be because the male condom is most commonly used and thus the males tend to take responsibility to have them for sexual acts. However, it is also thought that the society is more liberal towards male adolescents engaging in sexual activity than their female counterparts. The proportion of sexually active undergraduates who had ever used any contraceptive method was 76% while about 33% regularly did so; similar to Omokhodion and Balogun (2017) who reported that 77% of sexually active single hairdressers in Ibadan had ever used contraceptives and Adeniji *et al.* (2014) who reported 32.6% regular use among tertiary students in Osun state. Meanwhile about 40% of sexually active undergraduates of Bayero University Kano had ever used contraceptives and just 15.63% of them regularly used any form. The low utilization of contraceptives found in Kano by Ahmed *et al.* (2017) was attributed to cultural and religious factors which may have affected the students' responses to the question.

Overall, knowledge about HIV/AIDS among our respondents was high (96.2%); while Gonorrhoea (85%) and syphilis (70.4%) were the other most recognised STIs. This supports Edith and Ovaioza (2014) who reported HIV/AIDS (91%), gonorrhoea (89.3%) and syphilis (81.2%) as the most known types of STIs. Polytechnic students however again demonstrably had poorer knowledge of all the Sexually Transmitted Infections inquired about. This might further increase the tendency of Polytechnic students to be more involved in unsafe sex.

It is of concern also to mention that many undergraduates of both institutions proved unaware of symptoms of STIs for either gender. Our findings showed that the most recognised symptoms of STI in female are genital discharge (57%) and vulvar itch (57%) while the most recognised symptom in male was dysuria (64%). These symptoms are also reportedly more recognised among students in India, Thailand (Subbarao and Akhilesh, 2017; Svensson and Waern, 2013). Furthermore, it is bothersome that just 44% and 39% of our respondents knew for sure that the male and female condoms respectively are protective of STIs. It contrasts with report by Edith and Ovaioza (2014) in which 88.2% recognised condom use as a preventive measure against STI. It is possible that many of our respondents however did not fill this aspect of our questionnaire enthusiastically, being the latter part as there were many non-responses for this question on our questionnaire. However, 32%, 22% and 15% of respondents thought that using antibiotics, douching immediately after sexual intercourse and praying to God respectively could protect against Sexually Transmitted Infection. This reflects

profound ignorance about sexually transmitted infections among undergraduates of Nigerian Institutions.

In conclusion, most tertiary institution students do have some form of sex education. It however does not translate to reduced sexual exploration nor equip these young people with knowledge and skills to successfully manage emotional relationships while abstaining from unprotected sexual intercourse and abortion. It is needful hence for institutions – schools, religious homes and parents – to be better equipped with information and skills to adequately educate young people on sexual matters. We recommend that peer groups or clubs supervised by health educators be formed in schools across all levels of education where young people can be equipped to avoid unsafe sexual practices and abortion and be given adequate and appropriate sex education to enable them make the right choices on their sexual health. More youth friendly centers should be developed to meet reproductive health needs of young people.

