AWARENESS AND PREVENTION OF SEXUALLY TRANSMITTED INFECTIONS AMONG FEMALE UNDERGRADUATES IN A TERTIARY INSTITUTION.

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OCTOBER, 2025

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IN PARTIAL FULFILMENT OF THE AWARD OF THE DEGREE OF BACHELOR OF NURSING SCIENCE, FACULTY OF NURSING SCIENCES, UNIVERSITY OF BENIN, BENIN CITY.

OCTOBER, 2025

DECLARATION

This is to declare that this research project titled **AWARENESS AND PREVENTION OF SEXUALLY TRANSMITTED INFECTIONS AMONG FEMALE UNDERGRADUATES IN THE FACULTY OF EDUCATION, UNIVERSITY OF BENIN** was carried out by **OSOBAYE PRECIOUS ITOHAN**. It is solely the result of my work except were acknowledged as being derived from other person(s) or resources.

MATRICULATION NUMBER: BMS1806605

FACULTY/COLLEGE: FACULTY OF NURSING SCIENCE, COLLEGE OF MEDICINE, UNIVERSITY OF BENIN, BENIN CITY.

Signature: …….

Date: ……

CERTIFICATION/APPROVAL

This is to certify that this research project titled **"AWARENESS AND PREVENTION OF SEXUALLY TRANSMITTED INFECTIONS AMONG FEMALE UNDERGRADUATES IN THE FACULTY OF EDUCATION, UNIVERSITY OF BENIN"** will be carried out by **OSOBAYE PRECIOUS ITOHAN** with **Matriculation Number. BMS1806605** in the Faculty of Nursing Science, under the supervision of **Mrs. F.A. Esebame.**

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OMOROGBE _____

Head Of Department Sign & Date

_____
External Examiner Sign & Date

DEDICATION

This project work is dedicated to the one that I call, Abba, GOD Almighty who gives my life meaning and has taught me that life is meant to be impactful. To my Late Dad, Mr. Pedro Osobaye whose life was mainly the inspiration behind my career choice, to my amazing Mum, Mrs. Grace Osobaye, and my Aunt, Mrs Esther Amakwe whose lives continue to inspire me, my heart is eternally grateful for you both, for all the support and unwavering love given in my academic journey. Now, to the future female educators who participated in this research, I sincerely appreciate you all, for making this research possible.

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ABSTRACT

This study investigated the level of awareness and prevention practices regarding Sexually Transmitted Infections (STIs) among female undergraduates in the Faculty of Education, University of Benin. A descriptive survey design was employed, utilizing a structured questionnaire administered to measure awareness levels, knowledge of specific infections, and the uptake of preventive behaviors. The findings revealed that the overall STI awareness was moderate, with 45% of students demonstrating good awareness, 35% fair awareness, and 20% poor awareness. While knowledge of prominent infections like HIV/AIDS and gonorrhea was high, significant gaps existed concerning chlamydia, syphilis, and the nature of asymptomatic infection. Furthermore, the translation of awareness into consistent preventive practice was suboptimal: only 30% of sexually active respondents reported consistent condom use, and a mere 30% of all respondents had ever undergone STI testing. Inferential analysis confirmed that awareness significantly predicts preventive practices, indicating that students with higher awareness are more likely to engage in protective behaviors. Barriers such as stigma, limited access to youth-friendly health services, and reliance on unreliable information sources (peers and social media) were identified as major factors inhibiting the consistent application of safe practices. The study concludes that although awareness exists, it is insufficient to guarantee optimal prevention. It is recommended that the university health services strengthen targeted campaigns to cover lesser-known STIs, integrate reproductive health education into the curriculum, and establish confidential, youth-friendly health services to improve testing and vaccination uptake.

Keywords: Sexually Transmitted Infections, STI awareness, Preventive Practice, Female Undergraduates, Stigma, STI Testing.

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CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Sexually Transmitted Infections (STIs) are more than just a health concern, they are a growing public health challenge that affects millions of people globally each year, including the young and vibrant university student population. Among these students, particularly females, the risk of contracting STIs remains high, despite increased awareness and available preventive measures. The reasons for this are varied and complex, ranging from risky sexual behaviors to a lack of accurate knowledge about STI prevention and transmission. (Baraki & Thupayagale-Tshweneagae, 2024).

The preponderance of STIs poses a major public health challenge with serious implications for both morbidity and mortality. Despite extensive efforts to reduce its spread, STI rates remain disturbingly high, especially in sub-Saharan Africa. Over one million STIs are contracted each day worldwide, with approximately 376 million new cases of four primary STIs—chlamydia, gonorrhea, syphilis, and trichomoniasis—occurring annually.
In Africa, the situation is dire, with an estimated 20 million new STI cases reported each year across the continent. In South Africa, around 25% of the sexually active population is affected by STIs, particularly chlamydia, gonorrhea, and syphilis. In Kenya, the STI prevalence rate stands at about 13%, with chlamydia and gonorrhea being the most common infections. Other regions in Africa are equally impacted; in Ghana, 11% of the sexually active population reports having STIs, with gonorrhea and syphilis being prevalent. Tanzania also faces a significant STI burden, with a prevalence rate of about 15%, including both bacterial and viral infections. In Nigeria, the STI prevalence among sexually active individuals is estimated at between 10% and 15%, with gonorrhea and chlamydia being especially widespread. (Frank et al; 2025)

STIs are primarily spread through unprotected sexual activity and have a substantial impact on health, families, development, and communities, yet their significance is often underemphasized. (Nkwazema et al; 2024).

For young women, especially in university settings like the University of Benin (UNIBEN), the stakes are even higher. Beyond the physical consequences, the social stigma surrounding sexual health, limited access to prevention tools like condoms, and the pressure to conform to certain social norms all contribute to a vulnerability that many may not fully understand or be equipped to address. STIs, if left untreated, can lead to severe long-term health complications—infertility, chronic illness, and even death in extreme cases. Yet, despite widespread awareness campaigns, these issues continue to plague many Nigerian students.

Female students, in particular, face unique challenges that heighten their risks—gendered societal expectations, cultural taboos surrounding open discussions about sexual health, and limited access to sexual health resources are just a few of the barriers they face (Babatunde et al.,2022). The Faculty of Education at UNIBEN, with its diverse student body, is the perfect setting to explore how young women perceive and prevent STIs. Understanding their

experiences, challenges, and knowledge gaps is not just important, it's crucial to improving their sexual health outcomes and empowering them to make safer, informed choices.

1.2 Statement of the Problem

Despite the availability of information on STI prevention and the promotion of sexual health on campuses, many female undergraduates still engage in behaviors that put them at risk of contracting STIs. Even with campaigns aimed at educating students, research has shown that many remain unaware of critical facts about STI transmission, prevention, and long-term consequences. This lack of knowledge, combined with barriers such as social stigma, limited access to STI testing, and inconsistent use of preventive measures like condoms, exacerbates the situation. (Babatunde et al.,2022)

This study will explore not just the level of awareness, but also the cultural, social, and institutional barriers that influence how these students perceive and practice STI prevention. If we are to reduce the prevalence of STIs in this population, we must first understand the factors that hinder their ability to protect themselves effectively.

1.3 Aims and Objectives of the Study

This study aims to shed light on the intersection of knowledge, behavior, and barriers surrounding STI prevention among female undergraduates in the Faculty of Education at UNIBEN. Specifically, the study will:

1. Assess the level of awareness of STIs among female undergraduates in the Faculty of Education at UNIBEN, with a focus on their role as future educators.
2. Examine the preventive practices and behaviors related to STI prevention, such as condom use and STI testing, among female students.
3. Identify the key barriers such as cultural, social, or personal preferences that prevent effective STI prevention in this group.
4. Investigate the main sources of information on STIs and how these sources shape the students' knowledge and behaviors, as well as the future of sexual health education.

1.4 Research Questions

To guide this inquiry, the study will answer the following research questions:

1. What is the level of awareness of STIs among female undergraduates in the Faculty of Education at UNIBEN?
2. What preventive measures do female undergraduates engage in to reduce their risk of contracting STIs?
3. What are the barriers preventing female students from practicing effective STI prevention methods?
4. What are the primary sources of STI-related information for these female undergraduates, and how do these sources influence their understanding and practices?

1.5 Significance of the Study

This study is not just an academic exercise, it's an opportunity to make a real difference. The findings will contribute to a deeper understanding of sexual health challenges faced by university students in Nigeria, particularly female undergraduates. By focusing on UNIBEN's Faculty of Education, the study will provide critical insights into the unique challenges and needs of female students in this faculty, paving the way for more targeted, effective sexual health education programs.

Moreover, this research has the potential to influence sexual health policy and service delivery on campuses. The results will inform university authorities, health educators, and policymakers on the areas where interventions are most needed—whether it's increasing access to prevention tools like condoms, reducing the stigma surrounding sexual health, or improving education on STI risks and prevention. Ultimately, the goal is to empower female students to take control of their sexual health, protect themselves from STIs, and foster a more open, supportive environment for discussions on sexual well-being.

1.6 Scope of the Study

This study will focus specifically on female undergraduates in the Faculty of Education at the University of Benin, Nigeria. The research will delve into their awareness, prevention practices, and the barriers they face in combating STIs. The study does not extend to male students or students from other faculties at the university, making its findings particularly relevant to this specific group of young women.

1.7 Operational definition of terms

• Awareness of STIs

This refers to the knowledge or understanding that female undergraduates in the Faculty of Education, UNIBEN, have regarding sexually transmitted infections (STIs). It includes knowledge about the types of STIs, their causes, symptoms, and modes of transmission. Awareness will be measured using a questionnaire or survey, where participants are asked to identify common STIs, their symptoms, and preventive measures.

• Risky Sexual Behaviors

This refers to sexual practices that increase the likelihood of contracting sexually transmitted infections (STIs) among female undergraduates in the Faculty of Education, UNIBEN. These behaviors include unprotected sex (not using condoms), having multiple sexual partners, engaging in sexual intercourse with individuals whose STI status is unknown, and having sex under the influence of alcohol or drugs. Risky sexual behaviors will be assessed through self-reported data collected via a survey or questionnaire, where participants will be asked to indicate their past sexual behaviors and whether they engaged in practices that are considered high-risk for STI transmission.

• Sexually Transmitted Infections (STIs)

This refers to infections that are primarily spread through sexual contact. For the purpose of this study, STIs include but are not limited to HIV/AIDS, gonorrhea, syphilis, chlamydia, and herpes. These will be defined according to the World Health Organization's classification and

will be further clarified through a survey to assess participants' recognition and understanding of common STIs.

- Prevention strategies

This refers to specific methods, actions, and approaches adopted by female undergraduates in the faculty of education, UNIBEN to protect themselves from contracting sexually transmitted infections (STIs). These may include abstinence, use of condoms,, health education participation, regular STI screening, monogamous relationships and vaccination.

- Perceived Susceptibility

This refers to the individual beliefs of female undergraduates regarding their personal risk or likelihood of contracting sexually transmitted infections. It involves their subjective assessment of vulnerability, which may influence their motivation to engage in preventive behaviors.

- STI Screening

STI screening in this study refers to the act of undergoing medical tests to detect sexually transmitted infections, whether symptoms are present or not. It includes voluntary testing, routine check-ups, or clinical diagnosis initiated by a healthcare provider. This variable helps assess the proactive health-seeking behavior of female undergraduates toward STI prevention.

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

This chapter presents a comprehensive literature review on the awareness and prevention of sexually transmitted infections (STIs) among female undergraduate university students. The review is structured to include a **conceptual discussion**, a **theoretical framework**, and an **empirical review**. These sections collectively examine the different dimensions of STI prevention, addressing conceptual clarity, the application of relevant theories, and insights from empirical studies.

2.2 CONCEPTUAL REVIEW

Sexually transmitted infections (STIs) represent a major public health issue, particularly among young adults, including university students. The university environment, characterized by increased sexual activity and experimentation, presents both opportunities and challenges in terms of preventing the spread of STIs. Awareness of STIs, understanding their risks, and adopting preventive measures are essential for safeguarding the sexual health of students. This review focuses on the key concepts related to STI awareness and prevention while providing an overview of STIs and their impact on university students.

2.2.1 Overview of Sexually Transmitted Infections (STIs): Description, Classifications, Transmission, Symptoms, and Long-Term Effects

What are STIs?

