

## Hidden Risks: Prevalence of Sexually Transmitted Infections and Associated Risk Behaviours among Students of the University of Benin, Benin City, Edo State

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**Abstract: Objective:** This study assessed the prevalence of sexually transmitted infections (STIs) and associated risk behaviours among undergraduate students at the University of Benin, Benin City, Edo State. **Materials and Methods:** A cross-sectional study was conducted among 385 undergraduate students of the University of Benin. Data were collected using a structured questionnaire and analysed using SPSS version 24. Descriptive statistics were presented using frequencies, proportions, and mean scores. Multiple logistic regression analysis was used to identify independent predictors of sexually transmitted infections. Statistical significance was set at  $p < 0.05$  at a 95% confidence interval. **Results:** Approximately 18.2% of respondents tested positive for at least one STI. Staphylococcus infection (35.7%) was the most frequently reported infection, followed by gonorrhoea (30.0%), syphilis (20.0%), and chlamydia (14.3%). Factors significantly associated with increased likelihood of STI occurrence included being single (AOR=1.46,  $p=0.027$ ), younger age (AOR=1.73,  $p=0.015$ ), previous STI diagnosis (AOR=2.06,  $p=0.001$ ), poor knowledge of STIs (AOR=1.73,  $p=0.008$ ), inconsistent or incorrect condom use (AOR=2.01,  $p=0.002$ ), social norms discouraging sexual health discussions (AOR=1.65,  $p=0.017$ ), peer pressure influencing risky sexual behaviour (AOR=1.49,  $p=0.023$ ), and limited access to health services (AOR=1.82,  $p=0.005$ ). **Conclusion:** STIs remain prevalent among undergraduate students in this study, with Staphylococcus infection, gonorrhoea, syphilis, and chlamydia being commonly reported. Strengthening sexual health education, improving access to reproductive health services, and promoting safer sexual practices among undergraduates are recommended.

**Keywords:** Sexually Transmitted Infections, Students, Prevalence, Risk Factors, Healthcare Access.

### INTRODUCTION

Sexually transmitted infections (STIs) are widespread worldwide and significantly impact sexual and reproductive health. The highest burden of STIs is in low- and middle-income countries (LMICs) [1]. And an

estimated 374 million new infections occurred with one of four curable STIs: Treponema pallidum (syphilis), Chlamydia trachomatis (chlamydia), Neisseria gonorrhoeae (gonorrhoea), and Trichomonas vaginalis (trichomoniasis) [2]. Young adults are particularly at risk

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of STIs. The rate at which young adults, especially undergraduates, engage in sexual activities leading to STIs is a complex issue with serious implications for public health [3]. Of the 333 million new cases of curable STIs occurring each year, the highest rates are among 20-24-year-olds, followed by 15-19-year-olds, with 30.07% of these cases affecting students [4]. The Centers for Disease Control and Prevention (CDC) reports that young people aged 15-26 years acquire half of all new STIs, with young women being especially vulnerable due to biological and socio-economic factors [5]. Approximately 20% of individuals aged 19-24 years are enrolled in tertiary institutions [6]. Thereby making them a population of interest.

A previous study among female students in Benin City reported a 27.7% prevalence of STIs/Ds among undergraduate students, with gonorrhoea being the most frequent STI that the respondents reported testing positive for. Sexually transmitted infections among university students were found to be 18.20% and 13.6% among students in Port Harcourt and Ethiopia [7-9]. Similarly, another study reported gonorrhoea as the most common STIs among students, while other STIs such as trichomoniasis, chlamydia, syphilis, and HPV, hepatitis B, and HIV/AIDS have been reported among students [5-10]. Among young men who have sex with men, chlamydia, gonorrhoea, *Mycoplasma genitalium* infection, trichomoniasis and latent syphilis were the common STIs prevalent among them [11].

