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Contraceptive Use Among Female Undergraduates: Prevalence, Patterns, and Barriers at Edo State University, Iyamho Nigeria

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Abstract

Introduction: Contraceptive use remains a cornerstone of reproductive health, particularly among young women in tertiary institutions who face the dual challenges of unintended pregnancies and sexually transmitted infections (STIs). Despite increasing awareness, contraceptive uptake among female undergraduates in Nigeria remains suboptimal. This study assessed the prevalence, patterns, and barriers to contraceptive use among female undergraduates at Edo State University, Iyamho, Nigeria

Methods: A descriptive cross-sectional study was conducted involving 350 female undergraduate students selected through stratified random sampling across academic levels (100–600 level). Data collection was carried out using a structured, self-administered questionnaire covering socio-demographic characteristics, contraceptive use, and perceived barriers. Data were analyzed using STATA version 16.0. Associations between variables were tested using chi-square, with a p-value < 0.05 considered statistically significant

Results: The mean age of respondents was 22.2 ± 2.0 years; most were between 18 and 21 years (61%) and unmarried (97%). Only 21% had ever used contraceptives, with just 8% being current users. Common methods included condoms (46%), natural methods (44%), and emergency contraception (42%). Long-acting methods were rarely used. The primary motivation for use was pregnancy prevention (42%), while discontinuation was largely due to side effects (31%) and cost (18%). Alarmingly, 76% were unaware of where to access contraceptives. Major barriers included fear of side effects (54%), poor access (51%), inadequate information (49%), and cultural or religious beliefs. Age, marital status, and relationship status significantly influenced use ($p < 0.05$).

Conclusion: While awareness of contraceptive methods is high among female undergraduates, actual utilisation remains relatively low. Addressing misinformation, improving access, and delivering youth-focused reproductive health programmes are essential to enhancing uptake.

Keywords: Contraceptive use, Female Undergraduate, Prevalence, Patterns, Barriers

Background

Access to and use of contraceptives among young women, particularly university students, is a critical component of reproductive health and rights.1 Contraceptive use is associated with the prevention of unintended pregnancies, reduction in unsafe abortions, and improvement in educational attainment and economic opportunities for women.[2] In sub-Saharan Africa, despite increasing awareness of modern contraceptive methods, usage among young women remains relatively low due to a complex interplay of social, cultural, and institutional factors.[3,4]

Nigeria, the most populous country in Africa, continues to face significant reproductive health challenges, including high rates of unintended pregnancies and unmet need for contraception among adolescents and young adults.[5] According to the 2018 Nigeria Demographic and Health Survey (NDHS), only 17% of sexually active unmarried women aged 15–24 were using any modern contraceptive method, and a substantial proportion had an unmet need for family planning. This gap is particularly concerning within the university environment, where young women are increasingly exposed to sexual activity without a proportional increase in access to or use of contraceptives.[6]

University students, especially females, represent a vulnerable group in terms of reproductive health. They often navigate newfound independence, peer pressure, and exposure to risky sexual behaviours in the absence of adequate reproductive health education and services.7 Despite relatively higher levels of education and awareness among this group, studies have consistently shown low levels of contraceptive use due to fear of side effects, misconceptions, religious and cultural beliefs, stigma, and poor access to youth-friendly services.[8–11]

Furthermore, the choice of contraceptive method varies widely across settings and populations. While condoms and emergency contraceptive pills are among the most frequently reported methods among university students, long-acting reversible contraceptives (LARCs) remain underutilised due to misinformation and lack of accessibility.[12] Understanding the patterns of contraceptive use, including types of methods preferred, frequency, and factors influencing choice, can provide critical insights for designing effective interventions.

Edo University, Iyamho, is a relatively young institution in South-South Nigeria with a growing population of female undergraduate students. However, there is a paucity of data on their contraceptive behaviours, preferences, and barriers to uptake. Given the socio-cultural context of the region and the transitional nature of university life, it is imperative to explore contraceptive use dynamics among these young women.

This study, therefore, seeks to determine the prevalence, patterns, and barriers to contraceptive use among female undergraduate students at Edo University, Iyamho. Findings from this research will provide evidence to inform institutional policies and reproductive health programmes tailored to the needs of university students.

