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Contraceptive Knowledge and Perceptions about Unprotected Sex among Undergraduate Pharmacy Students in Nigeria

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ABSTRACT

Background: Adolescents have been affected by poor contraceptive information and their sexual behaviour is often cited as a source of public health concern.

Objective: Our study assesses undergraduate pharmacy students' contraceptive knowledge and perceptions of unprotected sex across the geopolitical zones of Nigeria.

Methods: The study design was cross-sectional and analytic. Data was collected via an online Google form® after ethical approval was obtained. Descriptive and inferential analyses were undertaken using Statistical Package for Social Sciences (SPSS) Version 20.0 to compare continuous variables. For all analyses, p values less than 0.05 was considered to be statistically significant.

Results: About 1089 students consented to the study and a third were in final year (33.6%). About 86% of the participants could correctly define contraception, with all schools having about 80% of their students in the correct knowledge category ($p < 0.001$). The main reason for engaging in unprotected sex was that condoms are not comfortable (59%).

Conclusion: Most of the students have good knowledge of contraception but practice is suboptimal which may expose them to untoward effects including infections and unwanted pregnancies. An urgent need for advocacy and public health promotional activities on contraception and the subsequent danger of inaccurate use exists.

Keywords: Contraception, Undergraduate students, Knowledge, Pharmacy, Nigeria

INTRODUCTION

According to the Fact Sheet on the International Year of Youth August 2010 – 2011 by the United Nations, Africa is the world's youngest continent with the youth population being higher than found in other continents [1-3]. In 2010, 70 percent of the region's population was under the age of 30, and slightly more than 20 per cent were young people between the ages of 15 to 24 years [1]. Ejembi and Otu documented that youth aged 15 to 24 years make up approximately 20% of the Nigerian population [4]. Undergraduate students in Nigeria are often in the age range of 16 to 25 thus falling clearly in the adolescent age range identified as being adventurous and risk takers when it comes to their sexual lives [5-7]. Globally, adolescent sexual behaviour is often cited as a source of public health concern [8-10]. Young adults are at risk of negative health outcomes associated with their sexual and reproductive health (SRH). Outcomes such as infection with HIV and other sexually transmitted infections (STIs) as well as unintended pregnancies are common especially in the developing countries. More adverse outcomes are associated with adolescent pregnancy [11,12] including likelihood of dropping out of school when teenage girls become pregnant [13]. Risky sexual behaviour involves the number and types of partnerships, sexual acts, sexual orientation, early age at first sexual intercourse, unprotected sexual intercourse with 'at risk' sexual partners, and untreated sexually transmitted diseases [14,15]. Another contributory factor to this issue is the fact that sex and sexuality is often shrouded in secrecy thus many young people do not have open channels of communication to discuss concerns with adults [16]. Also, contraceptive information offered to single women is often tainted by discrimination and bias because of the firmly held cultural belief that such a woman should be married before needing such information. Poor contraceptive information, overly critical behaviour of family planning providers are some of the issues that negatively affect good contraceptive practices by adolescents and especially young women [17]. This study set out to assess undergraduate pharmacy students' contraceptive knowledge and perceptions about unprotected sex in eight (8) public tertiary academic institutions across the geopolitical zones of Nigeria.

METHODS

Research Design and Setting

A cross-sectional, analytic study design was utilized for this study. Data was collected digitally using Google form. The study covered the six geopolitical zones of the country, with one public tertiary institution selected each along with the host schools of the primary researchers that initiated the study.

Study Population

The target population for this study were undergraduate pharmacy students across all levels conveniently chosen from the University of Calabar, Cross River state (host school) and University of Uyo, Akwa Ibom State (South South), University of Lagos, Lagos state (host school) and University of Ibadan, Oyo state (South West), University of Nigeria (Nsukka) (South east), the Ahmadu Bello University, Kaduna state (North West), University of Maiduguri, Borno state (North East) and the University of Jos, Plateau state (North Central). The students were reached out to from their class online engagement platforms usually via WhatsApp to participate in the study by team leads per school and those willing to do so were accepted into the study.