REFERENCES

- Abiodun, OM., Balogun, OR (2009):** Sexual activity and contraceptive use among young female students of tertiary educational institutions in Ilorin, Nigeria. *Contraception*: 79(2): 146-9
- Adeniji, AO., Adekanle, DA., Akindele RA (2014):** Emergency contraception: knowledge and practices of tertiary students in Osun State, South Western Nigeria. *Gynecol Obstet (Sunnyvale)*; 4:196
- Adeokun, LA., Ricketts, OL., Ladipo, OA. (2009):** Sexual and Reproductive Health Knowledge, Behaviour and Educational Needs of In-School Adolescents in Northern Nigeria. *African Journal of Reproductive Health*: 13(4):37-49
- Adinma E (2011):** Unsafe abortion and its ethical, sexual and reproductive rights implications. *West Afr J Med*. 2011; 30(4):245-9
- Adinma, ED., Adinma, JI., Iwuoha, C., Akiode, A., Oji, E., Okoh, M (2012):** Knowledge and practices among medical abortion seekers in southeastern Nigeria. *Southeast Asian J Trop Med Public Health*. 2012;43(2):471-478
- Ahmed, ZD., Sule, IB., Abolaji, ML., Mohammed, Y., Nguku, P (2017):** Knowledge and utilization of contraceptive devices among undergraduate students of a tertiary institution in Kano State, Nigeria 2016. *Pan Afr Med L*. 2017; 26: 103
- Alabi BO. (2014):** Rampant Sexual Intercourse among Female Undergraduates in Nigeria and Induced-Abortion Related Morbidity. *Journal of Studies in Social Sciences*. Vol 8, No 1, 2014: pp 61-80
- Aziken, ME., Okonta, PI., Ande, ABA (2003):** Knowledge and perception of emergency contraception among female undergraduates. *Int Fam Plan Perspect*. 29(2): 84-7
- Bankole, A., Adewole, IF., Hussain, R., Awolude, O., Singh, S., Akinyemi, JO. (2015):** The Incidence of Abortion in Nigeria. *Int Perspect Sex Reprod Health*. 41(4): 170-181
- Bello, OO., Oluwasola, TAO., Bello, FA. (2016):** Awareness and Practice of Dual Contraception among Female Tertiary Institution Students in Ibadan, Nigeria. *Open Access J Contracept*. 7:109-115.
- Cadmus, EO., and Owoaje, ET. (2011):** , Knowledge about complications and practice of abortion among female undergraduates in the University of Ibadan. *Ann Ib Postgrad Med*. 2011 Jun; 9(1):19-23.