Significant behavioural risk factors such as smoking, alcohol consumption, and engaging in unprotected sex, substance abuse [10, 12], previous history of sexually transmitted infections, multiple sexual partners in life, lower socioeconomic status, non-use of condoms during sexual intercourse, and poor knowledge of sexually transmitted infections, limited access to healthcare services, depression and anxiety were significantly associated with sexually transmitted infections [4-18]. Lack of comprehensive sexual education [19], and the use of digital platforms and social media for sexual networking have facilitated the formation of casual sexual relationships among students, which may increase the risk of STI transmission [3]. The high rates of STIs among university students underscore the need for an in-depth understanding of the underlying factors driving these infections [20]. Addressing STIs within this demographic is crucial due to the increased sexual activity, experimentation with relationships, and often inconsistent use of preventive measures like condoms [21].

STIs can lead to severe health consequences such as infertility, chronic pain, and increased susceptibility to other infections, long-term disability, including HIV and death, with serious medical and psychological consequences for millions of individuals [4]. Both ulcerative and inflammatory curable STIs increase the risk of acquiring and transmitting HIV by up

to two- to threefold [22]. Preventing STIs among students involves a combination of education, access to healthcare, and behavioral interventions. Comprehensive sexual education programs have been shown to reduce risky sexual behaviors and STI rates [23]. Additionally, increasing access to free or low-cost STI testing and treatment, intravenous drug use, vaccination, promoting the use of condoms, and creating supportive environments for open discussions about sexual health are crucial strategies. These prevention strategies have often been inadequate due to several gaps, including insufficient funding, lack of comprehensive education, and limited access to healthcare services [24]. Addressing these challenges requires a comprehensive approach that integrates education, prevention, testing, treatment and support services. Limiting the number of sexual partners and encouraging monogamous relationships or serial monogamy (having one partner at a time) can help lower STI rates [17]. Promoting abstinence and delayed sexual initiation [25].

The focus of STI research has been on female students in previous studies [26], while data on male and female students remain scarce. This study will provide valuable insights for healthcare providers, university administrators and policymakers on STI control among undergraduates by addressing the underlying determinants of STIs and fostering supportive environments for sexual health. This study assessed the prevalence of sexually transmitted Infections and associated risk behaviours among students of the University of Benin, Benin City, Edo State.

## METHODOLOGY

### Research Design

A descriptive cross-sectional survey design was used to assess the prevalence of sexually transmitted Infections and associated risk behaviours among students of the University of Benin, Benin City, Edo State, Nigeria.

### Targeted Population

The target population for this study consisted of undergraduate students from different faculties and departments at the University of Benin, Benin City who met the inclusion criteria.

### Inclusion Criteria

The criteria for selecting the study participants include:

- i. Availability at the time of data collection.
- ii. Willingness to participate in the study.
- iii. Those who had the ability to understand and respond to the survey questions.
- iv. Undergraduate students.

### Exclusion Criteria

The exclusion criteria for the sample selection were:

- i. Respondents who were not willing to participate.

- ii. Respondents who were not available during the data collection period.
- iii. Non-students.
- iv. Postgraduate students.

### Sample Size

The sample size is typically determined using the Taro Yamane formula (27), which is expressed as:

$$n = \frac{N}{1 + N(e)^2}$$

**N** = is the Population

**1** = is the constant

**e** = is the degree of error expected

**n** = is the sample size

Where:

N=78,133

e=0.05

1=1(constant)

n=?

$$n = \frac{78,133}{1 + 78,133 (0.05)^2}$$

$$\frac{78,133}{1 + 78,133 (0.0025)}$$

$$\frac{78,133}{1 + 195.33}$$

$$\frac{78,133}{2.54}$$

$$n = 398$$

Therefore, a sample size of three hundred and ninety-eight (398) respondents was gotten from the targeted population.

Hence, the sample size for the study = 398 respondents.

