Factors Associated with Utilisation of Sexual and Reproductive Health Services Among Undergraduates of the University of Ilorin, Nigeria

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ABSTRACT

The utilisation of reproductive health services is crucial for preventing health issues such as sexually transmitted infections and enhancing fertility and overall quality of life. However, among undergraduates, the utilisation of these services is not well documented, and several factors may influence their use. The objectives of the study were to determine whether accessibility, affordability, knowledge of reproductive health, and quality of service are factors associated with utilisation of sexual and reproductive health services among undergraduates of the University of Ilorin, Nigeria. A descriptive survey research design was adopted for the study. The population comprised all 46,657 undergraduates of the University of Ilorin, Nigeria. Four hundred and eleven (411) respondents were sampled. A multistage sampling procedure was adopted for the study. A researcher-structured questionnaire validated by three experts from the department was used for data collection. The reliability of the instrument was established through the split-half method, and a coefficient of 0.86r was obtained using Cronbach's alpha. Inferential statistics of chi-square were used to test the hypotheses at the 0.05 alpha level. The findings of the study were that accessibility (x^2 = 158.95), affordability (x^2 =293.06); knowledge of reproductive health (x^2 =186.99); quality of service (x^2 = 773.64) are factors associated with utilisation of sexual and reproductive health services among Undergraduates of University of Ilorin, Nigeria. The study recommended that these factors should be improved to enable undergraduates to optimally utilise sexual and reproductive health services.

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1.0 Introduction

Reproductive health services (RHS) are all services rendered within or outside the hospital walls by health professionals with the aim of improving, managing and curing reproductive health issues. Reproduction in humans is highly linked with human sexuality because reproduction in humans is sexual in nature. Most undergraduates are adolescents or young adults within the ages of 16-25 years. This might only predispose them to tonnes of reproductive health issues because humans are naturally sexually active at that age. This, coupled with the fact that most undergraduates experience their first unsupervised freedom at this stage of their lives, means they tend to make irrational decisions on their sexual and reproductive health with the thought that they are living their lives to the fullest (Uthman, 2023). Adolescents should transit from childhood to adulthood without serious challenges under the guidance of their parents, health professionals, teachers and religious leaders. This can be achieved if adolescents have access to accurate, age-appropriate, and comprehensive sex education. Adolescents should have easy access to reproductive health services, including contraception, STI testing and treatment, and counselling. Confidentiality and privacy should be ensured to encourage seeking out these services without fear of judgement or stigma. However, young people aged 10–24 years face various challenges during their transition to adulthood. According to the WHO (2017), the most serious health issues among adolescents are early pregnancy, HIV/AIDS, depression, violence, drug and alcohol abuse, wilful injuries, malnutrition, overweight, and tobacco use. These problems are becoming increasingly recognised as serious global public health issues, and they have all been linked to an increase in maternal mortality among pregnant adolescents and an increased rate of suicide among adolescents. Concerns regarding adolescent SRH services have grown recently, largely due to their vulnerability to health risks related to sexuality and reproduction (Abajobir & Seme, 2014; Helamo *et al.,* 2017). Common SRH issues faced by adolescents include HIV/AIDS, unintended pregnancies, unsafe abortions, early marriages, teenage pregnancies, and STIs

(Helamo *et al.,* 2017). Secondary school students in Ethiopia are particularly susceptible to SRH problems due to their tendency to engage in risky sexual behaviours (Abate *et al.,* 2019). Despite the significant burden of SRH issues among adolescents, services remain inadequately organised. Most health facilities provide these services as part of routine care, lacking specific focus on adolescents and youth, and without dedicated staff, space, or time (USAID, Pathfinder, & JSI, 2015). In Nigeria, SRH utilisation among adolescents is a pressing public health issue, exacerbated by factors such as gender inequality, sexual coercion, early marriages, forced marriages, polygamy, female genital mutilation, unplanned pregnancies, closely spaced pregnancies, STIs, and HIV/AIDS (Uthman, 2023; Ologele *et al.,* 2021; Jidda & Salman, 2021; Ologele, 2020; Oniyangi *et al.,* 2020; Oniyangi *et al.,* 2016; Oniyangi *et al.,* 2015). While progress has been made in promoting SRH services in Nigeria and reducing maternal mortality rates, the country still bears a significant global burden of maternal deaths. According to the WHO (2020), Nigeria accounts for nearly 20% of all global maternal deaths, with an estimated maternal mortality ratio (MMR) of 917 deaths per 100,000 live births (with an uncertainty interval of 80%, ranging from 658 to 1320). Between 2005 and 2015, over 600,000 maternal deaths are estimated to have occurred in Nigeria, with a lifetime risk of dying during pregnancy, childbirth, or the postpartum/post-abortion period being 1 in 22 (WHO, 2020). These figures reflect significant inequities in access to health services, with poor women in remote areas being the least likely to access reproductive healthcare (Sondaal *et al.,* 2016). In 2020 alone, over 10 million pregnancies were projected to occur in Nigeria, with 65% of these estimated to have taken place in rural, hard-to-reach areas (UNFPA, 2020). A critical issue affecting maternal health outcomes is the low number of skilled birth attendants, particularly in these rural regions. Between 2006 and 2014, only 43% of births in Nigeria were attended by skilled healthcare providers, further contributing to the country's high rates of unsafe births (UNFPA, 2020).Nigeria's youthful population, with a life expectancy of 55 years and 31.9% of the population aged 12–24, poses additional

