



Sexually Transmitted Infections Risky Behaviors, Preventive Practices, and Utilization of Reproductive Health Services among Undergraduates in a Nigerian University

Margaret O. Akinwaare*, Shukurat A. Kamorudeen, OreOluwa Christiana Oladele

Department of Maternal and Child Health Nursing, Faculty of Nursing, College of Medicine, University of Ibadan, Ibadan, Nigeria
Email: *margaretakinwaare@gmail.com

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Abstract

Background: Sexually transmitted infection (STI) is a significant health problem worldwide with increased new cases among young people. It contributes significantly to infertility, sudden illness, long-term impairment, and death. Therefore, it is essential to assess the preventive practice against STIs among young undergraduates. **Method:** A descriptive cross-sectional design was adopted for the study and 345 students were randomly selected from five faculties in the University of Ibadan. A structured self-administered questionnaire was used to collect data from the respondents. SPSS was used for data analysis, and results were presented using frequency and percentage, while the hypotheses were tested using a chi-square test at a significant level of $P < 0.05$. **Result:** The respondents identified the use of sharp objects (87.6%), sharing of underwear (37.6%), and multiple sexual partners (94.2%) as risky behaviors. They also reported the use of condoms (39.6%), use of contraceptives (41.9%), and regular washing of hands (41.0%) as preventive practices against STIs. A total of 59.4% of the respondents are not aware of Reproductive Health Services (RHSs) available in the university and 68.1% of the respondents are not utilizing the available RHSs. There was no significant association between perception and preventive practices of STIs (p -value = 0.967). However, awareness of RHSs was significantly associated with the utilization of available reproductive health services (p -value = 0.004). **Conclusion:** The study concluded that there are poor preventive practices and poor utilization of available reproductive health services among young people. Also, the utilization of available RHSs is influenced by their awareness.

Subject Areas

Infectious Diseases

Keywords

Prevention, Sexually Transmitted Infections, Undergraduates, Reproductive Health Services

1. Introduction

There is an estimated one million new instances of sexually transmitted infections (STIs) per day, or 499 million new cases of treatable infections annually. STIs continue to be a significant worldwide health concern [1]. Around the world, young people are responsible for more than half of all new STI cases each year [1]. Sexually Transmitted Infections are infections or diseases that are spread by unprotected sexual contact and can either be treatable or incurable. Syphilis, gonorrhea, and chlamydia are among the STIs that can be cured, whereas the Human Papilloma Virus (HPV), Hepatitis B, Human immunodeficiency virus (HIV), and Herpes Simplex O are among the STIs that cannot be cured but are treatable [2].

According to the WHO, one in twenty young individuals develop an STI each year, and 20% of those with HIV/AIDS are in their second decade of life [3]. Unprotected sexual activity is associated with a significant risk of STIs, including AIDS, and unexpected and undesired births among teens and young adults.

The risky behaviors and perceptions have made university students more vulnerable to STIs, especially HIV and unwanted pregnancies. Numerous factors, according to the literature, influence university students' dangerous sexual behaviors. It was found that risky sexual behavior is highly connected with childhood abuse, poor mental health, alcohol or drug use, partner violence, or sexual coercion [4]. In addition, other risk factors, such as peer pressure, a lack of life experience, and early sexual development raise the likelihood of acquiring these diseases [5].

Other contributing factors, according to Osuala *et al.* [6], to young people being more likely than adults to engage in risky sexual conduct are their social activities and exposure to peer pressure.

The primary causes of concerns with sexual and reproductive health among students in low-income countries are a lack of trained human resources and limited access to sexual and reproductive health care. Even though numerous studies have been conducted to ascertain the perspectives, this study aims to comprehend how undergraduates perceive STIs with their level of utilization of sexual reproductive health services and the contributing factors.

2. Objectives of the Study

Specific Objectives

- 1) To identify risky behaviors of STIs as perceived by young undergraduates.
- 2) To assess the preventive practices of the undergraduates against STIs.

3) To measure the level of awareness and utilization of reproductive health services among young undergraduates.

3. Methodology

3.1. Research Design

The research was a descriptive cross-sectional study.

3.2. Research Setting

This study was carried out at the University of Ibadan, Ibadan, Nigeria. This is the first University in Nigeria with many faculties cutting across all disciplines in Science, Arts & Humanities, and Social Science, the university trains both undergraduate and postgraduate students.

3.3. Sampling

The sample size was calculated using Taro Yamane's formular; $n = \frac{N}{1+N(e)^2}$. After adjustments for a drop rate of 5%, the required sample size was 345. A multi-stage sampling technique was used to select the participants.