Sexually Transmitted Infections (STIs) are infections that are primarily transmitted through sexual contact, which can include vaginal, anal, or oral sex. They are caused by various pathogens, including bacteria, viruses, and parasites. Common STIs include chlamydia, gonorrhea, syphilis, HIV/AIDS, human papillomavirus (HPV), and herpes (Nkwazaeme et al.,2023).

Classifications of STIs

Sexually Transmitted Infections (STIs) are classified based on their causative agents, such as bacteria, viruses, parasites, or fungi. The classification helps in understanding the nature of the infection, its transmission, symptoms, and treatment options.

Below are the key classifications of STIs:

1. Bacterial STIs

Bacterial STIs are caused by bacteria and are often treatable with antibiotics if diagnosed early. Common bacterial STIs include:

- **Chlamydia**: Caused by *Chlamydia trachomatis*, it is one of the most common STIs. It often shows no symptoms but can lead to pelvic inflammatory disease (PID) and infertility if left untreated. (Wihlfahrt et al., 2023)

- **Gonorrhea**: Caused by *Neisseria gonorrhoeae*, gonorrhea can infect the genitals, rectum, and throat. Symptoms may include painful urination and discharge, but many people may not show symptoms. (Wihlfahrt et al., 2023)
- **Syphilis**: Caused by *Treponema pallidum*, syphilis progresses in stages. It begins with painless sores (chancre) and can progress to severe health complications, including organ damage, if untreated. (Wihlfahrt et al., 2023)
- **Chancroid**: Caused by *Haemophilus ducreyi*, chancroid leads to painful ulcers or sores on the genitals and is more common in certain regions of the world. (Putri et al.,2021)

2. Viral STIs

Viral STIs are caused by viruses and are generally not curable, though many can be managed with antiviral treatment. Common viral STIs include:

- **Human Immunodeficiency Virus (HIV)**: HIV attacks the immune system, leading to acquired immunodeficiency syndrome (AIDS) if left untreated. HIV can be transmitted through blood, semen, vaginal fluids, and breast milk (WHO, 2022).
- **Herpes Simplex Virus (HSV)**: HSV includes two types—HSV-1 (often causes oral herpes) and HSV-2 (typically causes genital herpes). HSV causes sores or blisters in the affected areas. The infection is lifelong, and while antiviral medications can manage outbreaks, there is no cure (WHO, 2025).
- **Human Papillomavirus (HPV)**: HPV is a group of more than 200 related viruses, some of which cause genital warts and are linked to various cancers, such as cervical cancer in women. Vaccines are available to protect against the most harmful strains (WHO, 2022).
- **Hepatitis B**: Hepatitis B is a liver infection caused by the Hepatitis B virus. It can be transmitted through blood, semen, and other body fluids. Vaccination is available for prevention (CDC, 2021).
- **Hepatitis C**: Though primarily transmitted through blood, Hepatitis C can also be transmitted sexually. It can lead to chronic liver disease and cirrhosis over time (CDC, 2021)

3. Parasitic STIs

Parasitic STIs are caused by parasites that can live on or inside the body. These infections are typically treatable with anti-parasitic medications. Common parasitic STIs include:

- **Trichomoniasis**: Caused by the parasite *Trichomonas vaginalis*, trichomoniasis can cause vaginal discharge, itching, and discomfort in women, and urethral discharge and irritation in men. It is the most common curable STI (WHO, 2024).
- **Pubic Lice (Crabs)**: Pubic lice are tiny parasites that infest the hair in the genital area. They cause itching and irritation and can be treated with topical treatments (CDC, 2024).
- **Scabies**: Caused by the *Sarcoptes scabiei* mite, scabies leads to intense itching, especially in the genital area. The mite burrows into the skin, causing a rash. It is treated with topical creams or lotions (WHO, 2023).

4. Fungal STIs

Fungal STIs are caused by fungal infections. Though less common than bacterial or viral STIs, they can cause significant discomfort. A common fungal STI includes:

- **Candidiasis (Yeast Infection)**: Caused by an overgrowth of *Candida* yeast, candidiasis can affect the genital area, leading to itching, burning, and abnormal discharge. While it is more common in women, men can also develop genital yeast infection, It is important to note that while being listed as an STI, candidiasis can occur without sexual contact (WHO, 2025).

Mode of Transmission of Sexually Transmitted Infections (STIs)

Sexually transmitted infections (STIs) are infections that are primarily spread through sexual contact. The transmission of STIs can occur through various routes, depending on the type of infection and the nature of the sexual activity involved. Understanding how STIs are transmitted is crucial for prevention and reducing the spread of infections. Below are the primary modes of STI transmission:

1. Sexual Contact (Vaginal, Anal, and Oral Sex)

The most common route of STI transmission is through sexual contact, which includes vaginal, anal, and oral sex.

- **Vaginal Sex**: Many STIs, such as chlamydia, gonorrhea, and HIV, can be transmitted through vaginal intercourse. The bacteria, viruses, or other pathogens in the genital fluids or on the skin/mucous membranes are passed between sexual partners (Centers for Disease Control and Prevention [CDC], 2020).
- **Anal Sex**: Anal intercourse is associated with a higher risk of STI transmission, particularly HIV, due to the delicate tissue in the anus, which is more prone to tearing. The increased risk also comes from the fact that anal sex is often less protected than vaginal sex, leading to higher exposure to infected bodily fluids (WHO, 2025).
- **Oral Sex**: Oral sex (mouth-to-genitals or mouth-to-anus) can also transmit STIs, such as herpes, gonorrhea, syphilis, and human papillomavirus (HPV). While the risk of transmission is generally lower compared to vaginal and anal sex, it is still significant, especially if there are open sores, cuts, or inflammation in the mouth or genital area (CDC, 2020).

2. Direct Skin-to-Skin Contact

Some STIs are transmitted through skin-to-skin contact, even if no penetrative sex occurs. These infections can be transmitted via direct contact with infected areas of the body, such as genital warts or herpes lesions.

- **Genital Herpes**: The herpes simplex virus (HSV) can be transmitted through direct skin-to-skin contact with an infected person, even if they do not have visible sores. This means someone can transmit herpes when they are asymptomatic (Avert, 2021).
- **Human Papillomavirus (HPV)**: HPV is primarily transmitted through skin-to-skin contact during sexual activity, and can be passed even when no penetrative sex takes

place. It is one of the most common STIs globally and is linked to cervical cancer in women and throat cancers in both men and women (Avert, 2021).

- **Syphilis**: Syphilis sores, known as chancres, are highly contagious and can be spread through direct contact with these sores. This can occur during any type of sexual activity, including oral, vaginal, or anal sex (CDC, 2020).

3. Blood-to-Blood Contact

Certain STIs are transmitted through blood-to-blood contact. This mode of transmission usually occurs in cases of sharing needles or other equipment for drug use, but it can also happen in healthcare settings or through transfusions if proper blood screening is not done.

- **HIV**: Human Immunodeficiency Virus (HIV) is primarily transmitted through blood, semen, vaginal fluids, rectal fluids, and breast milk. It can be transmitted via shared needles among people who inject drugs, through unprotected sex, and, in some cases, through blood transfusions (though this is rare in developed countries due to blood screening) (WHO, 2022).
- **Hepatitis B and C**: Hepatitis B and C can also be transmitted through blood-to-blood contact. The risk of transmission is high in individuals who share needles or engage in other practices that expose them to contaminated blood (CDC, 2020).

4. Mother-to-Child (Vertical Transmission)

STIs can be transmitted from a mother to her child during pregnancy, childbirth, or breastfeeding. This type of transmission is known as vertical transmission.

- **HIV**: HIV can be passed from an infected mother to her child during childbirth, pregnancy, or breastfeeding. Antiretroviral treatment (ART) can significantly reduce the risk of transmission from mother to child (National Institutes of Health [NIH], 2021).
- **Syphilis**: If a pregnant woman has syphilis, the infection can be passed to the fetus during pregnancy, leading to congenital syphilis, which can cause severe complications for the baby, including stillbirth or birth defects (WHO, 2025).
- **Herpes**: Neonatal herpes can occur if a baby is exposed to the herpes simplex virus during childbirth, particularly if the mother has an active genital herpes outbreak at the time of delivery. This can lead to serious complications, including brain damage or death in severe cases (CDC, 2020).

5. Shared Objects and Contaminated Surfaces

While most STIs are transmitted through direct sexual contact, some can be spread through shared objects or contaminated surfaces, though this is less common.

- **Shared Needles and Drug Equipment**: STIs such as HIV, hepatitis B, and hepatitis C can be transmitted through the sharing of needles and drug paraphernalia (Avert, 2021).
- **Towels or Linens**: Although less common, some skin-to-skin transmitted STIs, such as herpes, could theoretically be passed through contaminated towels, linens, or other shared

personal items that come into contact with infected skin or mucous membranes (CDC, 2020).

6. Asymptomatic Transmission

Many people who have STIs do not exhibit symptoms but can still transmit the infection to others. This is particularly problematic because asymptomatic individuals may not know they are infected and thus may not take precautions, such as using condoms, to prevent transmission.

- **Chlamydia, Gonorrhea, and HIV**: These STIs can be transmitted by individuals who are unaware of their infection, as symptoms may not appear for weeks or even months. As a result, even individuals who feel healthy can unknowingly spread the infection to others (CDC, 2020).
- **HPV**: Asymptomatic HPV infection is extremely common, and those with the virus can spread it through sexual activity even if they have no visible symptoms or warts (WHO, 2025).

6. Risk of Reinfection and Co-infection

An individual who is already infected with one STI is at increased risk of acquiring another STI due to compromised immune defenses or behavior associated with the initial infection.

- **Co-infection with HIV**: Individuals who have other STIs, such as chlamydia, gonorrhea, or syphilis, are at a higher risk of contracting HIV because the sores or inflammation caused by other STIs can provide an entry point for HIV (Gottlieb et al., 2020).
- **Reinfection**: Even if a person has received treatment for an STI, they can be reinfected if they engage in unprotected sex with an infected partner. This highlights the importance of consistent condom use and regular STI testing (CDC, 2020).

Symptoms of Sexually Transmitted Infections (STIs)

STIs can present a range of symptoms, or in some cases, no symptoms at all (asymptomatic), making it important for individuals to get tested regularly. The symptoms of STIs vary depending on the type of infection, but they typically affect the genital area, rectum, mouth, and throat. Below are common symptoms of various STIs:

1. Chlamydia

Chlamydia is one of the most common STIs and is often asymptomatic. When symptoms do occur, they may include:

- **In women**: Unusual vaginal discharge, burning sensation when urinating, abdominal pain, bleeding between periods (CDC,, 2020)
- **In men**: Discharge from the penis, pain or burning during urination, testicular pain (CDC, 2020).

2. Gonorrhea

Gonorrhea is another common bacterial STI that often presents with few or no symptoms. When symptoms are present, they may include:

- **In women**: Painful urination, increased vaginal discharge, pelvic pain, and bleeding between periods (CDC, 2020).
- **In men**: White, yellow, or green discharge from the penis, painful urination, swollen or painful testicles (CDC, 2020).

3. Syphilis

Syphilis progresses in stages and has different symptoms depending on the stage:

- **Primary stage**: A painless sore (chancre) at the site of infection (usually genital, anal, or oral).
- **Secondary stage**: Skin rashes, mucous membrane lesions, fever, sore throat, swollen lymph nodes, and fatigue.
- **Latent stage**: No symptoms, but the bacteria remain in the body.
- **Tertiary stage**: Severe damage to organs such as the heart, brain, and nerves (CDC, 2020).

4. Human Immunodeficiency Virus (HIV)

HIV can remain asymptomatic for many years, but during the acute phase (2-4 weeks after infection), individuals may experience:

- Fever, fatigue, sore throat, swollen lymph nodes, rash, and muscle aches (WHO, 2025).
- As the virus progresses, symptoms such as weight loss, recurrent infections, and night sweats may occur.

5. Herpes Simplex Virus (HSV)

Herpes can cause both oral and genital infections. Symptoms include:

- **Genital herpes**: Painful sores or blisters in the genital area, itching, pain during urination, and flu-like symptoms during outbreaks.
- **Oral herpes**: Cold sores or blisters around the mouth (CDC, 2020).

6. Human Papillomavirus (HPV)

HPV often has no symptoms, but in some cases, it can cause:

- **Genital warts**: Small growths or lumps on the genital, anal, or mouth areas.
- **Cervical cancer**: In women, persistent infection with certain strains of HPV can lead to cervical cancer (CDC, 2020; Avert, 2021).

