



Study on the Effect of Contraceptive Usage among Students (A Case Study of Federal School of Statistics Manchok Kaduna State)

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ABSTRACT

Contraceptives are medications or devices used to prevent pregnancies and sexually transmitted diseases. Despite being sexually active, young people still lack adequate information and acceptance of contraceptive use, raising concerns about their awareness and perception of effectiveness. This study investigates students' knowledge and perception of contraceptive effectiveness in a tertiary institution. A cross-sectional design was adopted, and data were collected through a structured questionnaire administered via simple random sampling. The data was analysed using descriptive statistics and the chi-square method in SPSS 24. Results show that 81.3% of respondents believe contraception is effective, with condoms being the most commonly used method. The results of the chi-square test show a strong correlation between age group and the efficacy of contraception. The effectiveness of contraceptives is significantly correlated with marital status. Perceptions of the effectiveness of contraceptives are substantially correlated with gender. Students with prior contraceptive use were more likely to perceive them as effective. These findings underscore the need for targeted awareness and education campaigns to improve contraceptive understanding among students. Social media can be a good medium to sensitize students (young people at large) of the importance and the correct ways to use contraceptives effectively. A good gender base strategy should be developed and employed in educating young people of contraceptive usage for the prevention of STDs and pregnancy.

Keywords:

Contraceptives,
Effectiveness of
Contraception,
Knowledge about
Contraception,
Students.

INTRODUCTION

Contraception is fundamentally defined as "a process or technique for preventing pregnancy by means of a medication device or alters one more processes of production in such a way that sexual union can occur without impregnation" (Mosby medical dictionary, 2022). Its significance extends beyond mere pregnancy prevention, serving as a critical intervention against the spread of sexually transmitted diseases and the devastating consequences of unintended pregnancies and unsafe abortions (Idris et al., 2024). Studies have shown a direct correlation between low contraceptive prevalence rates and high youth mortality ratios, underscoring its public health importance. Nigeria, in particular, faces alarming mortality statistics in Sub-Saharan Africa, with a substantial number of annual deaths directly attributable to illegal and unsafe abortions. This positions abortion rates as a reliable, albeit tragic, indicator of a country's current medical treatment and family planning landscape.

A pervasive issue identified is the insufficient understanding of contraceptives among undergraduate students, highlighting an urgent need for enhanced information dissemination through new media and reinforced social and behavioral change communication (Idris and others, 2024). This knowledge gap is not isolated, being particularly prevalent among secondary school students, and directly linked to Nigeria's overall low levels of contraceptive awareness and use (Adinma et al., 1999). Research consistently indicates that Nigerian undergraduates, despite engaging in diverse sexual activities, frequently fail to utilize appropriate contraception to protect their health. This disparity in sexual behavior and contraceptive use is influenced by the type of educational institution attended and the chosen course of study (Tosin & Mabaso, 2024). This aligns with observations by the National Center for Chronic Disease Prevention and Health Promotion

(2023), which suggests that health-related courses undergraduates with more adequate knowledge concerning sexual health. To counter these deficits and promote contraceptive uptake among Nigerian youth and teenagers, a key recommendation involves educating adolescents on both the mechanism of action of contraceptives and the potential negative ramifications of unsafe abortions (Otoide *et al.*, 2001).

A comprehensive understanding of factors influencing contraceptive usage is deemed essential for effective policy formulation (Abubakar & Abubakar, 2024). Despite a relatively high incidence of sexual activity and widespread general awareness of various contraceptive options among Nigerian adolescents and youth, the actual prevalence rate of contraceptive use remains notably low. This creates a significant unmet demand, leading to a proliferation of unintentional pregnancies and illegal abortions, which in turn contribute to high youth mortality rates.

Empirical evidence from Nigeria reveals that over 60% of women experiencing an unintended pregnancy do not utilize contraception (Otoide, Oransaye, & Okonofua 2001). The scale of this issue is stark: approximately one in seven Nigerian women of reproductive age (14%) have attempted an abortion, and one in ten (10%) have successfully terminated an unwanted pregnancy, cumulatively implying up to 760,000 induced abortions annually.