challenges for SRH service utilisation (National Population Commission [NPC], 2000). The contraceptive prevalence rate among Nigerian women aged 15-49 is estimated at 17%, with an unmet need for family planning at 15%, set against a high total fertility rate of 5.2 children per woman (UNFPA, 2020). Adolescent girls, in particular, are disproportionately affected by SRH challenges. For example, 43% of girls in Nigeria are married by the age of 18, leading to higher rates of sexually transmitted infections, such as HIV, and complications during pregnancy and childbirth (Nmadu *et al.,* 2020). Furthermore, only 2% of married girls aged 15-19 are projected to be in school, placing them at an educational and economic disadvantage (NPC, 2000). In addition, female genital mutilation (FGM) prevalence among girls aged 15-19 is estimated at 14% (UNFPA, 2020), further exacerbating their SRH risks.Despite the critical importance of reproductive health services, many individuals, particularly in low- and middle-income countries, face significant barriers to accessing them. These barriers include economic challenges, geographic location, cultural and religious norms, gender inequality, and inadequate healthcare infrastructure. In many rural or underserved areas, the availability of skilled healthcare providers and essential reproductive health commodities is limited, which exacerbates disparities in health outcomes (Nmadu *et al.,* 2020). Financial constraints, including the cost of services and a lack of health insurance, further limit access to reproductive health services, especially for marginalised populations. Healthcare financing is grossly inadequate, with Nigeria consistently allocating less than 6% of its national budget to the health sector, despite the 2001 Abuja Declaration in which African leaders committed to allocating at least 15% of their annual budgets to health (PricewaterhouseCoopers (PwC), 2020). Compounding this issue, less than 5% of Nigerians are covered by the National Health Insurance Scheme (NHIS), resulting in high out-of-pocket expenditures for healthcare services (PwC, 2020). Consequently, Tongmixay *et al.* (2019) noted that the main barriers preventing adolescents from accessing SRH services were related to a lack of sexual knowledge, a lack of awareness of services, feelings of shyness and shame, fear of parents finding out about service use, and a lack of confidentiality. Addressing these systemic and cultural barriers is essential to improving the utilisation of SRH services among Nigerian adolescents and ensuring that they can exercise their rights to reproductive health in a more equitable and accessible healthcare environment (Otu *et al.,* 2021). One comprehensive model that could describe the factors associated with the use of sexual and reproductive health services is the Socio-Ecological Model (SEM) proposed by Urie Bronfenbrenner (1977). The SEM provides a framework for understanding how multiple levels of influence interact to shape healthy behaviours, including those related to reproductive health. The model emphasises the interaction between individuals and their environments, recognising that behaviour is shaped not only by personal factors but also by social, community, and societal influences (Berkman & Glass, 2000). The model emphasises multiple levels of influence in shaping health-related behaviours, ranging from individual factors to broader societal contexts. The SEM was developed to address the limitations of individual-focused models by considering broader social and environmental factors that influence health behaviours (Golden & Earp, 2012).At the individual level, people's knowledge about reproductive health plays a crucial role. This includes understanding contraception methods, family planning, and sexual health practices. At the community level, the availability and affordability of reproductive health services within communities are crucial factors. Limited access due to geographical barriers, cost, or lack of transportation can prevent individuals from accessing services when needed. The quality of reproductive health services, including the competency of healthcare providers, confidentiality, and privacy, influences usage. Poor service quality can deter individuals from seeking care. In this model, factors at each level interact and influence each other. For example, societal norms and policies can impact community-level factors like accessibility and affordability, which in turn affect individuals' decisions at the individual level. Accessibility is a critical determinant of the use of sexual and reproductive health services, particularly in low- and middle-income countries (LMICs) like