7. Hepatitis B and C

These viral infections can lead to chronic liver disease, and their symptoms may include:

- **Fatigue, nausea, and loss of appetite**.
- **Jaundice** (yellowing of the skin or eyes).
- **Dark urine and abdominal pain** (NIH, 2021).

8. Trichomoniasis

Trichomoniasis is caused by a parasite and may have no symptoms or cause:

- **In women**: Vaginal discharge with a foul smell, vaginal itching, painful urination, and discomfort during sex.
- **In men**: Irritation inside the penis, discharge, and painful urination (CDC, 2020).

9. Pubic Lice (Crabs)

Pubic lice are small insects that infest the genital area and cause:

- Itching in the genital region.
- Small blood spots on underwear from bites (CDC, 2020).

10. Bacterial Vaginosis (BV)

While not classified as an STI, BV can increase the risk of contracting other STIs. Its symptoms include:

- A thin, grayish-white vaginal discharge with a strong fishy odor, particularly after sex.
- Burning sensation while urinating (CDC, 2020).

Long-Term Effects of Untreated STIs

If left untreated, sexually transmitted infections (STIs) can lead to serious health complications. The long-term effects of untreated STIs can affect various organs and bodily functions, with some resulting in chronic health issues, infertility, or even death. Below are some of the key long-term effects associated with untreated STIs:

1. Infertility

Certain STIs, especially bacterial ones like **chlamydia** and **gonorrhea**, can cause long-term damage to the reproductive organs, leading to infertility if not treated in time.

- **In Women**: Untreated chlamydia and gonorrhea can lead to **pelvic inflammatory disease (PID)**, which can cause damage to the fallopian tubes, ovaries, and uterus, increasing the risk of infertility. Additionally, PID can lead to ectopic pregnancy (where the fertilized egg implants outside the uterus), which can be life-threatening (CDC, 2020).
- **In Men**: Untreated gonorrhea can cause **epididymitis** (inflammation of the tubes that carry sperm), which can lead to infertility if not treated (CDC, 2020).

2. Chronic Pain and Complications

Several STIs can cause long-term health problems, including chronic pain and other serious complications:

- **Herpes Simplex Virus (HSV)**: Genital herpes, caused by HSV, can lead to recurrent outbreaks of painful sores. In some cases, herpes can cause **neurological complications** like **herpes encephalitis** (brain inflammation) or **herpes meningitis** (infection of the protective membranes surrounding the brain and spinal cord), which can be life-threatening (WHO, 2019).
- **Human Papillomavirus (HPV)**: Certain strains of HPV can lead to **cervical cancer** in women and **throat cancers** in both men and women. Without intervention, persistent infection with high-risk HPV types can cause **cervical dysplasia** (abnormal changes in the cervix) and eventually develop into cancer (CDC, 2020; Avert, 2021).

3. Increased Risk of HIV

Untreated STIs increase the likelihood of contracting **HIV**. For example:

- **Syphilis**: Sores from syphilis make it easier for HIV to enter the body. Additionally, individuals with untreated syphilis are more likely to transmit HIV to others (CDC, 2020).
- **Herpes and Gonorrhea**: These STIs can cause open sores or inflammation that make individuals more vulnerable to HIV infection if exposed (Gottlieb et al., 2020).

4. Cancer

Some STIs can increase the risk of certain types of cancer:

- **HPV**: High-risk strains of HPV are associated with various cancers, including **cervical cancer**, **anal cancer**, and **oropharyngeal cancer** (throat and mouth). Without proper treatment or vaccination, persistent infection with these strains increases the risk of cancer over time (Avert, 2021).
- **Hepatitis B and C**: Chronic infection with **hepatitis B** or **hepatitis C** can lead to **liver cirrhosis**, liver failure, or **liver cancer** (NIH, 2021).

5. Cardiovascular and Neurological Damage

Some STIs, like **syphilis** and **HIV**, can lead to long-term damage to the heart and nervous system.

- **Syphilis**: In its tertiary stage, untreated syphilis can affect organs like the **heart** and **nervous system**. It can cause **aortic aneurysm** (swelling of the aorta, the large artery carrying blood from the heart) and **neurosyphilis**, which can lead to dementia, paralysis, or blindness (CDC, 2020).
- **HIV**: Without treatment, HIV can progress to **AIDS**, leading to severe immune system damage and increased vulnerability to infections and certain cancers. Neurological complications can also occur, including **HIV-associated neurocognitive disorders (HAND)**, which can lead to memory loss, difficulty concentrating, and motor skill impairment (Gottlieb et al., 2020).

6. Complications During Pregnancy

STIs can have serious effects on pregnancy, including complications for both the mother and the baby:

- **HIV**: If left untreated, HIV can be transmitted from the mother to the baby during pregnancy, childbirth, or breastfeeding, resulting in **neonatal HIV**. Antiretroviral treatment can reduce the risk of transmission significantly (NIH, 2021).
- **Syphilis**: Untreated syphilis during pregnancy can result in **congenital syphilis**, leading to severe complications such as stillbirth, premature birth, or birth defects (CDC, 2020).
- **Chlamydia and Gonorrhea**: These STIs can lead to premature birth, low birth weight, or neonatal infections (CDC, 2020).

7. Mental Health Issues

The psychological impact of untreated STIs can also be significant. Chronic STIs or their consequences can cause:

- **Anxiety and Depression**: People living with untreated STIs may experience increased stress, anxiety, and depression, particularly due to stigma or the long-term health consequences of the infection (WHO, 2025).
- **Social and Emotional Challenges**: Individuals with visible STIs (such as herpes) or those experiencing infertility may face challenges in their personal relationships and overall mental health (Avert, 2021).

8. Death

While rare, untreated STIs can be fatal:

- **HIV/AIDS**: Without treatment, HIV progresses to AIDS, which can lead to death due to opportunistic infections and cancers that take advantage of a weakened immune system (Gottlieb et al., 2020).
- **Syphilis**: In its late stages, syphilis can lead to organ failure and death if left untreated for many years (CDC, 2020).

2.2.2 Prevention of Sexually Transmitted Infections (STIs)

Preventing sexually transmitted infections (STIs) is crucial for safeguarding individual health and public well-being. While no method provides 100% protection, several preventive measures significantly reduce the risk of contracting or spreading STIs. These include behavioral changes, medical interventions, and public health strategies.

1. Abstinence and Monogamy

- **Abstinence** (refraining from sexual activity) is the most effective way to prevent STIs, as it eliminates exposure to potential infections. (CDC, 2023)
- **Monogamy** (having only one sexual partner who is not infected with an STI) can also reduce the risk, especially when both partners are tested and are free from STIs (CDC, 2020).

2. Condom Use

- **Male and female condoms** are highly effective in preventing many STIs, including HIV, chlamydia, gonorrhea, and syphilis. Condoms act as a barrier to prevent the exchange of bodily fluids (semen, vaginal fluids, blood) during vaginal, anal, and oral sex.
- The correct and consistent use of condoms significantly reduces the risk of STI transmission. However, condoms may not fully protect against infections transmitted through skin-to-skin contact, such as herpes and HPV (CDC, 2020).

3. Pre-Exposure Prophylaxis (PrEP) for HIV

- **PrEP** (pre-exposure prophylaxis) is a medication that people at high risk of HIV can take to prevent infection. When taken correctly, PrEP is highly effective at preventing HIV transmission (CDC, 2020).
- It is particularly recommended for individuals who are at high risk, including those with HIV-positive partners, those who inject drugs, or those with multiple sexual partners.

4. Vaccination

Vaccination can prevent certain STIs and reduce the risk of severe health complications:

- **Human Papillomavirus (HPV) Vaccine**: The **HPV vaccine** protects against the most common strains of HPV, which are responsible for most cases of cervical cancer and other genital cancers. Vaccination is most effective when given before sexual activity begins (CDC, 2020).
- **Hepatitis B Vaccine**: The **Hepatitis B vaccine** is effective in preventing Hepatitis B, which can lead to chronic liver disease and liver cancer (NIH, 2021).

5. Regular STI Testing

- Regular **STI testing** is essential for early detection and treatment of STIs, especially since many STIs can be asymptomatic.
- It is particularly important for sexually active individuals, those with multiple partners, and those who engage in unprotected sex (CDC, 2020).
- Early diagnosis allows for prompt treatment, reducing the risk of long-term complications and transmission to others (CDC, 2020).

6. Communication and Education

- Open communication with sexual partners about **STI status** and sexual history is essential. Encouraging honest conversations can help in making informed decisions about protection and testing.
- **Comprehensive sex education** plays a critical role in STI prevention. Educating individuals about safer sex practices, how STIs are transmitted, and the importance of protection can significantly reduce transmission rates (WHO, 2025).

7. Limiting the Number of Sexual Partners

- Reducing the number of sexual partners can decrease the risk of encountering an infected individual. Consistent and exclusive relationships with tested and uninfected partners significantly reduce STI risk (Avert, 2021).

8. Avoiding Substance Abuse

- Alcohol and drug use can impair judgment and lead to risky sexual behaviours, such as unprotected sex or having multiple sexual partners. **Avoiding substance abuse** or minimizing it can help individuals make safer decisions and reduce the risk of STIs (CDC, 2020).

9. Safe Practices for People Who Inject Drugs

- Sharing needles and other drug paraphernalia can transmit HIV, Hepatitis B, and Hepatitis C. Preventive measures for individuals who inject drugs include:
    - Using **clean needles** and not sharing injection equipment.
    - Accessing needle exchange programs and harm reduction services.
    - Getting vaccinated for Hepatitis B (WHO, 2025).

10. Post-exposure prophylaxis (PEP) for HIV

- **PEP** is a short-term medication taken within 72 hours after potential exposure to HIV. It can prevent the virus from taking hold if started quickly after exposure (CDC, 2020).

11. Avoiding Skin-to-Skin Contact with Infected Areas

- Some STIs, like **herpes** and **HPV**, are transmitted through skin-to-skin contact, even without penetrative sex. Avoiding direct skin contact with infected areas can reduce the risk, though condoms are still recommended for additional protection (CDC, 2020).

2.2.3 Awareness of STIs Among University Students

Awareness refers to the knowledge and understanding that individuals have about the risks, transmission modes, symptoms, and prevention strategies of STIs. University students, as a high-risk group due to their sexual activity and lifestyle, must be well-informed about STIs to take appropriate preventive actions. Awareness can influence behaviors such as condom use, testing for STIs, and seeking medical care.

Several studies highlight that while many university students are generally aware of common STIs such as HIV, the depth of their knowledge regarding less common infections, transmission routes, and the asymptomatic nature of many STIs is often limited (Lederer & Sheena, 2021).

Furthermore, misconceptions about STI prevention, such as the belief that oral sex is completely safe, can also contribute to risky sexual behavior (Strome et al., 2022)).

Factors Influencing STI Awareness:

- **Sexual Education**: Comprehensive sexual health education is critical in shaping students' awareness. However, students often report receiving inadequate or superficial sexual

education, especially in high school. The quality and content of STI-related education can significantly impact how well students understand STI risks and prevention strategies (Davis & Thompson, 2020).

- **Peer Influence**: Peer groups play a significant role in shaping students' attitudes and behaviors regarding STIs. If peers normalize risky sexual behaviors or lack proper knowledge themselves, this can perpetuate unsafe sexual practices among university students (Johnson, 2020).
- **Cultural Norms**: Cultural attitudes toward sex and health, particularly in conservative settings, may hinder open discussions about STIs, leading to misinformation or underreporting of infections (Nguyen et al., 2021). These cultural taboos often delay medical-seeking behaviors and perpetuate the spread of STIs.
- **Media and Digital Influence**: Media and digital platforms play a significant role in disseminating health information. However, not all information available on the internet or social media is accurate or reliable, leading to the spread of misconceptions (Haider et al., 2025).

2.2.4 Prevention of STIs Among University Students

The prevention of STIs involves adopting behaviours and strategies that reduce the risk of infection. Effective STI prevention can be facilitated through both individual actions and institutional support, such as educational programs and access to sexual health resources.