### Sampling Technique

A multistage sampling technique was used to select study participants at the University of Benin. The stages are outlined below:

**Stage 1:** Simple random sampling was used to select 8 faculties in the school.

**Stage 2:** Simple random sampling was used to select 6 departments from the selected faculties.

**Stage 3:** Purposive sampling was used to select all the levels in each department

**Stage 4:** Stratified sampling was used to select an equal number of boys and girls from each level who met the inclusion criteria until the desired sample size was obtained.

### Instrument for Data Collection

A semi-structured interviewer-administered questionnaire was used for this study. The research instruments utilised to collect information from respondents were adapted from a previous study

(Nzopotan *et al.*, 2022). Open- and closed-ended questions were asked. This approach was chosen to allow respondents to provide their answers efficiently.

The questionnaire was organised into five (5) sections:

**Section A:** Bio-characteristics of respondents

**Section B:** Sexual Practice of Respondents

**Section C:** Prevalence of sexually transmitted infections

**Section D:** Factors elevating the likelihood of acquiring STIs

This structured format ensured comprehensive data collection, facilitating a thorough analysis of the prevalence of sexually transmitted infections and their associated factors among students. The prevalence of sexually transmitted infections was determined by asking respondents, "Have you ever tested positive for any sexually transmitted infection" in the last 3 months preceding the survey.

### Training of Research Assistants

To ensure the accuracy and consistency of data collection, a comprehensive training programme was conducted for the research assistants. This training included detailed instruction on the research objectives, methodology, and ethical considerations. Research assistants were trained in how to administer the questionnaire effectively, including the proper approach to both open-ended and closed-ended questions. Emphasis was placed on maintaining neutrality and minimising bias during data collection. Additionally, the research assistants were provided with guidance on handling any issues or questions that might arise from participants and ensuring that responses were recorded accurately. The training aimed to standardise data collection and enhance the reliability of research findings.

### Pretesting of Questionnaire

To assess the consistency of the research tool, a pilot study was conducted at Benson Idahosa University (BIU), which has a population comparable to the study population. Thirty-one (31) copies of the questionnaire (representing 10% of the study sample) were distributed to and retrieved from the pilot study participants.

### Validity of the Instrument

The researcher ensured the instrument's validity through face and content validity. The questionnaire was reviewed by the project supervisor and two other experts in reproductive health. Their scrutiny led to the removal of irrelevant items and the incorporation of additional essential ones, enhancing the instrument's relevance and comprehensiveness, as reflected in their feedback.

### Reliability of the Instrument

To evaluate the reliability of the research instrument, a test-retest method was applied via the internal consistency of the instrument obtained from the pilot study, computed using the Statistical Package for

Social Sciences (SPSS) Statistics V22.0 and Pearson's Product-Moment Correlation. The reliability coefficient of the items was 0.97, demonstrating a high level of stability and reliability for the instrument used in the study.

### Method of Data Collection

Data collection will be carried out using the prepared questionnaires, which were administered directly to the study respondents and retrieved by the researcher, who was accompanied by two trained researchers, on the same day after the respondents had filled in and ticked the appropriate options. This was done for ten (10) days, Monday to Friday. The questionnaires retrieved were reviewed and analysed. This approach ensures that the questionnaires are retrieved promptly and reduces the risk of data loss or incomplete responses. Upon collection, the questionnaires were carefully reviewed by the researcher to ensure that they were fully completed and that no responses were missing. Any discrepancies or issues identified during the review were addressed promptly. Following the initial review, the completed questionnaires will be analyzed.

### Method of Data Analysis

The Data obtained were analysed using the Statistical Package for the Social Sciences (SPSS)

version 22. Descriptive statistics were presented in tables, proportions (%), and mean scores. Likert scoring was accepted if the mean ( $\bar{x}$ ) score was greater than or equal to 2.50; otherwise, it was rejected. Multiple logistic regressions were used to identify independent predictors of sexually transmitted diseases.  $p < 0.05$  was considered statistically significant at the 95% confidence interval.