Method

This study was conducted at **Edo State University, Iyamho**, located in the Etsako West Local Government Area of Edo State, South-South Nigeria. Edo University is a state-owned

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tertiary institution established in 2016 to provide quality education and foster research excellence in Nigeria. The university is situated in Iyamho, a semi-urban community approximately 20 kilometres from Auchi and about 130 kilometres from the state capital, Benin City.

Edo University, Iyamho, has a steadily growing student population and offers a variety of undergraduate programmes across various faculties, such as Basic Medical Sciences, Basic Clinical Sciences, Clinical Sciences, Education, Life Sciences, Arts and Social Sciences, Engineering, and Law. The university provides residential accommodation for all its students and has a well-equipped medical centre that offers basic reproductive and general health services. The academic environment is characterised by diverse socio-cultural and religious backgrounds, which can influence students' health behaviours, including contraceptive use. This study focused specifically on female undergraduate students enrolled in various faculties at the university, aiming to understand their patterns of contraceptive use, identify existing barriers, and provide data-driven insights to inform student-focused health interventions.

This study employed a descriptive cross-sectional design to assess the prevalence, patterns of contraceptive use, and barriers faced by female undergraduate students at Edo State University, Iyamho. Data collection was conducted using a structured, self-administered questionnaire. Participation was restricted to female students who were actively enrolled in undergraduate programmes at the university during the study period and who provided informed consent to participate in the research. Students with chronic health conditions that could potentially affect their reproductive health or contraceptive choices were excluded to maintain the study population's representativeness. Likewise, students who were on a study break at the time of data collection were excluded due to their unavailability.

Sample Size Determination

The minimum sample size (n) was calculated using the Cochran formula for a cross-sectional study.[13]

$$n = \frac{Z^2 P(1-P)}{d^2}$$

Where,

n = minimum sample size

Z = standard normal deviation set at 1.96 (at 95% confidence interval)

d = degree of precision set at 0.05

p = prevalence rate of a particular characteristic of the target population (a prevalence rate of 28% will be used). This is the prevalence of contraceptive use among female undergraduates attending Irrua Specialist Teaching Hospital. [14]

Therefore,

p = 28% = 0.28

q = 1 – 0.28

= 0.72

Hence: $\frac{1.96^2 \times 0.28 \times 0.72}{0.05^2}$

Adjusting for Non-Response Rate: To account for potential non-response, a non-response rate of **10%** was applied. The non-response rate was calculated using the formula:

Adjusted Sample Size = $\frac{\text{Initials sample size}}{1 - \text{Non-response rate}}$

Adjusted value = $\frac{310}{1 - 0.10}$

=344.4

Rounding up, the adjusted sample size is **345** participants.

Sampling technique

A stratified random sampling technique was employed to select participants for this study. The study population was divided into distinct strata based on academic levels, ranging from 100

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to 600 level. From each academic level, participants were randomly selected to ensure proportional representation. This method allowed for a balanced and comprehensive assessment of contraceptive use across all stages of undergraduate study, providing insight into how patterns and barriers may differ by academic level.

Measurement of Variables: The dependent variable, contraceptive uptake, was treated as a categorical variable with two responses: "Yes" for participants who had ever used contraceptives and "No" for those who had not. Additional data were gathered on the types and frequency of contraceptive methods used, including condoms, oral pills, injectables, implants, and others. Independent variables included socio-demographic characteristics (age, year of study, faculty, relationship status, and socioeconomic status), knowledge and attitudes toward contraceptives, barriers to use, and sources of information.

Data analysis: Completed questionnaires were checked for consistency, coded, and entered into STATA version 16.0 for analysis. Descriptive statistics (frequencies, percentages, and means) were used to summarise social and demographic characteristics and patterns of contraceptive use. The prevalence of contraceptive use was calculated as the percentage of respondents reporting past or current use. Barriers to contraceptive use were assessed using a 4-point Likert scale (strongly agree to disagree strongly). Frequencies of reported barriers—such as limited access, fear of side effects, cultural beliefs, and partner opposition—were analysed to understand common challenges. Participants also reported the specific contraceptive methods they had used. The most commonly used methods were identified through frequency analysis, and factors influencing method choices, such as accessibility, effectiveness, and personal preference, were explored.