In terms of specific methods, Tosin and Mabaso (2024) found condoms to be the most commonly used modern contraceptive among undergraduates in Southwest Nigeria. This is followed by oral contraceptive pills (OCP), injections (Depo-Provera), intra-uterine devices, spermicidal cream, and other injections. Traditional methods, such as the withdrawal method (coitus interruptus) and calendar rhythm, also exhibit significant popularity, with the practice of drinking strong salt solution post-intercourse identified as a third prevalent traditional method.

A consistent finding across studies, including those by Idowu *et al.* (2020) in Nigeria and Emina *et al.* (2014) in other African contexts, highlights an inverse relationship between educational level and contraceptive use (Abubakar and Abubakar, 2024). This underscores the critical role of education as a determinant of contraception behaviours. Furthermore, geographical variations in contraceptive use are pronounced in many developing countries, including Nigeria, where socio-cultural and economic factors significantly influence usage patterns. Tosin and Mabaso (2024) also observed that undergraduates in public colleges exhibit higher rates of sexual activity compared to their counterparts in private universities (average scores of 44.52 vs. 42.77), while paradoxically, undergraduates in private institutions are more likely to use contraception.

Several formidable challenges impede optimal contraceptive use in Nigeria. A primary barrier is the "dearth of knowledge about contraception" (Adinma *et al.*, 1999). Additionally, concerns about future infertility and the perceived adverse effects of modern contraceptives contribute to individuals opting for abortion as an immediate solution to unplanned pregnancies. A prevalent misconception among some girls is that a single dilation and curettage (D&C) procedure is safer than long-term (16 packs) daily pill usage (Otoide *et al.*, 2001).

The reliance on peer groups as the primary source of information is problematic, as these sources are often unreliable, stemming from similarly uninformed individuals (Adinama *et al.*, 1999). Moreover, Williamson *et al.* (2009) highlight that while access to safe and effective fertility control is crucial for young women in developing countries, many predominantly rely on traditional rather than modern methods like condoms or hormonal contraceptives. The use of condoms is frequently associated with disease and promiscuity, and is often perceived as a method that confers greater male control.

Fear of potential side effects significantly deters contraceptive use, despite knowledge that contraceptive failure rates can be as high as 30 pregnancies per 100 women annually (Eberendu, Ogubuike, Obianozie, Chinedu & Ugwulor, 2024). While common side effects of hormonal contraceptives (e.g., mood swings, nausea, migraines) generally subside with consistent use over three to five months (Grossman *et al.*, 2010), a substantial proportion (64.6%) of women discontinuing oral contraception do so specifically due to negative side effects.

Proprietary patent medicine vendors (PPMVs) represent a significant, although limited, source of family planning services, particularly for adolescents and youth (aged 15–24 years). However, the quality of their services, compliance with national regulations, and low referral rates to primary health centers (PHCs) for long-term contraceptive methods pose critical limitations to adequately addressing the sexual and reproductive health needs of adolescents and youth (Akila, *et al.*, 2024).

Contraceptive methods are broadly categorized into; **Barrier methods:** Such as condoms. **Hormonal methods:** Including oral pills, injections, and implants. **Emergency contraception.** **Intrauterine methods:** Such as Intra-Uterine Devices (IUDs). **Sterilization.** As previously noted, condoms, implants, and oral pills are the most widely used modern contraceptives, while traditional methods encompass withdrawal and calendar rhythm (Tosin and Mabaso, 2024).

The primary aim of the study is to comprehensively assess the level of knowledge and the perceived effects of contraceptives among students in tertiary

institutions. The core objective of this research is the promotion of effective contraceptive use among Nigerian students, recognizing that improving the reproductive health of unmarried couples and adolescents presents a significant challenge. It is unequivocally clear that neglecting the current disparity between contraceptive need and utilization will lead to a dramatic escalation in the prevalence of unsafe abortions.

To address these challenges, several recommendations are posited:

- Education for adolescents should encompass both the mechanism of action of contraceptives and the potential negative consequences of unsafe abortions (Otoide et al., 2001).
- Strengthening partnerships between PPMVs and the state public health system has demonstrated significant increases in contraceptive dispensing, suggesting this as a promising avenue for improving access (Akila, et al., 2024).
- Patient education is crucial to mitigate unintended side effects, and rigorous evaluation of medical eligibility should precede and accompany the use of hormonal contraception (Grossman et al., 2010).

The grim statistics—with approximately one in five pregnancies in Nigeria being unplanned annually, and over 50% of these ending in abortion (Guttmacher Institute, 2006)—underscore the urgent and paramount need for enhanced contraception promotion and comprehensive educational initiatives.