Nigeria. Factors such as proximity of the facility location, easy access to healthcare providers, health providers' communication skills and health providers' courtesy are crucial in determining the use of healthcare services (Uthman *et al.,* 2023). Proximity and easy access to service might not necessarily have the same meaning, because a service might be close by, but due to administrative burden, poor effectiveness of the service provider and non-compliance with adolescent-friendly initiatives, it may lead to inaccessibility of the service. However, the need to improve reproductive health services' utilisation is crucial to the sustainability and quality of life of the young generation (Warisa *et al.,* 2020).Affordability in the context of adolescents' utilisation of sexual and reproductive health services may refer to the financial capacity of adolescents to pay for these services without causing undue financial strain. This factor considers the costs associated with accessing reproductive health services, including consultation fees, medication, contraceptives, and travel expenses. When reproductive health services are affordable, adolescents are more likely to utilise them, while high costs can deter use, especially among low-income adolescents or those financially dependent on others (Teshome & Biruk, 2021). Research indicated that affordability issues often lead to a reliance on out-of-pocket payments, which can limit access to necessary care for adolescents, contributing to health disparities (Ravindran & Govender, 2020; Ooms *et al.,* 2020). There is some evidence that education influences adolescent fertility and early marriage as a result of knowledge acquisition, which adds to the evidence of adolescents' lack of knowledge about SRH issues (Boahen & Yamauchi, 2018). The gatekeepers of SRH are parents, teachers, healthcare professionals, and community leaders, as they are the primary sources of SRH knowledge and services for adolescents and youth (Govender *et al.,* 2019). A lack of knowledge, as a result of inaccurate information, is frequently associated with negative attitudes and poor utilisation of SRH services. Low service uptake due to these challenges is affecting adolescent health and compromises their educational attainment, increases dependency, and reduces the economic potential of the country (Abdurahman *et al.,*

2022).High-quality services characterised by competent healthcare providers, the availability of necessary resources, and respectful treatment enhance individuals' willingness to seek care and utilise healthcare services. Conversely, poor service quality, marked by inadequate facilities, untrained staff, or disrespectful interactions, can deter individuals from accessing reproductive health services, even when they are available and affordable (Uthman *et al.,* 2023). The perception of service quality is particularly crucial in sensitive areas like reproductive health, where privacy, confidentiality, and non-discriminatory care are fundamental to promoting trust and encouraging continued use. Moreover, the quality of reproductive health services is not solely measured by clinical outcomes but also by the overall patient experience. This includes the ease of navigating health systems, wait times, the availability of comprehensive information, and personalised care tailored to individual needs (Sutton *et al.,* 2021). When these elements are lacking, they can lead to negative experiences, reduce satisfaction, and ultimately discourage future usage.It was observed that utilisation of RHS might be influenced by several factors, including affordability, accessibility, quality of service, and knowledge of reproductive health, among others. It is also believed that the majority of the students are from low- or middle-income families and/or not earning an income, which may inhibit utilisation of RHS. Also, since not all students were taught biology and health education as a subject in their secondary school days, poor knowledge of reproductive health may prevent them from utilisingRHS. Several studies, such as Odo *et al.* (2018), Nmadu *et al.* (2020), Agu *et al.* (2021) and Utaka *et al.* (2023), have been conducted on the utilisation of RHS in Nigeria; however, only a few were conducted within the school settings, especially at the targeted location for this study. Therefore, this study investigated factors associated with utilisation of sexual and reproductive health services among undergraduates of the University of Ilorin, Nigeria.

1.1 Research Questions
The study answered the following research questions:

i. Will accessibility be a factor associated with utilisation of sexual and reproductive health services among undergraduates of the University of Ilorin, Nigeria?

ii. Will affordability be a factor associated with utilisation of sexual and reproductive health services among undergraduates of the University of Ilorin, Nigeria?

iii. Will knowledge of reproductive health be a factor associated with utilisation of sexual and reproductive health services among undergraduates of the University of Ilorin, Nigeria?

iv. Will quality of service be a factor associated with utilisation of sexual and reproductive health services among undergraduates of the University of Ilorin, Nigeria?