- Chihurumanya, A., Lawrence, UO., Benedict, NA., Uche, D., Nnenna, ALO (2016):** Premarital Sex, Safer Sex and Factors Influencing Premarital Sex Practices Among Senior Secondary School Students in Ebonyi Local Government Area of Ebonyi State Nigeria. *J Community Med Public Health Care*. 2016; 3: 012
- Curtis, SL., and Sutherland, EG (2004):** Measuring sexual behaviour in the era of HIV/AIDS: the experience of Demographic and Health Surveys and similar enquiries. *Sexually Transmitted Infections*, 2004, 80(Suppl 2 ii22-ii27).
- Duru, CB., Iwu, AC., Diwe KC., Uwakwe, KA., Merenu, IA., Emerole, CA., Oluoha, UR. (2015):** Sexual Behaviour, Contraceptive Knowledge and Use among Female Undergraduates in tertiary Institutions in Imo State, Nigeria. *Am J of Med Sci and Med*. Vol. 3, No 5, 2015, pp 61-66
- Edith, M. and Ovaioza, AM. (2014):** Awareness of Sexually Transmitted Infections (STIs) Including HIV/AIDS among Undergraduate Students of University of Abuja, Nigeria. *British J App Sci Tech*, Vol 4, issue 4, 2014:1-10
- Envuladu, EA., Van de Kwaak, A., Zwanikken, P., Zoakah, AI. (2017):** Exploring the factors Influencing Adolescent Sexual Behaviour in Plateau State Nigeria. *American Journal of Medicine and Medical Sciences* 2017, 7(1): 1-6
- Eze, GU., Obiebi, IP., Akpofure, HE (2018):** Sexual Behaviour and Patterns of Contraceptive Use among Students of Tertiary in Southern Nigeria. *Journal of Community Medicine and Primary Health Care*. 30 (1) 2018: 109-121
- Fagbamigbe, AF., Adebowale, AS., Olaniyan, FA (2011):** A comparative analysis of condom use among unmarried youths in rural community in Nigeria. *Public Health Res: 1: 8-16*
- Federal Government of Nigeria, (2004).** ‘Criminal Code Act’ in *The Laws of the Federal Republic of Nigeria*. Nigeria: National Legislative Bodies, Articles 228-230, 297, 309, 328.
- Federal Government of Nigeria. (2004).** ‘Penal Code (Northern States) Federal Provisions Act’ in *The Laws of the Federal Republic of Nigeria*. Nigeria: National Legislative Bodies, Articles 232-236.
- Folayan, MO., Odetoyinbo, M., Brown, B., Harrison, A. (2014):** Differences in sexual behaviour and sexual practices of adolescents in Nigeria based on sex and self-reported HIV status. *Reproductive Health*. 2014 11:83.
- Igwebueze, IO. and Obi SN (2005):** Sexual risk behaviour among undergraduate students in Enugu, Nigeria. *Journal of Obstetrics and Gynaecology* 25(6):592-5
- Imaledo, JA., Peter-Kio, OB., Asuquo, EO (2012):** Pattern of risky sexual behaviour and associated factors among undergraduate students of the University of Port Harcourt, Rivers State, Nigeria. *Pan Afr Med J*. 2012; 12:97
- Kaler, A. (2003):** “My girlfriends could fill a yanu-yanu bus”: rural Malawian men’s claim about their own serostatus. *Demographic Research*, 2003, Spec. Coll. 1, Art 11, pp. 349-372
- Luke, N., Clark, S., Zulu, EM (2011):** The relationship history calendar: improving the scope and quality of data on youth sexual behaviour. *Demography*, 2011, 48(3):1151-1176.
- Nibabe, WT., and Mgutshini, T (2014):** Emergency contraception amongst female college students- knowledge, attitude and practice. *Afr J Prim Health Care Fam Med*. 2014; 6(1): 538
- Nolte, I., Jones, R., Taiyari, Khadijeh., Occhiali, G (2016):** Research note: Exploring survey data for historical and anthropological research: Muslim-Christian relations in southwest Nigeria, *African Affairs*, Volume 115, Issue 460, July 2016, Pges 541-561
- Obiajuru. OC. and Jude, NO (2007):** The Prevalence of Sexually Transmitted Infections among Post-Primary and Tertiary School Students in Imo State, Nigeria. *Nig J Heal Biomed Sci*. Vol. 6 (2) 2007: pp. 90-95
- Oguntona, T., Adedeji, OO., Odusanya. OO (2013):** The knowledge, attitude and practice of contraceptives by undergraduates in Lagos Nigeria. *J Biol Agric Healthc*. 2013;3(12):61-67
- Ojiyi, E., Anolue, FC., Ejekunle, SD., Nzewuihe, AC., Okeudo, C., Dike, EL., Ejikem, CE (2014):** Emergency Contraception: Awareness, Perception and Practice among Female Undergraduates in Imo State University, Southeastern Nigeria. *Ann Med Health Sci Res*. 2014 Nov-Dec; 4(6): 904-909
- Omokhodion, FO. and Balogun, MO (2017):** Cotraceptive use, Unwanted Pregnancies and Abortions among Hairdressers in Ibadan, Southwest Nigeria. *Afr J Reprod Health*. 2017 Mar; 21(1):114-121
- Poulin, M. (2010):** Reporting on first sexual experience: the importance of interviewer-respondent interaction, *Demographic Research*, 2010, 22(11):237-288
- Sedgh, G., Bearak, J., Singh, S., Bankole, A., Popinchalk, A., Ganatra, B., Rossier C., Gerdtts, C., Tunçalp, Ö., Johnson Jr, BR., Hohnston, HB., Alkema, L (2016):** Abortion incidence between 1990 and 2014: global, regional, and sub-regional levels and trends, *Lancet*, 2016,
- Subbarao, TN. and Akhilesh, A (2017):** Knowledge and attitude about sexually transmitted infections other than HIV among college students. *Indian J Sex Transm Dis AIDS*. 2017 Jan-Jun; 38(1): 10-14
- Svensson, L. and Waern, S (2013):** Knowledge of and attitudes to sexually transmitted diseases among Thai university students [The Bachelor Programme of Science in Nursing Thesis], Uppsala University, Uppsala, Sweden, 2013.
- Thairu, Y., Abubakar, H., Egenti, N (2015):** Pattern of Sexually Transmitted Infection among students of tertiary educational institution in Abuja, Nigeria. *Journal of Medical and Dental Sciences*. Vol. 14, 2015 pp 71-74
- Ugoji, FN (2013):** An Examination of university students’ attitude to contraceptive use. *Am Int J Soc Sci*. 2013; 2(1): 18-22
- World Health Organization (WHO, 2013).** *Unsafe Abortion: Global and Regional Estimates of the Incidence of Unsafe Abortion and Associated Mortality in 2008*, Geneva: WHO.