MATERIALS AND METHODS

Study area and population.

This study was conducted exclusively on the students of Federal school of Statistics Manchok which located in Kaduna State Nigeria. It an institution of higher learning with six departments. However, only three departments were considered for this research.

Study Design

The data used in this paper were obtained via administered structured questionnaires from the Federal school of Statistics Manchok Kaduna State, Nigeria. The data represent cross-sectional data from a cross-sectional study and were analysed using descriptive statistics and the Chi-square test.

Sample Size and Sampling

A sample of 120 students was randomly selected across various departments and levels comprising both males and females, married and unmarried. Simple random sampling was employed in each department of Federal School of Statistics. However, the sample size was determined using a convenience-based approach.

Data collection procedures

Structured questionnaires, which were pre-tested and adapted from relevant literature, were exclusively prepared in English. Two students from each department were selected to administer the questionnaires within their respective departments. A concise training session covered the study's objectives, relevance, confidentiality of information, respondents' rights, informed consent, and interviewing techniques was organized. Additionally, a practical demonstration of the interview process was conducted in the classroom. Every completed questionnaire was reviewed and cleaned before data entry.

Data Analysis

All data were entered and analysed by computer using SPSS version 24.0, in line with the study's objectives, and using appropriate statistical tools and procedures. The results are presented in tables, graphs, and charts. Simple statistical analysis was also performed on both univariate and bivariate data set using appropriate statistical tools and procedures.

Ethical considerations

Permission and ethical approval were obtained from the Federal School of Statistics Manchok's administration. A formal letter was used to obtain permission. Prior to the interview, each respondent provided written informed consent. Utilizing unique identifiers for each study participant and restricting access to respondent data to the principal investigator and research assistants by keeping completed questionnaires and all participant information documents in a locked cabinet helped to ensure the confidentiality of individual client information.

RESULTS AND DISCUSSION

The socio-demographic pattern and knowledge of the effect of contraceptives **among** the respondents are presented in the tables and graphs below.

Table 1. Socio-demographic characteristics

Age group.		
15-25	82	71.9%
26-35	24	21.1%
36-45	8	7.0%
46+	0	0%
Total	114	100.0%
Marital status		
Single	98	86.0%
Married	16	14.0%
Divorced	0	0%
Widowed	0	0%
Total	114	100.0%
Gender		
Male	52	45.6%

Female	62	54.4%
Total	114	100.0%
Occupation		
Student	108	94.7%
Civil servant	4	3.5%
Business	2	1.8%
Others	0	0%
Total	114	100.0%
Department		
Statistics department	42	36.8%
Business Admin &mgt	34	29.8%
Computer science	38	33.3%
Total	114	100.0%
Religion		
Christianity	108	94.7%
Islam	4	3.5%
Others	2	1.8%
Total	114	100.0%

The largest age category examined was 15-25 (71.9%), followed by 26-35, confirming that the student population is young. The marital status of those interviewed was single 98, married 16, and no divorced or widowed

individuals were interviewed. The majority of the students interviewed are female (54.4%), with males accounting for 45.6%. The majority of responders (94.7%) are full-time students, with only 1.8% being business professionals. Civil servants are 3.5% of the sampled population that responded to this research.

The majority of students (94.7%) are Christian, whereas Muslims account for only 3.5% of the population surveyed and 1.8% practice other religionn. Most of the students agreed that they had heard of contraception.

Table 2. Have you heard of contraceptives?

Yes	92	80.7%
No	22	19.3%
Total	114	100.0%

The majority of the students 80.7% of them said that they have heard of contraceptives. A reasonable small number of them however said they have not heard of contraceptives. The figure below shows that 78 of the 114 students acknowledged they have idea on contraceptive while 32 of them don't.

