

**KNOWLEDGE, ATTITUDE AND PREVENTIVE PRACTICES TO SEXUALLY
TRANSMITTED INFECTIONS AMONG YOUNG PEOPLE IN OVIA NORTH EAST
LOCAL GOVERNMENT AREA, EDO STATE**

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SCHOOL OF MEDICINE

COLLEGE OF MEDICAL SCIENCES

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**A ONE YEAR PROJECT PRESENTED TO THE DEPARTMENT OF PUBLIC
HEALTH AND COMMUNITY MEDICNE, SCHOOL OF MEDICINE, COLLEGE OF
MEDICAL SCIENCES, UNIVERSITY OF BENIN, BENIN CITY, EDO STATE,
NIGERIA**

**IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD OF THE
BACHELOR OF MEDICINE, BACHELOR OF SURGERY (MBBS) DEGREE**

DECLARATION

I hereby declare that this research project titled “**KNOWLEDGE, ATTITUDE AND PREVENTIVE PRACTICES TO SEXUALLY TRANSMITTED INFECTIONS AMONG YOUNG PEOPLE IN OVIA NORTH EAST LOCAL GOVERNMENT AREA, EDO STATE**” was carried out by **EBIYOMARE KELVIN EDESIRI & EDOKPA OSEBHAHIEMEN FAITH** with matriculation numbers **MED1807386 & MED1807388** respectively under supervision of **Professor V.Y Adam** and has not been submitted anywhere else in part or in full for the award of a degree or certificate.

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CERTIFICATION

This is to certify that this research study titled “**KNOWLEDGE, ATTITUDE AND PREVENTIVE PRACTICES TO SEXUALLY TRANSMITTED INFECTIONS AMONG YOUNG PEOPLE IN OVIA NORTH EAST LOCAL GOVERNMENT AREA, EDO STATE**” was conducted by **EBIYOMARE KELVIN EDESIRI & EDOKPA OSEBHAHIEMEN FAITH** with matriculation numbers **MED1807386 & MED1807388** respectively under supervision of **Professor V.Y Adam**. In the Department of Public Health and Community Medicine, College of Medical Sciences, University of Benin as part of the requirements for the award of Bachelor of Medicine, Bachelor of Surgery (MBBS) degree.

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DEDICATION

This project is humbly dedicated to God Almighty, the giver of wisdom, knowledge, strength, and understanding, whose grace and guidance made the successful completion of this work possible.

We also dedicate this project to our beloved parents, whose endless love, sacrifices, encouragement, and prayers have been the pillar of our success. Their constant support, guidance, and faith in us continue to inspire us to achieve greater heights.

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I give heartfelt thanks and gratitude to my mother Mrs. Victoria Musa Akponewhe for her endless love, sacrifices, prayers, and constant support throughout my academic journey. I remain deeply grateful to my late father Mr. Bernard Edesiri Akponewhe, whose values, guidance, teachings and memories I will always cherish as they continue to inspire me every day.

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LIST OF ABBREVIATIONS

AIDS	Acquired Immune Deficiency Syndrome
CDC	Centre for Disease Control and Prevention
HIV	Human Immunodeficiency Virus
HPV	Human Papilloma Virus
HSV	Herpes Simplex Virus
LGA	Local Government Area
NDHS	Nigeria Demographic and Health Surveys
SRH	Sexual and Reproductive Health
STIs	Sexually Transmitted Infections
SPSS	Statistical Package for the Social Sciences
UN	United Nations
WHO	World Health Organization

OPERATIONAL DEFINITION OF TERMS

Attitude: Beliefs, perceptions, and feelings individuals hold about something are often reflected in the person's behaviour

Knowledge: Awareness, understanding and information that individuals possess about STIs, including their causes, symptoms, mode of transmission, and complications

Preventive Practices: Actions taken by individuals to avoid contracting or spreading STIs, such as consistent condom use, regular testing, vaccination and limiting sexual partners

Self-medication: Use of drugs or traditional remedies without consulting a qualified healthcare professional, often through patent medicine vendors or local sources

Sexually Transmitted Infections: Infections that are primarily spread through sexual contact including vaginal, anal and oral sex; usually caused by bacteria, viruses and parasites

Treatment-Seeking Behaviour: The decision-making process and actions individuals take when seeking care for STI symptoms, including whether they will visit a health facility or self-medicate

Vaccination: A Preventive health measure that involves the administration of a vaccine to help the body develop immunity against specific infections

Youth/Young people: Individuals aged between 10 - 24 years often characterized by increased vulnerability to STIs due to behavioural, social and biological factors

ABSTRACT

BACKGROUND: Sexually transmitted infections (STIs) remain a major global public health problem, especially among youths, causing reproductive health, social, and economic challenges. They are caused by various bacteria, viruses, and parasites, with some curable infections and others requiring lifelong management. Untreated STIs can result in infertility, chronic pain, pregnancy complications, increased HIV risk, and certain cancers. Prevention includes abstinence, consistent condom use, vaccination, limiting sexual partners, and regular testing, though many youths do not practice these consistently. In Nigeria and sub-Saharan Africa, poor sexual health knowledge, misinformation, peer pressure, and risky behaviours continue to increase STI prevalence among young people.

OBJECTIVES: This study assessed the knowledge, attitude, and preventive practices towards sexually transmitted infections (STIs) among young people in Ovia North East Local Government Area, Edo State, with the goal of identifying gaps and recommending effective interventions for STI awareness and prevention.

METHODS: A descriptive cross-sectional study was conducted amongst 633 youths in Ovia North East LGA of Edo State Nigeria, selected by multistage sampling. Data were collected using a structured questionnaire adapted from validated tools administered via an online google form with required answers, and analyzed with IBM SPSS version 27. Descriptive statistics, chi-square and logistic regression identified predictors at 95% CI with significance at $p < 0.05$.

RESULTS: A total of 633 respondents participated in the study with a 100% response rate. The mean age of respondents was predominantly within 20–24 years 490 (77.4%), while 364 (57.5%) were females and 621 (98.1%) were single. Majority of respondents had heard of sexually transmitted infections (STIs) 604 (95.4%), with schools (86.4%), social media (78.1%), and health workers (75.7%) as major sources of information. Overall, 593 (93.7%) respondents had good knowledge of STIs, while 481 (76.0%) demonstrated positive attitudes towards STI prevention and management. Preventive practices were generally high, with 604 (95.4%) having good preventive practices; however, only 199 (31.4%) had ever tested for STIs, and 183 (28.9%) had received STI vaccination. Among respondents, 72 (11.4%) reported experiencing STI symptoms, with itching (6.6%), discharge (4.9%), and painful urination (4.3%) being the most

common symptoms. Hospitals were the most preferred place for treatment 477 (75.4%), followed by private clinics 107 (16.9%). Despite this, overall utilization of appropriate treatment options was poor, as 586 (92.6%) had poor treatment utilization while only 47 (7.4%) had good treatment utilization. Significant predictors of good preventive practice included positive attitude towards STIs (OR = 2.617, $p = 0.041$), while predictors of good treatment utilization included increasing age (OR = 1.213, $p = 0.026$).

CONCLUSION: Young people in the study area demonstrated high knowledge, positive attitudes, and good preventive practices regarding sexually transmitted infections. However, uptake of important preventive services such as STI screening and vaccination remained low, while utilization of appropriate treatment options was poor. This gap between knowledge and actual health-seeking behaviour suggests persistent barriers such as stigma, delayed treatment seeking, and limited access to youth-friendly sexual health services. Strengthening sexuality education, expanding confidential screening and vaccination services, and promoting early treatment-seeking behaviour are recommended to improve STI prevention and management among young people.

KEYWORDS: Sexually transmitted infections, Knowledge, Attitude and Practice, Young people, Preventive behaviors, Treatment utilization

CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND

Sexually transmitted infections (STIs) continue to be a major public health concern across the world, particularly affecting the younger population. These infections transmitted through vaginal, anal, or oral sex pose serious consequences for reproductive health and carry with them both social and economic burdens. Beyond the immediate discomfort or medical challenges, they present, STIs can lead to infertility, chronic pain, pregnancy complications, increased vulnerability to HIV, and even certain cancers. As the world grows more interconnected and sexual behaviours become increasingly diverse and unregulated, the global burden of these infections continues to rise.¹⁻³

Scientific evidence indicates that over 30 different pathogens, including bacteria, viruses, and parasites, can be transmitted through sexual activity. Among these, eight are of particular concern due to their high prevalence. Four of these, chlamydia, gonorrhoea, syphilis, and trichomoniasis, are currently curable, but if left untreated, they can lead to serious complications. The remaining four: Hepatitis B, Herpes Simplex Virus (HSV), Human Papillomavirus (HPV), and Human Immunodeficiency Virus (HIV) are viral infections that, while not curable, can be managed with long-term treatment. Complicating matters further, emerging infections such as monkeypox, Zika virus, Ebola, and *Neisseria meningitidis* have recently been identified as sexually transmissible, widening the spectrum of concern. There is also a resurgence of neglected infections like chancroid, granuloma inguinale, and lymphogranuloma venereum, further stressing global health systems.^{1,4}

To combat the rising burden of STIs, a combination of primary and secondary prevention strategies is critical, especially among young people. Primary prevention focuses on avoiding infection altogether with abstinence being the only completely effective method. Other highly effective strategies include the consistent use of condoms for all sexual acts (vaginal, anal, and oral), which acts as a barrier to transmission for many infections. Vaccination is also represented a major advance in STI prevention, with safe and highly effective vaccines available against Human Papilloma virus (HPV) and Hepatitis B. Additionally, limiting the number of sexual partners and maintaining a mutually monogamous relationship with an uninfected partner can significantly reduce the risk of transmission. Secondary prevention strategies involve actions to detect and treat infections early to prevent complications and further spread. For sexually active individuals, this involves regular STI testing and screening, which is vital as many STIs are asymptomatic. Despite the availability of these measures, the adoption of consistent preventive practices, such as condom use and vaccination remain a challenge among young adults globally.⁵ Among those most vulnerable to these infections are young people, defined by the United Nations as individuals between the ages of 15 and 24. This transitional phase from childhood to adulthood is often characterized by increased curiosity, experimentation, peer pressure, and risk-taking behaviour. At this stage, many begin to explore romantic and sexual relationships, often without adequate guidance or information. In the United States alone, over 20 million new cases of STIs are reported each year, with the majority occurring in people within this age group. The situation is even more concerning in lower- and middle-income countries, where access to sexual education and healthcare services remains limited.^{2, 6}

In many parts of sub-Saharan Africa, including Nigeria, young adults face multiple sources of influence that shape their sexual behaviour. These range from cultural expectations and social

media to peer dynamics and misinformation. Although awareness about HIV/AIDS is widespread, many remain uninformed about other STIs and their modes of transmission. Practices such as having multiple sexual partners, inconsistent condom use, and reluctance to seek medical help are common, despite the availability of affordable preventive measures. As a result, STIs continue to spread, silently undermining the health and potential of an entire generation.^{3,4}

1.2. STATEMENT OF THE PROBLEM

The crisis of Sexually Transmitted Infections (STIs) presents a massive, ongoing public health challenge globally. Every day, more than one million people contract an STI, and each year, around 374 million new infections are recorded for just four of the most common ones: chlamydia (126 million), gonorrhoea (82 million), syphilis (7.1 million), and trichomoniasis (156 million). While these numbers point to a worldwide health challenge, the burden is not evenly distributed as young people (between 15-24 years) are disproportionately affected, not only by the infections themselves but also by the long-term consequences of delayed or inappropriate treatment. The consequences of this is particularly devastating in developing countries where resource limitations compound the long-term health, social and economic impact.^{1,3}

A core issue is the disparity between awareness and practice, driven by gaps in knowledge and problematic attitudes. Although many Nigerian youths exhibit encouraging knowledge levels e.g. 79.3% correctly identifying unprotected sexual intercourse and blood transfusion as transmission routes and 97.8% knowing that STIs can affect both men and women equally, this awareness is focused narrowly on HIV/AIDS. Knowledge about less common, though still prevalent STIs like trichomoniasis or molluscum contagiosum remains as low as 17.8% even in countries with

advanced healthcare systems. Furthermore, less than half of Nigerian respondents (46.9%) identified ‘mother to child’ transmission. This incomplete understanding leaves them ill equipped to make fully informed decisions.^{3, 8}

Despite this general knowledge, many young Nigerians still engage in high-risk sexual practices. University-based studies show that a significant number of students begin sexual activity as early as 12 years. Internationally, university students are commonly sexually active (85.16%) and reported a multiplicity of sexual partners (50.31%). While Nigerian students show slightly better patterns, with a large number (79.3%) reporting condom use and about half (53.8%) having only one partner, a dangerous attitude-behaviour gap remains. For example, some respondents held incorrect beliefs that taking drugs before sex (25.5%) or taking alcohol before sex (17.9%) could prevent STIs. These figures emphasize that simply possessing knowledge does not translate into consistent preventive action.^{3,4}

Beyond inconsistent behavioural choices, the failure to utilize highly effective preventive methods is a glaring issue. While a high percentage of respondents agreed with using condoms (91.6%) and believed screening is good (94.2%), the uptake of vaccination is critically low. This is a major concern as 49.1% of the young people have never been vaccinated for Hepatitis B, and an overwhelming 95.3% have not been vaccinated for Human Papilloma Virus (HPV). Only a minority (34.9%) knew that some STIs can be prevented by vaccination. This lack of preventive practice exposes the young population to entirely avoidable, serious, long-term health outcomes.³

For the treatment of STIs, many sexually active youths turn to self-medication, using drugs from patent medicine vendors or traditional remedies rather than seeking proper medical care. This practice is chosen because traditional remedies are often considered more effective by

participants. These approaches are not only ineffective but can also lead to complications, reinfections, and drug resistance. Even when symptoms are present, stigma and misinformation often prevent young people from seeking professional help. In some local contexts, fewer than half (46%) of those with STI symptoms consult healthcare providers. This pattern highlights a major gap between knowledge and practice, a gap that must be bridged to improve outcomes.^{7,9}

The combination of fragmented knowledge, high-risk practices, critically low vaccine uptake, and dangerous self-medication creates an urgent public health crisis. These challenges are often amplified in semi-urban and rural areas like Ovia North East LGA, where access to youth-friendly services is constrained and cultural factors may pose greater barriers. Since age, level of education, and attitude are significantly associated with knowledge and preventive practices, this study is essential to investigate the specific local dimensions of these problems and identify the factors influencing preventive practices among young people in Ovia North East LGA.³

1.3. JUSTIFICATION OF THE STUDY

Addressing the problem of STIs among young people is not just a medical necessity; it is a developmental imperative. The youth population represents the foundation of any society's future, and their health, particularly sexual and reproductive health, plays a critical role in determining national well-being. In Nigeria, the challenges related to STI prevention, treatment, and education are amplified by socio-cultural norms, economic limitations, and infrastructural gaps in the healthcare system. These infrastructural issues often include lack of functional, dedicated STI testing and counselling centres, frequent stock-outs of essential antibiotics, lack of privacy at primary healthcare centres (making youths reluctant to visit), and the absence of

adequately trained healthcare workers who can provide youth-friendly, non-judgmental services.^{10,11}

Studies conducted in Ibadan and Lagos have highlighted the tendency of young people to avoid formal healthcare systems in favour of traditional remedies and over-the-counter medications. This not only delays effective treatment but also leads to poor health outcomes and contributes to the continued spread of infections. For example, self-medication with inappropriate antibiotics can lead to drug-resistant strains of Gonorrhoea, while delayed treatment of Chlamydia or Gonorrhoea in women significantly increases the risk of Pelvic Inflammatory Disease (PID) and subsequent infertility. Similarly, using traditional remedies for syphilis can fail to cure the infection, allowing it to progress to severe secondary or tertiary stages, which is a major contributor to continued transmission within the community. In Edo State, even among secondary school students with relatively high STI awareness, actual preventive behaviour is lacking. Abstinence remains the most commonly practiced method, but other important strategies, like condom use, vaccination, and regular screening, are often ignored.^{3,7,11}

This situation demands targeted attention, especially in resource-limited settings like the Ovia North East Local Government Area, where cultural beliefs and limited access to youth-friendly healthcare services create substantial additional barriers. It is within this specific context that this study seeks to make a difference. By examining the knowledge, attitudes, and practices of young people in this area, we can gain deeper insight into the specific factors that influence their health decisions. This information can then be used to design locally relevant, culturally sensitive interventions that empower young people to take control of their sexual and reproductive health.

The findings of this study will not only inform public health education but may also influence policy decisions and community-based programming. Ultimately, our goal is to promote

healthier behaviours, reduce the prevalence of STIs, and ensure that young people are better equipped to make informed decisions about their sexual well-being.

1.4. RESEARCH QUESTIONS

1. What is the level of knowledge about sexually transmitted infections (STIs) among young people in Ovia North East LGA?
2. What are the common sources of information on STIs for young people in Ovia North East LGA?
3. What is the attitude of young people in Ovia North East LGA towards STIs?
4. What preventive practices do young people in Ovia North East LGA adopt against STIs?
5. What treatment options do young people in Ovia North East LGA utilise when managing STIs?
6. What factors influence young people's adoption of STI preventive measures young people in Ovia North East LGA?

1.5. AIM AND OBJECTIVES

AIM

To assess the knowledge, attitude and preventive practices towards Sexually Transmitted Infections (STIs) among young people in Ovia North East LGA, with the goal of identifying gaps and recommending effective interventions for STI awareness and prevention.

SPECIFIC OBJECTIVES

1. To assess the knowledge of STIs among young people in Ovia North East Local Government Area.
2. To ascertain the attitude of young people in Ovia North East Local Government Area towards STIs.
3. To determine the practice of STIs preventive measures by young people in Ovia North East Local Government Area.
4. To identify treatment options utilized by young people in Ovia North East LGA for the management of STIs.
5. To identify the factors associated with the preventive practices of STIs by young people in Ovia North East LGA.

CHAPTER TWO

LITERATURE REVIEW

This chapter reviews literature on knowledge, attitude and preventive practices towards sexually transmitted infections (STIs) among young people. It examines evidence from global, regional and local studies, focusing on knowledge, attitudes, preventive practices, treatment seeking patterns and the factors influencing them.

2.0 THEORETICAL FRAMEWORK

This study is based on the **Health Belief Model** (HBM), which is a theory used in health education and public health to explain why people adopt or fail to adopt health behaviours. The model proposes that a person's health behaviour depends on their perception of a disease and the benefits versus barriers of taking action.¹²

The model has six (6) main components:

- **Perceived Susceptibility:** This refers to an individual's belief about their risk of developing a disease or health condition
- **Perceived severity:** How serious a person believes the disease or its consequences are
- **Perceived Benefits:** A person's belief that a particular health action will reduce their risk or severity of the disease
- **Perceived barriers:** These are factors that prevent a person from taking action
- **Cues to Action:** These are triggers that stimulate people to take health action
- **Self-efficacy:** This refers to a person's confidence in their ability to perform the health behaviour successfully

2.1 CONCEPTUAL FRAMEWORK

A conceptual framework in research is used to understand a research problem and guide the development and analysis of the research. It serves as a roadmap to conceptualize and structure work by providing an outline that connects different key concepts, variables, relationships and assumptions within the field of study to guide the academic inquiry. It draws from existing theories, models, or established bodies of knowledge to provide a structure for understanding the research problem.¹³

Various models of conceptual framework are usually utilized in research. Some include:

- The Independent variable- dependent variable model (IV-DV model) - In this model, dependent and independent variables are defined and the relationship focuses on how the independent variables affect the outcome of the dependent variables which are being evaluated.
- Input, process and output model (The IPO model) – focuses on the factors causing a phenomenon (input), the actions taken (process), and the results (output)
- Others include: Thematic framework, mental model/cognitive map, concept map etc.

