Determinants of Contraceptive Use Among Female Undergraduates in Edo State

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Abstract

Background: Nigeria has one of the highest maternal morbidity and mortality worldwide. Use of modern contraceptive has been shown to significantly reduce maternal morbidity and mortality. However, contraceptive use is still low among young women in Nigeria. This study was to determine the prevalence and determinants of contraceptive use among female undergraduates in Edo State.

Methods: The study was a cross sectional study. 360 female undergraduates attending Irrua Specialist Teaching Hospital who met the eligibility criteria were consecutively recruited and questionnaire administered to them. The results were analysed using epi info 3.5.4 statistical software and significance level was set at p value less than 0.05.

Results: The prevalence of contraceptive use among female undergraduates was found to be 28% despite 100% knowledge of contraception. Reasons for non-usage included fear of future infertility, refusal by male partner, fear of safety profile of the methods and lack of interest. Determinants of contraceptive use among the study population were older age ($p = 0.02$), being single ($p = 0.04$) and high socioeconomic status ($p < 0.001$).

Conclusion: Contraceptive use is low among female undergraduates despite adequate knowledge due to fear of adverse effects and non-cooperation by male partner.

Implication for Action: There is need for greater advocacy and education on the safety profile of modern contraception by policy makers, as well as educating men on the importance and benefits of contraception as their cooperation is key to increased usage.

Introduction

Nigeria has one of the highest maternal morbidity and mortality worldwide accounting for 14% of the global burden of maternal mortality.^{1,2} Adolescents and young adults constitute a significant proportion of the world's population. Over one-quarter of the world's population is between the ages of 10 and 24; close to 90% of the world's young people live in developing countries³. The periods of adolescence and youth are the most productive and energetic times, characterized by risky behaviours including exploratory sexual practices. Due to their population base, their sexual and reproductive health behaviours critically affect the global wellbeing and population growth pattern⁴.

According to the Nigeria Demographic and Health Survey (NDHS), 2018, the mean age of coitarche for girls is 17.2 years (17.6 years in 2013), while the mean age for marriage in girls is 19.1 years (18.3 years in 2013).⁵ This means whereas girls are becoming sexually active earlier, they are marrying later. Girls from rural settings initiate sex earlier (16 years) than girls from urban setting (18.6 years), also girls from low socioeconomic class initiate sex earlier (15.5 years) than girls from high socioeconomic class (19.7 years).⁵ Available information from previous study in Nigeria, suggests increasing sexual activity

among single adolescents of both sexes, and there is also progressive decrease in age at initiation of sex and poor contraceptive use⁶.

In addition to the above, adolescents and youth have a high level of premarital, often multiple, short-term sexual relationships, and consequently are predisposed to unwanted pregnancies and sexually transmitted infections. This leads to school dropout, unsafe abortion, pelvic inflammatory disease (PID), infertility among others.⁷ The other adverse health outcomes of risky sexual behaviour were found to be greater in females than in males; for example, Nigerian National Agency for Control of HIV/AIDS (NACA), reported a prevalence of 4.1% in people between 15 and 24 years, with adolescent girls three times more vulnerable than boys at the same age⁸. Contraceptive use particularly barrier contraceptive has been shown to significantly reduce the above adverse health outcomes and improve maternal health indices.^{2,7,9}

Contraception is the deliberate prevention of conception or impregnation through the use of contraceptives¹⁰. This form of prevention is often employed for economic, demographic and /or medical purposes so as to reduce maternal mortality, teenage pregnancy, over population and sexually transmitted infections prevalence¹¹. It is one of the most cost-effective ways to prevent maternal, infant, and child mortality.⁷ It can reduce maternal mortality by reducing the number of unintended pregnancies, the number of abortions, and the proportion of births at high risk.⁷ It can help slow the spread of HIV, promote gender equality, reduce poverty, accelerate socioeconomic development, and protect the environment.⁸ However, contraceptive use is poor among adolescents and young ladies^{9,12} despite adequate knowledge of modern contraceptive methods.⁵ The NDHS in 2018 reported a contraceptive prevalence of 28% among unmarried women, and 12% among married women respectively.⁵ Even, when used by adolescents and young ladies, it is not consistently and properly used. Education, socioeconomic status and marital status significantly affect usage of contraceptives.^{13,14} Ignorance of the various contraceptive methods, their effectiveness and safety profile are some of the reasons why young women refuse contraceptives.^{12,14}