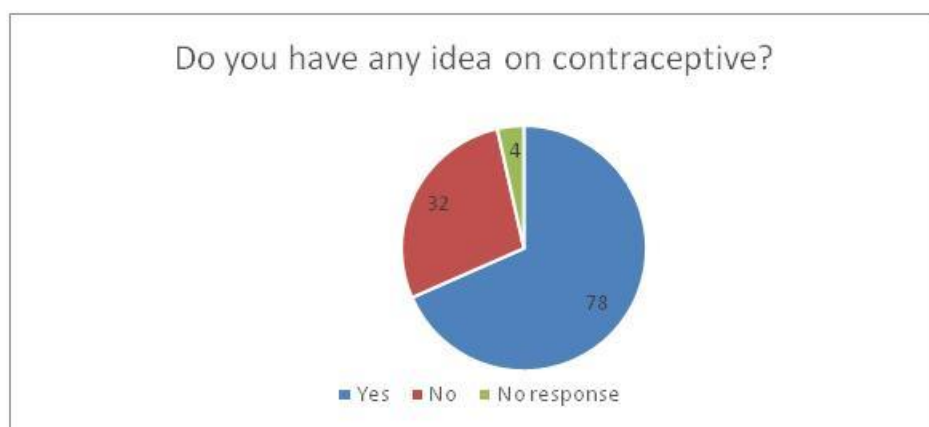


Figure 1. Do you have any idea on contraceptive?

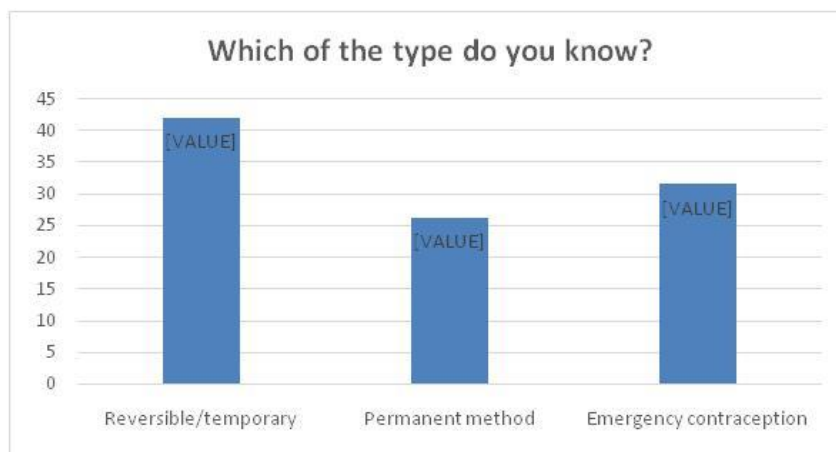


Figure 2. Which of the type do you know?

The most commonly known types of contraception are reversible/temporary (42.1%). From those interviewed

31.6% said they know emergency contraception. 26.3% of students know about permanent contraception.

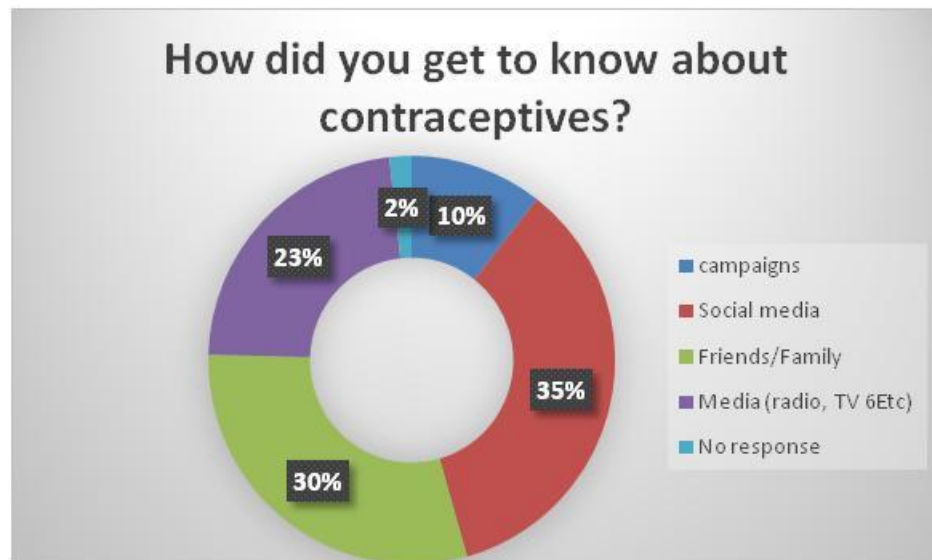


Figure 3. How did you get to know about contraceptives?

The responses from the students sampled shows that most (35%) know about contraceptive from the social media. After the social media, most knew about contraceptive via friends and family (30%). Follow by the mass media (radio, TV etc). 10% of students know about contraceptive through campaigns.