Ethical approval was obtained from the Health Research Ethics Committee of Edo State University, Iyamho (EDSU/HREC/CMSE/003/25). Written informed consent was secured from all participants, who were assured of confidentiality, anonymity, and the voluntary nature of their participation.

Results

Sociodemographic Characteristics of Respondents

The study surveyed 350 respondents, predominantly young adults aged 18–21 years (61.4%), with a mean age of 22.2 ± 2.0 years. The majority of respondents were Bini (59.7%) and Christians (87.7%), while Muslims accounted for 12.0% of the study population. Most of the participants are single (97.7%), and a substantial number are in the 300-level (18.9%) and 100-level (18.6%) of their studies. The Faculty of Medical Sciences had the highest representation among respondents (32.6%), followed by the Faculties of Applied Health Sciences (18.3%) and Law (16.9%). Regarding relationship status, most respondents reported being single (71.7%), while 24.9% were in a relationship. A significant portion of the respondents earn above ₦30,000 monthly (66.3%), while smaller proportions reported earning ₦21,000–₦30,000 (14.0%) and ₦10,000–₦20,000 (13.4%). (Table 1)

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Table 1: Demographic characteristics of respondents

Variable	Frequency (n=350)	Percent (%)
Age (years)		
< 18	76	21.7
18-21	215	61.4
22-25	49	14
Above 25	10	2.9
Mean ±standard deviation	22.2 ±2.0	
Marital status		
Single	342	97.7
Married	8	2.3
Religious affiliation		
Christianity	307	87.7
Islam	42	12.0
Traditional religion	1	0.3
Other		
Level of study		
100 level	62	17.7
200 level	59	16.9
300 level	63	18
400 level	60	17.1
500 level	58	16.6
600 level	48	13.7
Faculty		
Faculty of arts	33	9.4
Faculty of social sciences	32	9.1
Faculty of sciences	36	10.3
Faculty of medical science	114	32.6
Faculty of law	59	16.9
Faculty of applied health sciences	64	18.3
Faculty of engineering	12	3.4
Relationship status		
Single	251	71.7
In a relationship	87	24.9
Engaged	7	2.0
Married	5	1.4
Monthly Income (₦)		
< 10,000	22	6.3
10,000-20,000	47	13.4
21,000-30,000	49	14.0
<30,000	232	66.3

Table 2, Only 21.7% of students had ever used contraceptives, and just 8% were current users. Half of the current users had used them for less than 6 months. Most users (46%) started before age 18. Frequent use was low—only 3% always used contraceptives, while 78% never did. The main reason for use was pregnancy prevention (42%). Among users, 63% had stopped at some point, mostly due to side effects (31.3%) and cost (18.8%). Finally, 76.6% of students did not know where to access contraceptives on campus or in the community.

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Table 2: Contraceptive use and related behaviours among Female undergraduate students.

Variable	Frequency (n=350)	Percent (%)
Have you ever used any form of contraceptive?		
Yes	76	21.7
No	274	78.3
Are you currently using any contraceptive method?		
Yes	28	8.0
No	322	92.0
If yes, how long have you been using contraceptives? (n=28)		
Less than 6 months	14	50
6 months – 1 year	7	25
1 – 2 years	4	14
Over 2 years	3	11
At what age did you first use any form of contraceptive? (n=76)		
Below 18 years	36	46
18 – 21 years	31	40
22 – 25 years	7	9
Above 25 years	2	3
How often do you use contraceptives?		
Always	12	3
Sometimes	25	7
Rarely	39	11
Never	274	78
What was your primary reason for using contraceptives? (n=76)		
Prevent pregnancy	32	42
Regulate the menstrual cycle	21	28
Prevent sexually transmitted infections (STIs)	18	24
Medical reasons (e.g., hormonal imbalance)	5	7
Have you ever stopped using contraceptives since starting? (n=76)		
Yes	48	63
No	28	37
If yes, why did you stop using contraceptives? (n=48)		
Side effects	15	31.3
Partner's disapproval	6	12.5
Religious/moral reasons	4	8.33
Cost issues	9	18.8
Lack of access	3	6.25
Other	11	22.9
Do you know where to access contraceptive services on campus or within the community?		
Yes	82	23.4
No	268	76.6