3.4. Sampling Procedure

A three-stage sampling method was used for this study.

3.4.1. Stage 1

Faculties with less than 300 students were excluded to allow for a better representation of the sample. The study population for this comprises randomly selected faculties from the included faculties in the University of Ibadan which are: Faculty of Arts, Faculty of Education, Faculty of Sciences, Faculty of Social Sciences and Faculty of Agricultural Science.

3.4.2. Stage 2

The sample size was distributed proportionately for each selected department based on the number of students in each department.

3.4.3. Stage 3

A systematic sampling method was used to select the participants for the study in each department. A kth value and a random number were determined each time to determine the starting point and continuous selection of all eligible participants for each department.

3.5. Research variables.

3.5.1. Dependent Variable

Perception of sexually transmitted infections (STIs). A type of Ordinal variable.

3.5.2. Independent Variable

Factors associated with STIs. Factors such as knowledge, sexual behavior, socio-demographics (age, gender), access to health services, peer influence, cultural/religious

beliefs, and previous experience with STIs.

3.5.3. Instrument

The study used a self-administered questionnaire. The instrument's face and content validity were confirmed by comparing the items to those used in similar studies and matching them to the stated objectives, research questions, and hypotheses. Test-retest reliability was done, and Cronbach's reliability coefficient of the instrument was ascertained to be 0.70.

3.6. Ethical Consideration

Ethical approval was obtained from the UI/UCH ethical committee before the commencement of the research. Informed consent was signed by all participants with the assurance of anonymity and confidentiality of all information provided by the respondents.

3.7. Data Analysis

The SPSS-25 analysis program was used for the analysis. The descriptive analysis of the data used statistical methods like frequency, and percentages, while the inferential analysis was tested using the chi-square test at a 0.05 level of significance.

4. Results

4.1. Socio-Demographic Characteristics of the Respondents

More than half (58.3%) of the respondents were between 21 - 25 years with a mean age of 23.83 ± 2.858 . More than one-fourth (26.4%) of them were from faculty of Arts, 35.9% of them were in 400 level, 68.2% of them were females, the majority (63.8%) were Christians, 87.8% of them were single, and the majority (75.9%) were from Yoruba ethnic group (**Table 1**).

Table 1. Socio-demographic data of respondents.

Variables	Frequency N = 345	Percentage (%)
Age group (23.83 ± 2.858)		
16 - 20	60	17.4
21 - 25	24.9	58.3
26 - 30	75	21.7
30 above	9	2.6
Gender		
Female	235	68.2
Male	110	31.9
Faculty		
Agricultural science	55	16.1
Arts	86	24.9

Continued

Education	76	22
Science	74	21.4
Social sciences	54	15.6
Level		
100	23	6.7
200	84	24.3
300	98	28.4
400	124	35.9
500	16	4.6
Ethnicity		
Yoruba	262	75.9
Hausa	18	5.2
Igbo	65	18.8
Religion		
Christianity	220	63.8
Islamic	125	36.2
Marital status		
Married	42	12.2
Single	303	87.8

4.2. Perceptions of Sexually Transmitted Infections

Table 2 below revealed that 32.3% of the respondents opined that STIs are transmitted sexually only, 60% agreed that STIs affect both sexes, 64.6% strongly agreed that microbes cause STIs, 95.1% perceived that HIV/AIDS is the major STI, 75.8% agreed that STIs are transmitted from an infected person, 72.5% strongly agreed that using a condom can prevent one from contracting HIV/AIDS, and 72.4% opined that STIs could not be prevented.

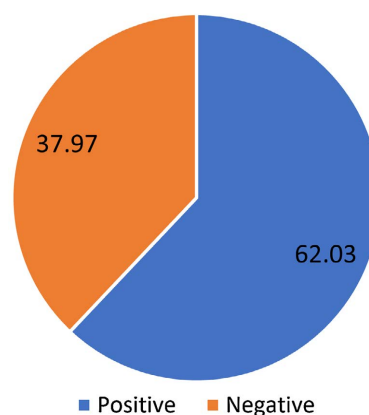
The findings of this study revealed the distribution of the respondents according to level of perception of sexually transmitted infection (**Figure 1**). More than half (62.03%) of the respondents have a positive perception about STIs.

4.3. Risky Behaviors Associated with Sexually Transmitted Infections

Table 3 below revealed some of the risky behavior identified by the respondents that are associated with STIs: sharp objects 87.6%, sharing of under-wears 37.6%, multiple sexual partner 94.2%, same-gender attraction 72.8%, sex during menstruation 65.0%, bad hygiene from women 61.6%, bad hygiene from men 59.2%, blood transfusion, 87.6%, misuse of alcohol and drugs 60.1% and having unprotected sex 92.8%.