Research Sample size

Individual sample sizes were calculated per institution using the formula for cross-sectional surveys below [18].

$$N = \frac{(1.96)^2[p*q]}{d^2}$$

Where:

p: The prevalence of the condition/ health state (Unknown so 50% used).

q: When p is in percentage terms: (100-p) or if it is in decimal terms: (1-p)

d (or l): The precision of the estimate. This could either be the relative precision, or the absolute precision.

Zα [Z alpha]: The value of z from the probability tables. If the values are normally distributed, then 95% of the values will fall within 2 standard errors of the mean. The value of z corresponding to this is 1.96 (from the standard normal variate tables).

At 95% confidence limit and 5% margin of error, the minimum sample size required per school based on

population of pharmacy students using the Raosoft online sample size calculator [19] is as shown: UNN (1531) – 308; UniCal (170) – 119; ABU (466) – 211; UI (378) – 191; UniJos (560) – 229; UniUyo (771) – 257; UniMaid (618) – 238 and UniLag (732) – 253.

Research Instrument

Data collection tool was developed using Google Forms®, a mobile online tool for developing customized surveys. The survey tool was sub-divided into sections to cover demographic and institutional information, knowledge about contraception and perceptions with respect to unprotected sexual intercourse. The survey tool was pre-tested among non-pharmacy students in the University of Lagos and the final survey tool edited to reflect identified adjustments. It was then deployed on WhatsApp platforms per level of students in each institution by the team lead per school and their cooperation and consent sought and obtained to respond as quickly as possible.

Inclusion criteria

Undergraduate students in the eight institutions who had access to the tool and were willing to participate.

Data Collection and Analysis

Survey tool was deployed for one month to enable data to be collected from as many of the targeted respondents as possible. An additional two weeks was given to allow for more responses. Data collected was checked for completeness using Microsoft Excel. Descriptive (frequency, percentages, means and mode) and inferential analyses (chi square) were carried out. For all categorical variables, Kwiktables Beta version (TM) was used for the analysis, with p values obtained from Chi-square or Fischer's exact test as appropriate (for comparison between schools). Statistical Package for Social Sciences (SPSS) Version 20.0 was used to compare the continuous variables among the schools. For all analyses, p values less than 0.05 were taken to be at levels of statistical significance. Results are presented in form of frequency tables and charts.

Ethical Considerations

Approval was obtained from the Health and Research Ethics Committee of the Lagos University Teaching Hospital, Idiaraba, Lagos and the Jos University Teaching Hospital, Jos, Plateau state to cover both broad geopolitical zones with LUTH HREC exemption number of ADM/DCST/HREC/APP/4245 and JUTH/DCS/IREC/127/XXXI/2474 for JUTH HREC. The team leads per school served to ensure approval to survey the students was given for their institution. The purpose of the study was explained to the students and consent obtained before data collection was initiated in each institution. Anonymity was ensured as no personal identifiers was collected as part of the survey.

RESULTS

One of the host institutions for this study had to be dropped because of low student population. Thus the study proceeded with seven schools instead of eight.

Socio-demographic Characteristics of the Students

A total of 1089 students participated in the study from the seven schools of Pharmacy that were used for the study. UNN had the highest number of students (369) that responded to the study while UNIMAID had the least (43). With an almost gender-balanced population, there were 581 (53.4%) female students among the respondents, 643 (59%) were aged between 21-25 years and majority were of the Christian faith, accounting for 835 (76.7%) of participants. About a third of the participants, 366 (33.6%) were in the final year of the pharmacy programme. There were statistically significant differences in the sociodemographic details of the respondents across the schools (Table **1**).

Majority of the participants were single (1032; 94.8%), Igbo, (450; 41.3%) and had West African Examination Council (WAEC) as their pre-pharmacy educational qualification (799; 73.4%). About 5% of the students had obtained other bachelor's degree qualification before coming back to study pharmacy. Apart from the marital status with $p = 0.864$, the other demographic details in Table **2** were statistically different across the schools.