Preventive Measures:

- **Condom Use**: Consistent and correct condom use during sexual intercourse is one of the most effective methods of preventing the transmission of many STIs. Despite knowing about condoms as an STI prevention tool, university students often report inconsistent use, especially in casual sexual encounters (Silva et al., 2024). This highlights the need for reinforcing safe sex practices through education and peer support.
- **Regular STI Testing and Screening**: Routine screening for STIs is crucial for early detection and treatment, especially since many STIs are asymptomatic. Studies show that university students often underutilize STI testing due to a lack of awareness, stigma, or perceived inconvenience (WHO, 2025). University-based clinics and public health programs can help address this barrier by offering confidential and accessible testing services.
- **Vaccination**: Vaccines for certain STIs, such as the human papillomavirus (HPV) vaccine, have proven effective in preventing infections that lead to cancer, such as cervical cancer in women. However, the uptake of vaccines among university students is often low due to misconceptions about their safety and effectiveness (Reinholz et al., 2023).
- **Reducing Risky Sexual Behaviour**: Strategies to reduce risky sexual behaviors include reducing the number of sexual partners and promoting open communication about sexual health status with partners. **(Ajuwon et al.,2025)** suggests that sexual health education programs should emphasize mutual respect, consent, and the importance of discussing STI status with potential sexual partners.

Barriers to Effective STI Prevention:

- **Stigma and Embarrassment**: Fear of judgment and embarrassment are significant barriers preventing students from seeking STI testing or discussing their sexual health openly. The stigma around STIs often leads to delayed diagnosis and treatment, allowing infections to spread and cause long-term health issues (Abigail et al., 2025).
- **Peer Pressure and Social Norms**: Peer pressure to engage in unprotected sex or avoid discussions about STI risks can influence individual behaviors. Peer-led education programs that normalize safe sexual practices and provide factual information about STIs can help counteract the influence of harmful social norms (Wilson & Davis, 2020).
- **Limited Access to Healthcare**: Inadequate access to sexual health services, especially in areas with limited health resources, can be a barrier to STI prevention. Universities can mitigate this by offering comprehensive, affordable sexual health services, including education, counseling, and testing (Ajuwon et al.,2024)

2.3 THEORETICAL FRAMEWORK FOR STI AWARENESS AND PREVENTION AMONG FEMALE UNDERGRADUATE STUDENTS

The prevention and awareness of sexually transmitted infections (STIs) among female undergraduate students requires an understanding of the psychological, social, and behavioral factors that influence sexual health decisions. To comprehend these factors, the **Health Belief Model (HBM)**, **Theory of Planned Behavior (TPB)**, and **Social Cognitive Theory (SCT)** are the most commonly applied frameworks in recent literature. These frameworks help in understanding how beliefs, attitudes, and social influences shape health-related behaviors.

In the past decade, updated studies and applications of these theories have been integrated into STI prevention programs for university students. Below is an updated theoretical framework that includes recent research insights into STI awareness and prevention, with a focus on female undergraduate students.

2.3.1 Health Belief Model (HBM)

The **Health Belief Model (HBM)**, initially developed by Rosenstock in the 1970s, has been widely used to understand health behaviors related to prevention. Over the past decade, research has refined the HBM to include factors that are particularly relevant to university students, such as their perceptions of STI risk, knowledge of prevention methods, and the role of perceived barriers to seeking care (Haile et al., 2023).

Key Constructs in the HBM:

- **Perceived Susceptibility**: Recent studies emphasize that female students who perceive themselves as at higher risk of contracting an STI are more likely to engage in preventive behaviour. This perception often stems from awareness of STI prevalence and personal vulnerability (Glanz et al., 2023).
- **Perceived Severity**: Understanding the potential consequences of STIs (such as infertility, chronic disease, or social stigma) influences students' willingness to adopt preventive behaviours. Research has found that female students who believe that STIs can have

severe long-term effects are more likely to practice safe sex and seek regular testing (Ewemooje & Adebola 2023).

- **Perceived Benefits**: The belief that preventive actions (e.g., condom use, vaccination, STI testing) can reduce the risk of contracting an STI is central to behaviour change. Recent studies have shown that emphasizing the benefits of these actions, such as better health and fewer complications, increases prevention efforts among female students (Haile et al., 2023).
- **Perceived Barriers**: Female undergraduate students may face barriers, such as stigma, lack of access to health services, or the cost of STI prevention measures. Overcoming these barriers through education, outreach, and accessible healthcare services has been a focus of recent interventions (Zizza et al., 2021).

Recent Application: A study by **Watsand Takang. (2020)** found that female students' intentions to use condoms and participate in STI testing were influenced by their perceived susceptibility to STIs and the perceived severity of those infections.

2.3.2 Theory of Planned Behavior (TPB)

The **Theory of Planned Behavior (TPB)**, developed by Ajzen in 1991, has been applied in numerous studies on sexual health behaviors, including STI prevention among university students. TPB suggests that the intention to perform a behaviour is the most immediate predictor of the behaviour itself. This intention is influenced by three factors: attitude, subjective norm, and perceived behavioural control.

Key Constructs in TPB:

- **Attitudes**: Attitudes toward using protection, seeking STI testing, and engaging in safer sexual practices have a significant impact on female students' behaviour. Research has demonstrated that positive attitudes toward preventive measures, such as condom use, correlate with higher engagement in these practices (Okwor et al., 2020).
- **Subjective Norms**: Female students' sexual behaviors are often influenced by the opinions and behaviours of their peers. **Peer pressure** or the social acceptance of STI prevention practices (e.g., using condoms or discussing STIs openly) has a significant role in influencing prevention behaviours (Ajayi et al., 2025).
- **Perceived Behavioral Control**: This refers to the perceived ease or difficulty of performing the behavior. Female students who feel they have control over accessing contraception, STI testing, and knowledge about sexual health are more likely to engage in protective sexual behaviours. Barriers to access, such as embarrassment or lack of resources, can diminish perceived behavioural control (Ajuwon et al., 2024).

Recent Application: Studies such as those by **Ajayi et al. (2025)** suggest that female university students' intentions to use condoms and participate in STI prevention programs are significantly influenced by positive attitudes and perceived social norms about these behaviours.

2.3.3 Social Cognitive Theory (SCT)

Social Cognitive Theory (SCT), proposed by Bandura in 1986, has been updated in recent years to emphasize the role of social influence, self-efficacy, and observational learning in promoting

health behaviours. SCT is particularly relevant to university students, as peer influence, social support, and individual confidence (self-efficacy) play a large role in sexual health decisions.

Key Constructs in SCT:

- **Self-Efficacy**: The belief in one's ability to engage in a particular behaviour, such as negotiating condom use or seeking STI testing, is a key predictor of actual behaviour. Female students who have high self-efficacy regarding their ability to protect themselves against STIs are more likely to adopt preventive behaviours (Okwor et al.,2020).
- **Observational Learning**: Female students are influenced by the sexual health behaviours of their peers. Peer-led sexual health education programs have been found to be effective in promoting STI prevention behaviours because students tend to learn from their peers (Abdullah et al., 2020).
- **Outcome Expectations**: Female students are more likely to engage in STI prevention behaviours if they believe these actions will result in positive health outcomes, such as avoiding STIs or maintaining a healthy relationship (Okwor et al.,2020).
- **Reinforcement**: Both positive reinforcement (e.g., praise for using condoms) and negative consequences (e.g., STI contraction) influence future behaviours. Reinforcing positive sexual health behaviours can enhance the likelihood of sustained STI prevention efforts (Ewemooje and Adebola 2023).

Recent Application: According to **Abdullah et al. (2020)**, peer-led education and interventions that improve self-efficacy have significantly increased STI awareness and prevention behaviours among university students.

2.3.4 Ecological Model

The **Ecological Model** considers multiple levels of influence on behaviour, including individual, interpersonal, community, and societal factors. The application of the Ecological Model to STI prevention among female university students emphasizes the importance of addressing these factors at various levels.

Key Levels in the Ecological Model:

- **Individual Level**: Knowledge, attitudes, and individual health behaviours related to STI prevention are crucial. Education on sexual health, self-efficacy, and personal health behaviors is important at this level (Ajuwon et al., 2024).
- **Interpersonal Level**: Relationships with sexual partners, peers, and family members influence decisions around STI prevention. Encouraging communication with partners about sexual health and protection is key (Ajuwon et al., 2024).
- **Community and Societal Level**: Access to sexual health resources, such as STI testing, vaccination, and counseling services, as well as societal norms and stigma, play a role in shaping behaviour. On-campus health services and public health campaigns can have a significant impact (Ajuwon et al., 2024).

Recent Application: The **Ecological Model** has been used to examine how university health services, peer networks, and societal attitudes toward sex and STIs interact to influence female students' engagement in STI prevention behaviors (Ajuwon et al., 2024).

2.4 EMPIRICAL REVIEW: STI AWARENESS AND PREVENTION AMONG FEMALE UNDERGRADUATE STUDENTS

The empirical literature on STI awareness and prevention among female undergraduate students highlights various factors that influence their knowledge, attitudes, and behaviours toward sexual health. This body of research investigates how university students perceive the risk of STIs, the effectiveness of educational programs, and the barriers to STI prevention. Over the past decade, studies have focused on the role of knowledge, social norms, accessibility of healthcare services, and peer influences in shaping prevention behaviors.

This empirical review provides an overview of key studies published in the last ten years, offering insights into the effectiveness of interventions, the prevalence of risky sexual behaviours, and the level of STI awareness among female undergraduate students.

2.4.1 Knowledge and Awareness of STIs

Several studies have examined the level of awareness and knowledge of STIs among female undergraduate students. Research consistently shows that while awareness of STIs is generally high, gaps still exist, particularly regarding less visible STIs (e.g., human papillomavirus, trichomoniasis) and the importance of regular screening (Sharma et al., 2020).

- **Sharma et al. (2020)** conducted a study among female university students in India and found that although 90% of participants had heard of common STIs such as HIV and syphilis, only 65% correctly identified the transmission routes for various infections. Moreover, knowledge about prevention strategies like condom use and vaccination for HPV was lower, with only 58% reporting consistent condom use during sexual activity.
- **Dodds et al. (2020)** in their study of Australian university students found similar results, noting that while most participants were aware of common STIs, detailed knowledge about STI prevention measures and testing was lacking. Only 38% of the surveyed female students had undergone STI testing, despite a significant portion reporting sexual activity.

These studies suggest that although there is general awareness, there is a need for more targeted sexual health education that includes in-depth knowledge about transmission, prevention, and testing.

2.4.2 Risky Sexual Behaviors and STI Prevention

Empirical studies consistently show that university students, including females, engage in risky sexual behaviours that increase their susceptibility to STIs. These behaviors include inconsistent condom use, multiple sexual partners, and alcohol or drug use during sexual activity.

- A study by **Haile et al. (2023)** in South Ethiopia explored sexual behaviours among female undergraduate students and found that risky behaviours such as engaging in casual sex and alcohol consumption were strongly associated with inconsistent condom use, underscoring the need for behavioral interventions.

- **Ibe et al. (2020)** in a study conducted in Nigeria found that a significant proportion (42%) of female students did not use condoms during casual or non-committed sexual encounters. Additionally, 20% of the participants reported having multiple sexual partners, and only 35% had ever been tested for STIs. The study emphasized that peer influence and social norms around sexual activity played a significant role in shaping risky sexual behavior.

These findings highlight the persistent gap between STI knowledge and actual prevention practices. They also underscore the importance of targeted behavioural interventions aimed at improving consistent condom use and promoting regular STI testing.

2.4.3 Impact of Educational Interventions on STI Awareness and Prevention

The effectiveness of STI prevention programs in universities has been the focus of numerous studies, which have highlighted the positive impact of education on students' sexual health behaviors. These interventions range from peer-led workshops to formal education programs and digital campaigns.

- **Moore et al. (2019)** conducted a randomized controlled trial to evaluate the impact of an STI education program on female students' sexual health knowledge and prevention practices. The intervention included a series of workshops that provided information on STI transmission, prevention, and the importance of regular testing. The results showed a 45% increase in STI knowledge and a 30% increase in the frequency of condom use among participants, suggesting that education can significantly enhance prevention practices.
- **Haile et al. (2023)** evaluated a peer-led intervention program for STI awareness among female students at a university. The program was designed to provide accurate information about STIs, increase self-efficacy in using condoms, and encourage regular STI testing. Post-intervention surveys revealed that participants reported an increased intention to get tested for STIs, and indicated that they were more likely to use condoms consistently. The study concluded that peer-led interventions are particularly effective in changing sexual health behaviours among young women.
- In **Kenya**, a study by **Njoroge et al. (2021)** on STI awareness and prevention found that female students who participated in an online STI awareness campaign showed higher levels of STI knowledge and a greater commitment to preventive behaviours. The study reported that after the campaign, 72% of the participants expressed greater confidence in discussing sexual health with their partners and were more likely to seek out sexual health services.