Adolescent females form a sixth of the women in the reproductive age.¹³ Half of the pregnancies in adolescents in developing countries are unintended.¹³ Studies have shown that pregnancy before 20 years of age, have strong correlation with poor maternal and neonatal health outcomes, including higher rates of pregnancy related complications.¹⁴ Approximately 20% of pregnancy-related morbidity and mortality, along with 32% of maternal deaths, could be prevented by the use of effective contraception.^{2,13}

To assess the current situation in our environment, periodic survey of the sexual behaviour and contraceptive practices of the young female students is required. This would allow for appraisal of policy formulations that promote sexual health. A study of the sexual practices, and contraceptive use among the female undergraduates, would be a reflection of happenings among young adults, since most undergraduates are usually in their late teens and early twenties, a period characterized by sexual

adventure and risky behaviour. The aim of this study therefore, was to determine the prevalence and determinants of modern contraceptive use among undergraduates in Edo State.

Methodology

This study was conducted at Irrua Specialist Teaching Hospital, Irrua, (ISTH), Edo State. The hospital receives students from the three major tertiary institutions in Edo Central and Edo North Senatorial Districts – Ambrose Alli University, Ekpoma, and College of Education, Igueben, both in Edo Central Senatorial District, and Auchi Polytechnic, Auchi in Edo North Senatorial District.

Study Design

The study was a descriptive cross-sectional study.

Study Population

This comprised of sexually active female undergraduates of reproductive age (15 – 49 years), who presented at Irrua Specialist Teaching Hospital, Irrua, during the study period.

Inclusion Criteria

1. Female undergraduates aged 15 to 49 years,
2. Those who are sexually active,
3. Those who presented at ISTH
4. Those who consented to participate in the study.

Exclusion Criteria

1. Female undergraduates outside the age range
2. Students who were too ill to participate in the study.
3. Those who objected to the study

Selection of Subjects

Female undergraduates presenting to the General Out-Patient Department, Accidents and Emergency Unit, and gynaecological unit of ISTH, who met the inclusion criteria were selected for the study.

The sample size was determined using the formula for single proportion:¹

$$N = Z^2 pq / d^2 \text{ where}$$

N = estimated sample size

Z = standard normal deviate corresponding to a confidence interval of 95% (1.96)

p = prevalence of contraceptive use in Nigeria (Nigeria Demography and Health Survey reported a Contraceptive prevalence of 28% among unmarried women in Nigeria, majority of female undergraduates being unmarried)²

q = the proportion of those without PID in the population = $1 - p = 1 - 0.28 = 0.72$

d = allowable relative error (5%)

$N = (1.96)^2 \times 0.28 \times 0.72 / (0.05)^2 = 309$

Response Rate: A response rate of 90% was anticipated and so the sample size to be selected (n_s) was calculated using the formula

$n_s = n / 0.9$ where

n_s = sample size to be selected,

n = calculated sample size and

0.9 = anticipated response rate of 90%

$n_s = n / 0.9 = 309 / 0.9 = 343$.

The total sample size used was **360**

Sampling Technique

Consecutive sampling was employed in the study. Female undergraduates who met the inclusion criteria were recruited consecutively, and interviewed until the required sample size of three hundred and sixty (360) was achieved. An average of eight students were seen weekly. These patients were seen in the Family Medicine clinic, gynaecological clinics and Accident and Emergency units of Irrua Specialist Teaching Hospital, Irrua.

Study Instruments

The instrument for data collection was a Semi structured, interviewer administered questionnaire. The questionnaire was pretested in the staff/NHIS clinic of the hospital. Data analysis was done with the aid of Epi info statistical software version 3.5.4, designed by the American Centre for Disease Control and Prevention (CDC), Atlanta, USA for epidemiological studies. Results were presented using tables, charts, frequency distribution and simple percentages. Chi-square test was used to test for association between the occurrence of PID and associated risk factors, and $p \leq 0.05$ was considered statistically significant.