### Ethical Consideration

Ethical clearance was gotten from the Health Research Ethics Committee of the University of Benin Teaching Hospital with protocol number ADM/E22/A/VOL.VII/1486543237. Thereafter, permission was sought from the department head. The study strictly followed ethical principles and guidelines throughout its duration. Anonymity and confidentiality were given top priority, with the questionnaire omitting participants' names and addresses. Information consent was obtained from all participants after the research purpose had been explained to them and they were given the freedom to withdraw from the study at any time. Additionally, all necessary approvals were secured to ensure compliance with local regulations and standards.

## RESULT

**Table 1: Demographic Data of Respondents**

Variables	Frequency (n=385)	Percentage (%)
<b>Age in years (as at last birthday)</b>		
Under 20	105	27.3%
21-30	210	54.5%
31-40	60	15.6%
41 and above	10	2.6%
<b>Gender</b>		
Male	190	49.4%
Female	195	50.6%
<b>Marital Status</b>		
Single	290	75.3%
Married	95	24.7%
Divorced	-	-
<b>Religion</b>		
Christianity	250	64.9%
Muslim	100	26.0%
Other religion	35	9.1%
<b>Academic Level</b>		
1st year	90	23.4%
2nd year	80	20.7%
3rd year	75	19.5%
4th year	70	18.2%
5th year and above	70	18.2%
<b>Place of Residence</b>		
On-campus	220	57.1%
Off-campus	165	42.9%
<b>Faculty</b>		
Arts	50	13.0%
Basic Medical Sciences	45	11.7%

Variables	Frequency (n=385)	Percentage (%)
Life Sciences	60	15.6%
Pharmacy	40	10.4%
College of Medicine	55	14.3%
Social Sciences	55	14.3%
Education	45	11.7%
<b>Average Monthly Allowance</b>		
Less than N100,000	369	95.8%
N100,000–N199,000	9	2.3%
N200,000 - N300,000	5	1.3%
More than N300,000	2	0.5%
<b>Parents' Marital Status</b>		
Single Parent	60	15.6%
Married	265	68.8%
Divorced	35	9.1%
Widow/Widower	25	6.5%
<b>Father's Educational Level</b>		
No formal education	30	7.8%
Primary	60	15.6%
Secondary	120	31.2%
University	175	45.5%
<b>Mother's Educational Level</b>		
No formal education	25	6.5%
Primary	55	14.3%
Secondary	110	28.6%

The majority [210 (54.5%)] of the respondents were aged 21-30, suggesting that most students are in the traditional university age range. While 105 (27.3%) are under age 20. About 195 (50.6%) are females, while 190 (49.4) are males. More than half of the respondents, 290 (75.3%), identify as single. One quarter of the respondents are in their 1<sup>st</sup> year (23.4%), 2<sup>nd</sup> year (20.7%). The majority of respondents practice Christianity (250, 64.9%). Most students reside on campus 220 (57.1%), which likely enhances engagement with university resources and community life. Financially, the overwhelming majority, 369 (95.8%), receive less than N100,000 a month. Popular faculties

include the arts and the life sciences, reflecting academic interests among the student body.

The demographic data on parents reveals a significant influence on students' backgrounds. A large majority, 265 (68.8%) of respondents come from married households, suggesting stability in family structure. Educational attainment among parents is notably high, with 175 (45.5%) of fathers and 195(50.6%) of mothers having university degrees. The presence of a considerable number of parents with secondary education (120 [31.2%] fathers and 110 [28.6%] mothers).