The conceptual framework of this study is based on the Independent variable- dependent variable model (IV/DV model). The independent variables are the socio-demographic characteristics such as Age, Sex, educational level, Religion, Socio-Economic status, Information source, which are also the factors associated with STIs prevention. The dependent variables are the Knowledge of STIs, Preventive practices, Attitude towards STIs and Treatment options utilized. Socio-demographic factors influence respondents' knowledge of STIs. Knowledge subsequently shapes attitudes towards STIs, which in turn determines preventive practices and treatment-seeking behaviour. The

framework therefore illustrates that knowledge and attitude serve as intermediary variables linking socio-demographic factors to STI prevention.¹³

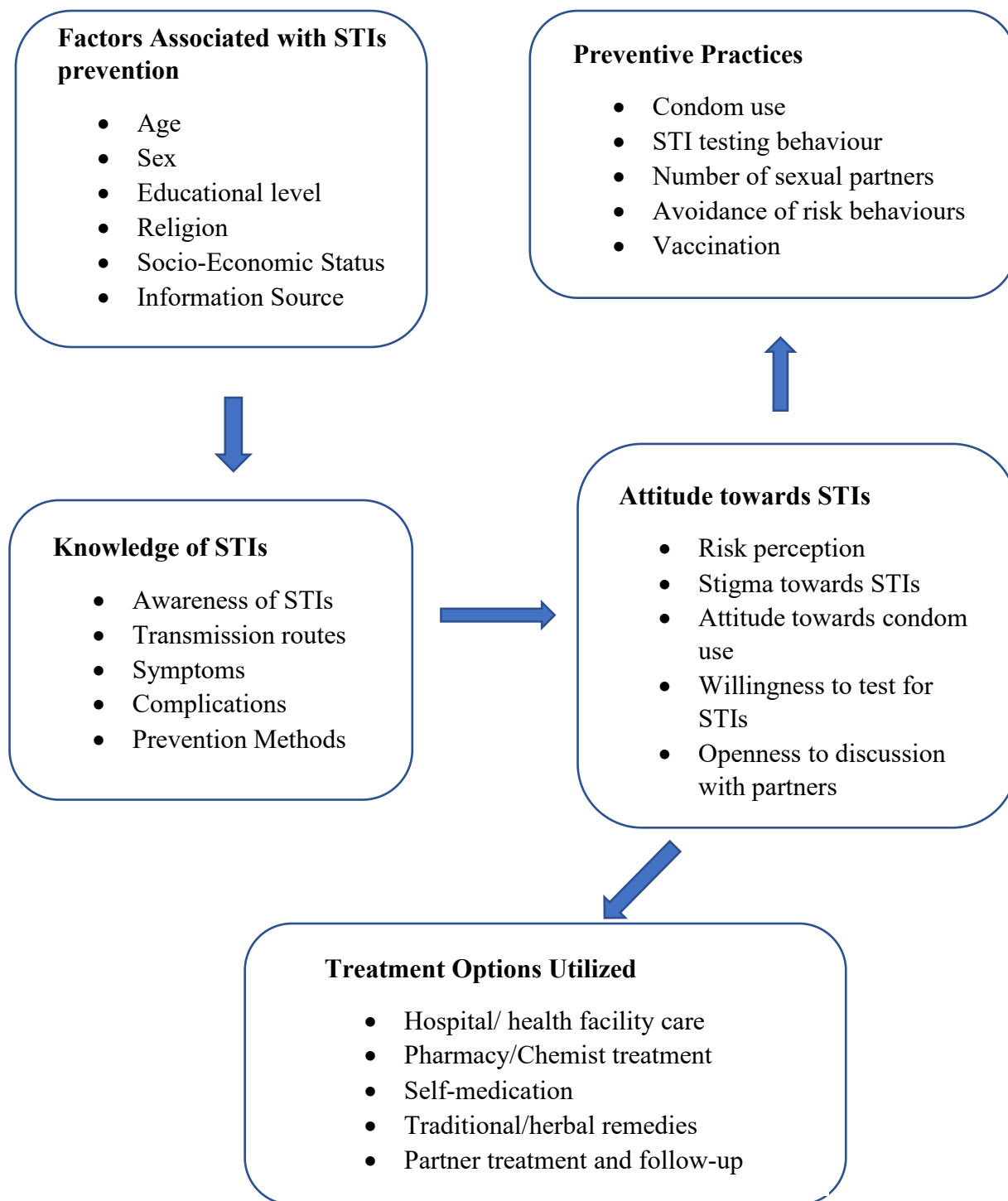


Fig. 1.0: A conceptual framework showing the interrelationships between the objectives of the study^{12,13}

2.2. EMPIRICAL REVIEW

2.2.1. KNOWLEDGE OF STI AMONG YOUNG PEOPLE

Sexually transmitted infections (STIs) remain a significant public health concern, particularly among young people in sub-Saharan Africa. In Nigeria, where youth represent a substantial proportion of the sexually active population, the prevalence of STIs is closely linked to inadequate knowledge, limited access to sexual health education, and prevailing cultural taboos around sexuality. Although there is limited published research specifically conducted in Ovia North East Local Government Area (LGA) of Edo State, a relevant study carried out at the University of Benin which is geographically situated within the LGA, offers valuable insight into the knowledge of STIs among young people in the area.¹

An analytical cross-sectional study aimed at assessing the knowledge, prevalence, and associated risk factors of sexually transmitted diseases was conducted among female students of the University of Benin¹. The study was carried out between February 2016 and January 2018 and involved a sample of 423 female undergraduate students¹. A multistage sampling technique was employed to select participants across five faculties. Data were collected using a structured, self-administered questionnaire adapted from the National HIV/AIDS and Reproductive Health Survey (NARHS). The findings revealed that 95.3% of respondents were aware of STIs, and 83.1% demonstrated good knowledge regarding symptoms, transmission, and prevention. Despite this relatively high level of awareness, the study reported a 27.7% self-reported prevalence of STIs among participants, with gonorrhoea being the most commonly identified infection. The authors concluded that while awareness was widespread, misconceptions and knowledge gaps, particularly regarding non-HIV STIs and asymptomatic infections, persisted among the population.¹⁴

In a broader context, a systematic review of STI knowledge was conducted across 35 African countries, including Nigeria. The review synthesized findings from 74 studies conducted between 2010 and 2018, encompassing data from over 1.3 million participants. The aim of the review was to evaluate levels of awareness and knowledge of STIs, not only concerning HIV but also regarding other infections such as hepatitis B and C, human papilloma virus (HPV), gonorrhoea, and syphilis. While the level of awareness of HIV was generally high among African populations, including youth and students in Nigeria, the review highlighted significant knowledge gaps in relation to other STIs. Variability in awareness was observed across countries and population groups, underscoring the need for targeted health education initiatives.¹⁵

A study conducted in Albaha, Saudi Arabia, adds a comparative international perspective to STI knowledge among young adults in conservative societies. This quantitative cross-sectional study, conducted in 2019, involved 1,902 university students selected through simple random sampling. Using a pre-validated electronic questionnaire, the researchers assessed knowledge of STIs and calculated STI knowledge scores. The findings revealed an average knowledge score of 7.95 out of 27, suggesting poor overall understanding. Female students and those enrolled in health science programmes had significantly higher scores compared to their peers. Although conducted outside Nigeria, the study's relevance lies in its exploration of how cultural norms and educational background influence STI knowledge among youth, a dynamic also presents in parts of Nigeria, including Edo State.¹⁶

Further comparative evidence comes from a descriptive cross-sectional study conducted in 2017 in Bngaluru, Karnataka, India. The study assessed the knowledge, awareness, and attitudes about STIs (excluding HIV) among 350 engineering college students aged 18–22 years, selected through convenience sampling. Data were collected using an anonymous self-administered

questionnaire. Results showed that while 90% of students had heard of STIs, only 64% were aware of infections beyond HIV. Less than half of the respondents were knowledgeable about STI symptoms and complications. Teachers, the internet, and media emerged as the primary sources of information. Notably, 94.2% of participants agreed that sex education should be mandatory in schools.¹⁷

A descriptive cross-sectional study was carried out in 2018 in Rio de Janeiro, Brazil⁵. They aimed to analyse the relationship between social aspects and knowledge of STI transmission among 768 university students aged 18–29 years, stratified by gender. Using a structured questionnaire, they found that students had below-average STI knowledge. HIV was the most recognized STI, while chlamydia and HPV were poorly known. Females, married students, and health science students demonstrated better awareness. However, only 21% had heard about partner notification practices, highlighting another key area of poor STI literacy.¹⁸

Another cross-sectional analytical study in 2021 among 918 health sciences university students in Pretoria, South Africa. Employing multistage sampling, the researchers aimed to assess risky sexual behaviours, STI knowledge, and partner notification practices. The findings showed that 55.9% of the students had poor STI knowledge. Males were more likely to engage in high-risk sexual behaviours such as having multiple sexual partners and engaging in transactional sex. Alarming, only 14.2% perceived themselves at risk despite their behaviours. The majority preferred to receive partner notification via SMS from a doctor (59.4%), showing openness to digital approaches in STI communication.¹⁹

In Nigeria, a cross-sectional descriptive study was conducted in 2020 among 401 polytechnic students in Ibadan, Oyo State. The study utilized a four-stage sampling method and collected

data via a semi-structured, self-administered questionnaire. Results showed that only 18.7% of the participants had good STI knowledge. A large proportion (65.3%) were sexually active, 26.7% had multiple sexual partners, and 76.9% did not use condoms consistently. Additionally, 68.6% did not perceive themselves at risk of STIs. Interestingly, while knowledge was significantly associated with risk perception, it was not significantly associated with condom use.²⁰

In conclusion, this literature review highlights a consistent global trend of poor STI knowledge among young people, coupled with high-risk sexual behaviours and low risk perception. These patterns are likely mirrored in Ovia North East LGA, Edo State. To address this challenge, it is critical to implement evidence-based, localized interventions that improve STI awareness, correct misconceptions, and foster safe sexual behaviours among youth. Future research should focus on conducting specific assessments within the LGA to identify local knowledge gaps and tailor strategies accordingly.

2.2.2 ATTITUDE OF YOUNG PEOPLE TOWARD STI

This review synthesizes findings from studies conducted in different regions, which can provide insights into the potential attitudes of young people in Ovia North East, Edo State, Nigeria.

A study conducted in 2020 on university students in Rio de Janeiro, Brazil, adopted a quantitative, descriptive cross-sectional approach. The study was aimed to analyse the sexual practices and behaviour of university students regarding STI prevention. It was carried out in a private university in Rio de Janeiro, Brazil, with a study population consisting of university students aged 18–29 years. The sample size was 768 students (384 males and 384 females), selected through stratified random sampling. Data were collected using a structured

questionnaire consisting of 60 questions. The relevant findings showed that 62.84% of the participants did not use condoms consistently, and 50.31% reported having multiple sexual partners. The study also found a low level of concern about STIs despite the prevalence of high-risk behaviours. It concluded that risky behaviours such as inconsistent condom use and alcohol consumption before sex increase vulnerability to STIs.²¹

Another relevant study was conducted in 2021 among university students in Pretoria, South Africa. This study was also a descriptive cross-sectional study, and it aimed to assess risky sexual behaviours, STI knowledge, and partner notification practices. It took place at a health sciences university in Pretoria, South Africa, and included undergraduate and postgraduate students as its study population. The sample size was 918 students, selected using a multistage sampling technique. Data were gathered through a self-administered questionnaire. The study found that 85.8% of respondents perceived a low risk of STIs despite engaging in risky behaviours. Gender differences were observed, with male students reporting higher levels of risky behaviours such as having multiple sexual partners and engaging in transactional sex. Additionally, 55.9% of the participants demonstrated poor STI knowledge.¹⁹

Also, a study conducted in 2021, examined high school learners in the Nelson Mandela Municipality, Eastern Cape, South Africa. This quantitative descriptive cross-sectional study aimed to evaluate HIV/AIDS knowledge, attitudes, and practices among high school learners in grades 10–12. The sample size was 422 learners, selected through random sampling. A pre-tested questionnaire was used to collect data. Findings revealed that 29.8% of learners had an agreeable attitude toward risky sexual behaviour. Furthermore, 10% reported engaging in risky sexual behaviour, and 30% did not use condoms during their first sexual encounter. The study also

identified common misconceptions, including the belief held by 22% of participants that HIV could be transmitted through witchcraft.²²

Another study focused on male adolescents in Indonesia. Conducted in 2021, this study employed a quantitative descriptive cross-sectional design to examine attitudes and risky sexual behaviour related to STIs among male adolescents. The study was based on a national survey conducted in Indonesia, and the study population included unmarried male adolescents aged 15–24 years. The sample size was 10,547 respondents, selected using a two-stage stratified sampling technique. Data were collected from the 2017 Indonesia Demographic and Health Survey (IDHS) as secondary data. The study found that 29.8% of respondents had an agreeable attitude toward premarital sex, and 10% engaged in risky sexual behaviour. Peer influence and substance use were significant predictors of risky behaviour.²³

In addition to these studies, a 2023 study investigated the attitudes of in-school adolescents toward STIs in Tanzania. This analytical cross-sectional study involved 647 adolescents aged 10–19 years from the Central and Coastal zones of the country. The findings revealed that 39.6% of participants considered sexual activity before the age of 18 to be acceptable. Of those, 44.8% engaged in sexual activity voluntarily, while 24.9% reported experiencing coercion. The study identified key risk factors associated with risky sexual behaviours, including drug use, social media exposure and peer influence. A significant proportion of participants (73.3%) reported not having discussions about sexual and reproductive health (SRH) with their parents. Many adolescents underestimated their risk of contracting STIs and were more influenced by peer approval and personal views than by health concern.²³ These findings underscore the need for targeted interventions, including culturally appropriate, school-based sexual health education and broader community awareness campaigns. Addressing knowledge gaps and promoting safe

sexual practices through comprehensive sexual education could help mitigate STI risks. However, to ensure the effectiveness of these strategies, future research should aim to assess the specific attitudes, behaviours, and knowledge levels of young people in Ovia North East. Such localized research is essential to inform the design of context-sensitive STI prevention strategies.²⁴

2.2.3. PREVENTIVE PRACTICES TOWARDS STIS BY YOUNG PEOPLE

A study assessed the knowledge, attitude, and preventive practices toward sexually transmitted infections (STIs) among young unmarried persons in Surulere Local Government Area of Lagos State, Nigeria. This descriptive cross-sectional study involved 450 respondents, of which 425 responses were analysed. Findings revealed that although awareness and attitudes toward STI prevention were generally high, actual preventive practices were suboptimal. Only 34.0% of respondents demonstrated good preventive practices. Protective behaviours reported by participants included condom use (94.3%), abstinence (86.8%), faithfulness to one partner (73.6%), and regular screening (67.9%). However, only 34.9% recognized that STIs can be prevented through vaccination. Alarming, several misconceptions were noted as 35.9% of respondents believed that contraceptive use could prevent STIs, while others mistakenly thought that taking drugs (25.5%) or alcohol (17.9%) before sex could serve as protective measures. Among the sexually active respondents (24.9% of the sample), 79.3% reported using condoms, though only 69.0% did so consistently. The study further found that knowledge of STIs was significantly associated with preventive practices, suggesting that improved awareness could lead to better adoption of safe behaviours. The authors concluded that while awareness and attitudes toward STI prevention were encouraging, significant gaps remain in actual preventive behaviours and accurate understanding of effective methods. They recommended the

implementation of targeted health education and behaviour change communication interventions to bridge these gaps, particularly among young unmarried individuals in urban communities.³

In a cross-sectional descriptive study conducted in 2021 among 310 adolescents in Atani, Nigeria, researchers examined the adolescents' understanding and practice of sexually transmitted infection (STI) preventive measures. The study population consisted of unmarried, sexually active adolescents who were randomly selected and surveyed using a semi-structured questionnaire. Findings showed that although awareness of common STIs such as gonorrhoea (91.1%), syphilis (85.9%), and HIV/AIDS (83.9%) was high, this knowledge did not consistently translate into safe sexual practices. While many respondents (80.1%) were aware of contraceptives, only 51% reported using them. Preventive methods such as mutual faithfulness (83.1%), condom use (80.1%), and abstinence (55.6%) were acknowledged as effective, yet actual practice lagged behind these ideals. For instance, only 45.6% of females and 26.7% of males reported practicing abstinence. Similarly, while 51.6% of females reported being faithful to one partner, only 34% of males did. Condom use was also more prevalent among females (29.8%) than males (22%). The study revealed several risky sexual behaviours, including early sexual debut (mean age 15–19 years) and multiple sexual partnerships. About 5.2% of males and 3.8% of females reported having multiple sexual partners. Notably, 27.6% of all respondents were sexually active, with 4.1% having two sexual partners and another 3.6% having three or more in the six months preceding the study. The study found that although general awareness of STIs and their consequences, such as infertility and ectopic pregnancy was fairly high, awareness of non-curable STIs and the role of vaccination in prevention remained low. Only 10.3% of respondents identified vaccination as a preventive measure, indicating a significant gap in health education. Overall, the study concluded that while knowledge of STIs is increasing, it does not

always correspond to safer sexual behaviour. The authors emphasized the need for consistent, clear, and accessible prevention messages and the implementation of youth-focused policies and programs that can influence behaviour change.²⁵

A school-based quasi-experimental investigation conducted between April and October 2021 was done to evaluate the effects of a sexuality education program (SEP) on STI/HIV knowledge, attitudes, and risk behaviours. The population consisted of 384 adolescents (aged 15–19 years) from two education zones in Adamawa State, Northeast Nigeria. Cluster sampling technique was employed to select schools and the alternating sequence method (ASM) to assign participants to the intervention and comparison groups. Study findings indicated that widespread barriers to practice were prevalent at baseline, with 61.0% believing that “condoms are for promiscuous boys and girls” and 57.9% believing that “Condoms use reduces sexual satisfaction”. Post-intervention risk behaviour scores increased, implying reduced risk behaviours. The probable reason for poor pre-intervention practice is the prevalence of strong negative attitudinal barriers (condom stigma, belief in reduced pleasure).²⁶

A national-level analysis of Nigeria Demographic and Health Surveys (NDHS) from 2008, 2013, and 2018 was conducted to assess trends in sexual and reproductive health (SRH) behaviours among unmarried young people aged 15–24 years. The study examined four major indicators of risky sexual behaviour: inconsistent condom use, non-use of modern contraceptives, multiple sexual partnerships, and early sexual debut. Findings revealed that more than 80% of respondents engaged in at least one risky sexual behaviour during each of the survey years, with the highest prevalence recorded in 2018 and the lowest in 2013. This upward trend indicates a worsening pattern in STI preventive behaviour among Nigerian youth over the 10-year period. The probable reason for persistent risky behaviour is the lack of effectiveness, sufficient

coverage, or appropriate framing of existing SRH programmes. Updating this with the 2024 NDHS, they examined five major indicators of risky sexual behaviour: age at first sexual intercourse, premarital sex, condom use, multiple sexual partners and recent HIV testing. Findings showed that 78% of never – married men and women aged 15- 24 have never had sex, and the percentage of those who had sex before 18 is higher among those with no education than among those with secondary education. This showed that an increase in knowledge and socio-economic status has caused a downward trend in the prevalence of risky sexual behaviours as compared to earlier years.²⁷