Study Duration

The study lasted for six months from May 2016 to November 2016.

Results

Table 1
Sociodemographic Characteristics of the Respondents (N = 360)

Sociodemographic Characteristics	Frequency	Percentage
Age (Years)	37	10.3
15–19		
20–24	196	54.4
25–29	98	27.2
30 and above	29	8.1
Marital Status	338	93.9
Single		
Ever Married	22	6.1
Religion	283	78.6
Christianity		
Islam	77	21.4
Socioeconomic status		
Low	192	53.3
Middle	92	25.6
High	76	21.1

Respondents were female undergraduates aged 16–35 with a mean age of (24 ± 3.6) years. Majority of respondents were aged 20 to 24 years (54.4%) while the least respondents were 30 years and above (8.1%). They were mostly unmarried (93.9%), Christians (78.6%) and were of low socioeconomic class (53.3%).

Table 2
Sexual History of Respondents

Sexual History	Frequency	Percentage
Age at Coitarche (Years) (N = 360)		
10–14	3	0.8
15–19	261	72.5
20–24	89	24.7
25 and above	7	2.0
No of Sex Partners ever had (N = 360)		
1	19	5.3
2	249	69.2
3	54	15.0
4 and above	38	10.5
Knowledge of Contraception (N = 360)		
Yes	360	100
No	Nil	Nil
Contraceptive use (N = 360)		
Yes	104	28.9
No	256	71.1
Reasons for not using (N = 256)		
Fear of future infertility	122	47.7
Partner's refusal	72	28.1
Not sure of Safety profile	39	15.2
Don't like it	23	9.0
Method of Contraceptive (N = 104)		
Condom	69	66.3
Natural	22	21.2
Pills	5	4.8
Injectables	5	4.8
IUCD	3	2.9

Most respondents attained coitarche between the ages of 16 to 19 years (72.5%) with the mean age of sexual debut being 18 ± 2.2 years and a range of 13 to 30 years. Respondents had had multiple sex partners with only 5.3% having a single partner.

They all had knowledge of contraception but the contraceptive prevalence was 28.9%. The main reason for the refusal of contraceptive use was fear of future infertility (47.7%) followed by Partner refusal (28.1%). Of those who used contraceptives, 66.3% used Condom as the preferred method of contraception while Intra Uterine Contraceptive Device (IUCD) was the least preferred method of contraception (2.9%).

Table 3
Determinants of Contraceptive Use (N = 360)

Sociodemographic Characteristics	Contraceptive Use			Test Statistics (χ^2 Test)
	Yes N = 104(%)	No (N = 256)	Total (N = 360)	
Age (Years)	6(16.2)	31(83.8)	37(100)	$\chi^2 = 9.64$
15–19				
20–24	67(34.2)	129(65.8)	196(100)	P = 0.02
25–29	35(35.7)	63(64.3)	98(100)	
30 and above	8(36.4)	21(63.6)	29(100)	
Marital Status	102(30.2)	236(69.8)	338(100)	$\chi^2 = 4.46$
Single				
Married	2(9.1)	20(90.9)	22(100)	P = 0.04
Religion	78(27.6)	205(72.4)	283(100)	$\chi^2 = 1.23$
Christianity				
Islam	26(33.8)	51(66.2)	77(100)	P = 0.27
Socioeconomic status				
Low	39(20.3)	153(79.7)	192(100)	$\chi^2 = 18.13$
Middle	31(33.7)	61(66.3)	92(100)	df = 2
High	34(44.7)	42(55.3)	76(100)	P < 0.001
Age at Coitarche				
10–14	3(100)	– (0)	3(100)	$\chi^2 = 6.91$
15–19	74(28.4)	187(71.6)	261(100)	df = 3
20–24	24(27.0)	65(73)	89(100)	P = 0.07
25 and above	3(42.9)	4(57.1)	7(100)	

There was a significant increase in Contraceptive use with increase in age ($p = 0.02$) with respondents 30 years and above using it the most. Contraceptive use was significantly higher in singles compared to married respondents ($p = 0.04$). There was no significant difference in contraceptive use among adherents of Islam or Christianity ($p = 0.27$). Contraceptive increased with increase in socioeconomic class with respondents from low socioeconomic status reporting the least contraceptive use, the

difference was statistically significant ($p < 0.001$). Age at sexual debut did not significantly affect contraceptive usage ($p = 0.07$).