**Table 2: Sexual Practices of Respondents**

Variables	Frequency (n=385)	Percentages (%)
<b>Ever engaged in Sexual activity</b>		
Yes	385	100%
No	-	-
<b>Respondents' age of sex debut</b>		
< 14	30	7.8%
15-19	130	33.8%
20-24	155	40.3%
> 25	70	18.2%
<b>Respondents' Partner of sex debut</b>		
Boyfriend/Girlfriend	250	64.9%
Casual friend	90	23.4%
Relative	15	3.9%
Others	30	7.8%
<b>In a relationship</b>		
Yes	250	64.9%
No	135	35.1%

Variables	Frequency (n=385)	Percentages (%)
<b>Respondents' last sexual encounter</b>		
In the last week	100	26.0%
Weeks ago	80	20.7%
Last month	90	23.4%
Six months	50	13.0%
> 1 year	65	16.9%

Table 2 provides a comprehensive overview of the sexual practices and health-related behaviours of the respondents, revealing several key insights. All respondents (100%) reported having engaged in sexual activity, indicating that sexual experiences are a universal aspect of their lives. This highlights the need for relevant sexual health education among this demographic. Age of sexual debut revealed that the majority, 155 (40.3%) of respondents experienced their sexual debut between the ages of 20 and 24. A small fraction, 30 (7.8%), reported debuting before age 14, indicating that early sexual experiences are relatively

uncommon. Furthermore, A significant portion 250 (64.9%) of respondents had their first sexual experience with a boyfriend or girlfriend, Casual friends also made up a notable share 90 (23.4%), while encounters with relatives and others were minimal. With 250 (64.9%) of respondents currently in a relationship. A quarter of respondents 100 (26.0%) reported their last sexual encounter within the past week, demonstrating active sexual lives among many individuals. However, 65(16.9%) indicated going over a year without sexual activity.

**Table 3: Prevalence of Sexually Transmitted Infections (STIs)**

Variables	Frequency (n=385)	Percentages (%)
<b>Ever tested positive for any STI</b>		
Yes	70	18.2%
No	315	81.8%
<b>Respondents' STI diagnostics</b>		
Gonorrhoea	21	30%
Syphilis	14	20%
Staphylococcus	25	35.7%
Chlamydia	10	14.3%
<b>Respondents' STI Drug treatment</b>		
Antibiotics	65	92.9%
ART	-	-
Herbal mixtures	5	7.1%
<b>Respondents' Place of treatment for STI diagnoses</b>		
Pharmacy shop	25	35.7%
Hospital	20	28.6%
Laboratory	10	14.3%
Patent medicine store/chemist	10	14.3%
Herbal healers	5	7.1%

Table 3 provides a detailed examination of the prevalence of sexually transmitted infections (STIs) among the respondents, revealing several important trends indicating that 18.2% of respondents have tested positive for at least one STI, highlighting a significant health concern within this population. The majority (81.8%) have not tested positive to any sexually transmitted infections. Among those who tested positive, Staphylococcus (35.7%) is the most frequently reported infection, followed by gonorrhoea (30%), syphilis (20%), and chlamydia (14.3%). This distribution indicates that while certain infections like Staphylococcus and gonorrhoea are more prevalent, others, such as chlamydia, are less common but still present. The results suggest a need for increased awareness and testing for these infections, particularly among young adults. The treatment methods for STIs

revealed a strong reliance on antibiotic treatment, with 92.9% of respondents opting for this approach. However, the small percentage (7.1%) using herbal mixtures raises questions about treatment adherence and the potential for alternative treatments in managing STIs. The data on treatment locations shows that respondents primarily seek care at pharmacy shops (35.7%), followed by hospitals (28.6%). The use of pharmacies as a primary treatment source may indicate ease of access, but it also raises concerns about the adequacy of care and follow-up, particularly in a formal healthcare setting. Laboratories and patent medicine stores each accounted for 14.3% of treatment locations, while herbal healers were the least utilised. This blend of conventional and alternative health-seeking behaviors points to a potential gap in accessing comprehensive medical services.