A descriptive cross-sectional and qualitative study conducted in a public higher education institution in Rio de Janeiro, Brazil. The study involved a sample of 173 university students with the objective of analysing the sexual practices and the adoption of prevention practices for sexually transmitted infections among university students. Using a random sampling technique, findings showed that among the 78.03% sexually active respondents, low adherence to condom use was a major finding. Specifically, 47.22% did not use condoms continuously with stable partners, and 30.36% did not use the continuously with casual partners. Additionally, 56.07% reported never having been tested to detect HIV. Moreover, 65.08% admitted to using alcohol or drugs before the last intercourse. The probable reason for the low adherence to condom use with stable partners is the high sense of trust and a weak sense of vulnerability in committed relationships.²⁸

A study utilized a systematic review and meta-analysis of cross-sectional studies published in 2023 with the aim to determine the pooled prevalence of sexually transmitted infection (STI) prevention methods among young people aged 10–24 years in Ethiopia. The synthesis included five studies with a total sample size of 1,925 participants spanning regional states such as

Amhara, Oromia, South, Addis Ababa, and one national survey. The research employed the PRISMA guidelines to systematically search databases like PubMed and Google Scholar. The findings indicated that the pooled prevalence of preventive practice toward STIs among young Ethiopians was 54%. Subgroup analysis showed significant variation, with the highest prevalence recorded in the southern region at 66% and the lowest in the Amhara region at 42%. Preventive measures reported included condom use, protected sex, having a single partner, avoiding sex after drinking alcohol, and confidence in discussing condom use. The prevalence rate of 54% was critiqued as being lower than the WHO global health sector strategy target of 70%. Probable reasons for the variations in prevalence include differences in study period, sample size, study location, and access to high-quality healthcare services. The study highlighted the research gap that almost one in every two young people is not engaged in preventive practices, and recommended strengthening behavioural change strategies for STI prevention.²⁹

2.2.4. TREATMENT OPTIONS UTILIZED BY YOUNG FOR THE MANAGEMENT OF STIs

A study employing focus group discussions (FGDs) conducted among young people aged 15–20 attending secondary schools in Benin City, Edo State, Nigeria, aimed to provide deeper insight into adolescents' perceptions, knowledge, and experience regarding STD acquisition, symptoms, prevention, and treatment. This research utilized student participants within secondary school settings, selected as part of a larger investigation into determinants of sexual activity and treatment-seeking behaviour. Findings indicated that participants generally agreed that adolescents with STD symptoms sought care primarily from traditional healers, followed by patent medicine dealers, private doctors, and hospitals. Some youth also mentioned using home remedies or self-treatment with medication obtained from a chemist. Notably, local preparations, including herbs, roots, kola, and combinations of salt, potash, gin, lime, and pepper fruit, were

mentioned more frequently than antibiotics for treatment. A strength of this qualitative study is its ability to reveal preferred treatment sources and underlying rationale, showing that primary advantages cited for traditional healers were low cost and speed of both service delivery and cure, while a weakness is that it excluded out-of-school youth who might have different patterns. Recommendations are to establish youth-friendly services emphasizing sensitivity and confidentiality to encourage the use of formal care sources.¹⁰

A retrospective cross-sectional study analysing data from the 2003 and 2005 National HIV/AIDS and Reproductive Health Survey (NARHS) in Nigeria sought to determine gender differences in health-seeking behaviours among youth with self-reported STI symptoms. The study included 538 sexually experienced youth aged 15–24 who reported at least one STI symptom in the 12 months prior to the interview. The sampling technique used was a three-level, multi-stage method to randomly select eligible participants. Findings showed that a greater proportion of males had sought treatment (64.2% versus 47.9% of females). Among those seeking treatment, 60% of females utilized formal sources, most commonly a government clinic, whereas 54% of males sought care from informal sources, primarily a traditional healer. These same trends were shown in the data from 2012 National HIV/AIDS and Reproductive Health Survey, with 59% of females utilizing formal sources and 57.5% of males utilizing traditional healers. The likely reason for the findings is that males avoid formal clinics because they may be perceived as female-oriented, and they believe traditional medicine offers better discretion and efficacy.³⁰

A cross-sectional descriptive study conducted in Atani, Ogbaru LGA, Anambra State, South East Nigeria, aimed to determine adolescents' views of sexually transmitted diseases preventive measures. The study population consisted of 310 adolescents, of whom 27.6% were sexually active. The convenient sampling technique was used to select eligible participants. Among the 68

respondents who sought help for an STI, the majority (76.5%) sought treatment in a chemist shop. Other sources included traditional healers (13.2%) and hospitals (4.4%). The primary reason given for their choice of treatment location was affordability (77.6%). The strength of the study lies in its focus on a community in the South East where Christian faith is predominant (99% of respondents were Christians), providing contextual insight into local treatment choices. A significant weakness is the use of convenient sampling, limiting the representativeness of the findings.³¹

A descriptive cross-sectional study was conducted around September 2019, collecting data over a two-week period. The sample comprised 190 youth respondents aged 15–24 years, residing in the Abuakwa South Municipal Assembly of Ghana. The primary aim was to establish reasons for delay in seeking treatment for STI-related illness, and a specific objective was to determine the first point of call for STI treatment by the youth, using a multistage cluster sampling technique. The findings regarding initial management steps revealed that 54.9% indicated going to a health facility as their first measure. The most preferred health facility was a government hospital (42.3%), followed by clinics (24%), and pharmacy (16.8%). Regarding self-management, 19.2% indicated they would self-medicate and seek help simultaneously. When self-medicating, 28% used Western medicine, 23% used both western and traditional medicine, 22% used traditional medicine, 18% used over the counter drugs, and 9% used leftover antibiotics. The use of self-medication (western or traditional) was often justified by the belief that the medication had worked before. The preference for government hospitals stemmed from the perception that treatment is more effective there, while those preferring a pharmacy cited privacy as their reason.³²

A descriptive cross-sectional survey published in 2012 was conducted in the Nkomazi East area of Mpumalanga, South Africa, between December 2009 and January 2010. The sample included 332 patients aged 16 to 23 years, majorly single, unemployed black patients who presented with confirmed signs or symptoms of an STI at 14 primary healthcare clinics and comprehensive centres. The aim was to assess the health-seeking behaviour, including treatment utilization, of people with STIs in this community. Findings indicated that all participants (100%) sought help when they suspected an STI, with the majority (58.7%) doing so within one week. The preferred source of help for 76.8% of participants was the public healthcare sector (clinics). Regarding alternative options, traditional healers were consulted by 15.1% of participants, 6.6% visited a pharmacy and only 2.1% engaged in self-treatment. The probable reason for the high use of public facilities is the easy and equitable accessibility provided by primary healthcare clinics.³³

A secondary analysis of a national survey employed a cross-sectional design, utilizing data collected from August to September 2013. The analysis focused on 3,953 sexually experienced adolescents and young adults (ages 15–25 years) in the United States. The study's aim was to examine STI testing, including location, among this high-risk age group and identify reasons for not testing. Findings related to treatment/testing utilization showed that among those who had ever been tested in their lifetime, the private physician's office was the most recent testing location for 64.8% of respondents. Other locations utilized for testing were family planning clinics (13.0%), community clinics or health departments (10.5%), school-based clinics (6.9%), and STI clinics (2.2%). Overall, only 11.5% reported receiving an STI test in the last 12 months. The high reliance on private physicians suggests that although public "safety net" clinics are used (one in three used a public clinic), private care is the primary access point for testing.³⁴

2.2.5. FACTORS ASSOCIATED WITH THE PREVENTIVE PRACTICES OF STIS BY YOUNG PEOPLE

A systematic review and narrative synthesis synthesizing 18 studies published since 2007, focused on female Muslim participants of reproductive age (15–49) worldwide, particularly in the Middle East and North Africa (MENA) region, with the aim of exploring STI knowledge, attitudes, and barriers to prevention/treatment. Findings showed that preventive practices were negatively affected by poor knowledge regarding prevention and general unawareness of condoms for STI prevention. Key barriers were derived from attitudes: for instance, negative attitudes towards HIV-infected individuals were common (e.g., 32% of participants in a UAE study believed HIV/AIDS infection was the patient’s “own fault”). Cultural and religious factors were profound barriers, with the prohibition of extramarital sex making it difficult for young individuals to access condoms openly without being judged or stigmatised. The pervasive stigma is the probable reason for the poor utilization of services.³⁵

A descriptive study based on data collected on online platforms (affiliations in Ankara, Turkey) between May and December 2024, included a sample size of 385 young women aged 18–25, aimed to examine preventive behaviours and identify factors influencing them. Utilizing a known population sampling method, the study found that individuals who had received sexual health education scored significantly higher in protective behaviours than those who had not, accounting for 14% of the total variance. Furthermore, single participants demonstrated significantly higher scores in the knowledge and protection sub-dimension compared to married counterparts. Conversely, a major factor undermining prevention practice was identified in the finding that 79.4% of participants stated that they do not use any method of protection. This

disconnect between high mean scores and low active protection rates suggests that knowledge acquisition is incomplete without practical implementation.³⁶

A systematic review and meta-analysis based on five cross-sectional studies in Ethiopia searched up to May 18, 2022, examined 1,925 young people (10–24 years old), with the aim of determining the pooled prevalence of STI prevention methods. The review found that factors linked to an increased likelihood of STI prevention included good knowledge, a positive attitude, being male, and living closer to a Youth-Friendly Service (YFS). Conversely, factors associated with lower odds of STI prevention practice included being female, residing in rural areas, ever having sex, and Khat chewing. This indicates a need for behavioural change strategies for preventive practices toward STIs.²⁹

A descriptive cross-sectional study conducted between June and November 2018 in Surulere LGA, Lagos State, Nigeria, sought to assess STI knowledge, attitude, and preventive practices among 425 young unmarried persons. The researchers employed a multi-stage probability sampling technique and found that overall, 66.0% of respondents had poor preventive practices against STIs. The analysis highlighted that the key statistically significant factors associated with preventive practices were Age, Level of education, and Attitude. For instance, looking at educational attainment, 72.8% of those with tertiary education exhibited good preventive practices, compared to 51.7% with secondary education. The probable reason cited for the widespread poor practice, despite the majority exhibiting a positive attitude, is the failure to translate intention into action, potentially hindered by stigma associated with STIs and limited access to treatment facilities. A critical research gap identified is the need for larger populations/sample sizes in subsequent studies, leading to the recommendation that targeted

education on behaviour change communication is highly recommended to improve the knowledge and subsequent implementation of preventive practices against STIs.³

A qualitative study done in 2014 focusing on the influence of culture on preventive communication in Nigeria utilized in-depth interviews with the aim of improving communication strategies. The findings emphasized crucial contextual and structural cultural factors associated with failed prevention, noting that cultural barriers such as language and literacy issues diminish the impact of mass media prevention campaigns. Specifically, cultural practices that foster female submission and obedience to male influence put young women at high risk of STIs, fundamentally restricting their ability to negotiate protective behaviours. The implicit reason for ineffective prevention lies in the gap between generic public health messaging and culturally relevant messages. A recommendation made was that risk reduction could be effectively curbed through the utilization of culturally relevant messages understood by young people, ensuring prevention strategies incorporate specific cultural values.³⁷

A cross-sectional descriptive study published in 2013 was done among 200 out-of-school youths aged 10 to 24 at Lagos motor parks, Southwestern Nigeria. The aim of the study was to examine STI and contraceptive practices among this population. Purposive and random sampling procedures were used and key findings identified socioeconomic status and poor education as major factors influencing prevention. 44% had never attended school, resulting in a low level of contraceptive practices. Furthermore, youths with inadequate income often sought treatment from medicine hawkers and traditional healers. The probable reason is that inadequate income and low education drive this population toward unprotected sexual intercourse and inadequate, informal care seeking.³⁸

CHAPTER THREE

METHODOLOGY

3.1 STUDY AREA

The study was carried out in Edo State in the South-South geopolitical zone of Nigeria. It is ranked as the 8th most populous state in Nigeria. Edo State is an inland state in central southern Nigeria formed in 1991 from the northern portion of Bendel State. Its capital is Benin City and is its largest urban city. It is bounded in the northeast and east by Kogi State, Anambra to the east, in the south by Delta State, and in the west and northwest by Ondo State; the Niger River flows along the state's eastern boundary.³⁹

Edo State lies at elevations between 500 feet (150m) in the south and more than 1800 feet (550m) in the north. The core Edo area, about 10,400 square kilometres, is located on a rolling coastal plain crossed by rivers, in an area of the tropical rainforest. About 40% of the region is forest reserves. There is seasonal variation, with a wet season from July to September and a dry one from December to February. The state produces crude oil and is notable for agricultural products; rubber, cocoa, cashew nuts, and is blessed with precious stones like Quartz, stone, and Limestone used in the production of cement in Okpella. Edo State is home to several ethnicities, among them the Edo, Esan, Okpe, Afemai, Ora, Akoko-Edo, Igbanke, Emai, and Ijaw.^{40, 41}

Ovia North-East is situated in the southern portion of Edo State, Nigeria. It shares boundaries with Ondo State to the North; Uhunmwode, Egor, Oredo, and Ikpoba-Okha LGAs to the East; Ovia South-West LGA to the West; and Delta State to the South. The area generally lies between latitudes 6°00'N and 6°45'N and longitudes 5°00'E and 5°45'E. The headquarters, Okada, is located approximately at 6°44'N, 5°23'E. It covers a total land area of approximately **2,301**

square kilometres. The terrain is characterized by a generally low-lying, gentle slope with an average elevation of about 40–78 meters above sea level. The area is drained significantly by the **Ovia (Osse) River**, which flows through the territory and serves as a major hydrological feature. The geology is predominantly the Benin Formation, consisting of coastal plain sands.⁴²

According to the 2006 National Population Commission (NPC) census, the population was **153,849**. Recent projections estimate the population has grown significantly, with 2025 target population estimate of 255,230,814. The indigenous population is predominantly **Benin (Edo)** speaking. However, the area is heterogeneous, hosting other ethnic groups such as the Yoruba, Igbo, Esan, Urhobo, and Ijaw, largely due to the presence of educational institutions and agricultural opportunities. The LGA is divided into 13 electoral wards. Major settlements include **Okada** (Headquarters), Uhen, Utese, Okokhuo, Oluku, Ekiadolor, Iguoshodin, and Isiuwa.^{43,44}

The area falls within the **Tropical Rainforest belt**. The vegetation historically consists of tall trees, shrubs, and rich forest cover. There is significant loss of forest cover due to logging (timber), sawmilling activities, and the conversion of forests into agricultural land. Erosion is a major environmental threat in the area, exacerbated by rainfall and improper land-use practices. Rapid urbanization in towns like Oluku and Okada has led to challenges with indiscriminate waste disposal, posing risks to groundwater quality.⁴³

The LGA is an educational hub housing **Igbinedion University** (the first private university in Nigeria) in Okada. It is also home to the University of Benin (UNIBEN) Ugbowo Campus extension and over 170 secondary schools. About 43 Primary Health Care (PHC) centres are available but are reported to be clustered rather than evenly distributed across the 13 wards. The area is traversed by the **Benin-Sagamu Expressway**, a critical arterial road linking the South-

West to the South-South and South-East regions. However, many internal community roads remain in varying states of repair. Electricity supply varies, with major towns connected to the national grid, while rural agrarian communities often rely on alternative power sources.⁴³

The economy is largely agrarian. The majority of the population engages in **farming** (producing cassava, yam, plantain, maize, and vegetables) and cash cropping (rubber and oil palm). **Sawmilling** and timber processing are prominent economic activities due to the forest resources. Trading is also a major occupation, particularly in market towns like Oluku and Okada. The socio-economic status is mixed. The presence of universities has created a service-based economy (housing, transport, retail) in semi-urban centres, raising income levels for some. Conversely, rural dwellers primarily dependent on subsistence farming often fall within lower income brackets, with youth unemployment remaining a focal issue for government intervention programs.⁴³

3.2 STUDY DESIGN

A descriptive cross-sectional study design was used for this study.

3.3 STUDY POPULATION

The study was carried out among young people aged 10 to 24 years in Benin City, Edo State, Nigeria.

3.4 SELECTION CRITERIA

3.4.1 Inclusion criteria

Young people aged 10 to 24 years as at last birthday.

Respondents who were available at the time of the study and have lived in Ovia North East for at least 6 months.

Respondents who gave consent to participate in the study

3.4.2 Exclusion criteria

Respondents outside the ages of 10 to 24 years as at last birthday

Respondents who declined consent or were absent during data collection

Visitors or temporary residents

3.5 DURATION OF THE STUDY

The study was carried out over a period of 1 year; from 2025 to 2026.

3.6 SAMPLE SIZE DETERMINATION

This was calculated using the Cochran's formula.⁴⁵

$$n = \frac{Z^2 pq}{d^2}$$

Where:

n = Minimum Sample Size.

z = Standard normal deviate set at 1.96 (at 95% confidence interval).

p = Proportion in the target population estimated to have a particular characteristic.

A prevalence rate of 55.9% was used. This is the prevalence of students with poor STI knowledge in a study done in Pretoria, South Africa in 2021.^{6,18}

$$q = \text{Desired precision} = 1 - p$$

d = level of precision or acceptable margin of error for mean being estimated 5% (0.05) was used for this study.

Therefore, substituting the sample size, it was computed as follows

$$p = 55.9 \%$$

$$p = 0.559$$

$$q = 1 - p$$

$$q = 1 - 0.559 = 0.441$$

Therefore;

$$n = \frac{(1.96)^2 \times 0.559 \times 0.441}{0.05^2}$$

$$n = \frac{(1.96)^2 \times 0.559 \times 0.441}{0.0025}$$

$$n = 378.81 \approx 379$$

To make room for non-response, 10% non-response rate was added to the minimum sample size, utilizing the formula for non-response rate.

$$n_f = n + (n_r \times n)$$

$n =$ Minimum sample size = 379

$n_r =$ Non-response rate = 10% = 0.10

$n_f =$ Final Minimum sample size

$$n_f = 379 + \left(\frac{10}{100} \times 379 \right)$$

$$n_f = 379 + 37.9$$

$$n_f = 416.9 \approx 417$$

$$\text{Multiplying by 1.5 for design effect} = 417 \times 1.5 = 625.5 \approx 626$$

Thus, final minimum sample size for this study is 626.

3.7 SAMPLING METHOD

Respondents who meet the inclusion criteria were selected using a multistage sampling technique comprising of 5 stages. At each stage, simple random sampling was applied. These stages include:

Stage 1: Selection of Ward

A list of all the wards in Ovia North East LGA served as the sampling frame. From this sampling frame, of the 13 wards in the LGA, 7 wards were selected by simple random sampling by balloting. This is to capture a diverse range of experiences across the local government.

Stage 2: Selection of Communities

From the selected wards, 1 community per ward was selected using a simple random sampling method by balloting.

Stage 3: Selection of Homes

Homes were selected using the aforementioned sampling method, and the number of homes selected were selected via simple random sampling method, to ensure the sample size is reached.

Stage 4: Selection of Households

Households from each home was selected via simple random sampling method.

Stage 5: Selection of Respondent

The respondents from the selected community was chosen by simple random sampling technique. This was done by selecting a street in which everybody who meet the inclusion criteria was chosen.

3.8 DATA MANAGEMENT

3.8.1 TOOLS FOR DATA COLLECTION

Tools utilized for this study were interviewer-administered questionnaires. The questionnaire was adapted from other studies done on KAP towards HIV/AIDS and other STIs.⁴⁶ The questionnaire was structured to contain both open-ended and closed-ended questions and these questions was grouped into five sections.