Discussion

This study found a contraceptive prevalence of 28.9% among female undergraduates. This is similar to the NDHS prevalence for unmarried women of 28%.⁵ It is also similar to findings of Kana et al¹ in North-eastern Nigeria and Ogboghodo et al⁹ in South-south Nigeria with a prevalence of 26% and 26.8% among current users respectively. This low level of contraceptive use among female undergraduates is worrisome, particularly when their literacy level about contraceptives was almost 100%, (NDHS 2018 found a literacy level of 98% among unmarried women in Nigeria)⁵. Reasons why most female undergraduates did not use contraceptives included fear of infertility in the future; refusal of their male partners; fear of the safety profile of the various methods as well as dislike for the use of modern contraception. These findings have been corroborated by other studies which found a low contraceptive use due to fear from the side effects of the contraceptives such as infertility, cancer etc.¹³ However, this finding is in contrast to what was reported in a study done in Southeast Nigeria,¹⁵ where a high prevalence of contraceptive use among female undergraduates was found.

In a study done by Akintayo et al,¹⁶ consistency in the use of contraceptives did not match the contraceptive knowledge, as only about 35% of the studied population consistently used contraceptive, while in about 31.2%, there was no consistency in the use of contraceptives during sexual intercourse. Sexual activity without consistent and proper usage of contraceptive will lead to unwanted pregnancy and PID with their attendant morbidity and mortality. Inconsistency in the use of contraception has been noted earlier, and it can be ascribed to ignorance, fear of side effects, poor access to contraception and spontaneity of adolescent sexual activities.^{17,18} In order to maintain and sustain healthy sexuality, attitudinal change in this area is inevitable.

In the same study as above,¹⁶ an outcome of unprotected intercourse is unwanted pregnancy which occurred in 27.4% of the sexually active students. Unwanted pregnancy among teens and young people account for about three million unsafe abortions worldwide and the incidence seems to be on the rise.¹⁹ Although abortion is illegal in our country, all the girls procured it somehow. Studies in Nigeria revealed that over 80% of adolescents who have an unwanted pregnancy, seek the option of induced abortion with many of them using dangerous and unsafe methods.^{6,20} The implications (both economic and otherwise) of treating complications of unsafe abortion is enormous, and this often stimulates the debate on review of our abortion legislation.

The study showed that respondents from low socioeconomic background (20.3%) were less likely to use contraceptives compared to those from middle (33.7%), and high (44.7%) socioeconomic backgrounds, and the higher the socioeconomic status, the higher the likelihood of using contraceptive. This is similar to findings by Ogboghodo et al⁷ and Ackerson et al.⁹ Poverty therefore is a major barrier to contraception

as these poor ladies are not likely to have a say in their sexual life, as they are more likely to engage in sex for monetary gains. Previous studies^{16,21} showed that engaging in sexual intercourse for monetary gains is common among undergraduate students, and this puts them in a condition where they are less likely to negotiate sex and contraceptive use leading to reduced use.¹³

The mean age of sexual debut found in our study was 18 ± 2.2 years. this was similar to findings in previous studies.^{16,22} Also this finding is comparable with the findings in South Africa, Ireland and Albania where sexual debut was at 17.3 years, 17.6 years and 18.8 years respectively.^{23,24} However, this is in contrast to the findings by Adegbeniga et al²⁵ in their study in Northern Nigeria, where earlier age of sexual debut was reported. This finding may be attributed to religion and cultural factors in the area studied.