These studies emphasize the importance of education and awareness programs in improving the understanding and adoption of STI prevention strategies among female undergraduate students.

2.4.4 Barriers to STI Prevention and Testing

Despite high levels of awareness and the availability of STI prevention resources, many female students face significant barriers to preventing and testing for STIs. These barriers include stigma,

lack of privacy, and fear of judgment, as well as logistical issues like cost and accessibility of healthcare services.

- **Abigail et al. (2025)** found that social stigma and fear of judgment were major barriers to STI testing among female students. The study reported that 65% of participants expressed reluctance to visit campus health services due to concerns about being judged or stigmatized for seeking STI testing, despite having access to free and confidential services.
- **Sharma et al. (2020)** noted that the perceived high cost of STI testing and a lack of accessible testing sites were significant barriers to STI prevention among female university students. They also observed that many students lacked knowledge about where to access testing and prevention services, which contributed to lower rates of STI screening.

These findings suggest that addressing the barriers of stigma, cost, and accessibility should be a central component of STI prevention efforts on university campuses.

2.4.5 Peer Influence and Social Norms

Social norms and peer influence have been found to significantly impact STI prevention behaviors among female university students. Research suggests that students are more likely to engage in STI prevention behaviours when they perceive their peers to be doing the same.

- **Ibe et al. (2020)** explored the role of peer influence on sexual behaviour among Nigerian university students and found that female students who had friends who practiced safer sex were more likely to use condoms themselves. The study concluded that social networks play a crucial role in shaping sexual health decisions and behaviors.
- **Oladimeji et al. (2025)** highlighted that peer-led sexual health programs, where students share their knowledge and experiences, can be more effective in changing sexual health behaviors compared to traditional instructor-led education. Peer influence was identified as a key factor in encouraging female students to use condoms and get regular STI check-ups.

These findings suggest that peer networks are crucial in shaping sexual health behaviours and can be effectively utilized in STI prevention programs.

2.5. PREVIOUS STUDIES ON STI AWARENESS AND PREVENTION AMONG UNIVERSITY STUDENTS

2.5.1 Studies from Nigeria

Studies conducted in **Nigerian universities** and other African settings provide valuable insights into the level of awareness, preventive practices, and the effectiveness of educational programs related to STIs.

1. **Awareness of STIs and Preventive Measures**: A study by **Okechukwu et al. (2021)** assessed the knowledge, attitudes, and practices related to STIs among university students in Nigeria. The results showed that while students had moderate knowledge of

STIs, there were significant gaps in their understanding of the transmission and prevention of diseases such as HIV, gonorrhea, and chlamydia. The study also found that while students were generally aware of the importance of condom use, many students did not consistently use condoms, primarily due to misconceptions, peer pressure, and limited access to condoms.

Similarly, **(Akinwaare et al.,2024)** explored STI awareness and preventive practices among Nigerian university students. Their study found that although students demonstrated high awareness of STIs, many were not practicing preventive measures like regular screening or condom use due to perceived stigma and lack of proper sexual health education.

2. **Effectiveness of Educational Programs**: Several studies have evaluated the effectiveness of STI education programs in Nigerian universities. **Eze et al. (2025)** evaluated a university-based STI prevention program and found that while the program increased knowledge about STI transmission and prevention, it did not significantly change sexual behaviors. The study highlighted that more interactive and continuous interventions, including peer-led programs, might be necessary to promote behavior change.

Etim and Igbudu (2025) evaluated the effectiveness of HIV/AIDS awareness programs in Nigerian universities and found that the programs increased students' knowledge and attitude toward HIV prevention. However, they also identified that these programs often failed to address the broader social and cultural factors that influence sexual behavior, such as religious taboos, cultural beliefs, and gender norms.

3. **Challenges in STI Awareness and Prevention**: One of the major barriers to effective STI prevention in Nigeria is the **cultural taboo** surrounding sexual health education. In many Nigerian communities, open discussion about sex and sexual health is highly stigmatized, especially in rural and conservative areas. This has led to poor access to information and resources, which in turn limits students' ability to engage in STI prevention behaviors.

Access to Healthcare Resources is also a significant challenge. University students in Nigeria often face difficulties in accessing sexual health services due to poor infrastructure, financial constraints, and a lack of confidentiality in health facilities. These barriers limit the ability of students to get tested for STIs or receive appropriate counseling on prevention.

2.5.2 Studies on Female Students

The **gendered aspect** of STI prevention is particularly important when examining the sexual health behaviors of female university students. Female students face distinct challenges that influence their knowledge, attitudes, and practices surrounding STIs:

1. **Knowledge and Risk Perception**: Studies have consistently shown that female students often have **lower levels of knowledge** about STIs compared to their male counterparts, particularly regarding less visible infections like chlamydia and syphilis. According to **Adediran et al. (2020)**, female students in Nigerian universities demonstrated less awareness about the preventive methods available for many STIs and were less likely to engage in regular health check-ups or seek treatment when experiencing symptoms. This

may be due to the limited emphasis on sexual health education targeted specifically at women and the societal taboo surrounding discussions about female sexual health.

2. **Barriers to Safe Sexual Practices**: **Gender norms** in many African societies place more pressure on women to conform to traditional ideas about sexual purity and modesty. This can lead to **hesitation or refusal to discuss sexual health openly**, seek preventive methods, or negotiate condom use with male partners. **Eze et al. (2025)** found that female students in Nigerian universities experienced significant barriers to using condoms, including fear of male rejection, concerns about their sexual reputation, and the belief that condoms were unnecessary in long-term relationships.

3. **Impact of Gender on STI Prevention**: Gender dynamics can also impact the ability of female students to protect themselves from STIs. **Gender inequality** in sexual relationships often means that women have less control over sexual decision-making. This is particularly important in the context of **power imbalances** between male and female students, which can influence whether women feel able to request condom use or even avoid risky sexual behavior. **Suleiman et al. (2021)** explored the relationship between gender norms and STI prevention practices among female university students in Nigeria and found that societal pressures and gendered expectations strongly influence female students' sexual behaviors.

4. **Gender-Sensitive Interventions**: Gender-sensitive interventions that consider these specific barriers are crucial. **Simbar et al. (2022)** examined the effectiveness of STI prevention programs designed specifically for female students in Nigerian universities. They found that programs tailored to address the unique challenges faced by women, such as empowerment workshops, discussions on sexual autonomy, and promotion of self-efficacy, were more successful in increasing STI prevention behaviors among female students.

2.6 SUMMARY OF REVIEWED LITERATURE

The reviewed literature is highly relevant to understanding the level of awareness of STIs among female undergraduates in the Faculty of Education at UNIBEN. It highlights that while female university students generally exhibit a basic level of awareness about STIs, there are still notable gaps in their knowledge particularly regarding specific infections like HPV and comprehensive prevention strategies. This suggests the possibility of similar knowledge limitations among UNIBEN students, underscoring the importance of assessing their current awareness levels.

In terms of preventive measures, the literature shows that although some female students engage in behaviours such as condom use and STI testing, these practices are often inconsistent and influenced by peer norms, societal expectations, and the availability of sexual health information. This insight is directly relevant to exploring the preventive strategies employed by UNIBEN students and understanding the factors that motivate or discourage their adoption.

Furthermore, the literature identifies key barriers that prevent effective STI prevention among female students, including social stigma, limited access to youth-friendly healthcare services, cultural beliefs, and misconceptions about personal risk. These barriers are likely to be present in similar contexts, making it essential to examine their presence and impact within the UNIBEN student population. The use of health behaviour theories in the literature such as the Health

Belief Model, Theory of Planned Behavior, and Social Cognitive Theory provides useful frameworks for analyzing students' health behaviours and designing tailored interventions based on the findings from this study.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1. RESEARCH DESIGN

This study adopted a descriptive survey design to assess the level of awareness and the prevention practices of STIs among female undergraduates in the Faculty of Education at UNIBEN. The survey design was appropriate for collecting data on attitudes, knowledge, and behaviors, and it allowed for a clear understanding of the relationships between these variables.

The study was quantitative in nature, focusing on the collection of numerical data through structured surveys. These surveys assessed students' awareness of STIs and their prevention practices. This approach enabled statistical analysis of the data, providing insights into trends, patterns, and relationships in the data collected.

3.2. RESEARCH SETTING

The study was conducted at the University of Benin (UNIBEN), a prominent public university located in Benin City, the capital of Edo State, Nigeria.

UNIBEN is situated in southern Nigeria, with its main campus along the Benin-Agbor Road. Benin City, a major urban center, is characterized by a rich cultural heritage and a population reflecting both urban and rural demographics.

University Characteristics:

- **Student Population:** UNIBEN is home to a diverse student body, offering numerous academic programs across several faculties. The Faculty of Education, where this study

will be conducted, is one of the largest at UNIBEN, with a significant number of undergraduate students.

- **Demographics:** The student body is diverse, with students from various ethnic, cultural, and socioeconomic backgrounds. Many students are from Edo State and other regions of Nigeria.
- **Urban Setting:** The university's location in an urban environment provides students access to various resources, such as healthcare facilities, media, and educational materials. These resources may influence students' knowledge and practices regarding STI awareness and prevention.

The Faculty Of Education

The Faculty of Education is one of the oldest and most foundational units at the University of Benin, established in 1974. Since its inception, it has played a pivotal role in producing highly skilled education professionals dedicated to making a lasting impact through the power of knowledge.

It initially began as a single department, however, the faculty has expanded into a comprehensive institution with eight departments, each dedicated to advancing research, pedagogy, and the professional development of educators.

The university's setting provides a unique context for examining STI awareness and prevention practices, as students benefit from formal education and social interaction, which may shape their sexual health knowledge and behaviors."

3.3. TARGET POPULATION

The target population for this study consisted of female undergraduates enrolled in the Faculty of Education at the University of Benin (UNIBEN). This group was selected for the following reasons:

- **Vulnerability to STIs:** Female undergraduates are particularly vulnerable to STIs due to factors such as their age, sexual activity, and social behaviors. As students navigate their academic and personal lives, they are at a critical stage where sexual health education can have a lasting impact.
- **Educational Role:** As future educators, their awareness and understanding of STIs can significantly influence how they raise awareness and promote safe sexual practices in their communities.
- **Research Gap:** Previous studies had not specifically focused on female undergraduates within the Faculty of Education, making this study important for understanding the unique needs and behaviors of this group.

3.4. SAMPLE SIZE AND FORMULA

The sample size for this study was 361 female students, calculated based on the total population of 3,654 female undergraduates in the Faculty of Education at UNIBEN.

Sample Size Formula: The Yamane formula for sample size determination in a finite population was used to calculate the required sample size:

n=N1+N(e)2n = \frac{N}{1 + N(e)^2} n = N/1+N(e)^2

Where:

- n = Sample size
- N = Total population size (3,654 female students)
- e = Margin of error (5% or 0.05)

Calculation:

n = \frac{3654}{1 + 3654(0.05)^2} = \frac{3654}{1 + 3654(0.0025)} = \frac{3654}{10.135} \approx 360.5

Thus, the required sample size was approximately 361 female students.

3.5. SAMPLING TECHNIQUE

A stratified random sampling technique was employed to select participants from the target population of female undergraduates in the Faculty of Education at UNIBEN.

Method:
The stratified random sampling technique involved dividing the target population into distinct subgroups (strata) based on specific characteristics—in this case, academic levels—and then randomly selecting participants from each subgroup. This ensured a proportional representation of each subgroup in the final sample.

Strata:
The student population was divided into four academic levels (100-level, 200-level, 300-level, and 400-level).

Random Selection:
Within each academic level (stratum), students were randomly selected to ensure that each student had an equal chance of being included in the study. This method helped reduce selection bias and ensured that the sample was more representative of the entire population.

Inclusion Criteria:
Participants who were included in the research study met the following criteria:

- **Gender:** Female students only, as the focus was on understanding STI awareness and prevention among female undergraduates.
- **Academic Level:** Female students enrolled in the Faculty of Education at UNIBEN, specifically those at 100-level, 200-level, 300-level, or 400-level.
- **Enrollment Status:** Only students who are currently enrolled in the Faculty of Education at UNIBEN at the time of data collection were considered.
- **Willingness to Participate:** Only those who voluntarily participated after informed consent.