Section A: Sociodemographic Characteristics

This section was designed to gather information regarding the socio-demographic characteristics and seek answers concerning respondents' age, gender, ethnic group, religion, age (as at last birthday), sexual history, occupation, average family income, marital status, etc.

Section B: Knowledge of STIs Among Young People in Ovia North East Local Government Area.

This was assessed using 12 yes/no and multiple-choice questions covering these domains: Awareness of STIs, sources of information, knowledge of HIV/AIDS, Knowledge of symptoms of other STIs other than AIDs, Knowledge of treatment options and preventive measures for STIs.

Section C: Attitude of Young People in Ovia North East Local Government Area Towards STIs.

This section assessed the attitude of young people towards STIs using 12 questions on a 5-point Likert scale type. The responses include; Strongly Agree, Agree, Neutral, Disagree and Strongly disagree

Section D: Preventive Practices among Young People in Ovia North East Local Government Area Towards STIs.

This section assessed preventive practices among respondents using 15 yes/no and multiple choice questions.

Section E: Preferred STI Treatment Options Among Young People In Ovia North East Local Government Area.

This section assessed preferred STI treatment options among respondents yes/no and multiple choice questions. This section seeks to assess the reasons behind treatment option choices.

3.8.2 METHOD OF DATA COLLECTION

The questionnaire for this study was interviewer-administered. Research assistants (3 to 5) were trained and adequately enlightened to effectively carry out the interview. The research assistants were medical students in 500 Level class of University of Benin, Ugbowo, Benin City.

The questionnaires were also administered in an environment where the privacy and confidentiality of the respondents can be guaranteed.

3.8.3 PRE-TESTING

The questionnaire was pretested in Egor LGA, Edo State, because it has a similar study population. Ten percent (63) of the sample size in the proportion was used for pretesting. The questionnaire for this study was interviewer-administered.

3.8.4 DATA ANALYSIS

The filled questionnaires were thoroughly checked for any inconsistencies. Data coding and cleaning was done. Data was entered and analysed with IBM Statistical Package for Social Sciences (SPSS) version 27.0 software.

Socio-demographic Characteristics;

This section was designed to gather information regarding the socio-demographic characteristics and seek answers concerning respondents' age, gender, ethnic group, religion, age (as at last birthday), sexual history, occupation, average family income and marital status.

The occupation of respondent was coded into skill levels according to International Labour Organization (ILO) classification and modified to include skill level 0.⁴⁷

Skill level 0: Housewives, students, unemployed

Skill level 1: Cleaners, laborers

Skill level 2: Secretary, police officers, hairdressers and butchers

Skill level 3: Shop managers, medical radiographers, legal secretaries, medical laboratory technicians

Skill level 4: Medical practitioners, civil engineers, secondary school teachers.

Educational attainment was categorized based on the highest level of education attained or currently being pursued by respondents. Due to the young age range of participants (10–24 years), the revised socioeconomic scoring scheme was adapted by collapsing categories into four levels: no formal education, primary, secondary, and tertiary education. These were then coded from highest to lowest educational attainment, with higher scores indicating higher educational status.⁴⁸

Classification of young people's age according to WHO. ⁴⁹

10 - 19 years: Adolescent

20 - 24 years: Young adult

SCORING SYSTEM

The scoring system was adapted from a similar Knowledge, Attitude and Preventive practice (KAP) study done to assess swallowing disorders among general practitioners.⁵⁰

Knowledge of STI among Young People

A total of 36 questions, covering various knowledge domains (Awareness of STIs, sources of information, knowledge of HIV/AIDS, Knowledge of symptoms of other STIs other than AIDs, Knowledge of treatment options and preventive measures for STIs) was used to assess the knowledge of STIs among respondents. Each question was scored 1 point for a correct response and 0 point for an incorrect or “don’t know” response. The multiple-response questions were scored by awarding 1 point for each correct option selected. The total knowledge score was obtained by summing all correct responses. The scores were converted to percentages and categorized as follows:

- **Good/positive knowledge:** Scores $\geq 50\%$
- **Poor/negative Knowledge:** Scores $< 50\%$

Attitude of Young People in Ovia North East towards STIs

A total of 12 questions, using a 5-point Likert scale, was used to assess respondents' attitudes towards STIs. Each question was scored with 5 points for the most positive response and 1 point for the least positive response, resulting in a maximum achievable score of 60 and a minimum achievable score of 5. The mean was then calculated and positive and negative attitude gotten as thus:

- **Positive attitude:** $\geq$ Mean score
- **Negative attitude:** $<$ Mean score

Preventive Practices towards STIs among Young People

A total of 14 questions was used to assess respondents' preventive practices. Correct/positive practice can be scored, coded as Good practice = 1 and Poor practice = 0. Total scores can then be categorized into:

- **Good preventive practice:** $\geq$ Mean score
- **Bad preventive practices:** $<$ Mean score

Treatment options utilized by Young People for the management of STIs

A total of 8 questions was used to assess respondents' preventive practices. Treatment options was categorized into Good and Poor Treatment options utilization

Univariate analysis was carried out on socio-demographic, knowledge, attitude, practices and perception data, and presented as frequencies and percentages for categorical data, mean and standard deviation for numerical data.

Bivariate analysis was carried out for parametric and non-parametric data. A Chi-squared statistical test or Fischer's exact test of association was done for non-parametric data and used to compare associations between the socio-demographic characteristics of respondents and dependent/outcome variables (knowledge, attitude, practices and treatment preferences). Fischer's exact test was used to compare associations when the total number of expected cells less than 5 is more than or equal to 20% and Chi-square was used to compare associations when the total number of expected cells less than 5 is less than 20%.

Multivariate analysis using binary logistic regression was carried out to further determine the significant predictors of outcome variables such as knowledge, attitude and practices among

respondents which represent possible determinants of STI transmission. Exploratory variables that were associated with the outcome variable in univariate analysis was included in the initial logistic models of multivariate analysis. The crude and adjusted odds ratio together with their corresponding 95% confidence intervals was computed.

The level of significance for all statistical associations was set at $p < 0.05$.

3.8.5 DATA PRESENTATION

Data was presented in prose, tables, charts and graphs for clarity. Statistical significance was tested where necessary.

3.9 ETHICAL CONSIDERATION

Ethical approval was obtained from the Health Research Ethics Committee of the University of Benin Teaching Hospital with protocol number **ADM/E 22/A/VOL. VII/14865491272115**. Informed consent was obtained from the respondents before administering questionnaires. The researcher ensured that information provided by respondents was treated with utmost confidentiality; hence, no names or addresses was requested for in the questionnaire. Respondents were informed of their right to voluntarily decide whether to participate in the study or not, without the risk of incurring any penalty or prejudicial treatment. They were given the right to decide at any point during the study to withdraw their participation or refuse to provide any information on any point that is not clear to them.

Respondents benefitted from the study as researchers offered appropriate sex education where necessary thereby contributing to the effectiveness of already established public health efforts aimed at curbing the spread of STIs in Benin City, Nigeria.

3.10 LIMITATIONS OF THE STUDY

The study relied on the information provided by the respondents and was limited by errors that may be introduced due to recall bias, language, or prejudice. Social desirability bias may arise as respondents may want to give the most favourable answers, which are contrary to their actual practice leading to incorrect data representation.

CHAPTER FOUR

RESULTS

A total of 633 respondents participated in the study with 100% response rate. The results are presented in the following sections in line with the specific objectives.

SECTION A: Socio-demographic characteristics of respondents

SECTION B: Knowledge of STI among young people

SECTION C: Attitude of young people towards STI.

SECTION D: Practices of STIs preventive measures among young people

SECTION E: Treatment options utilized for STIs management among young people

SECTION F: Factors associated with preventive practices of STIs by young people

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SECTION A: SOCIO-DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS

Table 1: Socio-demographic characteristics of respondents

Variables	Frequency (n = 633)	Percent
Age (in years)		
15-19	143	22.6
20-24	490	77.4
Mean age and SD: 21.42 ± 2.28		
Sex		
Male	269	42.5
Female	364	57.5
Ethnicity		
Benin	147	23.2
Esan	127	20.1
Igbo	113	17.9
Yoruba	88	13.9
Urhobo	66	10.4
Estako	34	5.4
Isoko	25	3.9
Hausa	17	2.7
Others	16	2.5
Religion		
Christianity	578	91.3
Islam	47	7.4
African Traditional Religion	8	1.3
Marital status		
Single	621	98.1
Married	12	1.9
Level of education		
Tertiary	429	67.8
Secondary	158	25.0
Primary	34	5.4
No formal education	12	1.9
occupation		
Skill Level 0	52	8.2
Skill Level 1	5	0.8
Skill Level 2	348	55.0
Skill Level 3	13	2.1
Skill Level 4	215	34.0
Type of school attended		
Public	388	61.3
Private	235	37.1
Not in school	10	1.6
Household size		
≤6	257	40.6
>6	376	59.4

**Others: Ibibio, Itsekiri, Tiv, Igala, Nupe*

The majority of respondents were female, accounting for 364 (57.5%), while males constituted 269 (42.5%). Most respondents were aged 20–24 years 490 (77.4%), with a smaller proportion aged 15–19 years 143 (22.6%). In terms of ethnicity, Benin formed the largest group 147 (23.2%), followed by Esan 127 (20.1%) and Igbo 113 (17.9%). Yoruba accounted for 88 (13.9%), while Urhobo constituted 66 (10.4%). Smaller proportions included Etsako 34 (5.4%), Isoko 25 (3.9%), Hausa 17 (2.7%), and other ethnic groups 16 (2.5%).

The vast majority of respondents were Christians 578 (91.3%), with fewer identifying as Muslims 47 (7.4%) and African Traditional Religion 8 (1.3%). Most respondents were single 621 (98.1%), while only 12 (1.9%) were married. Regarding educational level, the majority had tertiary education 429 (67.8%), followed by secondary education 158 (25.0%). A small proportion had primary education 34 (5.4%) or no formal education 12 (1.9%). In terms of type of school attended, most respondents were in public schools 388 (61.3%), while 235 (37.1%) attended private schools and 10 (1.6%) were not in school. For household size, more than half of the respondents 376 (59.4%) lived in households with more than six members, while 257 (40.6%) lived in households with six or fewer members.

SECTION B: KNOWLEDGE OF STIs AMONG YOUNG PEOPLE

Table 2a: Knowledge of STI among young people

Variables	Frequency (n=633)	Percent
Awareness of STI		
Has heard of STI	604	95.4
Sources* (n=604)		
School	522	86.4
Social media	472	78.1
Health workers	457	75.7
Television/Radio	451	74.7
Parents/Family	351	58.1
Friends	336	55.6
Faith-based organisations	188	31.1
Types of STI* (n=604)		
Gonorrhoea	577	95.5
HIV/AIDS	560	92.7
Syphilis	538	89.1
Genital herpes	514	85.1
Chlamydia	418	69.2
Hepatitis B	391	64.7
HPV	318	52.6
Mode of Transmission* (n=604)		
Unprotected sex	597	98.8
Mother-to-child	346	57.3
Sharing sharps	387	64.1
Kissing	171	28.3
Toilet seat	93	15.4
Mosquito bites	38	6.3
Casual contact	19	3.1

*Multiple response question

Table 2b: Knowledge of STI among young people continued

Variables	Frequency (n=633)	Percent
STI can be gotten via oral sex (n=604)	454	75.3
STI can be gotten via anal sex (n=604)	506	83.9
STI can present without symptoms (n=604)	449	76.2
Untreated STI leads to infertility (n=604)	444	73.5
Early treatment of STIs leads to cure (n=604)	485	80.4
Symptoms* (n=604)		
Painful urination	578	95.7
Genital discharge	565	93.5
Genital sores	560	92.7
Rash	492	81.5
Lower abdominal pain	431	71.4
No symptoms	20	3.3
STIs are preventable (n=604)	546	90.4
Preventive measures* (n=604)		
Condom use	581	96.2
Abstinence	582	96.4
Vaccination	471	78.0
Regular screening	417	69.0
Vaginal douching	85	14.1
Emergency contraception	76	12.6
Traditional herbs	22	3.6

A large majority of the respondents had heard about STIs 604 (95.4%). The main sources of information were school 522 (86.4%), social media 472 (78.1%), health workers 457 (75.7%), television/radio 451 (74.7%), parents/family 351 (58.1%), friends 336 (55.6%) and faith-based organisations 188 (31.1%). With respect to knowledge of types of STIs, gonorrhoea was the most identified 577 (95.5%), followed by HIV/AIDS 560 (92.7%), syphilis 538 (89.1%), genital herpes 514 (85.1%), chlamydia 418 (69.2%), hepatitis B 391 (64.7%) and HPV 318 (52.6%). Regarding transmission, most respondents identified unprotected sex 597 (98.8%), anal sex 506 (83.9%), oral sex 454 (75.3%), sharing sharps 387 (64.1%) and mother-to-child transmission 346 (57.3%) as routes of STI transmission. However, some misconceptions were still present as 38 (6.3%) mentioned mosquito bites, 93 (15.4%) mentioned toilet seats, 171 (28.3%) mentioned kissing and 19 (3.1%) mentioned casual contact. The majority also knew that STIs can occur without symptoms 449 (76.2%), that untreated STIs may lead to infertility 444 (73.5%), that STIs are preventable 546 (90.4%) and that early treatment can lead to cure 485 (80.4%). On symptoms, painful urination 578 (95.7%), genital discharge 565 (93.5%), genital sores 560 (92.7%), rash 492 (81.5%) and lower abdominal pain 431 (71.4%) were commonly recognized. On preventive measures, abstinence 582 (96.4%) and condom use 581 (96.2%) were the best recognized, followed by vaccination 471 (78.0%) and regular screening 417 (69.0%), while fewer respondents incorrectly mentioned vaginal douching 85 (14.1%), emergency contraception 76 (12.6%) and traditional herbs 22 (3.6%).

Table 3: Correctness of knowledge questions among respondent

Variables	Responses (n=633)	
	Correct (%)	Incorrect (%)
HIV is an STI	560 (92.7)	44 (7.3)
Gonorrhoea is an STI	577 (95.5)	27 (4.5)
Chlamydia is an STI	418 (69.2)	186 (30.8)
Syphilis is an STI	538 (89.1)	66 (10.9)
Herpes is an STI	514 (85.1)	90 (14.9)
Hepatitis B is an STI	391 (64.7)	213 (35.3)
HPV is an STI	318 (52.6)	286 (47.4)
Knows STIs	604 (100.0)	0 (0.0)
Multiple sexual partners increase risk	346 (57.3)	258 (42.7)
Sharing sharp objects transmits STIs	387 (64.1)	217 (35.9)
STIs are not transmitted by mosquitoes	566 (93.7)	38 (6.3)
STIs are not transmitted via toilet seats	511 (84.6)	93 (15.4)
STIs are not transmitted by kissing	433 (71.7)	171 (28.3)
STIs are not transmitted by casual contact	585 (96.9)	19 (3.1)
Condom use prevents STIs	581 (96.2)	23 (3.8)
Abstinence prevents STIs	582 (96.4)	22 (3.6)
Being faithful prevents STIs	604(100.0)	0 (.0)
Vaccination prevents STIs	471 (78.0)	133 (22.0)
Regular screening prevents STIs	417 (69.0)	187 (31.0)
STI symptom – Discharge	565 (93.5)	39 (6.5)
STI symptom – Painful urination	578 (95.7)	26 (4.3)
STI symptom – Genital sores	560 (92.7)	44 (7.3)
STI symptom – Abdominal pain	431 (71.4)	173 (28.6)
STI symptom – Rashes	492 (81.5)	112 (18.5)
Recognizes no symptoms option	584 (96.7)	20 (3.3)
Douching does not prevent STIs	519 (85.9)	85 (14.1)
Emergency methods doesn't prevent STIs	76 (12.6)	528 (87.4)
Herbal remedies doesn't prevent STIs	582 (96.4)	22 (3.6)
STI can be transmitted via oral sex	454 (75.2)	150 (24.8)
STI can be transmitted via anal sex	506 (83.8)	98 (16.2)
STIs can be asymptomatic	449 (74.3)	155 (25.7)
STIs can cause infertility	444 (73.5)	160 (26.5)
STIs are preventable	546 (90.4)	58 (9.6)
STIs are curable	486 (76.8)	44 (7.0)

The correctness of the knowledge questions showed generally high knowledge of STIs among the respondents. Most respondents correctly identified gonorrhoea as an STI 577 (95.5%), HIV as an STI 560 (92.7%), syphilis as an STI 538 (89.1%), herpes as an STI 514 (85.1%), and chlamydia as an STI 418 (69.2%). Similarly, 391 (64.7%) correctly identified hepatitis B as an STI, while HPV had the lowest correct identification 318 (52.6%). All respondents who had heard of STIs were recorded as knowing STIs 604 (100.0%). In terms of transmission and risk, 346 (57.3%) correctly knew that multiple sexual partners increase the risk of STIs, 387 (64.1%) knew that sharing sharp objects can transmit STIs, 566 (93.7%) knew STIs are not transmitted by mosquitoes, 511 (84.6%) knew they are not transmitted through toilet seats, 433 (71.7%) knew they are not transmitted by kissing and 585 (96.9%) knew they are not transmitted by casual contact. Regarding prevention, 581 (96.2%) knew condom use prevents STIs, 582 (96.4%) knew abstinence prevents STIs, 604 (100.0%) knew that being faithful prevents STIs, 471 (78.0%) knew vaccination can prevent some STIs and 417 (69.0%) knew regular screening is preventive. Most respondents also correctly identified genital discharge 565 (93.5%), painful urination 578 (95.7%), genital sores 560 (92.7%), abdominal pain 431 (71.4%) and rashes 492 (81.5%) as symptoms of STIs. Furthermore, 584 (96.7%) correctly recognized that STIs may sometimes have no symptoms. With respect to misconceptions, 519 (85.9%) correctly stated that douching does not prevent STIs and 582 (96.4%) knew herbal remedies do not prevent STIs, but only 76 (12.6%) correctly stated that emergency methods do not prevent STIs. Also, 454 (75.2%) knew STIs can be transmitted via oral sex, 506 (83.8%) knew transmission can occur via anal sex, 449 (74.3%) knew STIs can be asymptomatic, 444 (73.5%) knew they can cause infertility, 546 (90.4%) knew they are preventable and 486 (76.8%) indicated that STIs are curable.