Table 2. Perception of sexually transmitted infections N = 345.

Variables	SA F (%)	A F (%)	SD F (%)	D F (%)	U F (%)
STI is transmitted sexually only	54 (15.7)	57 (16.5)	57 (16.5)	57 (16.5)	22 (0.6)
STI affects both sexes	106 (30.7)	101 (29.3)	39 (11.3)	87 (21.2)	12 (3.5)
STI can be asymptomatic	92 (26.7)	74 (21.4)	57 (16.5)	110 (31.9)	12(3.5)
STI's are caused by microbes: such as bacteria and virus only	223 (64.6)	78 (22.6)	6 (1.7)	34 (9.9)	4 (1.2)
HIV/AIDS is the major STI	258 (74.8)	77 (22.3)	1 (0.3)	9 (2.6)	0 (0.0)
STI is transmitted from an infected person	213 (61.7)	83 (14.1)	10 (2.9)	36 (10.4)	3 (0.9)
Using condoms can prevent one from contacting HIV/AIDS from an infected person	250 (72.5)	81 (23.5)	81 (23.5)	13 (3.8)	0 (0.0)
STI can be prevented	32 (9.3)	51 (14.8)	106 (30.7)	144 (41.7)	12 (3.5)
STI can be inherited	32 (9.3)	51 (14.8)	116 (33.6)	144 (41.7)	11 (3.2)
No complications of STI	33 (9.6)	37 (10.7)	116 (33.6)	148 (42.9)	11 (3.2)
Abstinence is the best way to avoid contracting STI	278 (80.6)	54 (15.7)	0 (0.0)	11 (3.2)	11 (3.2)
I feel screening for STI is good	257 (74.5)	76 (22.0)	1 (0.3)	10 (2.9)	1 (0.3)
Some STIs are curable	181 (52.5)	86 (24.9)	25 (7.2)	47 (13.6)	6 (1.7)
Young people should get information about STI to avoid contracting it	283 (82.0)	53 (15.4)	0 (0.0)	9 (2.6)	0 (0.0)
STIs can cause death if left untreated	271 (78.6)	60 (17.4)	0 (0.0)	11 (3.2)	3 (0.9)

**Figure 1.** Perception of sexually transmitted infections.**Table 3.** Risk behaviors associated with sexually transmitted infections.

Variables	Yes F (%)	No F (%)	Undecided F (%)
Sharing of sharp objects	303 (87.6)	31 (9.0)	12 (3.5)
Sharing of under-wears	130 (37.6)	175 (50.6)	41 (11.8)
Multiple sexual partners	326 (94.2)	13 (3.8)	6 (1.7)

Continued

Same-gender attraction	252 (72.8)	42 (12.1)	51 (14.7)
Sex during menstruation	225 (65.0)	60 (17.3)	60 (17.3)
Bad hygiene of women	213 (61.6)	90 (26.0)	42 (12.1)
Bad hygiene of men	205 (59.2)	99 (28.6)	41 (11.8)
Blood transfusion	303 (87.6)	26 (7.5)	16 (4.6)
Misuse of alcohol and drugs	208 (60.1)	96 (27.7)	41 (11.8)
Having unprotected sex	321 (92.8)	14 (4.0)	10 (2.9)

4.4. Preventive Practices against Sexually Transmitted Infections

Table 4 below revealed the preventive practices respondents used to protect themselves against STIs: abstinence (40.8%), faithfulness to one partner (42.2%), use of condoms (39.6%), use of pre-exposure prophylaxis (39.9%), regular screening (39.9%), use of face masks (40.8%), use of contraceptives (41.9%), screening blood before transfusion (39.9%), regular handwashing (41.0%), vaccination (41.6%), and not sharing sharp objects (41.0%).

Table 4. Preventive practices against sexually transmitted infections.

Variables	Yes	No
Abstinence	141 (40.8)	205 (59.3)
Use of condoms	137 (39.6)	208 (60.1)
Faithful to one sexual partner	146 (42.2)	199 (57.5)
Using pre-exposure prophylaxis	138 (39.9)	207 (59.8)
Regular screening	138 (39.9)	207 (59.9)
Using of face mask	141 (40.8)	204 (59.0)
Contraceptive use	145 (41.9)	200 (57.8)
Don't drink alcohol excessively or drug use	138 (39.9)	207 (59.8)
Receiving screened blood	138 (39.9)	207 (59.8)
Regular hand washing	142 (41.0)	203 (58.7)
Vaccination	144 (41.6)	201 (58.1)
Avoid sharing sharp objects	142 (41.0)	203 (58.7)

4.5. Level of Awareness of Reproductive Health Services among Young Undergraduates

Findings of this study revealed the distribution of the respondents according to their level of awareness of reproductive health services (**Figure 2**). More than half (59.42%) of the respondents were not aware of reproductive health services available at the University.