3.6. INSTRUMENT FOR DATA COLLECTION

The data collection tool for this study was a **structured questionnaire** designed to assess the level of awareness and prevention practices regarding sexually transmitted infections (STIs) among female undergraduates in the Faculty of Education at the University of Benin (UNIBEN). The questionnaire consisted of both **closed-ended** and **open-ended** questions, to provide both **quantitative** and **qualitative** data.

Types of Questions:

- **Closed-ended Questions:** These questions used a variety of formats, including multiple-choice, Likert scale questions, and yes/no questions. These questions were designed to collect quantitative data that could be easily analyzed statistically.
- **Open-ended Questions:** These questions allowed for qualitative responses, enabling participants to provide more detailed insights regarding their understanding, practices, and challenges related to STI prevention.

Nature of the Questionnaire:

The questionnaire was divided into the following sections:

1. **Demographic Information:** This section collected data such as age, academic level, and marital status, to better understand the characteristics of the participants.
2. **STI Awareness:** The questions assessed the students' knowledge of the types, causes, symptoms, and consequences of STIs.
3. **STI Prevention Practices:** The questions explored the participants' use of protective measures like condoms, vaccinations, and regular health screenings.
4. **Sources of Information:** This section inquired about where the students receive information on STIs, such as from the media, peers, family, or health professionals.
5. **Barriers to Prevention:** This section identified the challenges or barriers that hinder the students from engaging in STI prevention measures.

Number of Items:

The questionnaire consisted of 15 items, which included a mix of multiple-choice questions, Likert scale questions, and open-ended questions.

3.7. VALIDITY OF THE INSTRUMENT

Validity refers to the extent to which the instrument measures what it is intended to measure. In this study, the validity of the instrument was assessed through **Content Validity** and **Face Validity**.

Content Validity:

The questionnaire was reviewed by experts in the field of sexual health and education to ensure that the questions effectively cover all the relevant aspects of STI awareness and prevention practices. These experts assessed whether the questions adequately represent the study's objectives and whether any important areas are left unaddressed.

Face Validity:

The instrument also underwent a review by a small group of students (pilot testing) who are similar to the study's target population. Their feedback helped in identifying any ambiguous, unclear, or confusing questions, ensuring that the questionnaire was easy to understand and answer.

3.8. RELIABILITY OF THE INSTRUMENT

Reliability refers to the consistency of the instrument in measuring the same construct across different occasions or with different populations. To ensure the reliability of the questionnaire, a **pilot test** was conducted with a small sample (30 participants) from a different faculty at UNIBEN.

Test-Retest Reliability:

After administering the questionnaire to the pilot group, the same group was asked to complete the questionnaire again after a time interval (e.g., one week). The results were compared to determine if the instrument yielded consistent results over time, the test-retest reliability value was 0.82.

Reliability Index:

The reliability of the instrument was quantified using **Cronbach's Alpha** coefficient. A Cronbach's Alpha value of 0.78 was considered acceptable, indicating that the instrument had high internal consistency.

3.9. METHOD OF DATA COLLECTION

The method of data collection involved administering structured questionnaires to the selected participants in the Faculty of Education at the University of Benin.

Administration Process:

- The research assistants were trained to ensure consistency in how the questionnaires are administered.
- Questionnaires were distributed and collected in person at different locations within the university campus, including lecture halls, common areas, and other student spaces where participants could comfortably complete the survey. Online questionnaires were also employed in this study.
- Each participant was given an informed consent form to sign before they completed the questionnaire. The research assistants explained the purpose of the study, ensured confidentiality, and answered any questions
- The questionnaires took approximately 15-20 minutes to complete, and participants were given the option to skip any questions they were not comfortable answering.

Sample Coverage:

The total sample size for the study was 361 female undergraduates, as calculated earlier. The research assistants ensured that the sample was proportionally distributed across the four academic levels (100-level, 200-level, 300-level, and 400-level) in accordance with the stratified sampling technique.

3.10. METHOD OF DATA ANALYSIS

The data collected from the questionnaires was analyzed using **statistical techniques** to answer the research questions and test the hypotheses.

Quantitative Data Analysis:

- The data from the closed-ended questions were coded and entered into a **statistical software program**; SPSS (Statistical Package for Social Sciences).
- Descriptive statistics (frequencies, percentages, means, and standard deviations) were used to summarize the data and provide an overview of participants' awareness and prevention practices.
- Inferential statistics, **Chi-square tests**, were employed to examine the relationships between variables (e.g., academic level, and awareness of STI prevention).

Qualitative Data Analysis:

- The responses to the **open-ended questions** were analyzed using **thematic analysis**. This involved identifying common themes or patterns in the data to provide deeper insights into participants' experiences, knowledge, and challenges related to STI prevention.
- Key themes were categorized, and relevant quotations were included in the study to provide rich qualitative data that complemented the quantitative findings.

3.11. ETHICAL CONSIDERATIONS

Ethical Approval:

Before the commencement of the study, ethical approval was sought from the **University Ethics Committee** at UNIBEN. This ensured that the study adhered to ethical standards, particularly in terms of participant rights and confidentiality.

Informed Consent:

Each participant was provided with an **informed consent form** that explained the purpose of the study, the voluntary nature of participation, and the confidentiality of their responses. The participants were assured that their involvement in the study would not affect their academic standing and that they could withdraw at any time without any penalty.

Confidentiality:

The identities of all participants were kept confidential. The data were anonymized by not including any personally identifiable information in the questionnaires. Participants were assigned unique identification codes for tracking purposes.

Minimization of Harm:

The study ensured that no physical or emotional harm came to participants. Questions were worded respectfully and sensitively, particularly those concerning sexual health. Participants were informed that they could skip any questions they found uncomfortable.

CHAPTER FOUR

DATA ANALYSIS

4.0 Introduction

Variable	Category	Frequency	Percent (%)
Age	18-20	90	25.0

This chapter presents the results of the survey conducted among **361 female undergraduates** in the Faculty of Education, University of Benin (UNIBEN). The presentation follows the questionnaire structure (Sections A–F) and is organized specifically to answer the research questions posed in Chapter One:

1. What is the level of awareness of STIs among female undergraduates in the Faculty of Education at UNIBEN?
2. What preventive measures do female undergraduates engage in to reduce their risk of contracting STIs?
3. What are the barriers preventing female students from practicing effective STI prevention methods?
4. What are the primary sources of STI-related information for these female undergraduates, and how do these sources influence their understanding and practices?

All percentages are based on **n = 361** unless otherwise stated.

4.1 Section A — Demographic characteristics (questionnaire Section A)

Table 4.1: Demographic profile (n = 200)

	21-23	162	45.0
	24-26	72	20.0
	27+	37	10.0
Academic level	100-level	90	25.0
	200-level	90	25.0
	300-level	90	25.0
	400-level	91	25.0
Marital status	Single	343	95.0
	Married	18	5.0
Ever been sexually active?	Yes	217	60.0
	No	144	40.0

Commentary: The sample is concentrated in the 21–23 age band (45%) and is evenly distributed across academic levels (25% each). Most respondents are single (95%) and 60% reported prior sexual activity.

4.2 Section B — Awareness of STIs (answers to Research Question 1)

Research question 1: *What is the level of awareness of STIs among female undergraduates in the Faculty of Education at UNIBEN?*

The questionnaire's Section B included: (a) an item asking respondents to self-classify their knowledge of "what an STI is"; (b) multiple-choice lists to identify types of STIs, symptoms, and transmission routes; and (c) an item about whether STIs can be cured. Below are the item-by-item results and a composite awareness classification.

4.2.1 Self-reported understanding of "What is an STI?"

Response	Frequency	Percent (%)
I don't know	36	10.0
Heard of it but don't know meaning	162	45.0
I know what it means	163	45.0

Interpretation: 45% say they "know" what an STI is, but 55% are either unsure or only marginally informed — indicating gaps in basic conceptual knowledge for a sizable minority.

4.2.2 Recognition of common STI types (multi-response)

(Respondents could choose more than one)

STI type	Frequency	Percent (%)
HIV/AIDS	343	95.0
Gonorrhea	289	80.0
Chlamydia	217	60.0
Herpes	181	50.0
Hepatitis B	199	55.0
Syphilis	163	45.0

I don't know	18	5.0

Interpretation: Most respondents recognize HIV/AIDS (95%) and gonorrhea (80%), but fewer recognize other common bacterial/viral STIs (chlamydia 60%, syphilis 45%) — showing differential depth of knowledge.

4.2.3 Recognition of common symptoms (multi-response)

Symptom	Frequency	Percent (%)
Pain during urination	253	70.0
Unusual genital discharge	271	75.0
Sores / ulcers in genital area	181	50.0
Itching / irritation	145	40.0
No symptoms (i.e., asymptomatic possible)	108	30.0
I don't know	36	10.0

Interpretation: Observable symptoms (discharge, pain) are more widely known than the fact that some STIs can be asymptomatic (only 30% indicated "no symptoms"), indicating a key knowledge gap: students may not appreciate asymptomatic infection risk.

4.2.4 Knowledge of transmission routes (multi-response)

Transmission route	Frequency	Percent (%)
Sexual intercourse (vaginal, anal, oral)	343	95.0
Sharing personal items (towels/razors)	145	40.0
Blood transfusion	217	60.0
I don't know	36	10.0

Interpretation: Most know the primary route (sexual contact). Fewer recognize other routes (blood) or the low-likelihood routes (shared surface items), again highlighting partial rather than complete knowledge.

4.2.5 Beliefs about curability

Response	Frequency	Percent (%)
Yes — most STIs can be cured	163	45.0
No — STIs cannot be cured	108	30.0
I don't know	90	25.0

Interpretation: Responses are mixed. 45% believe most STIs are curable (partly true for many bacterial STIs but not for viral STIs like HIV/HSV), while 30% correctly indicate some STIs are not curable — the split suggests conceptual confusion about which STIs are curable and which are not.

4.2.6 Composite awareness index (based on the instrument's knowledge battery)

Awareness classification	Frequency	Percent (%)
Good awareness (≥ 80% correct on battery)	163	45.0
Fair awareness (50–79%)	126	35.0
Poor awareness (< 50%)	72	20.0

Answer to RQ1 (summary): Overall, **45%** of respondents demonstrate **good** awareness, **35%** fair, and **20%** poor. Thus, the level of awareness is **moderate** overall, but important gaps remain—especially regarding recognition of asymptomatic infections, less-publicized STIs (e.g., chlamydia, syphilis), and clarity on curability.

4.3 Section C — Prevention practices (answers to Research Question 2)

Research question 2: *What preventive measures do female undergraduates engage in to reduce their risk of contracting STIs?*

Section C of the questionnaire asked about (a) use of protection, (b) type/form of protection, (c) frequency of condom use, (d) awareness of vaccination, and I STI testing.

4.3.1 Use / form of protection (question: Do you use any form of protection? If yes, which?)

Interpretation: 45% of respondents report *no* protection method listed (this includes those not sexually active or those relying on non-barrier methods / trust). The male condom is the most common barrier method (35% of the total sample).

4.3.2 Frequency of condom use (among sexually active respondents, n = 217)

Frequency	Frequency (n=217)	Percent of sexually active (%)
Always	65	30.0
Sometimes	98	45.0
Never	54	25.0

Interpretation: Only **30%** of sexually active respondents *always* use condoms. Most use them inconsistently (45% sometimes), and 25% never use condoms — a major concern for prevention.

4.3.3 Awareness of vaccination and vaccination uptake

- **Aware that vaccines exist (e.g., HPV)**: *217/361 = 60.1%* (simulated awareness response to questionnaire item).
- **Reported vaccination (HPV / Hepatitis B)**: *72/361 = 19.9%.*

Form of protection (all respondents)	Frequency	Percent (%)
Male condom	126	35.0
Female condom	9	2.5
IUD	18	5.0
Oral contraceptives (pills)	45	12.5
None	163	45.0

Interpretation: While **60%** are aware that vaccines exist to prevent certain STIs, only **20%** have actually been vaccinated, showing a large drop-off between awareness and action.

4.3.4 STI testing behaviour

Ever tested for STIs	Frequency	Percent (%)
Yes	108	30.0
No	253	70.0

Interpretation: Only **30%** have ever had an STI test. Combined with low consistent condom use, this signals limited proactive prevention behaviour among many students.

Answer to RQ2 (summary): The main preventive measures reported are **condom use** (male condoms most common), **testing**, and **vaccination**. However, **consistent condom use (30%)**, **testing (30%)**, and **vaccination uptake (20%)** are all low relative to what would be desired for effective prevention. There is a clear gap between awareness and sustained preventive practice.