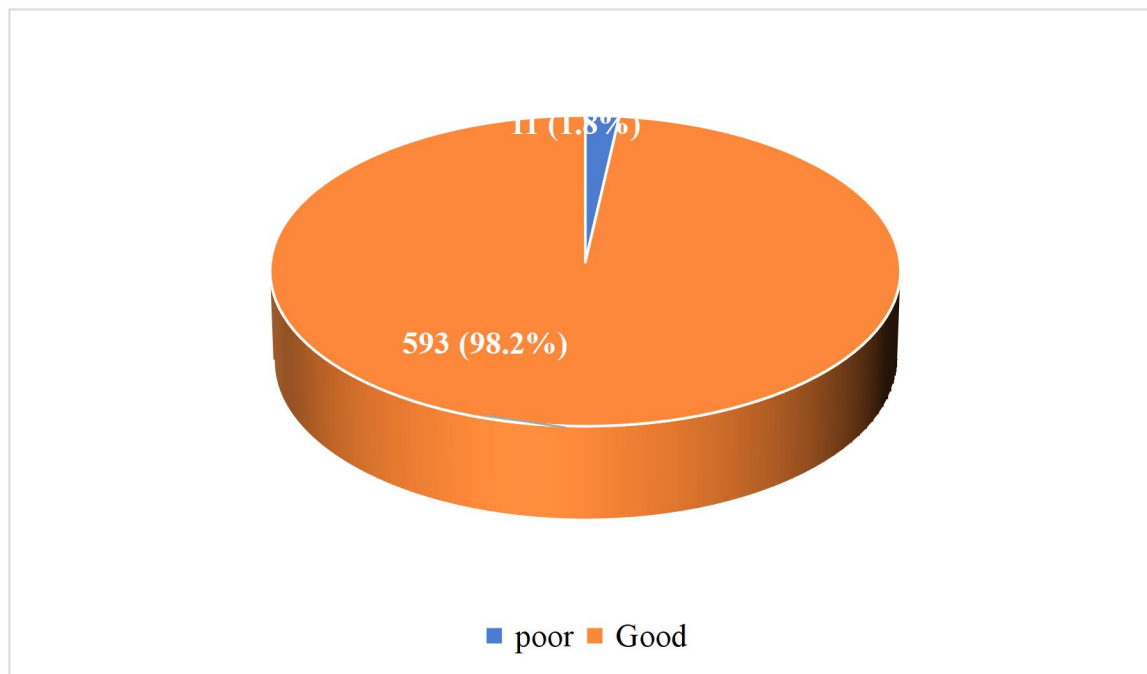


Fig 1: Knowledge of STI

Figure 1 shows that 593 (93.7%) of respondents had good knowledge of STIs, while 11 (1.7%) had poor knowledge of STIs. Note: The total does not sum to 100% as 29 respondents (4.6%) were not included in this classification.

Table 4: Sociodemographic characteristics and knowledge of STI

Variables	Knowledge		Test statistic χ^2	p-value
	Good (n=593) Freq(%)	Poor (n=11) Freq(%)		
Age (in years)			3.379	0.077
15–19	131 (96.3)	5 (3.7)		
20-24	462 (98.7)	6 (1.3)		
Sex of respondent			0.048*	>0.999
Male	250 (98.0)	5 (2.0)		
Female	343 (98.3)	6 (1.7)		
Skill level			8.029*	0.091
Skill Level 0	44 (93.6)	3 (6.4)		
Skill Level 1	4 (100.0)	0 (0.0)		
Skill Level 2	325 (97.9)	7 (2.1)		
Skill Level 3	13 (100.0)	0 (0.0)		
Skill Level 4	207 (99.5)	1 (0.5)		
Ethnicity			0.149*	0.768
Edo indigene	250 (98.4)	4 (1.6)		
Non-Edo indigene	343 (98.0)	7 (2.0)		
Religion			11.946*	0.003
Christianity	544 (98.7)	7 (1.3)		
Islam	42 (93.3)	3 (6.7)		
African Traditional Religion	7 (87.5)	1 (12.5)		
Marital status			0.189*	>0.999
Single	583 (98.1)	11 (1.9)		
Married	10 (100.0)	0 (0.0)		
Highest level of education			1.248*	0.741
No formal education	10 (100.0)	0 (0.0)		
Primary	32 (97.0)	1 (3.0)		
Secondary	150 (97.4)	4 (2.6)		
Tertiary	401 (98.5)	6 (1.5)		
School attended			2.001*	0.368
Public	362 (97.6)	9 (2.4)		
Private	223 (99.1)	2 (0.9)		
Not in school	8 (100.0)	0 (0.0)		
Household size			0.083*	0.774
≤ 6	244 (98.0)	5 (2.0)		
>6	349 (98.3)	6 (1.7)		

*Fishers exact test

Age was not significantly associated with knowledge of STIs ($\chi^2 = 3.379$, $p = 0.077$). However, respondents aged 20–24 years had a slightly higher proportion of good knowledge 462 (98.7%) compared to those aged 15–19 years 131 (96.3%), while poor knowledge was 6 (1.3%) and 5 (3.7%) respectively.

Sex of respondent showed no significant association with knowledge ($\chi^2 = 0.048$, $p > 0.999$). Males had 250 (98.0%) good knowledge and 5 (2.0%) poor knowledge, while females had 343 (98.3%) good knowledge and 6 (1.7%) poor knowledge.

Skill level was not significantly associated with knowledge ($\chi^2 = 8.029$, $p = 0.091$). Although respondents in higher skill levels (levels 3 and 4) showed very high proportions of good knowledge 13 (100.0%) and 207 (99.5%) respectively, compared to skill level 0 where 44 (93.6%) had good knowledge, this difference was not statistically significant.

Ethnicity was also not significantly associated with knowledge ($\chi^2 = 0.149$, $p = 0.768$). Edo indigenes had 250 (98.4%) good knowledge and 4 (1.6%) poor knowledge, while non-Edo indigenes had 343 (98.0%) good knowledge and 7 (2.0%) poor knowledge.

Religion, however, was significantly associated with knowledge of STIs ($\chi^2 = 11.946$, $p = 0.003$). Christians had the highest proportion of good knowledge 544 (98.7%), followed by Muslims 42 (93.3%), while respondents practicing African Traditional Religion had the lowest proportion 7 (87.5%). Poor knowledge was highest among African Traditional Religion respondents 1 (12.5%) compared to Muslims 3 (6.7%) and Christians 7 (1.3%).

Marital status was not significantly associated with knowledge ($\chi^2 = 0.189$, $p > 0.999$). Single respondents had 583 (98.1%) good knowledge and 11 (1.9%) poor knowledge, while all married respondents had good knowledge 10 (100.0%).

Highest level of education showed no significant association ($\chi^2 = 1.248$, $p = 0.741$). Respondents with tertiary education had 401 (98.5%) good knowledge, secondary 150 (97.4%), primary 32 (97.0%), and those with no formal education 10 (100.0%).

Type of school attended was also not significantly associated with knowledge ($\chi^2 = 2.001$, $p = 0.368$). Respondents from private schools had slightly higher good knowledge 223 (99.1%) compared to those from public schools 362 (97.6%), while those not in school all had good knowledge 8 (100.0%).

Household size was not significantly associated with knowledge ($\chi^2 = 0.083$, $p = 0.774$). Respondents from households with more than 6 members had 349 (98.3%) good knowledge compared to 244 (98.0%) among those with 6 or fewer members.

Table 5: Predictors of good knowledge of STIs among respondent.

Predictors	β	Odds ratio	95% CI for OR		p-value
			Lower	Upper	
Age (years)	0.289	1.335	1.029	1.732	0.030
Sex of respondent					
Female	0.090	0.914	0.258	3.231	0.889
Male*		1			
Skill level					
Skill 2	0.072	0.930	0.248	3.495	0.915
others*		1			
Ethnicity					
Non-Edo	0.020	0.980	0.270	3.557	0.975
Edo*		1			
Religion					
Christianity	1.746	0.174	0.046	0.666	0.011
Others*		1			
Marital status					
Married	16.886	0.000	0.000	.	0.999
Single*		1			
Education level					
Formal	-16.294	11928340.679	0.000	.	0.999
Non formal*		1			
School type					
Others	1.114	0.328	0.065	1.648	0.176
Public school*		1			
Household size					
>6	-0.027	1.027	0.295	3.573	0.966
$\leq 6^*$		1			

CI = Confidence interval; **OR** = Odd ratio; *reference category

For every one-year increase in age, respondents were 1.335 (95% CI = 1.029–1.732, $p = 0.030$) times more likely to have good knowledge of STIs, and this association was statistically significant.

Female respondents were 0.914 (95% CI = 0.258–3.231, $p = 0.889$) times more likely to have good knowledge of STIs compared to male respondents, but this was not statistically significant.

Respondents with skill level 2 were 0.930 (95% CI = 0.248–3.495, $p = 0.915$) times more likely to have good knowledge of STIs compared to those in other skill levels, and this was not statistically significant.

Non-Edo respondents were 0.980 (95% CI = 0.270–3.557, $p = 0.975$) times more likely to have good knowledge of STIs compared to Edo respondents, but this was not statistically significant.

Christian respondents were 0.174 (95% CI = 0.046–0.666, $p = 0.011$) times more likely to have good knowledge of STIs compared to respondents of other religions, and this association was statistically significant.

Married respondents were 0.000 (95% CI not estimable, $p = 0.999$) times more likely to have good knowledge of STIs compared to single respondents, but this was not statistically significant.

Respondents with formal education were 11928340.679 (95% CI not estimable, $p = 0.999$) times less likely to have good knowledge of STIs compared to those with non-formal education, but this was not statistically significant.

Respondents in other school types were 0.328 (95% CI = 0.065–1.648, $p = 0.176$) times less likely to have good knowledge of STIs compared to those in public schools, but this was not statistically significant.

Respondents from households with more than 6 members were 1.027 (95% CI = 0.295–3.573, $p = 0.966$) times more likely to have good knowledge of STIs compared to those with 6 or fewer members, but this was not statistically significant.

SECTION C: ATTITUDE TOWARDS STI AMONG YOUNG PEOPLE

Table 6: Attitude towards STI among young people

Attitude	Strongly agree (n = 633) Freq (%)	Agree (n=633) Freq (%)	Indifferent (n=633) Freq (%)	Disagree (n=633) Freq (%)	Strongly disagree (n=633) Freq (%)
Young people are at high risk of STIs	147 (23.2)	304 (48.0)	82 (13.0)	16 (2.5)	84 (13.3)
Sexually active individuals can get STIs	179 (28.3)	292 (46.1)	117 (18.5)	24 (3.8)	21 (3.3)
I am personally at risk of contracting an STI	30 (4.7)	68 (10.7)	102 (16.1)	151 (23.9)	282 (44.5)
Condoms effectively prevent STIs	52 (8.2)	278 (43.9)	168 (26.5)	79 (12.5)	56 (8.8)
Regular STI screening is important	248 (39.2)	278 (43.9)	74 (11.7)	12 (1.9)	21 (3.3)
Abstinence is the best way to avoid STIs	306 (48.3)	178 (28.1)	118 (18.6)	14 (2.2)	17 (2.7)
Would visit a health facility if STI is suspected	196 (31.0)	286 (45.2)	106 (16.7)	20 (3.2)	25 (3.9)
Discussing sexual health encourages irresponsibility	30 (4.7)	158 (25.0)	112 (17.7)	146 (23.1)	187 (29.5)
Buying condoms is embarrassing	25 (3.9)	132 (20.9)	324 (51.2)	102 (16.1)	50 (7.9)
Would feel embarrassed to go for STI testing	52 (8.2)	114 (18.0)	184 (29.1)	203 (32.1)	80 (12.6)
STIs are a punishment from God	5 (0.8)	20 (3.2)	119 (18.8)	152 (24.0)	337 (53.2)
People with STIs should be ashamed	5 (0.8)	22 (3.5)	127 (20.1)	169 (26.7)	310 (49.0)

Regarding attitudes towards STIs, 451 (71.3%) respondents either strongly agreed or agreed that young people are at high risk of STIs, while 100 (15.8%) either disagreed or strongly disagreed and 82 (13.0%) were indifferent. Similarly, 471 (74.4%) respondents agreed that sexually active individuals can get STIs, whereas 45 (7.1%) disagreed and 117 (18.5%) were indifferent. However, only 98 (15.5%) respondents agreed that they were personally at risk of contracting an STI, while 433 (68.4%) disagreed and 102 (16.1%) were indifferent, showing poor personal risk perception. On condom effectiveness, 330 (52.1%) respondents agreed that condoms effectively prevent STIs, 135 (21.3%) disagreed and 168 (26.8%) were indifferent. A large majority 526 (83.1%) agreed that regular STI screening is important, only 33 (5.2%) disagreed and 74 (11.7%) were indifferent. Also, 484 (76.5%) respondents agreed that abstinence is the best way to avoid STIs, while 31 (4.9%) disagreed and 118 (18.6%) were indifferent. Most respondents 482 (76.2%) stated they would visit a health facility if an STI was suspected, while 45 (7.1%) disagreed and 106 (16.8%) were indifferent. On whether discussing sexual health encourages irresponsibility, 188 (29.7%) agreed with the statement, 333 (52.6%) disagreed and 112 (17.7%) were indifferent. Regarding embarrassment in buying condoms, 157 (24.8%) agreed that it is embarrassing, 152 (24.0%) disagreed and the highest proportion 324 (51.2%) were indifferent. Concerning embarrassment about STI testing, 166 (26.2%) agreed they would feel embarrassed, 283 (44.7%) disagreed and 184 (29.1%) were indifferent. Most respondents rejected the belief that STIs are a punishment from God, with 489 (77.3%) disagreeing and only 25 (4.0%) agreeing. Similarly, a large proportion rejected the idea that people with STIs should be ashamed.

Table 7: Correctness of attitudinal responses towards STI among young people.

Variables	Appropriate Freq(%)	Inappropriate Freq(%)
Young people at high risk of STIs	451 (71.2)	182 (28.8)
Sexually active individuals can get STIs	471 (74.4)	162 (25.6)
Personally at risk of STI	98 (15.5)	535 (84.5)
Condoms effectively prevent STIs	330 (52.1)	303 (47.9)
Regular STI screening is important	526 (83.1)	107 (16.9)
Abstinence is the best way to avoid STIs	484 (76.5)	149 (23.5)
Would visit a health facility if STI is suspected	482 (76.1)	151 (23.9)
Discussing sexual health encourages irresponsibility	333 (52.6)	300 (47.4)
Buying condoms is embarrassing	152 (24.0)	481 (76.0)
Would feel embarrassed to go for STI testing	283 (44.7)	350 (55.3)
STIs are a punishment from God	489 (77.3)	144 (22.7)

The appropriateness of attitudinal responses showed that 451 (71.2%) respondents had appropriate attitudes regarding the high risk of STIs among young people, while 182 (28.8%) had inappropriate attitudes. For the statement that sexually active individuals can get STIs, 471 (74.4%) had appropriate responses and 162 (25.6%) had inappropriate responses. Only 98 (15.5%) had an appropriate response regarding personal risk of STI, while 535 (84.5%) had inappropriate responses. Condom effectiveness had almost equal distribution, with 330 (52.1%) appropriate and 303 (47.9%) inappropriate responses. Regular STI screening was appropriately endorsed by 526 (83.1%) respondents, while 107 (16.9%) responded inappropriately. Abstinence as the best way to avoid STIs had 484 (76.5%) appropriate and 149 (23.5%) inappropriate responses. Willingness to visit a health facility if STI is suspected was appropriate among 482 (76.1%) respondents and inappropriate among 151 (23.9%). On discussing sexual health, 333

(52.6%) had appropriate responses while 300 (47.4%) had inappropriate responses. Only 152 (24.0%) had appropriate responses concerning embarrassment in buying condoms, while 481 (76.0%) had inappropriate responses. In relation to embarrassment about STI testing, 283 (44.7%) had appropriate attitudes and 350 (55.3%) had inappropriate attitudes. Most respondents had appropriate attitudes regarding the statement that STIs are a punishment from God 489 (77.3%), while 144 (22.7%) had inappropriate responses.

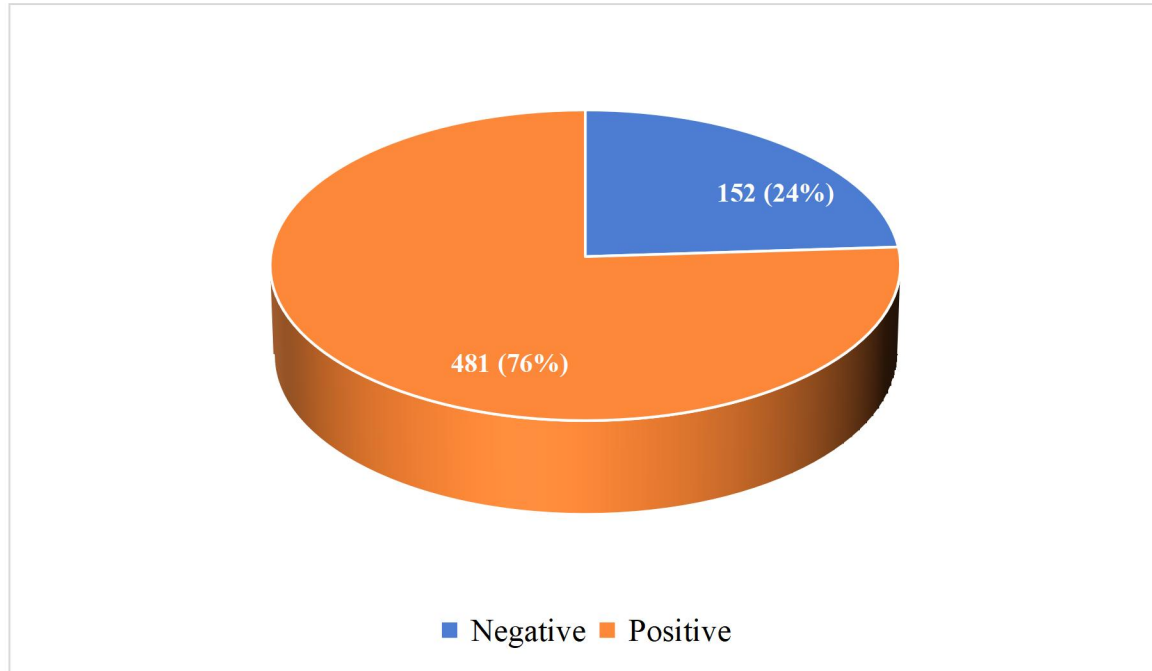


FIG 2: Attitude of respondents

Figure 2 shows that 481 (76.0%) of respondents had positive attitude towards STIs, while 152 (24.0%) had negative attitude towards STIs.

Table 8: Sociodemographic characteristics and attitude of young people towards STIs

Variables	Attitude		Test statistic χ^2	p-value
	Positive (n=481) Freq(%)	Negative (n=152) Freq(%)		
Age (in years)			0.271	0.657
15–19	111 (77.6)	32 (22.4)		
20–24	120 (24.5)	370 (75.5)		
Sex of respondent			0.688	0.407
Male	200 (74.3)	69 (25.7)		
Female	281 (77.2)	83 (22.8)		
Skill level			2.222*	0.695
Skill Level 0	36 (69.2)	16 (30.8)		
Skill Level 1	3 (60.0)	2 (40.0)		
Skill Level 2	266 (76.4)	82 (23.6)		
Skill Level 3	10 (76.9)	3 (23.1)		
Skill Level 4	166 (77.2)	49 (22.8)		
Ethnicity			0.092	0.762
Edo indigene	199 (75.4)	65 (24.6)		
Non-Edo indigene	282 (76.4)	87 (23.6)		
Religion			16.668*	<0.001
Christianity	451 (78.0)	127 (22.0)		
Islam	27 (57.4)	20 (42.6)		
African Traditional Religion	3 (37.5)	5 (62.5)		
Marital status			4.527*	0.044
Single	475 (76.5)	146 (23.5)		
Married	6 (50.0)	6 (50.0)		
Highest level of education			24.052	<0.001
No formal education	4 (33.3)	8 (66.7)		
Primary	25 (73.5)	9 (26.5)		
Secondary	106 (67.1)	52 (32.9)		
Tertiary	346 (80.7)	83 (19.3)		
Household size			27.571	<0.001
≤ 6	223 (86.8)	34 (13.2)		
>6	258 (68.6)	118 (31.4)		
Knowledge			8.072*	0.012
Poor knowledge	5 (45.5)	6 (54.5)		
Good knowledge	476 (80.3)	117 (19.7)		

*Fishers exact test

Age was not significantly associated with attitude towards STIs ($\chi^2 = 0.271$, $p = 0.657$). Respondents aged 15–19 years had 111 (77.6%) positive attitude and 32 (22.4%) negative attitude, while those aged 20–24 years had 120 (24.5%) positive and 370 (75.5%) negative attitudes respectively. Sex of respondent was also not significantly associated with attitude ($\chi^2 = 0.688$, $p = 0.407$). Males had 200 (74.3%) positive attitude and 69 (25.7%) negative attitude, while females had 281 (77.2%) positive and 83 (22.8%) negative attitudes. Skill level showed no significant association with attitude ($\chi^2 = 2.222$, $p = 0.695$). Although respondents in higher skill levels generally had higher proportions of positive attitude, such as skill level 4 with 166 (77.2%), compared to skill level 1 with 3 (60.0%), these differences were not statistically significant.