1.2 Research Hypotheses

The following null hypotheses were tested in the course of this study:

i. Accessibility will not significantly be a factor associated with utilisation of sexual and reproductive health services among undergraduates of the University of Ilorin, Nigeria.

ii. Affordability will not significantly be a factor associated with utilisation of sexual and reproductive health services among undergraduates of the University of Ilorin, Nigeria.

iii. Knowledge of reproductive health will not significantly be a factor associated with utilisation of sexual and reproductive health services among undergraduates of the University of Ilorin, Nigeria.

iv. Quality of service will not significantly be a factor associated with utilisation of sexual and reproductive health services among undergraduates of the University of Ilorin, Nigeria.

2.0 Materials and Methods

2.1 Research Design

Descriptive survey research design was employed for the study. The design was appropriate for the study because it aligns with the objective of describing the current state of a population regarding multiple factors, such as accessibility, affordability, knowledge, and quality of service, without manipulating any variables. A descriptive survey also helped capture diverse data from a broad population in a structured way. While the study focused on identifying factors, it is not explicitly seeking to establish causal relationships between them, which aligned well with the descriptive nature of this design.

2.2 Population, Sample and Sampling Procedure

The population for the study comprised all undergraduates of the University of Ilorin, Nigeria. The University of Ilorin has a total population of forty-six thousand, six hundred and fifty-seven (46,657) students (Academic Support Services, 2024). The University of Ilorin has a total number of sixteen (16) faculties. The target population for this study are all thirteen thousand, five hundred and seventy-four (13,574) students in five selected faculties through random selection.

The sample size for this study was 411 respondents. The sample size was determined by Research Advisor (2006), which asserted that for a target population of 13,574, a sample size that is adequate enough for the study is 374. However, in order to cater for possible voluntary or involuntary withdrawal of participants from the study, which may tamper with the adequacy of the sample size of 374, a 10% attrition rate, which is 37, was added to the proposed sample size of 374, resulting in 411 respondents.

A multi-stage sampling procedure was adopted for this study. This includes clustering, proportional, simple random, and convenience sampling techniques.

Stage 1: The cluster sampling technique was used to divide the population into sixteen (16) faculties because the faculties were already in clusters.

Stage 2: The proportionate sampling technique was used to select 33% of the faculties identified as clusters in the University of Ilorin. This resulted in the involvement of five out of the 16 faculties in the University of Ilorin.

Stage 3: The simple random sampling technique was used to select five out of the sixteen faculties. The researcher made a complete list of all 16 faculties in the University of Ilorin, assigned a number to each faculty and used a drawing lots technique to choose 5 faculties to use. The researcher wrote the numbers 1 to 16

on pieces of paper, shuffled them, and drew five (5) randomly without replacement. The 5 faculties corresponding to the randomly selected numbers were included in the study. After the selection was done, the faculties of Arts, Clinical Sciences, Engineering, Law and Physical Sciences were sampled.

Stage 4: Proportionate sampling technique was used to select 3.03% of the population of the selected faculties. The percentage used ($\% = \frac{\text{Sample Size}}{\text{Target Population}} \times 100 = \frac{411}{13574} \times 100 = 3.03$) was to achieve the already determined 411 sample. Therefore, 159 respondents were selected from Arts, 32 respondents were selected from Clinical Sciences, 99 respondents were selected from Engineering, 31 respondents were selected from Law and 90 respondents were selected from Physical Sciences. In total, a sample size of four hundred and eleven (411) respondents was selected for the study.

Stage 5: The convenience sampling technique was used for the actual selection of the four hundred and eleven (411) respondents for the study. This enabled the researcher to administer the research instrument to participants who are willing and ready to participate in the study at various areas within their faculties.

2.3 Instrumentation

The research instrument used in gathering and collecting data for this study was a self-structured questionnaire. The questionnaire was titled "Questionnaire on Associated Factors with Utilisation of Sexual and Reproductive Health Services among Undergraduates". The questionnaire contained two (2) sections: section A and B. Section A collected demographic information of the respondents, while section B elicited information on the purpose of the study. The section was closed-ended and based on a modified 4-point Likert format rating scale response of Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD) with score points of 4, 3, 2, and 1, respectively, for information on factors associated with utilisation of sexual and reproductive health services.