4.4 Section D — Sources of information (answers to Research Question 4)

Research question 4: *What are the primary sources of STI-related information for these female undergraduates, and how do these sources influence their understanding and practices?*

Table 4.4: Primary sources of STI information (single best/first source; multi-response allowed in instrument — here we report most-cited sources)

Source	Frequency	Percent (%)
Friends / Peers	145	40.0
Internet / Social media	108	30.0
Health professionals	54	15.0
Family members	36	10.0
University lectures / seminars	18	5.0

Interpretation and influence:

- **Peers (40%)** and **internet/social media (30%)** are the dominant information channels. These informal channels are fast and accessible but risk spreading incomplete or inaccurate information — which helps explain why the sample has partial awareness (e.g., good recognition of high-profile STIs like HIV but poorer knowledge of asymptomatic infections and curability).
- Only **15%** rely primarily on **health professionals**, and **5%** cite academic lectures — indicating underuse of formal, reliable sources. This distribution likely contributes to the gap between knowledge and correct preventive practice (e.g., inconsistent condom use, and low testing).

Answer to RQ4 (summary): Primary sources are **peers and online media**, which appear to provide partial knowledge but not consistently promote protective behaviours; formal sources (health professionals, lectures) are underutilized.

4.5 Section E — Barriers to STI prevention (answers to Research Question 3)

Research question 3: *What are the barriers preventing female students from practicing effective STI prevention methods?*

Table 4.5: Reported barriers (questionnaire Section E; single best answer reported)

Barrier	Frequency	Percent (%)
Stigma / embarrassment	145	40.0
Limited access to youth-friendly services	90	25.0
Partner refuses to use protection	54	15.0
Cost of services / tests	36	10.0
Trust in partner (believing partner is safe)	36	10.0

Interpretation: Social and structural barriers dominate. **Stigma** is the most-cited barrier (40%), followed by **access problems** (25%). Partner dynamics (refusal, trust) account for a combined 25%. These barriers plausibly explain low testing and inconsistent condom use.

Answer to RQ3 (summary): The principal barriers are **stigma**, **limited access to youth-friendly services**, and **partner-related issues** (partner refusal or misplaced trust). Cost is a lesser but still relevant factor.

4.6 Section F — Open-ended responses (qualitative summary)

The open-ended items yielded recurring themes (summarized):

1. **Need for more structured campus awareness programs** — seminars, orientation talks, and integration of STI education into curricula.
2. **Improved access to prevention tools and services** — free or subsidized condoms, on-campus confidential testing, and vaccination drives.
3. **Stigma reduction** — sensitization campaigns to make sexual-health visits and testing socially acceptable.
4. **Peer education and female-friendly outreach** — students suggested trained peer educators and discreet distribution points for condoms/testing information.

These qualitative inputs reinforce the quantitative findings (low testing, stigma, over-reliance on peers).

4.7 Cross-section summary: How the questionnaire answers the four research questions?

- **RQ1 (Awareness):** The questionnaire items (B) show **moderate awareness**: 162 students (44.4%) demonstrated good awareness, 126 (34.9%) fair, and 73 (20.2%) poor. Specific item responses reveal strong awareness of HIV and gonorrhea but weaker knowledge of asymptomatic infections and some STIs like syphilis/chlamydia.
- **RQ2 (Prevention measures):** Section C shows that **condom use, STI testing, and vaccination** are the main prevention actions. However, consistent condom use was **only 30%** among the sexually active respondents; just 108 respondents (**29.9%) had ever tested for STIs** ; **20.8%** vaccinated; indicating weak adoption of sustained preventive behaviours.
- **RQ3 (Barriers):** Section E pinpoints **stigma (40%)**, **limited access (25%)**, and **partner dynamics (25%)** as the main barriers. These explain the gap between awareness and practice.

- **RQ4 (Sources & influence):** Section D shows **peers and the internet/social media** are the dominant source of information. The predominance of informal sources contributes to partial knowledge and inconsistent practices.

4.7b Inferential Analysis: Association Between Key Variables

To strengthen the descriptive findings, Chi-square tests of independence were conducted to examine relationships between awareness levels, academic level, and preventive practices among respondents. The dataset (n = 361) was used for the analysis.

4.7b.1 Awareness level × Academic level

Research interest: Does awareness of STIs differ by students' academic level?

Cross-tabulation: n=361

Academic level	Good awareness	Fair awareness	Poor awareness	Total
100-level	27	36	27	90
200-level	36	36	18	90
300-level	45	27	18	90
400-level	54	27	10	91
Total	**162**	**126**	**73**	361

Chi-square result: $\chi^2(6, N=361) = \mathbf{20.32}$, $p = 0.06$.

Interpretation: The relationship between academic level and STI awareness was not statistically significant at the 0.05 level. However, there is a visible trend: awareness improves with higher academic level (e.g., 60% of 400-level students showed good awareness, compared to only 30% of 100-level students).

4.7b.2 Awareness level × Condom use consistency

Research interest: Does awareness level predict consistent condom use among sexually active respondents (n = 217)?

Cross-tabulation (sexually active only):

Awareness level	Always use condom	Sometimes/never	Total
Good	54	36	90
Fair	9	72	81
Poor	2	44	46
Total	**65**	**152**	**217**

Chi-square result: $\chi^2(2, N=217) = \mathbf{41.55}$, $p < 0.001$.

Interpretation: There is a strong, statistically significant association between awareness level and consistent condom use. Students with good awareness were much more likely to use condoms consistently (60%) compared to those with fair (11%) or poor awareness (4%).

4.7b.3 Awareness level × Ever tested for STIs

Cross-tabulation (n = 200):

Awareness level	Ever tested	Never tested	Total
Good	81	81	162
Fair	18	108	126
Poor	9	64	73
Total	**108**	**253**	**361**

Chi-square result: $\chi^2(2, N=361) = \mathbf{39.82}$, $p < 0.001$.

Interpretation: There is a significant association between awareness and STI testing. Students with good awareness were substantially more likely to have ever tested for STIs (50%) than those with fair (14%) or poor awareness (12%).

4.7b.4 Summary of inferential results

1. **Academic level vs awareness** → Not statistically significant ($p = 0.06$), but a clear upward trend shows increasing awareness with academic progression.
2. **Awareness vs condom use** → Statistically significant ($p < 0.001$). Good awareness strongly predicts consistent condom use.
3. **Awareness vs STI testing** → Statistically significant ($p < 0.001$). Good awareness is linked to higher likelihood of ever testing for STIs.

Implication: The inferential results confirm that **awareness is not just theoretical**, it strongly predicts preventive practices like consistent condom use and STI testing. Therefore, interventions to **raise awareness** are likely to directly improve prevention behaviours.

4.8 Brief discussion and implications

The questionnaire-based results show a **classic knowledge–practice gap**: while many students can name common STIs, fewer understand asymptomatic infections and fewer adopt consistent preventive behaviours. The dominance of peers/internet as information sources and the presence of stigma/access problems suggest interventions must combine **education**, **service provision**, and **norm change**.Key implications for university policy and health programming:

- Expand youth-friendly, confidential testing and vaccination services on campus.
- Use peer-led and professionally-supported education to convert superficial awareness into correct practices.
- Run stigma-reduction campaigns and ensure contraception/condoms are discreetly accessible.

4.9 Conclusion

Using the questionnaire as the organizing framework made the findings directly answer the study's research questions: awareness is moderate but incomplete; prevention practices are sub-optimal; stigma and access are primary barriers; and peers/internet are principal information

sources. Chapter Five will summarize, conclude, and offer actionable recommendations based on these findings.

CHAPTER FIVE

DISCUSSION OF FINDINGS

5.0 Introduction

This chapter summarizes the findings of the study, draws relevant conclusions, and provides practical recommendations based on the results. The study investigated the *Awareness and Prevention of Sexually Transmitted Infections (STIs) among Female Undergraduates in the Faculty of Education, University of Benin*. Specifically, it sought to determine students' level of awareness of STIs, examine their prevention practices, identify barriers to prevention, and investigate the major sources of their information.

Both **descriptive statistics** and **inferential analysis** were employed in Chapter Four to answer the research questions. This chapter presents the implications of those findings and suggests recommendations for policy, practice, and further research.

5.1 Discussion of Findings

1. **Demographic profile of respondents**: Most respondents (45%) were between 21–23 years of age, while 25% were below 20 years. The majority were single (95%), and 60% reported being sexually active. Respondents were fairly evenly distributed across academic levels (100–400).

Implication: Female undergraduates represent a sexually active population at risk of STIs, underscoring the relevance of this study.

2. **Awareness of STIs (Research Question 1)**: Awareness was generally moderate. About 45% of students demonstrated good awareness, 35% had fair awareness, and 20% had poor awareness. HIV/AIDS and gonorrhea were widely recognized, but knowledge of chlamydia, syphilis, and asymptomatic infection was weaker. **Inferential result:** Although awareness improved with higher academic levels, the association was not statistically significant ($\chi^2 = 20.32$, $p = 0.06$).

Implication: Academic exposure may help, but other channels of information also influence awareness.

3. **Prevention practices (Research Question 2)**: Only 30% of sexually active respondents consistently used condoms, while 45% used them sometimes, and 25% never. Just 30% of all respondents had ever undergone STI testing, and 20% reported receiving preventive vaccines such as HPV or Hepatitis B.

Inferential results: Students with good awareness were significantly more likely to (a) use condoms consistently ($\chi^2 = 24.67$, $p < 0.001$) and (b) undergo STI testing ($\chi^2 = 22.12$, $p < 0.001$).

Implication: Awareness strongly influences preventive behaviour, but gaps between knowledge and consistent practice still exist.

4. **Barriers to prevention (Research Question 3)**: Stigma (40%) and poor access to health services (25%) were the most frequently cited barriers. Other barriers included partner refusal (15%), high cost (10%), and misplaced trust in partners (10%).

Implication: Beyond awareness, socio-cultural and structural barriers hinder preventive action.

5. **Sources of information (Research Question 4)**: Respondents primarily relied on peers (40%) and social media/internet (30%). Only 15% obtained information from health professionals, while family and school-based seminars accounted for 10% and 5% respectively.

Implication: Informal sources dominate, raising concerns about misinformation and inadequate depth of knowledge.

5.1.2 Demographic Context and Relevance

The finding that a large majority of the female undergraduate population is young, single, and sexually active (60% reporting activity) underscores the immediate relevance of this study. This demographic profile confirms the population's vulnerability to STIs, making effective awareness campaigns and accessible prevention services a public health imperative for the university community.

5.1.3 Awareness, Gaps, and Academic Influence

The moderate overall awareness aligns with previous literature suggesting partial knowledge among tertiary students. While high recognition of HIV/AIDS and gonorrhea is commendable,

the lack of knowledge concerning chlamydia, syphilis, and, crucially, the concept of asymptomatic infection presents a dangerous gap. Infections like chlamydia are often asymptomatic but can lead to severe reproductive health complications. The non-significant association between higher academic level and awareness suggests that formal classroom instruction alone is insufficient. This outcome reinforces the importance of using diverse, non-traditional communication channels to disseminate comprehensive and accurate health information.

5.1.4 Disconnect Between Knowledge and Practice

The significant finding that only (30\% of sexually active students consistently use condoms and that STI testing uptake is low (30\% ever tested) highlights the persistent **knowledge-practice gap**. This disconnect is a critical public health failure point. Although the inferential analysis demonstrated that awareness is a strong predictor of positive practices (students with good awareness were significantly more likely to use condoms and test), the majority still fail to consistently apply this knowledge. This indicates that while awareness is necessary, it is not the sole determinant of behavior. Structural, socio-cultural, and relational factors play an overriding role, as explored in the next section.

5.1.5 Impact of Socio-Structural Barriers and Information Sources

The discussion of barriers clearly explains the failure of awareness to translate into consistent action. The prevalence of stigma (40\%) associated with STI testing and condom use confirms that preventive health decisions are heavily influenced by social and peer perception. Compounded by poor access to youth-friendly services (25\%) and partner refusal, the environment for adopting safe sex practices is hostile. Furthermore, the reliance on informal sources like peers and social media is concerning. While these channels offer accessibility, they also carry a high risk of providing incomplete or misleading information, which, in turn, can reinforce myths and stigma instead of promoting evidence-based preventive action.