Ethnicity was not significantly associated with attitude ($\chi^2 = 0.092$, $p = 0.762$). Edo indigenes had 199 (75.4%) positive attitude and 65 (24.6%) negative attitude, while non-Edo indigenes had 282 (76.4%) positive and 87 (23.6%) negative attitudes. Religion was significantly associated with attitude towards STIs ($\chi^2 = 16.668$, $p < 0.001$). Christians had the highest proportion of positive attitude 451 (78.0%), followed by Muslims 27 (57.4%), while respondents practicing African Traditional Religion had the lowest proportion 3 (37.5%). Negative attitude was highest among those practicing African Traditional Religion 5 (62.5%). Marital status was also significantly associated with attitude ($\chi^2 = 4.527$, $p = 0.044$). Single respondents had a higher proportion of positive attitude 475 (76.5%) compared to married respondents 6 (50.0%), while negative attitude was equal among married respondents 6 (50.0%). Highest level of education showed a statistically significant association with attitude ($\chi^2 = 24.052$, $p < 0.001$). Respondents with tertiary education had the highest proportion of positive attitude 346 (80.7%), followed by

primary education 25 (73.5%) and secondary education 106 (67.1%), while those with no formal education had the lowest positive attitude 4 (33.3%) and highest negative attitude 8 (66.7%).

Household size was significantly associated with attitude ($\chi^2 = 27.571$, $p < 0.001$). Respondents from households with ≤ 6 members had a higher proportion of positive attitude 223 (86.8%) compared to those with > 6 members 258 (68.6%), while negative attitude was higher among larger households 118 (31.4%).

Knowledge level was also significantly associated with attitude ($\chi^2 = 8.072$, $p = 0.012$). Respondents with good knowledge had a higher proportion of positive attitude 476 (80.3%) compared to those with poor knowledge 5 (45.5%), while negative attitude was higher among those with poor knowledge 6 (54.5%).

Table 9: Predictors of positive attitude toward STI among young people

Predictors	β	Odds ratio	95% CI for OR		p-value
			Lower	Upper	
Age (years)	0.047	1.048	0.953	1.152	0.333
Sex of respondent					
Female	0.244	1.277	0.818	1.993	0.282
Male*		1			
Skill level					
Skill 2	-0.029	0.972	0.627	1.506	0.898
others*		1			
Ethnicity					
Non-Edo	0.188	1.207	0.778	1.870	0.401
Edo*		1			
Religion					
Christianity	1.181	3.258	1.689	6.284	<0.001
Others*		1			
Marital status					
Married	-0.989	0.372	0.082	1.678	0.198
Single*		1			
Education level					
Formal	1.607	4.987	1.225	20.308	0.025
Non formal*		1			
School type					
Others	-0.826	0.438	0.280	0.684	<0.001
Public school*		1			
Household size					
>6	-1.211	0.298	0.182	0.488	<0.001
≤6*		1			
Knowledge					
Good	1.666	5.292	1.409	19.870	0.014
Poor*		1			

CI = Confidence interval; **OR** = Odd ratio; *reference category

Age was not significantly associated with positive attitude (OR = 1.048, $p = 0.333$), indicating that age did not influence the likelihood of having a positive attitude.

Sex of respondent was also not a significant predictor ($p = 0.282$). Although females had higher odds of having a positive attitude compared to males (OR = 1.277), this association was not statistically significant.

Skill level showed no significant relationship with attitude (OR = 0.972, $p = 0.898$), suggesting no meaningful difference between skill category 2 and others.

Ethnicity was not significantly associated with attitude (OR = 1.207, $p = 0.401$), indicating similar likelihood of positive attitude between Non-Edo and Edo respondents.

Religion was a strong and statistically significant predictor. Respondents practicing Christianity were over three times more likely to have a positive attitude compared to those of other religions (OR = 3.258, $p < 0.001$).

Marital status was not significantly associated with positive attitude (OR = 0.372, $p = 0.198$), although married respondents appeared less likely to have a positive attitude compared to unmarried respondents.

Education level was a significant predictor. Respondents with formal education were about five times more likely to have a positive attitude compared to those with non-formal education (OR = 4.987, $p = 0.025$).

School type was also significantly associated with attitude. Respondents in “other” school types were less likely to have a positive attitude compared to those in public schools (OR = 0.438, $p < 0.001$).

Household size showed a strong significant association. Respondents from larger households (≥ 6 members) were less likely to have a positive attitude (OR = 0.298, $p < 0.001$).

Knowledge was another significant predictor. Respondents with good knowledge were about five times more likely to have a positive attitude compared to those with poor knowledge (OR = 5.292, $p = 0.014$)

SECTION D: PREVENTIVE PRACTICES OF STI AMONG YOUNG PEOPLE

Table 10a: Preventive practices of STIs among young people

Variables	Frequency (n =633)	Percent
Ever had sexual intercourse (vaginal sex)	239	37.8
Age at first sexual intercourse (n=239)		
10-14	18	7.5
15-19	142	59.4
20-24	79	33.1
First sexual partner (n=239)		
Immediate family member	3	1.3
Distant relative	4	1.7
Intimate partner	137	57.3
Casual friend	90	37.6
Sex worker	5	2.1
Ever tested for STIs	199	31.4
STI screening frequency		
Regularly	11	1.7
Occasionally	96	15.2
Only when symptomatic	92	14.5
Has multiple sexual partners	18	2.8
Share sharps	198	31.3
Patronize sex workers	15	2.4
Engage in oral sex		
Always	6	0.9
Frequently	9	1.4
Sometimes	125	19.7
Rarely	42	6.6
Never	451	71.2
Engage in anal sex		
Always	2	0.3
Frequently	1	0.2
Sometimes	9	1.4
Rarely	8	1.3
Never	613	96.8

*multiple response question

Table 10b: Preventive practices of STIs among young people continued

Variables	Frequency (n =633)	Percent
Substances taken before/after sex		
Hard drugs use	5	0.8
Alcohol use	10	1.6
Antibiotics before/after sex	28	4.4
Contraceptives before/after sex	55	8.7
None	535	84.5
STI vaccination	183	28.9
Vaccine type*		
HPV vaccine	106	16.7
Hepatitis B vaccine	139	22.0
Completed vaccine dose	152	24.0
Received sex education	576	91.0
PREVENTIVE PRACTICE		
Good	604	95.4
Poor	29	4.6

Among those who had ever had sexual intercourse (n = 239), the most common age at sexual debut was 15–19 years, accounting for 142 (22.4% of the total respondents; 59.4% of sexually active respondents). This was followed by those who initiated sexual activity at 20–24 years, 79 (12.5% of the total; 33.1% of sexually active respondents). A smaller proportion, 18 (7.5% of the total; 7.5% of sexually active respondents), reported early sexual debut between 10–14 years.). Regarding first sexual partner, intimate partners constituted the highest proportion 137 (21.6%), followed by casual friends 90 (14.2%), sex workers 5 (0.8%), distant relatives 4 (0.6%) and immediate family members 3 (0.5%). Ever testing for STIs was reported by 199 (31.4%) respondents. Concerning screening frequency, 11 (1.7%) screened regularly, 96 (15.2%) screened occasionally and 92 (14.5%) screened only when symptomatic. Only 18 (2.8%)

reported having multiple sexual partners, while 198 (31.3%) reported sharing sharps and 15 (2.4%) reported patronizing sex workers. For oral sex, most respondents reported never engaging in it 451 (71.2%), while 42 (6.6%) reported rarely, 125 (19.7%) sometimes, 9 (1.4%) frequently and 6 (0.9%) always. Similarly, anal sex was uncommon, as 613 (96.8%) reported never engaging in it, while 8 (1.3%) reported rarely, 9 (1.4%) sometimes, 1 (0.2%) frequently and 2 (0.3%) always. With respect to substances taken before or after sex, contraceptives were the commonest 55 (8.7%), followed by antibiotics 28 (4.4%), alcohol 10 (1.6%) and hard drugs 5 (0.8%). STI vaccination was reported by 183 (28.9%) respondents. Among vaccine types received, hepatitis B vaccine was mentioned by 139 (22.0%) and HPV vaccine by 106 (16.7%), while 152 (24.0%) reported completing vaccine doses. The majority of respondents 576 (91.0%) had received sex education.

Table 11a: Sociodemographic and other characteristics and preventive practices of STI among young people

Variables	Preventive Practice		Test statistic χ^2	p-value
	Good (n=604) Freq(%)	Poor (n=29) Freq(%)		
Age(years)			4.090	0.043
15–19	132 (92.3)	11 (7.7)		
20–24	472 (96.3)	18 (3.7)		
Sex of respondent			0.259	0.611
Male	258 (95.9)	11 (4.1)		
Female	346 (95.1)	18 (4.9)		
Skill level			8.272	0.082
Skill Level 0	46 (88.5)	6 (11.5)		
Skill Level 1	5 (100.0)	0 (0.0)		
Skill Level 2	331 (95.1)	17 (4.9)		
Skill Level 3	13 (100.0)	0 (0.0)		
Skill Level 4	209 (97.2)	6 (2.8)		
Ethnicity			1.255	0.263
Edo indigene	249 (94.3)	15 (5.7)		
Non-Edo indigene	355 (96.2)	14 (3.8)		
Religion			7.728	0.021
Christianity	553 (95.7)	25 (4.3)		
Muslim	45 (95.7)	2 (4.3)		
African Traditional Religion	6 (75.0)	2 (25.0)		
Marital status			0.587	0.443
Single	592 (95.3)	29 (4.7)		
Married	12 (100.0)	0 (0.0)		
level of education			1.303	0.728
No formal education	12 (100.0)	0 (0.0)		
Primary	32 (94.1)	2 (5.9)		
Secondary	149 (94.3)	9 (5.7)		
Tertiary	411 (95.8)	18 (4.2)		
Type of school attended			0.712	0.700
Public	371 (95.6)	17 (4.4)		
Private	224 (95.3)	11 (4.7)		
Not in school	9 (90.0)	1 (10.0)		

Table 11b: Sociodemographic and other characteristics and preventive practices of STI among young people continued

Variables	Preventive Practice		Test statistic χ^2	p-value
	Good (n=604)	Poor (n=29)		
	Freq(%)	Freq(%)		
Household size			0.225	0.824
≤ 6	244 (94.9)	13 (5.1)		
> 6	360 (95.7)	16 (4.3)		
Knowledge			5.238	0.022
Poor	9 (81.8)	2 (18.2)		
Good	569 (96.0)	24 (4.0)		
Attitude			7.217	0.007
Negative	139 (91.4)	13 (8.6)		
Positive	465 (96.7)	16 (3.3)		

Age was significantly associated with preventive practices of STIs ($\chi^2 = 4.090$, $p = 0.043$). Respondents aged 19–22 years had a higher proportion of good preventive practice 472 (96.3%) compared to those aged 15–18 years 132 (92.3%), while poor practice was 18 (3.7%) and 11 (7.7%) respectively.

Sex of respondent was not significantly associated with preventive practices ($\chi^2 = 0.259$, $p = 0.611$). Males had 258 (95.9%) good practice and 11 (4.1%) poor practice, while females had 346 (95.1%) good practice and 18 (4.9%) poor practice.

Skill level was not significantly associated with preventive practices ($\chi^2 = 8.272$, $p = 0.082$). Although respondents in higher skill levels (3 and 4) recorded 100.0% and 97.2% good practice

respectively, compared to skill level 0 with 88.5%, the association was not statistically significant.

Ethnicity was also not significantly associated with preventive practices ($\chi^2 = 1.255$, $p = 0.263$). Edo indigenes had 249 (94.3%) good practice and 15 (5.7%) poor practice, while non-Edo indigenes had 355 (96.2%) good practice and 14 (3.8%) poor practice.

Religion was significantly associated with preventive practices ($\chi^2 = 7.728$, $p = 0.021$). Christians and Muslims both had high proportions of good practice 553 (95.7%) and 45 (95.7%) respectively, while respondents practicing African Traditional Religion had a lower proportion of good practice 6 (75.0%) and higher poor practice 2 (25.0%).

Marital status was not significantly associated with preventive practices ($\chi^2 = 0.587$, $p = 0.443$). Singles had 592 (95.3%) good practice and 29 (4.7%) poor practice, while all married respondents had good practice 12 (100.0%).

Level of education was not significantly associated with preventive practices ($\chi^2 = 1.303$, $p = 0.728$). Respondents with tertiary education had 411 (95.8%) good practice, secondary 149 (94.3%), primary 32 (94.1%), and those with no formal education 12 (100.0%).

Type of school attended was also not significant ($\chi^2 = 0.712$, $p = 0.700$). Respondents from public schools had 371 (95.6%) good practice, private schools 224 (95.3%), while those not in school had 9 (90.0%).

Household size showed no significant association with preventive practices ($\chi^2 = 0.225$, $p = 0.824$). Respondents from households ≤ 6 members had 244 (94.9%) good practice, while those from larger households had 360 (95.7%) good practice.

Knowledge of STIs was significantly associated with preventive practices ($\chi^2 = 5.238$, $p = 0.022$). Respondents with good knowledge had higher good practice 569 (96.0%) compared to those with poor knowledge 9 (81.8%), while poor practice was higher among those with poor knowledge 2 (18.2%).

Attitude towards STIs was also significantly associated with preventive practices ($\chi^2 = 7.217$, $p = 0.007$). Respondents with positive attitude had higher good practice 465 (96.7%) compared to those with negative attitude 139 (91.4%), while poor practice was higher among those with negative attitude 13 (8.6%).

Table 12: Predictors of good preventive practices among young people

Predictors	β	Odds ratio	95% CI for OR		p-value
			Lower	Upper	
Age (years)	0.012	1.012	0.846	1.212	0.893
Sex of respondent					
Female	-0.355	0.701	0.290	1.696	0.431
Male *		1			
Skill level					
Skill 2	0.046	1.047	0.458	2.394	0.912
others*		1			
Ethnicity					
Non-Edo	0.752	2.121	0.919	4.897	0.078
Edo*		1			
Religion					
Christianity	0.851	2.343	0.757	7.247	0.140
Others *		1			
Marital status					
Married	18.796	145530951.171	0.000	.	0.999
Not married*		1			
Education level					
Formal	-18.052	0.000	0.000	.	0.999
Non formal*		1			
School type					
Others	-0.202	0.817	0.347	1.921	0.643
Public school*		1			
Household size					
> 6	0.609	1.838	0.782	4.320	0.163
$\leq 6^*$		1			
Knowledge category					
Good	1.226	3.407	0.615	18.871	0.161
Poor*		1			
Attitude category					
Positive	0.962	2.617	1.042	6.570	0.041
Negative*		1			

CI = Confidence interval; OR = Odd ratio; *reference category

For every one-year increase in age, respondents were 1.012 (95% CI = 0.846 – 1.212, $p = 0.893$) times more likely to have good preventive practices, but this association was not statistically significant.

Female respondents were 0.701 (95% CI = 0.290 – 1.696, $p = 0.431$) times less likely to have good preventive practices compared to male respondents, and this was not statistically significant.

Respondents in skill level 2 were 1.047 (95% CI = 0.458 – 2.394, $p = 0.912$) times more likely to have good preventive practices compared to those in other skill levels, but this association was not statistically significant. Non-Edo respondents were 2.121 (95% CI = 0.919 – 4.897, $p = 0.078$) times more likely to have good preventive practices compared to Edo respondents, but this was not statistically significant, although it showed a borderline association.

Respondents practicing Christianity were 2.343 (95% CI = 0.757 – 7.247, $p = 0.140$) times more likely to have good preventive practices compared to those practicing other religions, but this association was not statistically significant. Married respondents had an extremely large odds ratio (OR = 145,530,951.171, $p = 0.999$) with an unstable confidence interval, indicating sparse data or model estimation issues; this association was not statistically significant.

Respondents with formal education had an odds ratio approximating zero (OR = 0.000, $p = 0.999$) compared to the reference category, suggesting severe model instability or sparse data, and this was not statistically significant. Respondents in other school types were 0.817 (95% CI = 0.347 – 1.921, $p = 0.643$) times less likely to have good preventive practices compared to those in public schools, but this was not statistically significant.

Respondents from households with more than 6 members were 1.838 (95% CI = 0.782 – 4.320, $p = 0.163$) times more likely to have good preventive practices compared to those with 6 or fewer members, but this was not statistically significant.

Respondents with good knowledge were 3.407 (95% CI = 0.615 – 18.871, $p = 0.161$) times more likely to have good preventive practices compared to those with poor knowledge, but this was not statistically significant.

Respondents with a positive attitude were 2.617 (95% CI = 1.042 – 6.570, $p = 0.041$) times more likely to have good preventive practices compared to those with a negative attitude, and this association was statistically significant.

SECTION E: TREATMENT OPTIONS UTILIZED FOR STI MANAGEMENT AMONG
YOUNG PEOPLE

Table 13: Treatment options utilized by young people for STIs managements

Variable	Frequency (n=633)	Percent
Ever had STI symptoms	72	11.4
Symptom* (n=72)		
Genital sores	11	15.3
Discharge	31	43.0
Itching	42	53.3
Painful urination	27	37.5
Rashes	20	27.8
Action taken when symptoms experienced (n=72)		
Visited hospital/health centre	33	45.9
Visited pharmacy/chemist	23	31.9
Used herbal/traditional remedies	2	2.8
Self-medication with drugs	7	9.7
Did nothing	7	9.7
Completed full course of treatment (n=72)	55	76.
Sexual partner received treatment (n=72)	26	
Preferred treatment place		
Hospital	477	75.4
Private clinic	107	16.9
Pharmacy/chemist	34	5.4
Traditional healer	4	0.6
Church	5	0.8
No treatment	6	0.9
Time to seek treatment		
Immediately	438	69.2
Within few days	151	23.9
After one week	12	1.9
Only if worse	24	3.8
Will not seek	8	1.3
Factor influencing Treatment options*		
Ease of accessibility	515	81.4
Financial cost	385	60.8
Privacy	392	61.9
Good reputation	227	35.9

*Multiple Choice Response

A small proportion of the young people reported experiencing STI symptoms, with 72 (11.4%) indicating they had symptoms. Among these respondents, the most commonly reported symptom was itching, 42 (6.6%), followed by discharge, 31 (4.9%), painful urination, 27 (4.3%), rashes, 20 (3.2%), and genital sores, 11 (1.7%).