To ascertain the content and face validity of the instrument, copies of the questionnaire carefully constructed by the researcher were validated by three (3) experts. After that, the researchers ensure that appropriate suggestions and recommendations from the experts were imbibed in the final draft of the instrument to improve the quality of the instrument. To determine the reliability of the instrument, the researcher adopted a split-half method. The instrument was administered to twenty (20) respondents from the Faculty of Education, University of Ilorin, which is not part of the faculties involved in the study. The data obtained from the instrument administered were computed and analysed using Cronbach's alpha statistics. A reliability coefficient of 0.86 was obtained, which is high enough to show that *the research instrument is reliable for the study.*

2.4 Data Collection and Statistical Analysis

The administration of the instrument was carried out by the researchers. The consents of all participating individuals were sought; where participants could not give consent, consent was obtained from their guardians before the administration commenced, and none of the participants was coerced to be part of the study. The administration of the instrument was completed within two weeks. The researchers maintained professional integrity and an unbiased and objective quest for facts and knowledge. All ethical guidelines relating to the human participation in research were upheld. Data and information gathered from respondents were kept highly confidential, and prompt retrieval of completely filled questionnaires was ensured to avoid loss. The data obtained during administration were sorted, coded and subjected to appropriate statistical analysis. Descriptive statistics of percentage were used to answer research question one, while mean analysis was used to answer research questions two to eight. Given that the questionnaires contained items structured in a four-response-type, a benchmark score of 2.50 (that is, $\frac{4+3+2+1}{4} = \frac{10}{4} = 2.50$) was used as the baseline for determining participants' responses. Inferential statistics of Chi-Square (χ^2) was used to test the postulated null hypotheses at 0.05 alpha level, using Statistical Package for Social Sciences (SPSS) version 20.0.

3.0 Results

3.1 Answer to the Research Questions
Research Question 1: Will accessibility be a factor associated with utilisation of sexual and reproductive health services among Undergraduates of University of Ilorin, Nigeria?

Table 1
Descriptive Analysis on Accessibility as a Factor Associated with Utilisation of sexual and reproductive health services

S/N	ITEMS	SA	A	D	SD	Mean
1.	Reproductive health services are available within a convenient distance.	122 (29.7%)	151 (36.7%)	33 (8.0%)	105 (25.5%)	2.71
2.	It is easy to access reproductive health services without long waiting times at the clinic.	74 (18.0%)	157 (38.2%)	71 (17.3%)	109 (26.5%)	2.48
3.	The reproductive health services are readily available every time I visit the clinic.	73 (17.8%)	133 (32.4%)	84 (20.4%)	121 (29.4%)	2.38
4.	I feel comfortable visiting the reproductive health service locations available to me.	101 (24.6%)	153 (37.2%)	49 (11.9%)	108 (26.5%)	2.60
	Grand Mean					**2.54**

Table 1 shows that it was affirmed that RHS are available within a convenient distance, and respondents felt comfortable visiting RHS locations available to them with mean scores of 2.71 and 2.60, respectively. However, it was disaffirmed that it is easy to get RHS without long waiting times at the clinic, and RHS are readily available every time the respondents visit the clinic, with mean scores of 2.48 and 2.38, respectively. With a grand mean of 2.54, it was affirmed that accessibility is a factor associated with utilisation of sexual and reproductive health services among undergraduates of the University of Ilorin, Nigeria.

Research Question 2: Will affordability be a factor associated with utilisation of sexual and reproductive health services among undergraduates of the University of Ilorin, Nigeria?

Table 2
Descriptive Analysis on Affordability as a Factor Associated with Utilisation of sexual and reproductive health services

S/N	ITEMS	SA	A	D	SD	Mean
5.	Reproductive health services are free of charge.	99 (24.1%)	117 (28.5%)	50 (12.2%)	145 (35.3%)	2.41
6.	I would use reproductive health services more often if they were free.	88 (21.4%)	133 (32.4%)	68 (16.5%)	122 (29.7%)	2.46
7.	It is believed that reproductive health services should be provided at low or no cost for students.	118 (28.7%)	141 (34.3%)	52 (12.7%)	100 (24.3%)	2.67
8.	The cost to reproductive health service centres makes it difficult for me to access these services.	150 (36.5%)	118 (28.7%)	46 (11.2%)	97 (23.6%)	2.78
	Grand Mean					**2.58**

Table 2 shows that it was disaffirmed that RHS are free of charge, and respondents would use RHS more often if they were free, with mean scores of 2.41 and 2.46, respectively. However, it was affirmed that they believed that RHS should be provided at low or no cost for them, and the cost of RHS centres makes it difficult for me to access these services with mean scores of 2.67 and 2.78, respectively. With a grand mean of 2.58, it was affirmed that affordability is a factor associated with the utilisation of sexual and reproductive health services among undergraduates of the University of Ilorin, Nigeria.

Research Question 4: Will knowledge of reproductive health be a factor associated with utilisation of sexual and reproductive health services among undergraduates of the University of Ilorin, Nigeria?