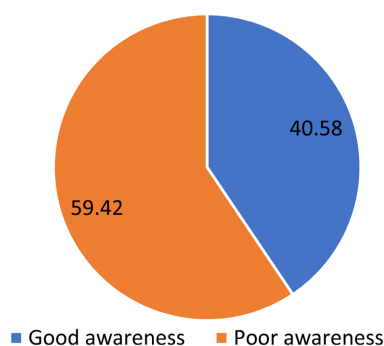


Figure 2. Awareness of reproductive health services.

4.6. Utilization of Reproductive Health Services among Respondents

Table 5 below revealed that 59.8% of the respondents have never received counseling on the prevention of pregnancy and STIs, 72.0% have never been screened for STIs and HIV, 79.8% have never received condoms for the prevention of STIs and unwanted pregnancy, and 88.4% have never received antenatal, intranatal, and postnatal care from the reproductive health services at the university.

Table 5. Utilization of reproductive health services among respondents.

Variables	Never	Rarely	Often	Always
Counseling on the prevention of pregnancy and STIs	207 (59.8)	112 (32.4)	21 (6.1)	6 (1.7)
Screening for STIs and HIV	249 (72.0)	73 (21.1)	22 (6.4)	2 (0.6)
Acquisition of condoms for prevention of STIs and unwanted pregnancy	276 (79.8)	48 (13.9)	16 (4.6)	6 (1.7)
Antenatal, intrapartum and	306 (88.4)	19 (5.5)	16 (4.6)	5 (1.5)

Level of utilization of reproductive health services among young undergraduates

Findings of this study revealed the distribution of the respondents according to their level of utilization of reproductive health services (**Figure 3**). More than half

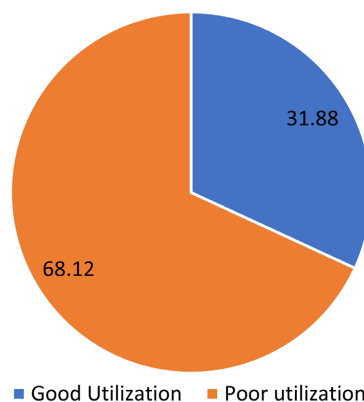


Figure 3. Utilization of reproductive health services among respondents.

(68.12%) of the respondents were not utilizing the reproductive health services available in the university.

4.7. Testing of Hypotheses

Hypothesis One: Chi-square test revealed that there was no significant association between gender and risky behavior associated with sexually transmitted infections ($X^2 = 1.797^a$, p -value = 0.180). Therefore, the null hypothesis was not rejected (**Table 6**).

Table 6. Cross-tabulation between gender and risky behavior associated with sexually transmitted infections.

Gender	Risky behavior		X ² -value	P-Value	Remark	Decision
	Low	High				
Female	27.7%	72.3%	1.797 ^a	0.180	Not Significant	Ho: Not Rejected
Male	20.9%	79.1%				

Hypothesis Two: Chi-square test revealed that there was no significant association between perception and preventive practices of sexually transmitted infections ($X^2 = 0.002^a$, p -value = 0.967). Therefore, the null hypothesis was not rejected (**Table 7**).

Table 7. Cross-tabulation of respondents' perception of STIs and preventive practices.

Perception	Preventive practices		X ² -value	P-Value	Remark	Decision
	Poor	Good				
Negative	57.3%	42.7%	0.002 ^a	0.967	Not Significant	Ho: Not Rejected
Positive	57.5%	42.5%				

Hypothesis Three: Chi-square test above revealed a statistically significant association between awareness and utilization of reproductive health services ($X^2 = 8.459^a$, p -value = 0.004). Therefore, the null hypothesis which states that there is no significant association between awareness and utilization of reproductive health services was rejected (**Table 8**).

Table 8. Cross-tabulation of respondents' awareness and utilization of reproductive health services.

Awareness	Utilization		X ² -value	P-Value	Remark	Decision
	Poor	Good				
Negative	74.1%	25.9%	8.459 ^a	0.004	Significant	Ho: Rejected
Positive	59.3%	40.7%				

5. Discussion

This study assessed the perceived risky behavior and preventive practices against STIs among young undergraduates. The awareness and utilization of Reproductive

Health Services (RHSs) of young undergraduates were also examined. The majority of the respondents were between 21 - 25 years with a mean age of 23.83 ± 2.858 indicating that they are young people. Oharume [7] opined that young people are most likely to contract STIs. This reinforces the need to focus on this age group for targeted health interventions aimed at improving access and education about sexual health.