Regarding actions taken when symptoms were experienced, only a few sought formal care, as 33 (5.2%) visited a hospital or health centre, while 23 (3.6%) visited a pharmacy or chemist. Very small proportions used herbal or traditional remedies, 2 (0.3%), practiced self-medication, 7 (1.1%), or did nothing, 7 (1.1%). Notably, 55 (8.7%) reported completing a full course of treatment, while only 26 (4.1%) indicated that their sexual partner also received treatment.

In terms of preferred place for treatment, the majority of respondents preferred hospitals, 477 (75.4%), followed by private clinics, 107 (16.9%), and pharmacies or chemists, 34 (5.4%). Very few preferred traditional healers, 4 (0.6%), churches, 5 (0.8%), or no treatment at all, 6 (0.9%).

Most respondents reported that they would seek treatment immediately when symptoms occur, 438 (69.2%), while 151 (23.9%) would do so within a few days. Only a small proportion would delay treatment for a week, 12 (1.9%), wait until symptoms worsen, 24 (3.8%), or would not seek treatment at all, 8 (1.3%).

Finally, key factors influencing treatment-seeking included ease of accessibility, reported by 515 (81.4%), privacy, 392 (61.9%), and financial cost, 385 (60.8%), while fewer respondents considered good reputation, 227 (35.9%).

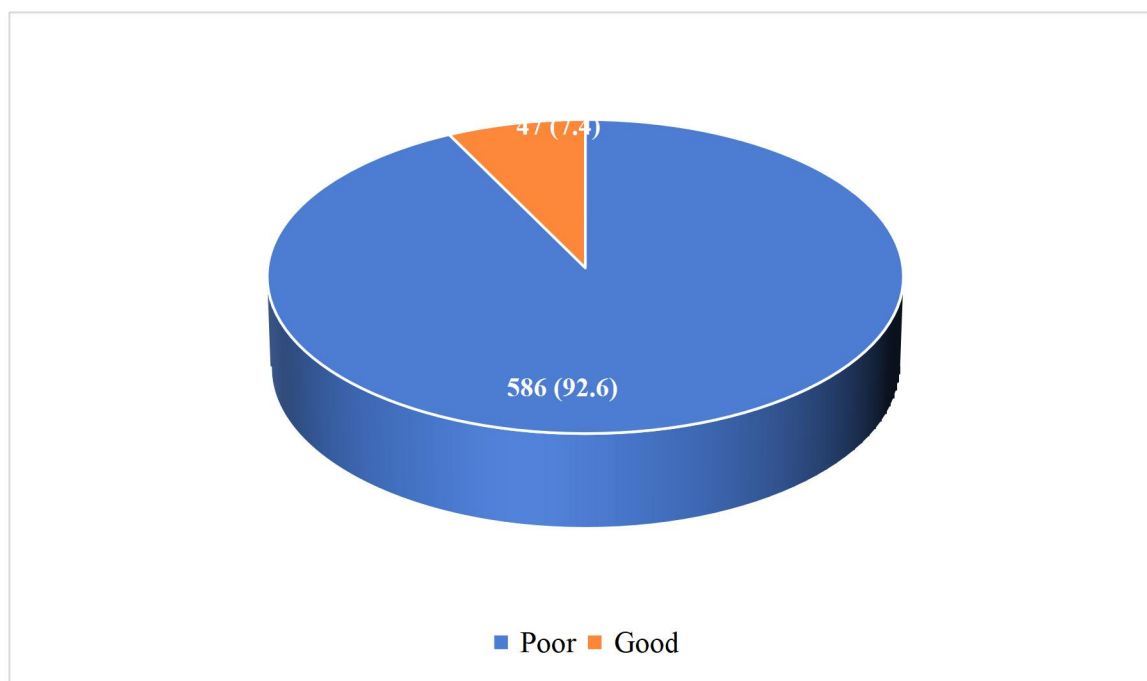


Fig 3: Level of utilization of treatment options

Figure 3 shows that 586 (92.6%) of respondents had poor level of treatment utilization of STIs, while 47 (7.4%) had good level of utilization of treatment of STIs.

Table 14a: Sociodemographic and other characteristics and treatment options utilized for STIs among young people

Variables	Treatment Options Utilization		Test statistic (χ^2)	p-value
	Good (n=47) Freq(%)	Poor (n=586) Freq(%)		
Age (years)			9.760	0.002
15–19	2 (1.4)	141 (98.6)		
20–24	45 (9.2)	445 (90.8)		
Sex of respondent			1.485	0.223
Male	16 (5.9)	253 (94.1)		
Female	31 (8.5)	333 (91.5)		
Skill level			7.393	0.117
Skill Level 0	5 (9.6)	47 (90.4)		
Skill Level 1	1 (20.0)	4 (80.0)		
Skill Level 2	32 (9.2)	316 (90.8)		
Skill Level 3	1 (7.7)	12 (92.3)		
Skill Level 4	8 (3.7)	207 (96.3)		
Ethnicity (recoded)			1.226	0.268
Edo indigene	16 (6.1)	248 (93.9)		
Non-Edo indigene	31 (8.4)	338 (91.6)		
Religion			0.745	0.689
Christianity	44 (7.6)	534 (92.4)		
Islam	3 (6.4)	44 (93.6)		
African Traditional Religion	0 (0.0)	8 (100.0)		
Marital status			11.945	0.001
Single	43 (6.9)	578 (93.1)		
Married	4 (33.3)	8 (66.7)		
Highest level of education			1.729	0.630
No formal education	1 (8.3)	11 (91.7)		
Primary	3 (8.8)	31 (91.2)		
Secondary	8 (5.1)	150 (94.9)		
Tertiary	35 (8.2)	394 (91.8)		

Table 14b: Sociodemographic and other characteristics and treatment options utilized for STIs among young people continued

Variables	Treatment Options Utilization		Test statistic (χ^2)	p-value
	Good (n=47) Freq(%)	Poor (n=586) Freq(%)		
Type of school attended			2.197	0.333
Public	33 (8.5)	355 (91.5)		
Private	14 (6.0)	221 (94.0)		
Not in school	0 (0.0)	10 (100.0)		
Household size			0.001	0.980
≤ 6	19 (7.4)	238 (92.6)		
>6	28 (7.4)	348 (92.6)		
Knowledge			0.880	0.348
Poor knowledge	0 (0.0)	11 (100.0)		
Good knowledge	44 (7.4)	549 (92.6)		
Attitude			3.519	0.061
Negative attitude	6 (3.9)	146 (96.1)		
Positive attitude	41 (8.5)	440 (91.5)		
Preventive practice			1.793	0.181
Poor	4 (13.8)	25 (86.2)		
Good	43 (7.1)	561 (92.9)		

Age was significantly associated with utilization ($\chi^2 = 9.760$, $p = 0.002$). Respondents aged 20–24 years had a higher proportion of good utilization 45 (9.2%) compared to those aged 15–19 years 2 (1.4%), while poor utilization was 445 (90.8%) and 141 (98.6%) respectively.

Sex of respondent was not significantly associated with utilization ($\chi^2 = 1.485$, $p = 0.223$). Males had 16 (5.9%) good utilization and 253 (94.1%) poor utilization, while females had 31 (8.5%) good utilization and 333 (91.5%) poor utilization.

Skill level was not significantly associated with utilization ($\chi^2 = 7.393$, $p = 0.117$). Although respondents in skill level 1 had the highest proportion of good utilization 1 (20.0%), followed by

skill level 2 with 32 (9.2%), and skill level 4 with 8 (3.7%), the association was not statistically significant.

Ethnicity was not significantly associated with utilization ($\chi^2 = 1.226$, $p = 0.268$). Edo indigenes had 16 (6.1%) good utilization and 248 (93.9%) poor utilization, while non-Edo indigenes had 31 (8.4%) good utilization and 338 (91.6%) poor utilization.

Religion was not significantly associated with utilization ($\chi^2 = 0.745$, $p = 0.689$). Christians had 44 (7.6%) good utilization and 534 (92.4%) poor utilization, Muslims 3 (6.4%) good utilization and 44 (93.6%) poor utilization, while respondents practicing African Traditional Religion had no good utilization 0 (0.0%).

Marital status was significantly associated with utilization ($\chi^2 = 11.945$, $p = 0.001$). Married respondents had a higher proportion of good utilization 4 (33.3%) compared to singles 43 (6.9%), while poor utilization was 8 (66.7%) among married and 578 (93.1%) among single respondents. Highest level of education was not significantly associated with utilization ($\chi^2 = 1.729$, $p = 0.630$). Respondents with tertiary education had 35 (8.2%) good utilization, secondary 8 (5.1%), primary 3 (8.8%), and no formal education 1 (8.3%), with similar patterns of poor utilization across groups.

Type of school attended was also not significantly associated with utilization ($\chi^2 = 2.197$, $p = 0.333$). Respondents in public schools had 33 (8.5%) good utilization and 355 (91.5%) poor utilization, private schools 14 (6.0%) good utilization and 221 (94.0%) poor utilization, while those not in school had no good utilization 0 (0.0%).

Household size was not significantly associated with utilization ($\chi^2 = 0.001$, $p = 0.980$). Respondents from households ≤ 6 members had 19 (7.4%) good utilization and 238 (92.6%) poor

utilization, while those from households >6 members had 28 (7.4%) good utilization and 348 (92.6%) poor utilization.

Knowledge was not significantly associated with utilization ($\chi^2 = 0.880$, $p = 0.348$). Respondents with good knowledge had 44 (7.4%) good utilization and 549 (92.6%) poor utilization, while all respondents with poor knowledge had no good utilization 0 (0.0%).

Attitude was marginally associated with utilization but not statistically significant ($\chi^2 = 3.519$, $p = 0.061$). Respondents with positive attitude had 41 (8.5%) good utilization and 440 (91.5%) poor utilization, while those with negative attitude had 6 (3.9%) good utilization and 146 (96.1%) poor utilization.

Preventive practice was not significantly associated with utilization ($\chi^2 = 1.793$, $p = 0.181$). Respondents with good preventive practice had 43 (7.1%) good utilization and 561 (92.9%) poor utilization, while those with poor practice had 4 (13.8%) good utilization and 25 (86.2%) poor utilization.

Table 15: Predictors of good utilization of treatment options among young people

Predictors	β	Odds ratio	95% CI for OR		p-value
			Lower	Upper	
Age (years)	0.193	1.213	1.023	1.438	0.026
Sex of respondent					
Female	0.527	1.695	0.851	3.371	0.133
Male *		1			
Skill level					
Skill 2	-0.826	0.438	0.214	0.895	0.024
others*		1			
Ethnicity					
Non-Edo indigenes	0.472	1.603	0.799	3.217	0.184
Edo indigenes*		1			
Religion					
Christianity	0.309	1.363	0.354	5.240	0.653
Others *		1			
Marital status					
Married	2.031	7.622	1.477	39.321	0.015
Single *		1			
Education level					
Formal	-0.773	0.461	0.047	4.542	0.507
Non formal *		1			
School type					
Others	-0.396	0.673	0.321	1.412	0.294
Public school*		1			
Household size					
> 6	-0.042	0.965	0.497	1.849	0.900
≤ 6*		1			
Knowledge category					
Good	17.990	64989744.873	0.000	.	0.999
Poor*		1			
Attitude category					
Positive	1.258	3.520	1.006	12.310	0.049
Negative*		1			
Preventive practice					
Good	1.334	0.263	0.078	0.886	0.031
Poor*		1			

CI = Confidence interval; OR = Odd ratio; *reference category

For every one-year increase in age, the odds of utilizing treatment increased by about 21.3% (OR = 1.213, $p = 0.026$), indicating that older young people were more likely to utilize treatment services after adjusting for other variables.

Sex of respondent was not significantly associated with utilization (OR = 1.695, $p = 0.133$), although females had higher odds of utilization compared to males after controlling for other factors.

Respondents with Skill 2 had 56.2% lower odds of utilizing treatment compared to those in the reference category (OR = 0.438, $p = 0.024$), indicating that lower skill level was significantly associated with reduced utilization of treatment services after adjustment for other variables.

Ethnicity was not significantly associated with utilization (OR = 1.603, $p = 0.184$), although non-Edo respondents had higher odds compared to Edo respondents after controlling for other factors.

Religion was not significantly associated with utilization (OR = 1.363, $p = 0.653$), although Christians had higher odds of utilization compared to respondents of other religions after adjusting for other variables.

Marital status was significantly associated with utilization. Married respondents were about 7.6 times more likely to utilize treatment services compared to those who were not married (OR = 7.622, $p = 0.015$), indicating a strong positive association after controlling for other factors.

Education level was not significantly associated with utilization (OR = 0.461, $p = 0.507$), although respondents in Category 1 had lower odds compared to the reference category after adjustment.

School type was not significantly associated with utilization (OR = 0.673, $p = 0.294$), although respondents in other school types had lower odds compared to public school students after controlling for other variables.

Household size was not significantly associated with utilization (OR = 0.965, $p = 0.900$), although respondents from smaller households (≤ 6 members) had slightly lower odds compared to those from larger households after adjustment.

Knowledge category was not significantly associated with utilization (OR = 64989744.873, $p = 0.999$), despite showing extremely high odds, indicating no reliable statistical relationship after controlling for other variables.

Attitude was significantly associated with utilization. Respondents with positive attitude had 3.5 times higher odds of utilizing treatment compared to those with negative attitude (OR = 3.520, $p = 0.049$), indicating that positive attitude significantly increased utilization after adjustment.

Preventive practice was significantly associated with utilization. Respondents with good preventive practice had 73.7% lower odds of utilizing treatment compared to those with poor practice (OR = 0.263, $p = 0.031$), indicating a significant inverse relationship after controlling for other variables.

SECTION F: FACTORS ASSOCIATED WITH PREVENTIVE PRACTICES OF STIS BY
YOUNG PEOPLE

Table 16a: Factors associated with preventive practices of STIs by young people

Variables	Practice		Test statistic (χ^2)	p-value
	Good (n=604) Freq (%)	Poor (n=29) Freq (%)		
Age (years)			4.090	0.043
15–19	132 (92.3)	11 (7.7)		
20–24	472 (96.3)	18 (3.7)		
Sex of respondent			0.259	0.611
Male	258 (95.9)	11 (4.1)		
Female	346 (95.1)	18 (4.9)		
Skill level			8.272	0.082
Skill Level 0	46 (88.5)	6 (11.5)		
Skill Level 1	5 (100.0)	0 (0.0)		
Skill Level 2	331 (95.1)	17 (4.9)		
Skill Level 3	13 (100.0)	0 (0.0)		
Skill Level 4	209 (97.2)	6 (2.8)		
Ethnicity			1.255	0.263
Edo indigene	249 (94.3)	15 (5.7)		
Non-Edo indigene	355 (96.2)	14 (3.8)		
Religion			7.728	0.021
Christianity	553 (95.7)	25 (4.3)		
Muslim	45 (95.7)	2 (4.3)		
African Traditional Religion	6 (75.0)	2 (25.0)		
Marital status			0.587	0.443
Single	592 (95.3)	29 (4.7)		
Married	12 (100.0)	0 (0.0)		
level of education			1.303	0.728
No formal education	12 (100.0)	0 (0.0)		
Primary	32 (94.1)	2 (5.9)		
Secondary	149 (94.3)	9 (5.7)		
Tertiary	411 (95.8)	18 (4.2)		
Type of school attended			0.712	0.700
Public	371 (95.6)	17 (4.4)		
Private	224 (95.3)	11 (4.7)		
Not in school	9 (90.0)	1 (10.0)		

Table 16b: Factors associated with preventive practices of STIs by young people continued

Variables	Practice		Test statistic (χ^2)	p-value
	Good (n=604) Freq (%)	Poor (n=29) Freq (%)		
Household size			0.225	0.824
≤ 6	244 (94.9)	13 (5.1)		
> 6	360 (95.7)	16 (4.3)		
Knowledge			5.238	0.022
Poor	9 (81.8)	2 (18.2)		
Good	569 (96.0)	24 (4.0)		
Attitude			7.217	0.007
Negative	139 (91.4)	13 (8.6)		
Positive	465 (96.7)	16 (3.3)		

Age was significantly associated with preventive practices of STIs ($\chi^2 = 4.090$, $p = 0.043$). Respondents aged 19–22 years had a higher proportion of good preventive practice 472 (96.3%) compared to those aged 15–18 years 132 (92.3%), while poor practice was 18 (3.7%) and 11 (7.7%) respectively.

Sex of respondent was not significantly associated with preventive practices ($\chi^2 = 0.259$, $p = 0.611$). Males had 258 (95.9%) good practice and 11 (4.1%) poor practice, while females had 346 (95.1%) good practice and 18 (4.9%) poor practice.

Skill level was not significantly associated with preventive practices ($\chi^2 = 8.272$, $p = 0.082$). Although respondents in higher skill levels (3 and 4) recorded 100.0% and 97.2% good practice respectively, compared to skill level 0 with 88.5%, the association was not statistically significant.

Ethnicity was also not significantly associated with preventive practices ($\chi^2 = 1.255$, $p = 0.263$). Edo indigenes had 249 (94.3%) good practice and 15 (5.7%) poor practice, while non-Edo indigenes had 355 (96.2%) good practice and 14 (3.8%) poor practice.

Religion was significantly associated with preventive practices ($\chi^2 = 7.728$, $p = 0.021$). Christians and Muslims both had high proportions of good practice 553 (95.7%) and 45 (95.7%) respectively, while respondents practicing African Traditional Religion had a lower proportion of good practice 6 (75.0%) and higher poor practice 2 (25.0%).

Marital status was not significantly associated with preventive practices ($\chi^2 = 0.587$, $p = 0.443$). Singles had 592 (95.3%) good practice and 29 (4.7%) poor practice, while all married respondents had good practice 12 (100.0%). Level of education was not significantly associated with preventive practices ($\chi^2 = 1.303$, $p = 0.728$). Respondents with tertiary education had 411 (95.8%) good practice, secondary 149 (94.3%), primary 32 (94.1%), and those with no formal education 12 (100.0%). Type of school attended was also not significant ($\chi^2 = 0.712$, $p = 0.700$). Respondents from public schools had 371 (95.6%) good practice, private schools 224 (95.3%), while those not in school had 9 (90.0%).

Household size showed no significant association with preventive practices ($\chi^2 = 0.225$, $p = 0.824$). Respondents from households ≤ 6 members had 244 (94.9%) good practice, while those from larger households had 360 (95.7%) good practice. Knowledge of STIs was significantly associated with preventive practices ($\chi^2 = 5.238$, $p = 0.022$). Respondents with good knowledge had higher good practice 569 (96.0%) compared to those with poor knowledge 9 (81.8%), while poor practice was higher among those with poor knowledge 2 (18.2%).

Attitude towards STIs was also significantly associated with preventive practices ($\chi^2 = 7.217$, $p = 0.007$). Respondents with positive attitude had higher good practice 465 (96.7%) compared to those with negative attitude 139 (91.4%), while poor practice was higher among those with negative attitude 13 (8.6%).

CHAPTER FIVE

DISCUSSION

This study assessed the knowledge, attitude, preventive practices and treatment options related to sexually transmitted infections among 633 young people in Ovia North East Local Government Area of Edo State, Nigeria. The findings are discussed below in line with the specific objectives of the study.