Only a very small percentage of the studied population (5.3%) had one sexual partner, while a very high percentage had more than one sexual partner. This high number of undergraduates with multiple sexual partners confirms the risky sexual practices among the adolescents and young adults. This is contrary to the expectation that the prevailing HIV/AIDS pandemic should exert some positive constraint on sexual exploitation by these undergraduates. However, this finding is in contrast to what was found in a previous study,²⁶ where a decline in the prevalence of multiple sexual partners when compared to earlier trend among undergraduates was reported.

Age was found to significantly affect contraceptive use in our study. The older the respondent, the higher the likelihood of them using a modern contraceptive method – ages 15–19 (16.2%) while ages 30 and above (36.4%). This may be due to their ability to negotiate sex with maturity, and are able to overcome their partner's insistence on not using contraceptive. Studies have shown that contraceptive use is affected by non-cooperation of the malepartner.¹³ Also, as the girl ages, she can resist coercion from male partners more. It was therefore not surprising that older respondents used contraceptives more than younger ones.

Marital status was also identified by the study as a determinant for contraceptive use among undergraduates. Unmarried respondents (30.1%) used contraceptives more than married ones (9.1%). This is in line with 2018 NDHS, which found a contraceptive use prevalence of 28% among unmarried women compared to 12% among married women.⁵ This is expected as married women look forward to having children and often have sex with their husbands only. They therefore use contraceptives for child spacing and when they have completed their family size. Unmarried women on the other hand commonly have multiple sex partners as found in this study and elsewhere, and are exposed to risks of unwanted pregnancies as well as STIs thus increasing the need for contraception in this category of young women.

The commonest method of contraception used by the respondents was male condom (63.3%). This is comparable to finding reported in a previous study,²⁷ but is in contrast to what was reported in another study,²⁸ where respondents who practiced natural methods such as rhythm and calendar methods were more. Also, another study in the United States²⁹ reported predominant use of oral contraceptive pill. The

preferred use of male condom found in our study is perhaps due to its availability, cheap price and ease of over-the-counter purchase of the condoms. Due to the fact that some other contraceptive methods require an expert input in their use, in addition to scarcity of adolescent friendly clinics, coupled with judgemental attitudes of health workers, the students are discouraged from accessing health facilities for other contraceptive methods in our environment.³⁰

Conclusion

Contraceptive use is low among female undergraduates in Edo State despite adequate knowledge. Grossly deficient formal sex education exposes the students to sex information from peers, media, religious houses and relatives whose healthy content could not be guaranteed.

List Of Abbreviations

HIV/AIDS Human Immunodeficiency Virus/Acquired ImmunoDeficiency Syndrome

ISTH Irrua Specialist Teaching Hospital

IUCD Intra Uterine Contraceptive Device

NACA National Agency for Control of HIV/AIDS

NDHS Nigeria Demographic and Health Survey

PID Pelvic Inflammatory Disease

STI Sexually Transmitted Infections

Limitation Of The Study

As with nearly all studies of sexual behaviour, the value of this study depends on the veracity of reported attitude. However, the survey was in the form of an anonymous questionnaire, which hopefully encourages accurate disclosure of attitude.

Recommendations

There is need for advocacy and sensitisation for undergraduates on the safety profile of modern contraceptives. Sex education should be taught to young girls in secondary school on the importance of contraceptives as a means of reducing maternal morbidity and mortality. Youth friendly centres should be established in all tertiary institutions to ensure the students have unhindered access to reproductive health information and care.

Declarations

Ethics Approval and Consent to Participate

Ethical approval was obtained from the Ethics and Research Committee of Irrua Specialist Teaching Hospital, Irrua via ISTH/HREC/2016/MAY/031, while written informed consent was obtained from study participants after details of the study including the aim and objective have been explained to them.

Consent for Publication

Consent for publication of research findings was obtained from ethics and research committee of ISTH as well as the study participants.

Availability of Data and Materials

Data and materials used in the study are available with the authors and can be assessed when needed.

Competing Interests

The authors report nil competing interest.

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Authors' Contributions

OSENI, Tijani Idris Ahmad – Conceived the idea, conducted the study and wrote the manuscript.

MOMOH, Mojeed O. – Conceived the idea and wrote the manuscript.

AFFUSIM, Christopher Chidozie – Conducted the study and wrote the manuscript.

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