**Table 4: Factors elevating Likelihood of Acquiring STIs (n=385)**

Statements	SA (%)	A (%)	D (%)	SD (%)	Mean (X)
Limited access to healthcare services and STI testing increases the likelihood of infection.	105 (27.3%)	135 (35.1%)	95 (24.7%)	50 (13.0%)	2.77
I have experienced stigma or embarrassment when seeking STI-related healthcare services.	120 (31.2%)	125 (32.5%)	85 (22.1%)	55 (14.3%)	2.81
Peer pressure influences students' decisions about engaging in risky sexual behaviours.	110 (28.6%)	150 (39.0%)	80 (20.8%)	45 (11.7%)	2.85
Inadequate awareness and education on STIs increase their prevalence among students.	130 (33.8%)	140 (36.4%)	80 (20.8%)	35 (9.1%)	2.95
Inconsistent or incorrect use of condoms elevates the risk of contracting STIs.	140 (36.4%)	130 (33.8%)	75 (19.5%)	40 (10.4%)	2.96
Cultural and social norms discourage open discussions about sexual health, leading to higher STI rates.	125 (32.5%)	130 (33.8%)	90 (23.4%)	40 (10.4%)	2.88
Mean Average					<b>2.87</b>

Table 4 summarizes respondents' views on various factors that may elevate the likelihood of acquiring sexually transmitted infections (STIs). The statement about inadequate access to healthcare services and STI testing received a mean score of 2.77, with 27.3% of respondents strongly agreeing and 35.1% agreeing. This indicates a significant recognition that limited access can hinder individuals from seeking necessary care, potentially increasing their risk of infection. The acknowledgment of this barrier suggests a pressing need for improved healthcare accessibility and resources for STI testing. Respondents also expressed notable concern regarding stigma when seeking STI-related healthcare, with a mean score of 2.81. A combined total of 31.2% strongly agreed and 32.5% agreed with the statement. This highlights that stigma continues to be a substantial issue, impacting individuals' willingness to pursue healthcare services. Efforts to mitigate stigma and create supportive healthcare environments are essential for encouraging more individuals to seek help. The influence of peer pressure on risky sexual behaviours was reflected in a

mean score of 2.85. With 28.6% of respondents strongly agreeing, it is clear that social dynamics play a crucial role in decision-making around sexual activity. This finding suggests the potential benefit of peer-led interventions that promote safe sexual practices among students, helping to counteract negative influences. Inadequate awareness and education on STIs, which received a mean score of 2.95, also garnered substantial support, with 130 respondents (33.8%) strongly agreeing. This underscores the critical role of education in reducing STI prevalence among students and highlights the need for comprehensive sexual health education programmes. The highest mean score of 2.96 pertains to inconsistent or incorrect use of condoms, with 36.4% of respondents strongly agreeing. This reinforces the critical importance of education surrounding proper condom use, which is vital for reducing the risk of STIs. Targeted campaigns focusing on safe sex practices could effectively address this issue. Lastly, cultural and social norms that discourage open discussions about sexual health were recognized, with a mean score of 2.88.

**Table 5: Binary Logistic Regression Model for Determinants of the Prevalence of Sexually Transmitted Infections (STIs) Among Respondents**

Variable	Regression Coefficient ( $\beta$ )	AOR (95% CI)	p-Value
Age (21-30 years)	0.55	1.73 (1.10 - 2.73)	0.015
Gender (Female)	-0.25	0.78 (0.58 - 1.05)	0.085
Marital Status (Single)	0.38	1.46 (1.05 - 2.03)	0.027
Previous STI Diagnosis	0.72	2.06 (1.40 - 3.05)	0.001
Access to Healthcare Services	-0.40	0.67 (0.48 - 0.93)	0.016
Use of Protection	-0.45	0.64 (0.47 - 0.87)	0.005
Socioeconomic Status (High)	-0.30	0.74 (0.55 - 1.01)	0.057
Parental Education (University)	-0.50	0.61 (0.44 - 0.85)	0.002
Limited access to healthcare services	0.60	1.82 (1.20 - 2.74)	0.005
Stigma or embarrassment in seeking healthcare	0.45	1.57 (1.10 - 2.25)	0.013
Peer pressure influencing risky sexual behaviour	0.40	1.49 (1.05 - 2.11)	0.023
Inadequate awareness and education on STIs	0.55	1.73 (1.17 - 2.57)	0.008
Inconsistent or incorrect condom use	0.70	2.01 (1.30 - 3.12)	0.002
Cultural and social norms affecting sexual health discussions	0.50	1.65 (1.12 - 2.43)	0.017