Table 3. Have you tried any contraceptives before?

Yes	45	39.5%
No	69	60.5%
Total	114	100.0%

From the table 3 above, majority of students had never used contraception previously; only 39.5% claimed that they had. The most common contraceptives used by students are condoms 57.1%, then calendar method 11.4%, and some emergency tablets 8.6% as shown on the table below.

Table 4. If yes which type?

Condom	40	57.1%
Implant	0	0%
spermicide	0	0%
Oral contraceptive	2	2.9%
Calendar method	8	11.4%
Emergency pill	6	8.6%
Vaginal ring	6	8.6%
Patch	0	0%
Surgical sterilization	0	0%
Diaphragms	0	0%
IUD	4	5.7%
Abstinence	0	0%
Others	4	5.7%

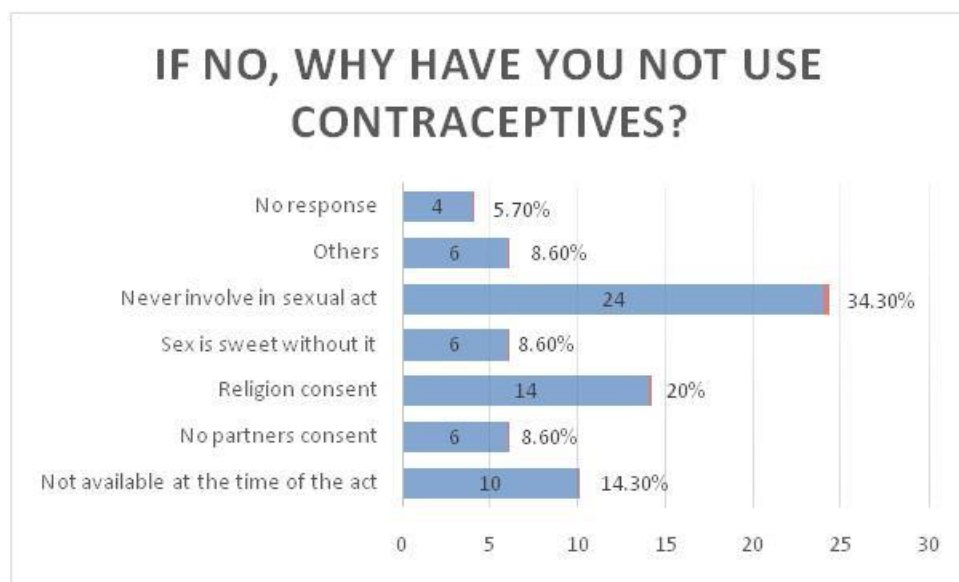


Figure 4. If no, why?

The main reason given not to have tried contraceptive by the students is that they have not indulged in sexual act (34.3%). The next most reason by 20% they said is because of religion consent they have not to have tried

contraceptive. Others about 14.2% said they have not tried contraceptive because not available at the time of the act. Some said because no partners consent and other reasons.

Table5. Distribution of responses on the effect of contraceptives

Do you think contraceptives are effective?	Agreed	67	59.2%
	Disagreed	18	15.9 %
	Strongly agreed	28	24%
	Strongly disagreed	1	0.9%
	Total	113	100%
How effective do you think contraceptives is?	5%	4	3.5%
	25%	10	8.7%
	50%	38	33.4%
	75%	42	36.8%
	100%	20	17.5%
	Total	114	100%
Do you think contraceptives have any side effect?	Agreed	62	54.3%
	Disagreed	6	5.4%
	Strongly agreed	42	36.8%
	Strongly disagreed	4	3.5%
	Total	114	100%
The side effects of contraceptives are more than its advantages?	Agreed	68	59.6%
	Disagreed	28	24.5%
	Strongly agreed	16	14.0%
	Strongly disagreed	2	1.7%
	Total	114	100%
Contraceptives have long time side effect?	Agreed	66	57.9%
	Disagreed	22	19.3%
	Strongly agreed	24	21%
	Strongly disagreed	2	1.8%
	Total	114	100%

Also when asked how effective do they think contraceptives are majority (36.8%) are 75% sure that they are effective. 17.5% of the students believe contraceptives are 100% effective. But just 3.5% of the population of the students say contraceptives are just about 5% effective. 19 people out 57 agreed that contraceptives are 50% effective.