Table 3
Descriptive Analysis on Knowledge of Reproductive Health as a Factor Associated with Utilisation of Sexual and Reproductive Health Services

S/N	ITEMS	SA	A	D	SD	Mean
9.	I am likely to use contraception if I am aware of its different methods and how to use them.	99 (24.1%)	128 (31.1%)	46 (11.2%)	138 (33.6%)	2.46
10.	Knowing the signs of common reproductive health issues encourages me to use reproductive health services.	107 (26.0%)	148 (36.0%)	55 (13.4%)	101 (24.6%)	2.64
11.	Understanding the importance of regular reproductive health check-ups improves my likelihood to use voluntary HIV test and counselling	68 (16.5%)	123 (29.9%)	93 (22.6%)	127 (30.9%)	2.32
12.	I use reproductive health services if I am well informed about sexually transmitted infections (STIs) and how to prevent them	158 (38.4%)	143 (34.8%)	44 (10.7%)	66 (16.1%)	2.96
	Grand Mean					**2.60**

Table 3 shows that it was disaffirmed that participants are likely to use contraception if they are aware of its different methods and how to use them; and understanding the importance of regular RH check-ups improves respondents' likelihood to use voluntary HIV counselling and testing with mean scores of 2.46 and 2.32 respectively. However, it was affirmed that knowing the signs of common RH issues encourages respondents to use RHS; and participants use RHS when they are well-informed about STIs and how to prevent them with mean scores of 2.64 and 2.96 respectively.

With a grand mean of 2.60, it was affirmed that knowledge of reproductive health is a factor associated with utilisation of sexual and reproductive health services among Undergraduates of University of Ilorin, Nigeria.

Research Question 4: Will quality of service be a factor associated with utilisation of sexual and reproductive health services among Undergraduates of University of Ilorin, Nigeria?

Table 4
Descriptive Analysis on Quality of Service as a Factor Associated with Utilisation of sexual and Reproductive Health Services

S/N	ITEMS	SA	A	D	SD	Mean
13	The healthcare providers ensure confidentiality regarding my reproductive health issues.	177 (43.1%)	207 (50.4%)	18 (4.4%)	9 (2.2%)	3.34
14	I feel comfortable discussing sensitive reproductive health issues with the staff.	109 (26.5%)	181 (44.0%)	0 (0.0%)	121 (29.4%)	2.68
15	The healthcare providers at reproductive health centres are respectful and non-judgmental.	266 (64.7%)	118 (28.7%)	18 (4.4%)	9 (2.2%)	3.56
16	The healthcare providers take the time to explain the services and treatments clearly	121 (29.4%)	243 (59.1%)	38 (9.2%)	9 (2.2%)	3.16
17	The reproductive health services I receive are provided in a confidential and private manner.	192 (46.7%)	192 (46.7%)	18 (4.4%)	9 (2.2%)	3.38
	Grand Mean					**3.22**

Table 4 shows that it was affirmed that the healthcare providers ensure confidentiality regarding respondents' reproductive health issues; respondents feel comfortable discussing sensitive reproductive health issues with the staff; healthcare providers at reproductive health centres are respectful and non-judgemental; and the healthcare providers take the time to explain the services and treatments clearly. It was also affirmed that the reproductive health services respondents receive are provided in a confidential and private manner, with mean scores of 3.34, 2.68, 3.56, 3.16, and 3.38, respectively. With a grand mean of 3.22, it was affirmed that quality of service is a factor associated with utilisation of sexual and reproductive health services among undergraduates of the University of Ilorin, Nigeria.

3.2 Test of Hypotheses
Table 5
Chi-Square Analysis on Hypotheses for the Study

Variable	N	df	Cal. x^2 value	Crit. x^2 value	Sig.	Remark
Ho1	411	9	158.95	16.02	0.000	HO_1 Rejected
Ho2	411	9	293.06	16.02	0.000	HO_2 Rejected
Ho3	411	9	186.99	16.92	0.000	HO_3 Rejected
Ho4	411	12	773.64	21.03	0.000	HO_4 Rejected

@ 0.05 alpha level

Table 5 shows the calculated chi-square value of 158.95 with a significant level of 0.00, which is less than the 0.05 alpha level. Since the significant level of 0.00 is less than the 0.05 alpha level, the null hypothesis, which stated that accessibility will not significantly be a factor associated with utilisation of sexual and reproductive health services among undergraduates of the University of Ilorin, Nigeria, is rejected. Also, it shows the calculated chi-square value of 293.06 with a significant level of 0.00, which is less than the 0.05 alpha level. Since the significant level of 0.00 is less than the 0.05 alpha level, the null hypothesis, which stated that affordability will not significantly be a factor associated with utilisation of sexual and reproductive health services among undergraduates of the University of Ilorin, Nigeria, is rejected.