Students' Knowledge about contraception and early/teenage pregnancies

Nine hundred and forty-one (86.4%) of the participants correctly defined contraception, with all schools having about 80% of their students in the correct knowledge category ($p < 0.001$). About 57% knew correct modern methods across all schools with UNIUYO respondents having the highest proportion at 75% and ABU having the lowest at 38%. Details of modern contraceptive methods known are shown in Figure **1**.

Use of rhythm (64%), calendar (13%) and withdrawal (12%) methods were the most known traditional contraceptive methods know though a few also indicated use of traditional herbs (7%) and douching (0.1%). All these results were statistically significant across the schools ($p < 0.001$). Details of these are presented in Table **3**.

Students' Perception about unprotected sex

About 64% of the respondents correctly defined what it means to engage in unprotected sex with UNIUYO having the highest proportion of correct answers at 69% and UI having the least at 59.5%. The major reason for engaging in unprotected sex proffered by about 59% of respondents is that the condoms are not comfortable. About 7% feel they are not at risk, only 5.4% cited peer pressure and even fewer, 0.4%, feel that contraceptive methods are expensive. This result is statistically significant across the schools. About 94% believe that outcomes of unprotected sex include contracting an STI, having an unwanted/unplanned pregnancy and even death from complications of any of these and this result is statistically significant across the schools (Table **4**)

Figure **2** shows respondents' perception of how STIs can be prevented with use of other contraceptive methods, use of condoms or abstinence being the top 3 at 53.1%, 38.4% and 7.5% respectively in all the schools.

Table 1. Sociodemographic Characteristics of Respondents I.

Characteristics	Total (N=1089)	UI (N=168)	UNIUYO (N=129)	UNN (N=369)	ABU (N=134)	UNIJOS (N=86)	UNIMAID (N=43)	UNILAG (N=160)	P-value
Gender									< 0.001*
Male	441 (40.5)	79 (47)	63 (48.8)	138 (37.4)	43 (32.1)	39 (45.3)	31 (72.1)	48 (30)	
Female	581 (53.4)	86 (51.2)	61 (47.3)	205 (55.6)	67 (50)	46 (53.5)	10 (23.3)	106 (66.3)	
Others (prefer not to say, non-binary)	67 (6.2)	3 (1.8)	5 (3.9)	26 (7)	24 (17.9)	1 (1.2)	2 (4.7)	6 (3.8)	
Age (Years)									< 0.001*
15-20	304 (27.9)	76 (45.2)	17 (13.2)	66 (17.9)	32 (23.9)	18 (20.9)	7 (16.3)	88 (55)	
21-25	643 (59)	80 (47.6)	91 (70.5)	259 (70.2)	68 (50.7)	53 (61.6)	24 (55.8)	68 (42.5)	
26-30	128 (11.8)	10 (6)	18 (14)	41 (11.1)	34 (25.4)	11 (12.8)	12 (27.9)	2 (1.3)	
31-35	1 (0.1)	0 (0.0)	1 (0.8)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	
31-35	13 (1.2)	2 (1.2)	2 (1.6)	3 (0.8)	0 (0.0)	4 (4.7)	0 (0.0)	2 (1.3)	
Current Level									< 0.001*
100	128 (11.8)	36 (21.4)	16 (12.4)	2 (0.5)	32 (23.9)	7 (8.1)	0 (0.0)	35 (21.9)	
200	210 (19.3)	37 (22)	7 (5.4)	89 (24.1)	36 (26.9)	12 (14)	3 (7)	26 (16.3)	
300	223 (20.5)	21 (12.5)	13 (10.1)	112 (30.4)	2 (1.5)	23 (26.7)	21 (48.8)	31 (19.4)	
400	160 (14.7)	24 (14.3)	7 (5.4)	76 (20.6)	11 (8.2)	9 (10.5)	9 (20.9)	24 (15)	
500	366 (33.6)	48 (28.6)	86 (66.7)	90 (24.4)	53 (39.6)	35 (40.7)	10 (23.3)	44 (27.5)	
Religion									< 0.001*
Islam	223 (20.5)	41 (24.4)	1 (0.8)	0 (0.0)	110 (82.1)	10 (11.6)	31 (72.1)	30 (18.8)	
Christianity	835 (76.7)	119 (70.8)	123 (95.3)	361 (97.8)	23 (17.2)	75 (87.2)	12 (27.9)	122 (76.3)	
Traditional Religion	4 (0.4)	1 (0.6)	1 (0.8)	2 (0.5)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	
Others (Atheism, Judaism)	27 (2.5)	7 (4.2)	4 (3.1)	6 (1.6)	1 (0.7)	1 (1.2)	0 (0.0)	8 (5)	