The students believed that the side effect of contraceptive usage has more disadvantages than the advantages based on the responses received from them.

Most of the students interviewed agreed that Contraceptives have long time side effect on the users.

Table 7. Among all contraceptives which ones do you think is more effective?

Intrauterine device (IUD)	16	14%
Implant	6	5.26%
Condom	44	38.6%
Patch	0	0%
Spermicide	10	8.8%
Emergency pill	10	8.8%
Vaginal ring	10	8.8%
Oral contraception	4	3.5%
Diapharms	2	1.7%
Calendar method	18	15.8%

Surgical sterilization	10	8.8%
Abstinence	2	1.7%
Others	4	3.5%
Total	136	100%

Condom is one adjudge by the students 44 (38.6%) among all contraceptives to be ones that is more effective possible because of availability and easy to use without the help of medical expert. Next among list of contraceptive method is the calendar method possible it has no financial implication and no contact with medical personnel. Intrauterine device (IUD) is other contraceptive that students think is effective after calendar method.

Proportion of the effective and non-effective of contraceptives

Agreed = $278/342 = 0.8129$

Disagreed = $64/342 = 0.1871$

The proportion of students that agreed that contraceptives are effective is 0.8129 and those that of the opinion that contraceptive is not effective is 0.181 that barely 2% of the population sampled and is significant.

Table 8. Bivariate analysis of factors associated with perceived effectiveness

		DO YOU THINK CONTRACEPTIVES ARE EFFECTIVE			
		YES	NO	Total	Chi square value and P-value
Age group	15-25	82	0	82	$\chi^2 = 36.262$ P=.000
	26-35	12	12	24	
	36-45	0	8	8	
	Total	94	20	114	
Marital status	Single	94	2	96	$\chi^2 = 48.741$ P=.000
	Married	0	16	16	
	Total	94	18	112	
Gender	Male	52	0	52	$\chi^2 = 10.172$ P=.001
	Female	42	20	62	
	Total	47	10	114	
Occupation	Student	94	14	108	$\chi^2 = 14.883$ P=.001
	Civil servant	0	4	4	
	Business	0	2	2	
	Total	54	20	114	
Department	Statistics Department	42	0	42	$\chi^2 = 24.255$ P=.000
	Business Admin & mgt.	34	0	34	
	Computer sci.	18	20	38	
	Total	94	20	114	
Religion	Christianity	94	14	108	$\chi^2 = 14.883$ P=.000
	Islam	0	4	4	
	OTHERS	0	2	2	

	Total	94	20	114	
Have you heard of contraceptives?	Yes	92	0	92	$\chi^2 = 50.716$ P=.000
	No	2	20	22	
	Total	94	20	114	
Do you have any idea on contraceptive?	Yes	78	0	78	$\chi^2 = 29.349$ P=.000
	No	16	16	32	
	No response	0	4	4	
	Total	94	20	114	
Have you tried any contraceptives before?	Yes	44	0	44	$\chi^2 = 6.939$ P=.008
	No	50	18	68	
	Total	94	18	112	
Which of the type do you know?	Reversible/temporary	38			
	Permanent method	26			
	Emergency contraception	30			
	Total	94			

Factors associated with contraceptive use and effectiveness

According to the cross-tabulation, the majority of students aged 15–25 years ($n = 82$) believe contraception is effective. Among those aged 26–35, twelve students reported that contraceptives are effective, whereas eight students aged 36–45 believe that contraceptives are ineffective. The chi-square test confirms a significant association between age group and perceived contraceptive effectiveness. Marital status is also significantly related to perceived effectiveness; 94 single students agree that contraception is beneficial, whereas 16 married students disagree. With respect to gender, 52 male students consider contraception effective, 42 female students agree, and 20 female students disagree; thus gender shows a strong association with perceptions of effectiveness. Based on their occupations, 94 students agreed that contraception is effective, whereas 14 disagreed. Civil servants and businesspeople among the students believe that contraception is not absolutely effective. All students from the statistics and business management departments think contraceptives are effective, in computer science department 18 students assert that contraceptives are effective but 20 think they are not. Religion and contraception have a statistically significant association. Of the 108 Christian students who responded, 94 believe contraception is effective, while 14 disagree. The Muslim students who answered to the questionnaire all stated that they believe contraception is ineffective. For those that answered that they have heard of contraceptives 92 of them said that they think of contraceptives is effective. Twenty (20) students said they have not heard and do not think contraceptive are effective. Students who have used some form of contraception and believe it is effective are 44, those who have not tried but believe it is effective are 50, and those who have not tried but believe it is ineffective are just 18 out of the sampled

population. There is a substantial relationship between having a notion about contraception and its effectiveness. 78 of the 114 students indicated they had a notion of a contraceptive and believe it is effective, while only 16 said they have no idea of a contraceptive and do not think it is effective.