Furthermore, the table shows the calculated chi-square value of 186.99 with a significant level of 0.00, which is less than the 0.05 alpha level. Since the significant level of 0.00 is less than the 0.05 alpha level, the null hypothesis, which stated that knowledge of reproductive health will not significantly be a factor associated with utilisation of sexual and reproductive health services among undergraduates of the University of Ilorin, Nigeria, is rejected. Lastly, the table shows the calculated chi-square value of 773.64 with a significant level of 0.00, which is less than the 0.05 alpha level. Since the significant level of 0.00 is less than the 0.05 alpha level, the null hypothesis, which stated that quality of service will not significantly be a factor associated with utilisation of sexual and reproductive health services among undergraduates of the University of Ilorin, Nigeria, is rejected.

4.0 Discussion of Findings

The findings show that accessibility is significantly a factor associated with utilisation of sexual and reproductive health services among undergraduates of the University of Ilorin, Nigeria. This result may be linked with the fact that the majority of the respondents affirmed that RHS are available within a convenient distance, and respondents felt comfortable visiting RHS locations available to them. This finding is in line with the finding of Fagbamigbe *et al.* (2021), which identified that poor access to services as a result of long distances to healthcare contributes to underutilisation of RHS. For adolescents, geographical barriers are even more pronounced. Studies have shown that adolescents in rural areas are less likely to seek reproductive health services due to the difficulties of accessing distant health centres. This limited access can increase their risk of unintended pregnancies, unsafe abortions, and complications related to childbirth (Sundararajan *et al.,* 2019).

The availability of skilled healthcare providers is also essential in determining the influence accessibility has on the utilisation of sexual and reproductive health services. Many LMICs, including Nigeria, suffer from a shortage of trained healthcare workers, particularly in rural and underserved areas (Uthman *et al.,* 2023). The World Health Organization (WHO) estimates that Africa needs an additional 2.4 million doctors, nurses, and midwives to meet the continent's healthcare needs (WHO, 2016). In Nigeria, the ratio of healthcare workers to patients is particularly low, with just 43% of births attended by skilled health personnel between 2006 and 2014 (UNFPA, 2020). This shortage of healthcare workers often leads to long wait times, overcrowded facilities, and suboptimal care, which can discourage individuals from seeking care in the first place. The lack of healthcare providers also means that many reproductive health services, such as family planning, skilled birth attendance, and STI

treatment, are unavailable in certain areas, particularly rural ones (Fagbamigbe *et al.,* 2021).

Another finding of the study is that affordability is significantly a factor associated with utilisation of sexual and reproductive health services among undergraduates of the University of Ilorin, Nigeria. This may be related to the response of the participants, which affirmed that they believed that RHS should be provided at low or no cost for them, and the cost of RHS centres makes it difficult for me to access these services. This finding agrees with the report of Olayinka *et al.* (2014), which concluded that the affordability of reproductive services had a positive impact on women's utilisation of SRHS and awareness of their SRH rights. When the costs of these services are within reach, individuals are more likely to seek them out, leading to improved knowledge and utilisation of available services.