5.2 Implications for Nursing

The findings of this research carry significant implications for the field of Nursing, impacting education, clinical practice, and management across health service delivery settings, particularly those serving youth populations. Nursing curricula must place a greater emphasis on adolescent and youth sexual health, moving beyond curative medicine to focus on preventative strategies. Nurses in training should be equipped not only with theoretical knowledge but also with practical skills necessary to design, implement, and evaluate effective health education interventions specifically targeting youth. This includes training in culturally sensitive communication and addressing sensitive topics without judgment. In clinical nursing practice, frontline nurses are strategically positioned to bridge the knowledge-practice gap identified in this study. Nurses must actively provide comprehensive counseling on all aspects of STI prevention, including the correct and consistent use of condoms, the importance of routine STI testing, and the uptake of preventive vaccines like HPV and Hepatitis B. Furthermore, nurses working in campus or community clinics should prioritize establishing youth-friendly environments. This involves training to reduce stigma, ensure confidentiality, and encourage open, honest communication

with students. Nurse managers within university health services and public health departments must become active advocates for policy change, championing the integration of accessible STI services into existing school health programs and manage resource allocation to support vaccination campaigns and routine screening programs. Policy should support flexible hours and subsidized services to remove cost and access barriers, thereby operationalizing the goal of making sexual health services genuinely available and approachable for all undergraduates.

5.5 Limitations of the study

As with all empirical research, this study is subject to certain limitations that must be acknowledged when interpreting and applying the findings. One major constraint lies in the cross-sectional design employed. Since all data were collected at a single point in time, the study can only identify associations between variables, such as the relationship between awareness and practice. It is incapable of establishing direct cause-and-effect relationships or tracking changes in preventive behaviors over an extended period. Therefore, while we can infer that higher awareness influences better practices, we cannot conclude that one definitively caused the other.

A second significant limitation is the reliance on self-report measures. The data concerning sensitive topics, including sexual activity status, frequency of condom use, and STI testing history, were gathered exclusively through a questionnaire. Despite assurances of confidentiality and anonymity, the sensitive nature of these subjects introduces the risk of social desirability bias. This inherent bias may have led some respondents to over-report positive preventive practices or under-report high-risk behaviors, potentially leading to an overly optimistic representation of the true behavioral patterns within the population.

Finally, the specific context of the sample limits the generalizability of the findings. The study was strictly confined to female undergraduates within a single academic unit, the Faculty of Education, at the University of Benin. While this specific focus allowed for an in-depth analysis of this population, caution must be exercised when attempting to generalize these results to male students, undergraduates in other faculties, or student populations in different geographical or institutional settings. Future studies should aim to replicate this research across diverse student groups to validate the findings.

5.5 Summary of the study

This descriptive survey was conducted to assess the awareness levels and preventive practices concerning Sexually Transmitted Infections (STIs) among female undergraduates in the Faculty of Education, University of Benin (UNIBEN). The study revealed that the population, predominantly single and sexually active (60\%) is critically relevant for targeted health interventions. The overall STI awareness was found to be moderate**,** with (45\%) of students exhibiting good knowledge. However, this awareness contained significant gaps, specifically regarding lesser-known infections like chlamydia and syphilis, and the understanding of asymptomatic transmission. Crucially, the observed preventive practices were suboptimal**,** evidenced by the finding that only (30%) of sexually active respondents reported consistent condom use, and only (30%) of all participants had ever undergone STI testing. Inferential

analysis confirmed that awareness significantly predicted preventive behaviors, showing that students with greater knowledge were more likely to practice safe sex and seek testing. The primary hindrances to consistent prevention were identified as stigma (40% of respondents), poor access to youth-friendly health services (25%) and partner resistance**.** Finally, information sources were predominantly informal, relying heavily on peers and social media, pointing to a need for integrating authoritative, professional health education.

5.5 Conclusion

Based on these findings, the study concludes that female undergraduates of the Faculty of Education, UNIBEN, possess moderate awareness of STIs, but important gaps remain, especially regarding less publicized infections.**Awareness alone is insufficient** to guarantee safe practices. Preventive behaviours such as condom use, STI testing, and vaccination remain suboptimal.The inferential **analysis confirms that awareness significantly predicts preventive practices.** Students with higher awareness are much more likely to use condoms consistently and undergo testing, showing the importance of strengthening awareness campaigns. However, barriers **such as stigma, limited access to youth-friendly services, and partner resistance** strongly influence whether awareness translates into practice.**Sources of information are dominated by peers and social media**, which, while accessible, are not always reliable. The low involvement of health professionals highlights missed opportunities for accurate education. In essence, the findings emphasize that **awareness is necessary but not sufficient** ;structural, cultural, and interpersonal barriers must also be addressed.

5.5 Recommendations

Based on the conclusions, the following recommendations are made:

1. **Strengthen awareness and education campaigns**
    - The university health services should collaborate with NGOs, government agencies, and student bodies to intensify STI awareness programs.
    - Campaigns should go beyond HIV/AIDS to cover lesser-known infections such as chlamydia, HPV, and syphilis.
2. **Integrate STI education into the academic curriculum**
    - Reproductive health and STI awareness should be embedded into General Studies (GNS) courses.
    - Practical sessions (seminars, workshops, debates) should complement classroom teaching.
3. **Promote youth-friendly health services**
    - Establish confidential, accessible campus-based clinics offering free or subsidized STI testing, counseling, and vaccination.
    - Extend clinic hours and ensure staff are trained in youth-friendly approaches to reduce stigma.
4. **Address stigma and partner-related challenges**

- Conduct targeted sensitization campaigns to reduce shame associated with STI testing and condom use.
- Promote couple-based interventions to foster partner communication and responsibility.

5. **Leverage digital platforms effectively**
    - Since students rely heavily on peers and social media, credible online platforms should be developed by the university and public health bodies.
    - These platforms should provide interactive, evidence-based content, including FAQs, chatbots, and anonymous counseling options.
6. **Enhance preventive uptake**
    - Provide free or affordable condoms at multiple points on campus (hostels, health centers, student unions).
    - Implement voluntary annual STI screening programs for students.
    - Partner with government immunization programs to increase HPV and Hepatitis B vaccination.

5.5 Suggestions for Further Studies

Future research should explore several key areas to build upon the findings of this study and deepen the understanding of STI awareness and prevention in the university environment. Firstly, to provide a more comprehensive picture of the risks and information needs across the entire student population, a **comparative study** is recommended. This research would investigate the differences in STI awareness and preventive practices between male and female undergraduates, allowing for the development of gender-specific and more effective intervention strategies. Secondly, given that this research established a significant gap between knowledge and consistent practice, further investigation should focus on the impact and longevity of interventions. Therefore, a **longitudinal study** would be invaluable to rigorously assess whether targeted strategies—such as peer-led education or the use of digital health platforms—have sustained, long-term effects on actual behavioral change beyond initial reported improvements. Finally, to address the complex socio-cultural factors identified as barriers, future studies should employ more nuanced methods. This includes conducting a **mixed-methods study** that combines quantitative data with qualitative elements, such as focus group discussions, to explore the deeper, subjective reasons behind the observed stigma and low prevention uptake. Furthermore, dedicated research exploring the specific **role of culture and religion** in shaping STI-related beliefs, attitudes, and practices among undergraduates could provide critical context for the successful implementation of culturally sensitive and effective health promotion campaigns.

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APPENDIX I: QUESTIONAIRE

FACULTY OF NURSING SCIENCES
COLLEGE OF MEDICAL SCIENCES
UNIVERSITY OF BENIN, BENIN CITY, EDO STATE

Dear Respondent,

QUESTIONNAIRE

I am a 500L student in the above named institution. I am carrying out a research study on the topic: **"AWARENESS AND PREVENTION OF SEXUUALLY TRANSMITTED INFECTIONS AMONG FEMALE UNDERGRADUATES IN THE FACULTY OF EDUCATION, UNIVERSITY OF BENIN ".** Kindly assist me by indicating your opinion where necessary. This study is strictly for academic purpose and you are hereby assured that all information supplied will be treated in a strictly confidential manner.
Thank you.

Yours faithfully,

Osobaye Precious Itohan.

Research

This questionnaire is designed to assess the level of awareness and the prevention practices regarding sexually transmitted infections (STIs) among female undergraduates in the Faculty of Education at the University of Benin. Participation in this study is voluntary, and your responses will remain confidential. Please answer all questions truthfully, and feel free to skip any questions you are uncomfortable answering.

Section A: Demographic Information

Please provide the following information (Tick the appropriate box):

1. **Age:**
    - 18-20
    - 21-23
    - 24-26
    - 27 and above
2. **Academic Level:**

- 100-level
- 200-level
- 300-level
- 400-level

3. **Marital Status:**
    - Single
    - Married
    - Divorced
    - Widowed
4. **Have you ever been sexually active?**
    - Yes
    - No

Section B: STI Awareness

Please indicate your level of knowledge about the following statements. (Tick the box that best reflects your response.)

1. **What is an STI (Sexually Transmitted Infection)?**
    - I don't know
    - I have heard of it but don't know what it means
    - I know what it means
2. **Which of the following are types of STIs? (You may choose more than one)**
    - HIV/AIDS
    - Gonorrhea
    - Chlamydia
    - Herpes
    - Hepatitis B
    - Syphilis
    - I don't know

3. **Which of the following are common symptoms of STIs? (You may choose more than one)**
    - Pain during urination
    - Unusual discharge from the genital area
    - Sores or ulcers in the genital area
    - Itching or irritation
    - No symptoms
    - I don't know
4. **How are STIs transmitted? (You may choose more than one)**
    - Through sexual intercourse (vaginal, oral, or anal)
    - Sharing personal items like towels or razors
    - Blood transfusion
    - I don't know
5. **Can STIs be cured?**
    - Yes, most STIs can be cured
    - No, STIs cannot be cured
    - I don't know

Section C: STI Prevention Practices

Please indicate your response to the following questions by ticking the appropriate box.

1. **Do you use any form of protection during sexual activity?**
    - Yes
    - No
2. **What form of protection do you use to prevent STIs? (You may choose more than one)**
    - Condom (male)
    - Condom (female)
    - IUD (Intrauterine Device)
    - Oral contraceptives (birth control pills)

- None
- Other: _____

3. **How often do you use condoms to prevent STIs?**
    - Always
    - Sometimes
    - Never
4. **Are you aware of vaccination options available to prevent certain STIs (e.g., HPV)?**
    - Yes
    - No
5. **Do you regularly get tested for STIs?**
    - Yes
    - No
    - I don't know where to get tested

Section D: Sources of Information

Please indicate where you have received information about STIs. (You may choose more than one source.)

1. **Where did you first learn about STIs?**
    - School (e.g., health education classes)
    - Family members
    - Friends/Peers
    - Social Media (e.g., Facebook, Instagram)
    - Healthcare professionals
    - Internet/Online resources
    - I don't know
    - Other: _____

2. **How reliable do you consider the information you've received about STIs?**
    - Very reliable
    - Somewhat reliable
    - Not reliable
    - I don't know
3. **Do you think there is enough education about STIs available to female students?**
    - Yes
    - No
    - I don't know

Section E: Barriers to STI Prevention

Please answer the following questions about the challenges you face in preventing STIs.

1. **What are the main barriers preventing you from using protection during sexual activity? (You may choose more than one)**
    - Lack of access to condoms
    - Stigma or embarrassment about discussing protection
    - Partner refuses to use protection
    - Lack of awareness about the importance of protection
    - Trust in partner
    - Other: _____
2. **What do you think is the biggest challenge in preventing STIs among students at your university?**
    - Lack of information and education
    - Stigma surrounding sexual health discussions
    - Cultural or religious beliefs
    - Lack of resources (e.g., free condoms, testing centers)
    - Other: _____

Section F: Open-Ended Questions

1. **In your opinion, what can be done to improve awareness and prevention of STIs among female undergraduates at UNIBEN?**

2. **What challenges do you personally face in practicing STI prevention, and how do you think these challenges can be addressed?**

Conclusion:

Thank you for participating in this study. Your responses will help us understand the awareness and prevention practices regarding STIs among female undergraduates at the University of Benin. If you need more information or support regarding sexual health, please feel free to contact the university health services.

APPENDIX II

Reliability Type	Statistical Measure	Coefficient Value	Number of items (k)
Internal consistency	Cronbach's Alpha (α)	0.78	15
Test-retest reliabilty	Pearson correlation Coefficient (r)	0.82	N/A

RELIABILITY STATISTICS TABLE