*****Significant at p<0.05*

Table 2. Sociodemographic Characteristics of Respondents II.

Characteristics	Total	UI	UNIUYO	UNN	ABU	UNIJOS	UNIMAID	UNILAG	*p*-value

	n=1089 (%)	n=168 (%)	n=129 (%)	n=369 (%)	n=134 (%)	n=86 (%)	n=43 (%)	n=160 (%)	
Marital status									0.864
Single	1032 (94.8)	163 (97)	122 (94.6)	346 (93.8)	123 (91.8)	81 (94.2)	41 (95.3)	156 (97.5)	
Married	50 (4.6)	4 (2.4)	7 (5.4)	20 (5.4)	11 (8.2)	5 (5.8)	1 (2.3)	2 (1.3)	
Divorced/Separated	1 (0.1)	0 (0.0)	0 (0.0)	1 (0.3)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	
Others	6 (0.6)	1 (0.6)	0 (0.0)	2 (0.5)	0 (0.0)	0 (0.0)	1 (2.3)	2 (1.3)	
Ethnic group									< 0.001*
Yoruba	296 (27.2)	142 (84.5)	4 (3.1)	0 (0.0)	26 (19.4)	13 (15.1)	2 (4.7)	109 (68.1)	
Igbo	450 (41.3)	21 (12.5)	29 (22.5)	350 (94.9)	0 (0.0)	13 (15.1)	1 (2.3)	36 (22.5)	
Ibibio	77 (7.1)	0 (0.0)	69 (53.5)	5 (1.4)	0 (0.0)	0 (0.0)	0 (0.0)	3 (1.9)	
Hausa	75 (6.9)	0 (0.0)	0 (0.0)	2 (0.5)	56 (41.8)	7 (8.1)	9 (20.9)	1 (0.6)	
Fulani	20 (1.8)	0 (0.0)	0 (0.0)	0 (0.0)	14 (10.4)	0 (0.0)	6 (14)	0 (0.0)	
Others	171 (15.7)	5 (3)	27 (20.9)	12 (3.3)	38 (28.4)	53 (61.6)	25 (58.1)	11 (6.9)	
Pre-pharmacy education									< 0.001*
WAEC/NECO	799 (73.4)	138 (82.1)	95 (73.6)	294 (79.7)	90 (67.2)	58 (67.4)	31 (72.1)	93 (58.1)	
Pre-degree	236 (21.7)	17 (10.1)	27 (20.9)	52 (14.1)	43 (32.1)	25 (29.1)	10 (23.3)	62 (38.8)	
Other Bachelor's degree	54 (5)	13 (7.7)	7 (5.4)	23 (6.2)	1 (0.7)	3 (3.5)	2 (4.7)	5 (3.1)	

***Significant at p<0.05*

Table 3. Respondents' Knowledge about Contraception.