Positive perception was observed among a greater percentage of the study participants. Larger percentage of the respondents were of the view that young people should get information about STI to avoid contracting it. Similarly, the findings of a study on the knowledge, prevalence and factors associated with STDs among female students of a university in Nigeria observed good knowledge and positive perception among the study participants [2]. This indicates that the participants recognize the importance of being informed about STIs to avoid contracting them, showing a level of health literacy and awareness.

Similarly, Clifton *et al.* [8] reported the perception risk was substantially correlated with age and education, with higher scores in younger men and women. However, on the contrary, another study conducted by Durosinlorun [9] reported poor level of knowledge about STIs and negative perception were observed among the study participants.

Many factors have been identified to be associated with STIs. In this study, a greater percentage of the respondents perceived the risky behaviors associated with STIs to be high. These risky behaviors include having multiple sexual partners, alcohol consumption, same-gender attraction, and unprotected sex. This is consistent with the study of Chimezie *et al.* [2] who reported that sex with several partners, inconsistent condom use, and prior STIs increases the risk of an individual developing STI. Similarly, a cohort study addressing factors associated with STIs among care-seeking adults in Africa suggested having several sexual partners, and abusing alcohol and drugs are social behavioral risk factors for STIs [10]. The high perception of risk shows a good level of awareness among the participants regarding the behaviors that increase STI vulnerability and further identification of same-gender attraction, consumption of alcohol as one of the perceived risky behaviors associated with STIs is a broader focus acknowledging that STI risk factor behavior extends beyond sexual behavior which is a more holistic understanding of the factors. Furthermore, the social activities of teens and young adults are predisposing variables to risky sexual behavior compared to adults because of peer pressure [6]. Generally, young people are more vulnerable to contracting STIs, making it essential to ensure they are adequately protected.

Poor preventive practices of STIs were observed among large numbers of respondents and a majority of them are sexually active. This predisposes the youths to high risk of contracting HIV/AIDS and other STIs which will increase the burden of healthcare. Shime *et al.* [11] opined that a person is less likely to take preventive action against the disease if they do not believe they are at risk for STIs. However, the person who perceives risk will undoubtedly employ disease-prevention strategies.

However, a study by Oluwole *et al.* [12] rightly observed that abstinence, proper use of condoms, having one sexual partner and regular screening prevent an individual from contracting STIs. Hence, the result reveals a shortfall in health education and prevention strategies aimed at this vulnerable group and emphasizes the need for target interventions to improve STI prevention behaviors among youth, who are at higher risk of infection due to these inadequate practices.

Furthermore, a greater percentage of the respondents were not aware of RHSs available at their institution. This is consistent with the study on the prevalence of STIs and associated factors among students in Ethiopia where many of the youths did not know about facilities providing RHSs [13]. Similarly, a study by Bethel *et al.* [14], reported poor utilization of reproductive health services among the youths. Poor awareness of RHSs has also led to poor utilization of the available reproductive health services in the university, which could endanger the lives of the youths who are sexually active. This highlights the need for improved promotion and visibility of RHSs in academic settings to ensure young people can access essential sexual and reproductive health services. Barriers such as stigma, lack of information, and accessibility issues have been identified to contribute to low utilization of RHSs among university students [15].

Furthermore, utilization of RHSs was found to be influenced by their awareness. This stresses the importance of creating awareness of the availability of RHSs among university undergraduates.

6. Conclusion

The majority of undergraduates who are sexually active have poor preventive practices against STIs, many of them perceived risky behavior of STIs to be high, and they are not aware of the available RHSs for them. Hence the utilization of the RHSs is very low among this population.

7. Limitations of the Study

The study is cross-sectional, which means that no causal conclusions could be made. Also, the participation in the study was limited to this area due to the time allotted for the completion of the study and financial constraint.

Suggestions for Further Research

A multi-site study that examines different educational institutions.

Research on factors influencing low awareness and utilization of RHSs.

Statement and Declaration

This is a declaration that the manuscript titled: is a major original work, has not been published earlier, and has not been submitted for publication elsewhere.

Ethical Consideration

Ethical approval was obtained from the UI/UCH ethical committee IRB number

NHREC/05/01/2008a before the commencement of the research.

Consent to participate

Informed consent was written and signed by all participants with the assurance of anonymity and confidentiality of all information provided by the respondents.

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Data Availability Statement

The data supporting the results reported in this paper are available (Link to the repository).

Conflicts of Interest

The authors declare no conflicts of interest.

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