Discussion of Findings

From the investigation carried out, condom was identified as the commonly known and used and is also regarded to be effective. Also commonly known are emergency tablets, the rhythm/calendar, and withdrawal method among students. This conclusion is compatible with the previous studies that corroborated the findings of Shamsudeen *et al.*, (2020); Umukoro, (2020); Tijani *et al.* (2016); Tosin, & Mabas, (2024); Osaikhwuomwan, & Osemwenkha, (2013); Oniso, & Tawari, (2021) etc.

This study demonstrates that students have a fair understanding and use of contraception, which indicates that students will adopt safe sex practices. This, however, contradicts previous findings which indicated low usage of contraceptives among adolescents. One possible explanation for this development is that the current era of technological advancement has made access to the Internet increasingly easy, which may have improved students' (young people's) health-related media literacy and enabled them to competently seek quality and adequate sexual knowledge to guide their decisions (Jain & Bickham, 2014; Umukoro, 2020; Oniso & Tawari, 2021; Yakubu *et al.*, 2024).

Given that a large number of respondents were aware of contraceptives, a higher percentage (35%) obtained this knowledge through social media, implying social media can serve as an effective platform to educate and encourage youth on safe sex practices related to contraception. Another 30% received this knowledge from family and friends (including classmates). Ideally,

information of this nature should be primarily obtained at home and in school settings; however, there is a tendency for peer-to-peer information to be incorrect—based on myths or hearsay—and the effects are exacerbated when such misinformation is spread and practiced, often leading to unfortunate outcomes such as infection and unwanted pregnancies. Many respondents agreed that education about family planning and birth control should take place in schools, and they also agreed that learning about birth is critical. The role of the mainstream media cannot be ignored in disseminating contraceptive knowledge to students; 23% of the students indicated they received such knowledge through mass media (radio, TV, etc.) a result similar to that obtained by Umukoro (2020).

A significant number of respondents believe that contraceptives are effective for the prevention of pregnancy and STDs, and the perceived efficacy is very high. However, a good proportion of the respondents agreed that contraceptive have detrimental effects, with weight gain and menstrual irregularities being the most prominent issues in the course of using contraceptives with difficulties connected to weight gain, menstruation being the most prominent issue. These side effects are caused by hormonal imbalances, which manifest as irregular menstruation, weight gain, and other symptoms. The main reasons for the non-usage of contraceptive in this study are, (i) Never involve in sexual act (34.3%) followed by (ii) religion consent (20%), (iii) non-available at the time of the act (14.3%). (iv) Partners refusal (8.6%) similar conclusion was reached in the study of Tijani *et al.*, (2016).

CONCLUSION

According to the study's findings, female students have a relatively higher level of contraceptive awareness and knowledge, and the majority of them believe that contraceptives are effective in preventing pregnancy and STDs, with a very high perceived level of effectiveness. Most of the students got their information on contraception from sources such as social media which may be inadequate or inaccurate in terms of proper application. Condom was identified as the commonly known and used contraceptive and is also perceived to be effective, followed by emergency pills, then rhythm/calendar and withdrawal method among students. The chi-square test results demonstrate a substantial association between age group and contraceptive effectiveness. Marital status has a substantial association with contraceptive effectiveness and gender is strongly associated with perceptions of contraceptive effectiveness. This research was studentcentered which is a limitation, I therefore recommend that further study should be conducted on institutions to find out what they do to encourage the effect usage of contraceptive among students. I also recommend that studies should be conducted on young

people who are not in a formal school system whom this study did not cover to see if similar finding will be obtained.

Key Implications

- Social media can be a good medium to sensitize students (young people at large) about the importance of contraception and the correct ways to use contraceptives effectively.
- A gender-sensitive strategy should be developed and employed in educating young people on contraceptive usage for the prevention of STDs and pregnancy

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