Characteristics	Total (N=1089)	UI (N=168)	UNIUYO (N=129)	UNN (N=369)	ABU (N=134)	UNIJOS (N=86)	UNIMAID (N=43)	UNILAG (N=160)	P-value
Definition of contraception#									0.019*
Knowledge	941 (86.4)	143 (85.1)	118 (91.5)	298 (80.8)	119 (88.8)	82 (95.3)	33 (76.7)	148 (92.5)	
Not Sure	6 (0.6)	0 (0.0)	2 (1.6)	2 (0.5)	1 (0.7)	0 (0.0)	1 (2.3)	0 (0.0)	
No knowledge	142 (13)	25 (14.9)	9 (7)	69 (18.7)	14 (10.4)	4 (4.7)	9 (20.9)	12 (7.5)	
Modern method of contraception									< 0.001*
A (Correct options)	625 (57.4)	110 (65.5)	97 (75.2)	197 (53.4)	52 (38.8)	54 (62.8)	19 (44.2)	96 (60)	
B (Wrong options)	464 (42.6)	58 (34.5)	32 (24.8)	172 (46.6)	82 (61.2)	32 (37.2)	24 (55.8)	64 (40)	
Traditional method of contraception									< 0.001*
Withdrawal method	132 (12.1)	28 (16.7)	16 (12.4)	41 (11.1)	16 (11.9)	12 (14)	3 (7)	16 (10)	
Rhythm method	699 (64.2)	108 (64.3)	93 (72.1)	225 (61)	67 (50)	59 (68.6)	26 (60.5)	121 (75.6)	
Calendar method	138 (12.7)	16 (9.5)	9 (7)	60 (16.3)	27 (20.1)	7 (8.1)	8 (18.6)	11 (6.9)	
Symptothermal method	31 (2.8)	3 (1.8)	4 (3.1)	10 (2.7)	10 (7.5)	0 (0.0)	2 (4.7)	2 (1.3)	
Cervical mucous method	10 (0.9)	3 (1.8)	1 (0.8)	4 (1.1)	0 (0.0)	2 (2.3)	0 (0.0)	0 (0.0)	
Douching/Deep cleaning after sex	1 (0.1)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.6)	
Use of herbal mixtures	77 (7.1)	10 (6)	6 (4.7)	29 (7.9)	14 (10.4)	5 (5.8)	4 (9.3)	9 (5.6)	

A: Contraceptive pills, Condoms, Vasectomy, Tubal occlusion, Intrauterine Contraceptive Devices, Contraceptive Implants, Contraceptive rings, Use of emergency contraception, Others

B: Abortion, Abortion, Use of herbal mixtures Use of antibiotics before sex, Use of antibiotics after sex, Use of misoprostol

#: Respondents were given many correct and incorrect statements and were scored based on their choices.

***Significant at p<0.05*

Table 4. Respondents' Knowledge and Perceptions about Unprotected Sex.

Characteristics	Total (N=1089)	UI (N=168)	UNIUYO (N=129)	UNN (N=369)	ABU (N=134)	UNIJOS (N=86)	UNIMAID (N=43)	UNILAG (N=160)	P-value
Definition of unprotected sex									0.981
C (Correct options)	700 (64.3)	100 (59.5)	89 (69)	247 (66.9)	80 (59.7)	57 (66.3)	27 (62.8)	100 (62.5)	
D (Wrong options)	387 (35.5)	68 (40.5)	40 (31)	121 (32.8)	53 (39.6)	29 (33.7)	16 (37.2)	60 (37.5)	
E (Irrelevant options)	2 (0.2)	0 (0.0)	0 (0.0)	1 (0.3)	1 (0.7)	0 (0.0)	0 (0.0)	0 (0.0)	
Reasons for engaging in unprotected sex									
Condoms are uncomfortable	638 (58.6)	112 (66.7)	75 (58.1)	191 (51.8)	74 (55.2)	57 (66.3)	25 (58.1)	104 (65)	
Condoms are irritable	137 (12.6)	15 (8.9)	21 (16.3)	68 (18.4)	8 (6)	6 (7)	6 (14)	13 (8.1)	
They feel 'not at risk'	77 (7.1)	8 (4.8)	9 (7)	35 (9.5)	9 (6.7)	6 (7)	1 (2.3)	9 (5.6)	
Pressure from their partners and peers	59 (5.4)	7 (4.2)	15 (11.6)	18 (4.9)	8 (6)	5 (5.8)	1 (2.3)	5 (3.1)	< 0.001*
Most contraceptives are expensive	4 (0.4)	1 (0.6)	1 (0.8)	0 (0.0)	2 (1.5)	0 (0.0)	0 (0.0)	0 (0.0)	
Most contraceptives have side effects	6 (0.6)	0 (0.0)	0 (0.0)	4 (1.1)	2 (1.5)	0 (0.0)	0 (0.0)	0 (0.0)	
A need to belong	18 (1.7)	1 (0.6)	0 (0.0)	3 (0.8)	8 (6)	2 (2.3)	0 (0.0)	4 (2.5)	
I don't know	150 (13.8)	24 (14.3)	8 (6.2)	50 (13.6)	23 (17.2)	10 (11.6)	10 (23.3)	25 (15.6)	
Possible outcomes of unprotected sex									< 0.001*
STI/Unwanted preg.	692 (63.5)	99 (58.9)	82 (63.6)	239 (64.8)	78 (58.2)	61 (70.9)	22 (51.2)	111 (69.4)	
STI	301 (27.6)	56 (33.3)	39 (30.2)	97 (26.3)	37 (27.6)	18 (20.9)	16 (37.2)	38 (23.8)	
STI/Unwanted preg. & Death	29 (2.7)	7 (4.2)	4 (3.1)	5 (1.4)	7 (5.2)	4 (4.7)	0 (0.0)	2 (1.3)	
Not sure	65 (6)	6 (3.6)	3 (2.3)	27 (7.3)	12 (9)	3 (3.5)	5 (11.6)	9 (5.6)	