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Table 3 highlights various barriers affecting contraceptive use among respondents. 20.8% of respondents agreed that contraceptives are too expensive, while 56% disagreed. Nearly half (49.2%) reported lacking adequate information about contraceptive methods. Fear of side effects was a major barrier, with 54.9% in agreement. About 28.3% felt uncomfortable discussing contraceptives with healthcare providers. Religious and cultural beliefs discouraged use in 27.2% and 23.7% of respondents, respectively. Partner and peer influence were less significant, reported by only 12.9% and 14%. Access was a major issue, with 51.5% finding it difficult to obtain contraceptives. Additionally, 38.5% believed healthcare providers did not give enough guidance.

Table 3: Showing the barriers to contraceptive use among female undergraduate students.

Variable	Strongly Agree	Agree	Disagree	Strongly disagree
Contraceptives are too expensive for me to afford.	33 (9.4)	40 (11.4)	196 (56.0)	81 (23.1)
I lack sufficient information about different contraceptive methods.	64 (18.3)	108 (30.9)	98 (28.0)	80 (22.9)
Fear of side effects prevents me from using contraceptives.	79 (22.6)	113 (32.3)	108 (30.9)	50 (14.3)
I feel uncomfortable discussing contraceptive use with healthcare providers.	31 (8.9)	68 (19.4)	170 (48.6)	81 (23.1)
My religious belief discourages me from using contraceptives.	44 (12.6)	51 (14.6)	165 (47.1)	90 (25.7)
My partner disapproves of contraceptive use, which affects my decision.	17 (4.9)	28 (8.0)	180 (51.4)	125 (35.7)
I find it difficult to access contraceptive services on campus or nearby.	79 (22.6)	101 (28.9)	114 (32.6)	56 (16.0)
Cultural norms discourage me from using contraceptives.	37 (10.6)	46 (13.1)	177 (50.6)	90 (25.7)
My friends' opinions affect my decision to use contraceptives.	18 (5.1)	31 (8.9)	181 (51.7)	120 (34.3)
Healthcare providers do not provide adequate guidance on contraceptive use.	46 (13.1)	89 (25.4)	144 (41.1)	71 (20.3)

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This horizontal bar chart displays the distribution of contraceptive methods ever used by female undergraduate students. The most commonly used method is condoms (male or female) **at** 46.9%**,** followed by natural family planning methods **(**44.0%**)** and emergency contraceptive pills **(**42.3%**).** Oral contraceptive pills were used by 38.9% of respondents, while less commonly used methods include contraceptive patches **(**21.7%**),** intrauterine devices (IUDs) **(**20.3%), and injectable like Depo-Provera **(**19.2%). Use of implants such as Nexplanon was reported by 17.4%**.** Diaphragms or cervical caps and vaginal rings were the least reported methods, used by 12.9% and 11.2% of respondents respectively. Figure 2 shows that 21.7% of the respondents have ever used a Contraceptive. (Figure 1)

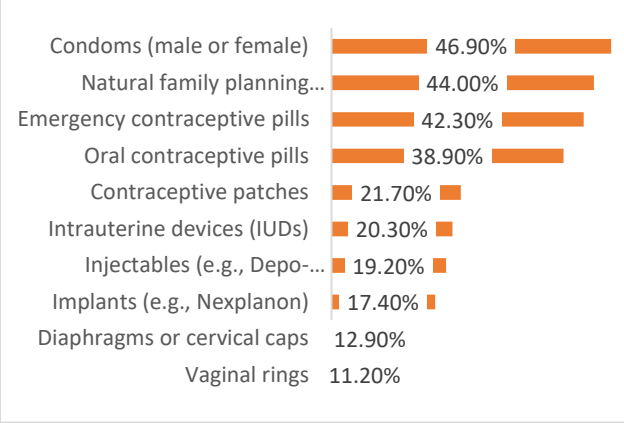

Figure 1: Types of Contraceptive Methods Ever Used by Female Undergraduate Students.