Table 5 shows the binary logistic regression model reveals several significant determinants influencing the prevalence of STIs among respondents were respondents aged 21-30 years are more likely to test positive for STIs, with an AOR of 1.73 ( $p=0.015$ ). This indicates that younger individuals are at a higher risk. Although the coefficient for females is negative ( $\beta = -0.25$ , AOR = 0.78,  $p=0.085$ ), it is not statistically significant at the conventional level, indicating that gender may not be a strong predictor in this context. Single respondents have a higher likelihood of testing positive for STIs (AOR 1.46,  $p=0.027$ ), indicating that relationship status may influence exposure. A strong predictor, those with prior STI diagnoses are more likely to test positive again (AOR 2.06,  $p=0.001$ ), underscoring the importance of prior health history in STI prevalence. Limited access negatively impacts the likelihood of infection (AOR 0.67,  $p=0.016$ ), implying that better healthcare access may lower STI prevalence. Inconsistent or no use of protection is associated with a higher likelihood of STIs (AOR 0.64,  $p=0.005$ ), emphasizing the need for safe sexual practices. Socioeconomic Status: While the coefficient for high socioeconomic status is negative (AOR 0.74,  $p=0.057$ ), it approaches significance, indicating potential protective factors associated with higher socioeconomic status. Respondents with university-educated parents are less likely to test positive for STIs (AOR 0.61,  $p=0.002$ ), indicating that parental education level can influence health outcomes.

Limited access to health service (AOR 1.82,  $p=0.005$ ) appears to hinder respondents from seeking necessary testing and treatment. The likelihood of acquiring STIs increases when respondents experience stigma or embarrassment in seeking healthcare (AOR 1.57,  $p=0.013$ ). This shows that negative social perceptions can deter individuals from accessing vital health services. The influence of peer pressure on risky sexual behaviours is notable (AOR 1.49,  $p=0.023$ ). This indicates that peer social dynamics can contribute to higher STI rates. Lack of knowledge about STIs significantly elevates risk (AOR 1.73,  $p=0.008$ ). This highlights the critical need for targeted educational initiatives. Inconsistent or incorrect condom use has been revealed to be a major risk factor, with a strong association with STI prevalence (AOR 2.01,  $p=0.002$ ). This underscores the importance of promoting proper and consistent use of protection. Norms that discourage open discussions about sexual health contribute to higher STI rates (AOR 1.65,  $p=0.017$ ). This indicates a need for cultural shifts to facilitate better communication around sexual health. Therefore, the data's illustrates a strong awareness among respondents of the various factors that elevate the risk of STIs. The insights gained can inform strategies for public health initiatives, emphasising the need for education, improved access to healthcare, and efforts to combat stigma and cultural barriers.

## DISCUSSION

Addressing sexually transmitted infections with tailored interventions is a highly effective strategy to prevent the exposure of undergraduates to risky sexual behaviours.

In this study, all respondents reported having engaged in sexual activity in this study. This is higher than the findings of studies among female students at the University of Benin in Benin City [26], and in Tanzania [28]. Indicating a high level of sexual activity among undergraduate students due to perceived freedom from parental control. The age of sexual debut was 20-24 years for most of the respondents. This is like a study in Tanzania [28]. This age is the age at which many students gain admission into tertiary institutions, so being under parental control may have restricted or delayed sexual debut at a younger age and being in a higher institution may have shaped their decision to have sex due to freedom.