C: Having sex without condoms; Having sex without use of any contraceptives

D: Having sex without the use of antibiotics; Having casual sex (e.g., with someone not well known; Having sex with commercial sex workers; Having sex with multiple partners; Others

E: Others (more enjoyable, unplanned sex, fear of people knowing they purchase such items); ***Significant at p<0.05***

STI = Sexually Transmitted Infection; preg. = pregnancy

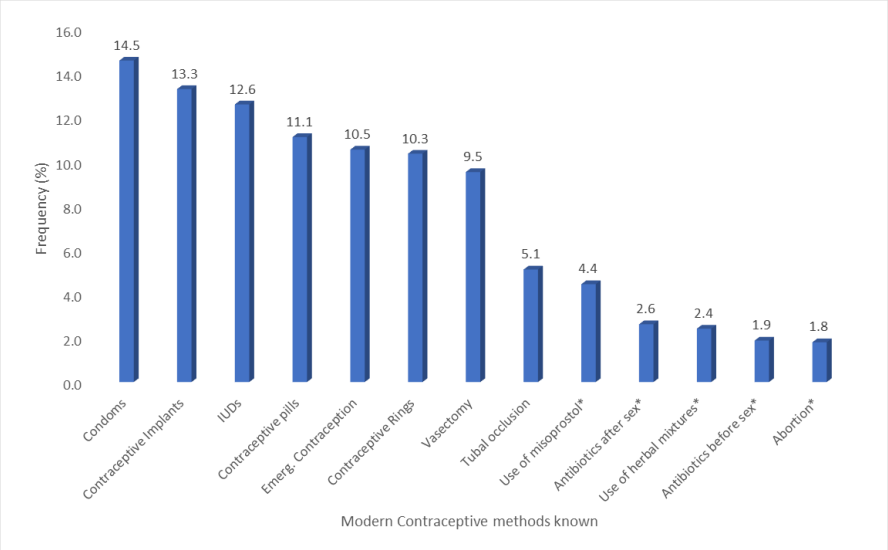

Figure 1. Modern contraceptive methods known.