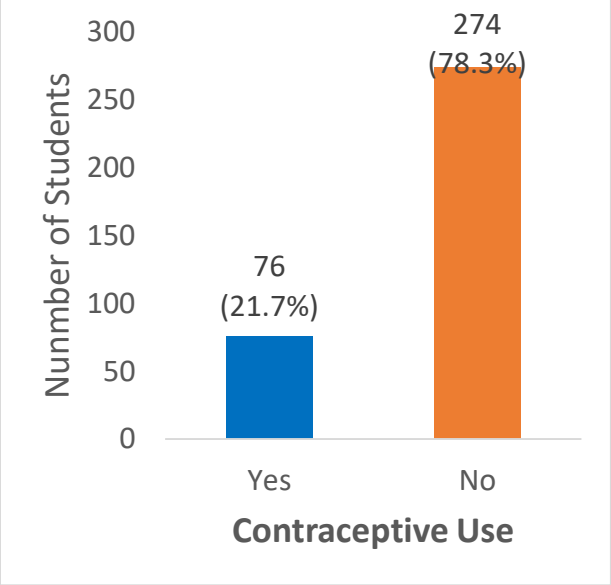

Figure 2: The prevalence of Contraceptive use among Female Undergraduate Students.

Table 4 presents the relationship between socio-demographic characteristics and contraceptive use among the respondents. Age was significantly associated with contraceptive use ($\chi^2 = 18.713$, $p = 0.000$), with prevalence increasing with age. Students above 25 years reported the highest use (70.0%), while those under 18 had the lowest (14.5%). Marital status also showed a significant association ($\chi^2 = 13.675$, $p = 0.002$), as married respondents were more likely to use contraceptives (75.0%) compared to singles (20.5%).

Similarly, relationship status was strongly associated with contraceptive use ($\chi^2 = 42.021$, $p = 0.000$). Those in relationships (42.5%) and married students (80.0%) reported much higher usage than singles (13.9%). In contrast, other variables such as religious affiliation ($p = 0.131$), level of study ($p = 0.248$), faculty ($p = 0.139$), monthly income ($p = 0.263$), and ethnicity ($p = 0.574$) were not statistically significant, although some trends were noted. For example, students in the Faculty of Engineering and those earning above ₦30,000 monthly reported relatively higher contraceptive use.

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Table 4: Association Between Socio-Demographic Characteristics and Contraceptive Use Among Female Undergraduate Students

Variables	Prevalence		χ^2	P-value
	High	Low		
Age (years)				
< 18	11 (14.5)	65 (85.5)	18.713	0.001
18-21	43 (20.0)	172 (80.0)		
22-25	15 (30.6)	34 (69.4)		
Above 25	7 (70.0)	3 (30.0)		
Marital status				
Single	70 (20.5)	272 (79.5)	13.675	0.002
Married	6 (75.0)	2 (25.0)		
Religious affiliation				
Christianity	68 (22.1)	239 (77.9)	4.269	0.131
Islam	7 (16.7)	35 (83.3)		
Traditional religion	1 (100.0)	0 (0.0)		
Level of study				
100 level	14 (21.5)	51 (78.5)	6.670	0.248
200 level	8 (12.9)	54 (87.1)		
300 level	13 (19.7)	53 (80.3)		
400 level	12 (20.3)	47 (79.7)		
500 level	15 (28.8)	37 (71.2)		
600 level	14 (20.4)	32 (69.6)		
Faculty				
Faculty of arts	11 (33.3)	22 (66.7)	6.674	0.139
Faculty of social sciences	3 (9.4)	29 (90.6)		
Faculty of sciences	6 (16.7)	30 (83.3)		
Faculty of medical science	24 (21.1)	90 (78.9)		
Faculty of law	15 (25.4)	44 (74.6)		
Faculty of applied health sciences	12 (18.8)	52 (81.3)		
Faculty of engineering	5 (41.7)	7 (58.3)		
Marital status				
Single	35 (13.9)	216 (86.1)	42.021	0.000
In a relationship	37 (42.5)	50 (57.5)		
Engaged	0 (0.0)	7 (100.0)		
Married	4 (80.0)	1 (20.0)		
Monthly income				
Less than 10,000	4 (18.2)	18 (81.8)	4.040	0.263
10,000-20,000	9 (19.1)	38 (80.9)		
21,000-30,000	6 (12.2)	43 (87.8)		
Above 30,000	57 (24.6)	175 (75.4)		
Ethnicity				
Edo	50 (23.9)	159 (76.1)	3.011	0.574
Yoruba	5 (17.2)	24 (82.8)		
Igbo	9 (22.0)	32 (78.0)		
Hausa	0 (0.0)	6 (100.0)		
Other	12 (18.5)	53 (81.5)		