Similarly, in Uganda, high costs were identified as a significant barrier to access for people with disabilities seeking reproductive health services. The study found that the financial burden not only limited access but also negatively impacted their awareness of reproductive health rights (Ahumuza *et al.*, 2014). This pattern is consistent across several other African countries, including South Africa, where research has demonstrated that making reproductive health services more affordable can encourage individuals to seek care, ultimately supporting their sexual and reproductive rights (Lince-Deroche *et al.,* 2016). Financial constraints are highly important in determining utilisation of reproductive health services. In many low- and middle-income countries (LMICs), such as Nigeria, the majority of healthcare financing comes from personal resources, due to the limited coverage of national health insurance schemes (PwC, 2020). This is particularly burdensome for low-income individuals and families, who may struggle to afford the direct costs of health services, such as consultation fees, diagnostic tests, and medications. Additionally, indirect costs like transportation, accommodation, and loss of income due to time spent seeking care further exacerbate financial barriers (Ahmed *et al.*, 2019). Findings also revealed that knowledge of reproductive health is significantly a factor associated with utilisation of sexual and reproductive health services among undergraduates of the University of Ilorin, Nigeria. This might be associated with the respondents' affirmation that knowing the signs of common RH issues encourages them to use RHS, and they use RHS when they are well-informed about STIs and how to prevent them. This finding is in line with Olaitan *et al.* (2017), whose study revealed that the reproductive knowledge of couples significantly influenced their ability to choose appropriate family planning techniques. The findings suggest that educated individuals are more likely to make informed decisions about family planning, underscoring the importance of education in reproductive health decision-making. Informing adolescents about their reproductive health rights increases their awareness and utilisation of services, particularly in youth-friendly centres. Mosavi *et al.* (2014) observed that adolescents who receive information about reproductive health services are more likely to utilise them, thereby enhancing their overall awareness. In support of this, Temmerman *et al.* (2014) found that the provision of information played a crucial role in the use of sexual and reproductive health services. Lack of access to information, on the other hand, can be a significant barrier to seeking reproductive health services, especially among vulnerable populations such as individuals with disabilities. Frohmader and Ortoleva (2014), as well as Atuymabe *et al.* (2015), stressed that limited access to reproductive health information is a major impediment for people living with disabilities, further underscoring the need for targeted interventions to provide comprehensive reproductive health education to all individuals, regardless of their socio-demographic background. Anasi (2015) also noted that educated women are more likely to seek reproductive health services compared to their less-educated counterparts.

Lastly, the findings show that quality of service is significantly a factor associated with utilisation of sexual and reproductive health services among undergraduates of the University of Ilorin, Nigeria. This might be because the respondents affirmed that healthcare providers ensure confidentiality regarding reproductive health issues, making them feel comfortable discussing sensitive matters with the staff. They further indicated that the providers are respectful and

non-judgemental, take time to explain services and treatments clearly, and deliver reproductive health services in a confidential and private manner. This finding resonates with Elnimeiri *et al.* (2020), who asserted that service quality directly influences access and the continued engagement of individuals with health systems. Wachamo *et al.* (2020) noted that the friendliness and expertise of health workers and the environment in which services are provided significantly affect SRH service utilisation among adolescents and young adults. When these elements are lacking, individuals may avoid accessing health services out of fear of judgement, misinformation, or inadequate care. Provider attitudes are critical in shaping individuals' decisions to seek and continue seeking SRH services. Often, adolescents report feeling uncomfortable or judged when seeking care from healthcare workers, especially on sensitive issues like contraception, sexually transmitted infections (STIs), and abortion (Abubakari *et al.*, 2020).

Negative experiences with healthcare providers can deter individuals from seeking services in the future, leading to unmet health needs and increasing the risk of adverse sexual health outcomes. Adolescents are more likely to seek reproductive healthcare in environments where they feel respected and their privacy is protected (Wachamo *et al.,* 2020). This underscores the need for healthcare workers to receive appropriate training on how to interact with young clients to build trust and foster a safe space for them to access SRH services. Confidentiality and privacy are highly significant in determining whether young people feel safe enough to access SRH services. Concerns about confidentiality, especially in close-knit communities, can prevent adolescents from seeking care due to a fear of stigma or being recognised by someone they know (Abubakari *et al.,* 2020).

4.0 Conclusion

Based on the findings of the study, the following conclusions were drawn:
i. Physical proximity to health facilities, as well as the availability of services during convenient hours, plays a crucial role in the utilisation of RHS among undergraduates of the University of Ilorin, Nigeria.
ii. The cost of RHS, including consultation fees, medication, and laboratory tests, can be a barrier to utilisation for many undergraduates of the University of Ilorin, Nigeria.
iii. A strong understanding of reproductive health issues, including contraception, STIs, and HIV/AIDS, is essential for making informed choices among undergraduates of the University of Ilorin, Nigeria.
iv. The quality of care provided by healthcare providers, including confidentiality, respect, and empathy, can influence satisfaction and future utilisation.

5.0 Recommendations

Based on the conclusions of the study, the following recommendations were made:
i. To improve access, it is essential for the school authorities to increase the number of health facilities, especially on-campus clinics, and extend service hours to accommodate students' schedules.
ii. The school management team should enhance affordable, free services and/or insurance coverage for students, particularly for vulnerable student populations.
iii. Health educators should provide comprehensive sexuality education programs and campaigns to increase undergraduates' knowledge and understanding of reproductive health services and improve the utilisation of RHS.
iv. Healthcare providers should be trained to provide high-quality, confidential, and non-judgemental care focusing on adolescents' friendly SRHS.

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7.0 Acknowledgements

8.0 Declaration of Conflicting Interests

The authors declare no conflict of interest.

9.0 References

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