About 18.2% of respondents have tested positive for at least one STI. Among those who tested positive, *Staphylococcus* is the most frequently reported infection, followed by gonorrhoea, syphilis, and chlamydia. This is similar to a study of students in Northwest Ethiopia [9]. And lower than that result among female students in Benin city [26]. And higher than a study conducted near Oluku in Benin [29]. Similar to findings in Port Harcourt [7]. A plausible reason for this study might be differences among the study subjects. This study included both male and female participants, whereas the Nzopotam study included only female students. The study in Ethiopia used laboratory confirmation of STIs, which is not subject to recall bias. The finding of this study is lower than that of a study in Sweden, which reported a higher STI prevalence and found *Chlamydia trachomatis* as the most common STI pathogen, followed by Herpes simplex virus and *Mycoplasma genitalium* [30]. Respondents in this study got antibiotics from pharmacies, hospitals, patent medicine vendors, laboratories, and herbs to treat the STIs. Most of them preferred the pharmacy and the hospital. This is like a previous study where those who tested positive for an STI were treated in a pharmacy shop, by a laboratory technician, patent medicine vendors or by a herbal healer in a herbal home, while only a quarter had received their treatment in a hospital [26].

The likelihood of acquiring STIs increases when respondents experience stigma or embarrassment in seeking healthcare, are single, have had prior STI diagnosis, lack knowledge about STIs, use inconsistent or incorrect condoms, have limited access to health services, face norms that discourage open discussions about sexual health, and are influenced by peer pressure on risky sexual behaviours. This is similar to studies in Port Harcourt, Sweden, and Ethiopia, which reported similar findings [7-30]. A plausible reason for this is due

to the increased sexual activity, experimentation with relationships, peer pressure, poor health service utilization, and often inconsistent use of preventive measures like condoms among students. Also, young adults from low socio-economic backgrounds may be tempted to practice risky sexual behaviours so as to match up to their financial needs while at campus or act on “peer-pressure” [31]. Similarly, a study conducted among university students in Nigeria found that many students were reluctant to seek medical attention for STDIs due to the stigma attached to the disease [26]. Stigma, embarrassment, and fear of judgment are common barriers to discussing STIs and seeking medical attention [32]. Similarly, a study conducted among university students in Nigeria found that many students were unaware of the availability of STDI screening services on campus and the importance of regular screening [33]. Students aged 21-30 years are more likely to test positive for STIs, with younger individuals at a higher risk. This is like a study in Canada [34]. This is likely due to access to early socio-media exposure and exposure to pornography at a young age. Gender was not a strong predictor of STIs in this study. This is different from a study in Canada that found strong predictions of STIs among female students [34]. The reasons for higher rates of STIs among females as compared to males are due to the physiological and anatomical makeup of the female reproductive system. Having prior STI diagnosis had a high likelihood odd of getting STIs. This is similar to findings in Port Harcourt and Ethiopia [7-9]. The increased risk could be due to an untreated sexual partner, with treatment compliance issues, drug resistance and shame to access health care.

A key limitation of this study is the fact that the prevalence of STIs relied on self-reported STIs and not laboratory confirmation. This is subject to recall bias. Moreover, this study was conducted at a single tertiary institution in the State, and the results may not be generalisable.

In conclusion, STIs were prevalent among most students in this study. Staphylococcus is the most frequently reported infection, followed by gonorrhoea, syphilis and chlamydia. All respondents reported having engaged in sexual activity. The likelihood of acquiring STIs increases when respondents are single, of a lower age, have prior STI diagnoses, lack knowledge about STIs, engage in inconsistent or incorrect condom use, are influenced by norms that discourage open discussions about sexual health, are influenced by the peer pressure on risky sexual behaviours and have limited access to health services. This study concludes that there is a need for critical intervention in STI prevention, emphasising the need for enhanced sexual health education and improved healthcare access among undergraduate students.

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