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Discussion

This study investigated the prevalence, patterns, and barriers to contraceptive use among female undergraduate students at Edo State University, Iyamho. The findings revealed a relatively low contraceptive uptake 21.7% had ever used contraceptives, and only 8.0% were current users—despite widespread awareness of contraceptive methods. This aligns with the 2018 Nigeria Demographic and Health Survey, which reported modern contraceptive use among sexually active, unmarried women aged 15–24 at 17% National Population Commission [NPC] & ICF, 2019. The persistent gap between knowledge and actual use underscores enduring challenges in translating awareness into practice among young women in tertiary institutions.

The pattern of method preference in this study—favoring condoms (46.9%), natural family planning (44.0%), and emergency contraception (42.3%)—reflects similar trends across sub-Saharan African university populations.[15] Long-acting reversible contraceptives (LARCs), such as intrauterine devices and implants, were notably underutilized. This may be due to common myths, limited access, fear of side effects, and low provider engagement—factors frequently noted in previous research .[15,16]

Importantly, 76.6% of respondents did not know where to access contraceptives on campus or within the community, indicating a critical service delivery gap. Additionally, a substantial number of users discontinued contraceptives due to side effects (31.3%) and cost (18.8%). These barriers are consistent with prior Nigerian studies which identified fear, misinformation, and affordability as major deterrents to continued use.[17]

Sociodemographic variables—particularly age, marital status, and relationship status—were significantly associated with contraceptive use. Students above 25 years and those in relationships were more likely to report use, confirming earlier observations that contraceptive behaviour is often driven by perceived need.[18] Interestingly, other variables such as faculty, religious affiliation, and monthly income were not significantly associated, suggesting that reproductive choices among young women may be shaped more by personal relationships and sexual activity than by socioeconomic or educational background.

Despite the relatively high level of education in this population, cultural and religious beliefs remained prominent barriers. The finding that nearly half of the respondents lacked sufficient information about contraceptives and over half feared side effects highlights the need for enhanced sexual health education. This supports WHO's (2018) position that improving the quality and accessibility of youth-friendly reproductive services is vital for closing the knowledge-practice gap.

These findings underscore the importance of holistic sexual and reproductive health education among female undergraduates. While knowledge of contraceptive methods was relatively high, uptake remained suboptimal due to factors such as fear of side effects, cultural beliefs, and misinformation. It is crucial to address these barriers through targeted interventions. Furthermore, establishing youth-friendly services on campuses with an emphasis on confidentiality and accessibility could help overcome fear, stigma, and mistrust associated with seeking contraceptive services. Importantly, such interventions should be culturally sensitive, aligning with local values and beliefs while still promoting autonomy and informed reproductive choices. These strategies can improve both uptake and informed decision-making among this population.

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Conclusion

Although female undergraduates at Edo State University have relatively high awareness of contraceptive methods, their actual use remains limited due to ongoing barriers such as fear of side effects, mistrust of available services, and sociocultural influences. Overcoming these challenges requires not only continuous health education but also a shift toward comprehensive, youth-friendly, and culturally sensitive programs. Incorporating STD prevention into reproductive health education and improving service delivery on campuses can help close the gap between knowledge and practice. Customized interventions that respect cultural norms while encouraging informed reproductive choices are essential for increasing contraceptive use and improving overall sexual health outcomes in this group. There is a need to improve access to contraceptives through youth-friendly sexual health services on campus. These services should prioritize confidentiality, empathy, and accessibility to build trust and encourage utilization among female students. Public health interventions should be designed to respect prevailing cultural and religious contexts. Tailoring messages to local values while promoting autonomy and informed decision-making can enhance acceptability and effectiveness.

Limitation of the Study

Limitations of the study: Its cross-sectional design restricts causal inference, and self-reported data may be affected by recall or social desirability bias. Nonetheless, the findings provide a valuable evidence base for designing targeted, youth-centered reproductive health programs within tertiary institutions in Nigeria.

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Conflict of Interest

The authors declare no conflicts of interest.

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