*Wrong options

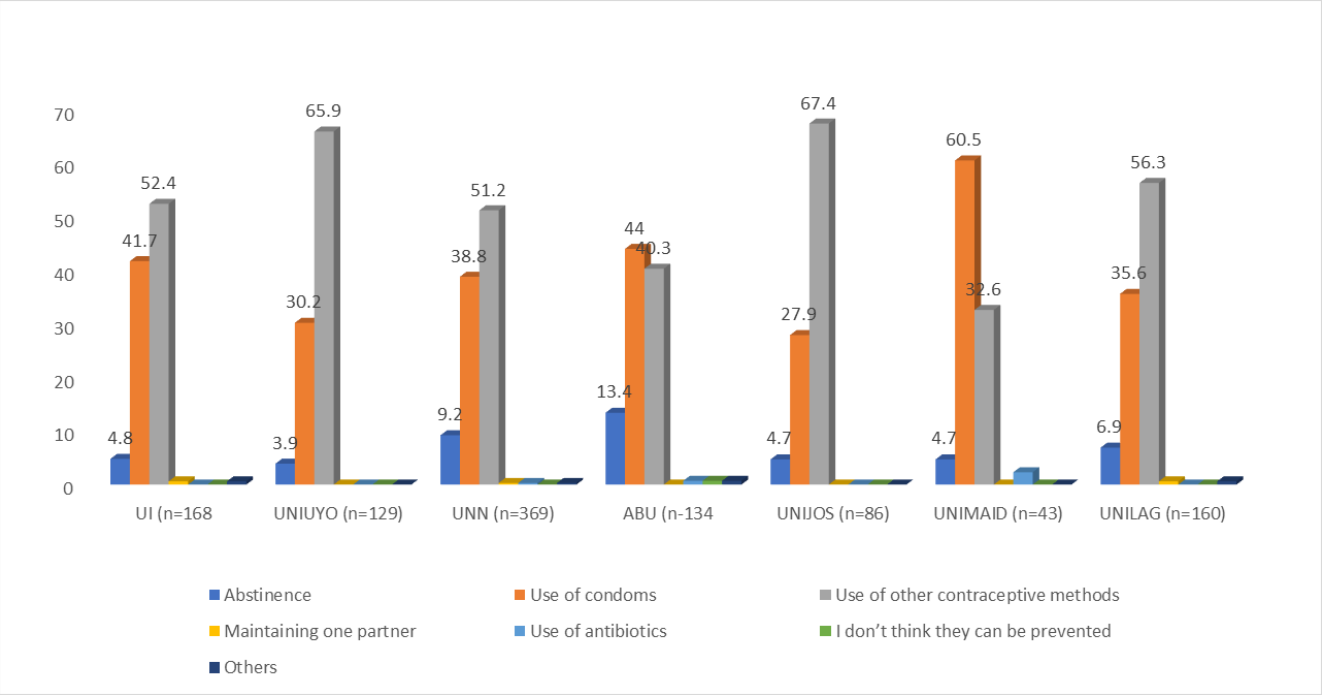

Figure 2. Respondents' perception of how STIs can be prevented.

p-value = 0.093 (***Significant at p<0.05***)

DISCUSSION

Use of modern contraceptives has been shown to be low amongst girls in tertiary institutions and this is often attributable to culture and religion [20-22] though some other researchers argue that the role of religion is not very clear [23-25]. It is a known fact that in Nigeria, the most predominant religion in the south is Christianity while Islam is predominant in the north [25-27] and this was corroborated in this study as most of the students from universities in the south were Christians while those in the north were Moslems. However, there was no effect of religion on contraceptive use or knowledge amongst the students as contended by previous authors [24,25].

A previous study shows that by 20 years of age in many LMICs, for every three women, one has given birth and that mortality by this age is twice as high as women above age 20 years [21]. Previous literature also shows that sexual activity starts as early as junior secondary classes in many Nigerian cities [28-30] without use of effective contraception to protect them against sexually transmitted infections including HIV and unwanted pregnancies [31,32]. Some of the reasons proffered for students engaging in unprotected sex include the fact that condoms are uncomfortable or are irritable and that they do not feel they are at risk so do not need to use protection as documented in literature [33,34]. This result is statistically significant across the schools. Unlike previous studies [35,36], peer pressure and cost issues were not predominant causes for engaging in unprotected sex in this study. This could be because they are in the university and have developed a level of maturity and so are not easily carried along with the crowd anymore [37]. The students' attitudes may lead to inconsistent use of condom [33,38] thus reducing its effectiveness as reported in previous literature where it was documented that majority of the youth intermittently use condom because of their beliefs [39]. Thus, those that regard condom use as effective will use them, while those that do not think so will not for reasons including reduced perceived increased risk, leakage or slippage of condom into the vagina during coitus [33,40].

Majority of the students could correctly define contraception as shown in previous literature [16,17] with all schools having most of their students in the correct knowledge category. About half of students knew correct modern methods across all schools with UNIUYO respondents having the highest proportion and ABU having the lowest. The most correctly identified modern contraceptive methods by the students are condoms, implants, IUDs and contraceptive pills. Correctly identified modern

contraceptive methods in previous literature agrees with this order [16,41]. Inaccurate methods selected include use of abortion as contraception, use of antibiotics after or before sexual intercourse and use of herbal mixtures and some of these were also wrongly selected in previous studies [33,41]. Use of rhythm, calendar and withdrawal methods were the most known traditional contraceptive methods as documented in a previous study [41]. Literature confirms that some of the traditional methods also termed natural family planning methods are more acceptable to faithful's of some religious beliefs such as Catholics and some Evangels [42]. The results for knowledge of modern and traditional contraceptive methods known were statistically significant. A previous study by Ahmed and colleagues document that even though knowledge about contraceptives was high among the respondents, utilization was low thus creating a window for possible unintended and unwanted pregnancies [43]. The cases of reported unwanted/unintended pregnancy and the consequential need for contraception in low- and middle- income countries is therefore high [43,44].

About two-thirds of the respondents correctly defined what it means to engage in unprotected sex with UNIUYO having the highest proportion of correct answers at 69% and UI having the least at 59.5%. Most common responses were having sex without condoms and having sex without use of any contraceptives. Possible outcomes of unprotected sex chosen include contracting a sexually transmitted infection and/or getting an unwanted/unplanned pregnancy and even death from complications of any of these [45] and this result is statistically significant across the schools. Use of other contraceptives can prevent one from getting an unwanted pregnancy but only the condom has been proven to protect against both an unwanted pregnancy and sexually transmitted infections including HIV [33,34]. Many more adolescents engage in premarital sex today [46] compared to the norm in the Nigerian society before where premarital sex was considered a taboo and a slight on the family of the new bride [31]. This is reflective of the extent of erosion in traditional practices and in family control of young women's behaviour borne out of modernization, longer time spent schooling and moving away from parental control for school and work [31,47]. In addition, studies show that many adolescents engage in risky sexual behaviours such as having multiple sex partners and changing sex partners often without recourse to effective contraception [47-50].

Most of the students' knowledge about how STIs can be prevented is by use of condoms and other contraceptive methods. Currently, the male, and lately the female condoms are the only available dual protection options available, and the male condom is a very common option for contraception globally [16,51-53]. However, studies on use of multiple prevention technologies (MPTs) against infections and unwanted/unplanned pregnancies are on the increase. These products, when available, will offer additional options for protection for adolescents and women generally [51,53,54]. Death from pregnancies at an early age as a result of abortion, sexually transmitted infections and unwanted pregnancies can be prevented with the use of contraceptives [55-58].

Though this study shows high knowledge about contraceptive methods amongst the respondents, several studies have shown that the uptake is low [59-62] and not commensurate with the knowledge possessed [34,38]. Some of the reasons for non-use of contraceptives generally within Sub-Saharan Africa include fear of adverse effects, lack of education, misconceptions about side- and adverse effects of contraceptives, use of concoctions and untested methods and lack of preparedness because of sex is practiced infrequently [33,63-65].

CONCLUSION

Most of the students have good knowledge of contraception but still indicate that unprotected sex is common among young people. This may expose them to sexually transmitted infections, death from early pregnancies, unwanted pregnancies and abortions carried out to terminate these unintended pregnancies. Hence there is the need for advocacy and public health promotional activities on proper use of all forms of contraception among students in tertiary institutions using suitable methods and personnel.

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