This study found that the majority of respondents had good knowledge of STIs, and awareness was widespread. School, social media, health workers and broadcast media were the most prominent sources of information, while gonorrhoea, HIV/AIDS and syphilis were the most recognised STIs and HPV was the least recognised. Knowledge of the risk of contracting STIs following unprotected sex, oral sex, anal sex, was high, but misconceptions persisted around toilet seats, kissing and mosquito bites. As it concerns knowledge regarding preventive measures towards STIs, knowledge on condom use, vaccination and abstinence were high, but misconceptions existed about emergency contraception and douching. The probable reason for this pattern is multi-layered. The generally high knowledge level is likely because most respondents were educated young people living in a setting with access to schools, mass media and social media, all of which increase exposure to health messages. At the same time, the persistence of misconceptions about STI transmission and preventive practices suggests that

much of this exposure may be broad rather than deep, with health messages often emphasizing HIV and a few common STIs while giving less attention to HPV, asymptomatic infection and incorrect preventive beliefs. In addition, the Nigerian context still contains cultural discomfort around open discussion of sexuality, which may limit opportunities for clarification and allow inaccurate peer-shared information to persist even among educated youths. This is similar to an analytical cross-sectional study conducted among 423 female undergraduate students of the University of Benin in Benin City, Nigeria, which found widespread awareness of STIs alongside residual misconceptions and gaps regarding non-HIV STIs and asymptomatic infections.¹⁴ Similarly, a systematic review of 74 studies conducted across 35 African countries between 2010 and 2018, involving over 1.3 million participants, reported that awareness of HIV was generally high while knowledge of other STIs such as HPV and hepatitis-related infections remained weaker and uneven across settings.¹⁵ This finding is significant because partial knowledge among young people creates a false sense of confidence, which can delay symptom recognition, reduce preventive practices, and ultimately sustain STI transmission. This gap weakens public health efforts and contradicts global goals such as WHO sexual and reproductive health targets and SDG 3 on Good Health and Well-being. To address this, STI education should be strengthened and made more comprehensive through schools, primary healthcare systems, and youth-friendly services in collaboration with the Federal Ministry of Health and Social Welfare and the National Primary Health Care Development Agency. Programs should expand beyond HIV to include HPV, Hepatitis B, asymptomatic infections, and correction of misconceptions, using classroom teaching, peer education, and verified digital platforms. Existing structures like the National School Health Policy and adolescent health programs should be fully leveraged for sustainability, while NGOs and community-based organizations can

support outreach and culturally appropriate messaging. Overall, these interventions should aim to improve knowledge depth, promote early health-seeking behaviour, and reduce STI incidence and complications among young people.

Religion was significantly associated with knowledge of STIs in this study with respondents in the dominant religious group, i.e. Christians showing a more favourable knowledge profile than those in smaller religious groups. The probable reason for this is likely related less to religion itself and more to the social environments through which information circulates. In Ovia North East LGA, churches, schools and community-based youth structures often overlap, and respondents from more socially integrated groups may have greater exposure to health talks, school campaigns and peer networks that reinforce accurate knowledge. In addition, the very small number of respondents in minority religious categories may reflect reduced access to the same health information channels or simply a smaller pool from which health literacy gains could emerge. This is consistent with an analytical cross-sectional study conducted among 423 female undergraduate students of the University of Benin in Benin City, Nigeria, which showed that contextual and institutional exposure played an important role in shaping STI knowledge.¹⁴ Similarly, a quantitative cross-sectional study conducted in 2019 among 1,902 university students in Albaha, Saudi Arabia, reported that knowledge levels varied by educational and social background, showing how wider sociocultural context influences STI literacy.¹⁶ This finding has important public health implications, as disparities in knowledge across social groups can result in certain populations being underserved by conventional health education strategies. If unaddressed, these gaps may sustain pockets of low awareness, delayed health-seeking behaviour and continued transmission of STIs within specific subgroups. Promoting equitable access to accurate STI information is therefore essential for comprehensive disease control and

aligns with the goals of the World Health Organization in reducing health inequities, as well as the United Nations Sustainable Development Goal 3 (Good Health and Well-being). To address this disparity, STI education interventions should be expanded beyond traditional school-based and mainstream channels to include targeted outreach through diverse community structures. Collaboration with the Federal Ministry of Health and Social Welfare and the National Primary Health Care Development Agency (NPHCDA) can support the integration of inclusive, community-based health education into primary healthcare and youth-friendly services.

After adjustment for other factors, age remained a significant predictor of good knowledge indicating that as respondents grew older within the study age range, they were more likely to demonstrate good knowledge of STIs. This is probably due to the fact that older youths are more likely to have progressed further in school, encountered more formal and informal health education, and accumulated more lived experience through peer interaction, media exposure and greater autonomy in health decision-making. In the Nigerian setting, older adolescents and young adults are also more likely to engage with reproductive health content directly, either because of relationship experience or because they become more attentive to the consequences of sexual behaviour. Religion also remained significant after adjustment, suggesting that differences in knowledge across religious categories persisted even when other background factors were taken into account. This is similar to a cross-sectional descriptive study conducted in 2020 among 401 polytechnic students in Ibadan, Oyo State, Nigeria, which reported that socio-demographic characteristics influenced STI knowledge and risk perception.²⁰ Similarly, a quantitative cross-sectional study conducted in 2019 among 1,902 university students in Albaha, Saudi Arabia, found that educational and social background shaped STI knowledge levels among young adults.¹⁶ Younger adolescents may begin sexual activity before acquiring adequate STI

knowledge, increasing vulnerability to risky behaviour, delayed symptom recognition, and poor use of preventive services. This early knowledge gap contributes to ongoing STI transmission and aligns with WHO adolescent Sexual and Reproductive Health (SRH) priorities. To address this, comprehensive sexuality education should be introduced earlier in secondary school under the National School Health Policy, with support from the Federal Ministry of Health and Social Welfare (FMOSHW) and National Primary Health Care Development Agency (NPHCDA). Strengthening youth-friendly services in primary healthcare and involving NGOs, peer educators, and community groups will improve early engagement and accessibility. These interventions will ensure adolescents are informed before sexual debut, promote safer behaviours, improve early care-seeking, and reduce STI incidence and complications.

This study also found that the majority of respondents had a positive attitude toward STIs and their prevention. Most respondents agreed that young people are at risk, that sexually active individuals can acquire STIs, that regular screening is important and that health facilities should be used when infection is suspected, but a much smaller proportion accepted personal susceptibility. The probable reason for this pattern might be due to various factors. The generally positive attitude likely reflects the fairly high level of STI knowledge in the study population and the normalising effect of school-based education, social media messaging and increasing public discussion of reproductive health. However, the poor perception of personal risk is likely because many young people cognitively recognise population-level danger while distancing themselves from that same danger at an individual level, especially in contexts where premarital sexual activity is morally sensitive and self-disclosure is uncomfortable. In addition, embarrassment around condoms and testing may persist because sexual health remains linked with stigma, judgment and fears of being labelled promiscuous in many Nigerian communities.

This is similar to a descriptive cross-sectional study conducted in 2021 among 918 university students at a health sciences university in Pretoria, South Africa, which found that many respondents perceived themselves to be at low risk despite engaging in risky behaviours.¹⁹ Similarly, a 2007 descriptive cross-sectional study conducted among 303 adolescents and youths (10-24 years of age) in Ile-Ife, Nigeria, reported that although young people demonstrated awareness of STIs and generally positive attitudes toward prevention, personal risk perception remained low and risky behaviours persisted.⁵¹ This finding has important public health implications because low personal risk perception can weaken screening uptake, delay care-seeking and sustain risky behaviour even where general attitudes appear favourable. Health educators should incorporate risk-personalisation strategies into STI education, including relatable scenarios, peer-led sessions and confidential counselling that help young people connect general STI information to their own behaviour. Implementation can be supported through the National School Health Policy and adolescent health programmes coordinated by the Federal Ministry of Health and Social Welfare and the National Primary Health Care Development Agency. In addition, partnerships with NGOs and community-based organisations can promote stigma reduction through community dialogue and normalize access to condoms and STI testing services. These interventions will improve personal risk perception, increase screening uptake, encourage safer sexual practices and ultimately reduce the transmission and complications of STIs among young people.

Several factors were significantly associated with attitude in this study, including religion marital status, education, household size and knowledge level. Respondents with better knowledge, smaller household size and higher education tended to have a more positive attitude. The probable reason for this pattern is that positive STI attitudes are not shaped by information alone

but also by the broader social environment in which young people interpret sexual health. Formal education likely improves critical thinking and acceptance of biomedical explanations, while smaller households may allow closer supervision, more privacy and more consistent parent-child communication. Better knowledge is also likely to reduce myths, stigma and stoic beliefs that sustain negative attitudes. This is consistent with a quantitative descriptive cross-sectional study conducted among 10,547 unmarried male adolescents aged 15–24 years in Indonesia using national survey data, which identified peer influence and substance-related social context as important drivers of sexual attitudes and risk behaviour.²³ Similarly, a quantitative descriptive cross-sectional study conducted among 422 high school learners in Nelson Mandela Municipality, Eastern Cape, South Africa, found that misconceptions and risky attitudes coexisted where supportive sexual health understanding was limited.²² This finding is significant because attitude is a bridge between knowledge and behaviour, and negative attitudes can undermine the practical uptake of prevention and care even when awareness exists resulting in sustained transmission, delayed treatment, and increased complications. To address this, interventions should go beyond schools to include family and community-based approaches. Through collaboration with the Federal Ministry of Health and Social Welfare and National Primary Health Care Development Agency (NPHCDA), STI education can be integrated into primary healthcare and adolescent programmes. Engaging parents through community forums, alongside NGO-led peer education and dialogue, will reduce stigma and improve communication. These actions will promote supportive attitudes, increase preventive practices, and enhance early care-seeking.

Multivariate analysis showed that religion, formal education, school type, household size and good knowledge independently predicted positive attitude. In practical terms, respondents with

stronger educational exposure and better knowledge were much more likely to hold constructive views about STIs, while respondents outside the public-school category and those from larger households were less likely to do so. The probable reason for this might be that education and knowledge create a framework for understanding susceptibility, stigma and prevention, whereas larger households and less structured school environments may dilute personalised health messaging, reduce supervision and increase reliance on peer narratives. In a semi-urban Nigerian setting, public schools may also offer broader exposure to organised health campaigns than more fragmented educational pathways. This is similar to a descriptive cross-sectional study conducted between June and November 2018 among 425 young unmarried persons in Surulere LGA, Lagos State, Nigeria, which reported that age, education and attitude-related factors were important in shaping STI preventive orientation.³ Similarly, a systematic review and meta-analysis based on five cross-sectional studies in Ethiopia involving 1,925 young people aged 10–24 years found that positive attitude and good knowledge increased the likelihood of engaging in STI prevention.²⁹ This has important public health implications because it shows that favourable STI attitudes are produced by educational and social support structures. Strengthening these structures is essential for promoting behaviour change, increasing uptake of preventive services and reducing STI transmission. This aligns with the priorities of the World Health Organization on adolescent health promotion and contributes to the achievement of United Nations Sustainable Development Goal 3 (Good Health and Well-being). To address this, the State Ministry of Education should strengthen STI education through inclusive school and community-based programmes, especially for adolescents in larger households and outside public-school systems. With support from the State Ministry of Health and National Primary Health Care Development Agency (NPHCDA), strategies should include peer education, youth

clubs, digital platforms, and community outreach. NGOs can further support tailored interventions for underserved groups. These actions will improve attitudes, promote safer behaviours, and increase early care-seeking.

Although about a third of respondents had ever had sexual intercourse, risky sexual behaviours were still present among those who were sexually active. Most respondents initiated sex between ages 15–19 years, with intimate partners being the most common first partners. Over a third of them in this category reported behaviours that increase STI risk, including having multiple sexual partners, sharing sharp objects, and low levels of STI screening. Condom use was generally low, with the majority reporting they never use condoms. While a high proportion had received sex education and an overwhelming majority were classified as having “good preventive practice,” uptake of specific preventive measures such as STI vaccination and consistent condom use remained suboptimal. This pattern may be explained by several factors. The relatively low proportion of sexually active respondents could reflect underreporting due to social desirability bias, especially in a setting where premarital sex is culturally sensitive. Early sexual debut in mid-adolescence likely reflects peer influence, curiosity, and limited supervision, and increases vulnerability to STIs due to inconsistent condom use, multiple partners, and poor risk perception. This can lead to higher rates of infections such as HIV, HPV, and other STIs, with consequences including delayed diagnosis, ongoing transmission, and long-term complications like infertility. The coexistence of “good preventive practice” classification with risky behaviours suggests that respondents might possess theoretical knowledge without consistent behavioural application. Low condom use and STI testing may be due to stigma, embarrassment, limited access, or misconceptions about personal risk, while low vaccination uptake likely reflects limited awareness, cost barriers, and poor integration of vaccines like HPV

into routine youth health services. Sharing of sharp objects may also indicate poor understanding of non-sexual transmission routes of infections such as hepatitis B. This is similar to the findings from a cross-sectional descriptive study conducted in 2021 among 310 adolescents in Atani, Nigeria which show that risky sexual practices often persist despite relatively good knowledge and reported positive attitudes.²⁵ Similarly, a descriptive cross-sectional and qualitative study conducted in Rio de Janeiro, Brazil among 173 university students, reported low condom use, multiple sexual partners and low levels of STI screening.²⁸ These findings are significant because they reveal a disconnect between knowledge, reported preventive practices, and actual risk behaviours. This gap increases the risk of continued transmission of STIs, including HIV and hepatitis B, as well as delayed diagnosis and complications such as infertility and chronic infections. Low vaccination uptake further represents a missed opportunity for primary prevention of infections like HPV and hepatitis B, which have long-term consequences including cancer. To address this, interventions should combine knowledge with behaviour-focused strategies. The State ministry of education through sexuality education should emphasise practical skills like condom negotiation and risk assessment, while youth-friendly services, supported by the National Primary Health Care Development Agency (NPHCDA) should provide accessible and confidential testing and counselling. Expanding HPV and hepatitis B vaccination through school and community programmes, alongside NGO-led peer education and stigma reduction, will improve uptake of preventive services, promote safer behaviours, and reduce STI burden.

Knowledge and attitude were significantly associated with preventive practice in this study, with better knowledge and a positive attitude corresponding to more favourable preventive behaviour. Religion was also significantly associated with preventive practice. The probable reason for this

is that preventive behaviour is more likely when young people not only understand STI transmission and prevention but also perceive preventive actions as acceptable, relevant and feasible within their social setting. Where stigma, embarrassment or moral judgment remain strong, even informed respondents may fail to act, especially regarding condom access, screening and vaccination. Religious and community norms may further shape what forms of protection are openly discussed or quietly avoided. This is consistent with a descriptive cross-sectional study conducted between June and November 2018 among 425 young unmarried persons in Surulere LGA, Lagos State, Nigeria, which found that knowledge of STIs was significantly associated with preventive practices.³ Similarly, a systematic review and meta-analysis based on five cross-sectional studies in Ethiopia involving 1,925 young people aged 10–24 years found that good knowledge and positive attitude increased the likelihood of STI prevention practice.²⁹ This has important public health implications because it shows that knowledge alone does not ensure safe sexual behavior. Without supportive attitudes and enabling environments, stigma, cultural barriers, and limited access to services can prevent action. This gap sustains STI transmission, delays diagnosis, and reduces uptake of preventive services, highlighting the need for integrated behavioural and structural interventions to improve preventive practices, interventions should combine knowledge dissemination with strategies that directly address stigma, social norms and access barriers. Health promotion programmes should integrate attitude-change communication, confidential STI testing and counselling services, and peer-led behaviour change interventions within schools and communities. In addition, NGOs and community-based organisations can support outreach programmes that normalise condom use, promote STI screening and expand vaccination uptake for HPV and hepatitis B. These combined interventions will improve the translation of knowledge and attitude into sustained preventive

behaviour, reduce risky sexual practices and ultimately lower the burden of STIs among young people.

After adjustment for other variables, positive attitude remained the only significant predictor of good preventive practice. In practical terms, respondents who viewed STI prevention more favourably were more than twice as likely to practise protective behaviours. The probable reason for this is that attitude is the point at which knowledge is translated into intention and then into action. A young person may know that screening, vaccination or condom use is beneficial, but unless those behaviours are perceived as acceptable, non-embarrassing and personally relevant, they may not occur. In the Nigerian setting, where sexual behaviour is still heavily moralised, positive attitude may therefore be the critical factor that helps young people overcome shame, inertia and peer pressure. This is similar to a descriptive cross-sectional study conducted between June and November 2018 among 425 young unmarried persons in Surulere LGA, Lagos State, Nigeria, which identified attitude as one of the key factors associated with preventive practices.³ Similarly, a systematic review and narrative synthesis synthesizing 18 studies among female Muslim participants of reproductive age worldwide reported that negative attitudes and stigma constituted major barriers to STI prevention and service use.³⁵ This finding has important public health implications because interventions that improve attitude may yield greater behaviour change than information-only campaigns. Programmes should go beyond information to include attitude-focused strategies such as peer education, scenario-based learning, and confidential counselling. These should be integrated into school and adolescent-friendly services with support from the National Primary Health Care Development Agency (NPHCDA). Partnering with NGOs and agencies like the National Orientation Agency can support community dialogue and

norm-shifting campaigns. These actions will strengthen positive attitudes, improve preventive behaviours, and reduce STI burden.

This study further found that the overall level of treatment utilization was poor, even though hospitals were the most preferred treatment location and most respondents stated that they would seek care immediately or within a short time when symptoms occurred. Among the small proportion who reported STI symptoms, itching, discharge and painful urination were the most common complaints, and while health facilities were preferred, some respondents still relied on pharmacies, self-medication, herbal remedies or no treatment at all. The probable reason for this pattern is many-sided. The stated preference for hospitals likely reflects trust in formal care and awareness that STI management requires professional treatment. However, the poor overall utilization score suggests that intention does not easily convert into behaviour once symptoms occur, particularly when privacy, transport, cost and fear of stigma become real barriers. In a semi-urban Nigerian setting, patent medicine vendors and pharmacies remain attractive because they are faster, less judgmental and more discreet than formal facilities, even when they do not provide ideal care. This is similar to a cross-sectional descriptive study conducted among 310 adolescents in Atani, Ogbaru LGA, Anambra State, Nigeria, which found that many adolescents sought STI treatment from chemist shops rather than hospitals.³¹ In contrast, a descriptive cross-sectional survey conducted among 332 patients aged 16 to 23 years with confirmed STI symptoms in Nkomazi East, Mpumalanga, South Africa, reported high use of public healthcare clinics, likely because primary healthcare services were more accessible and equitable.³³ This finding is significant because delayed or inappropriate treatment can prolong infection, increase complications, sustain transmission and contribute to antimicrobial resistance. The local government health authority in Ovia North East should strengthen confidential youth-friendly

STI treatment services and reduce reliance on informal drug outlets through subsidised, accessible clinic-based care.

Older respondents and those who were married demonstrated relatively better treatment utilization. The probable reason for this is that older young adults may have greater autonomy, more financial control and more confidence in navigating health services, while married respondents may feel a stronger need to seek definitive care because of concerns about fertility, partner wellbeing and social expectations around reproductive health. Younger adolescents, by contrast, may delay care because of shame, dependence on parents and fear of disclosure. This is similar to a descriptive cross-sectional study conducted around September 2019 among 190 youths aged 15–24 years in the Abuakwa South Municipal Assembly of Ghana, which found that privacy, beliefs about effectiveness and prior experience shaped first points of treatment-seeking for STI illness.³² Similarly, a secondary analysis of a national cross-sectional survey conducted among 3,953 sexually experienced adolescents and young adults aged 15–25 years in the United States reported that service use depended strongly on where young people felt able to access care, with private settings often preferred for confidentiality.³⁴ This has important public health implications because poor treatment utilization among younger and socially vulnerable youths can leave infections untreated at the stage when they are most transmissible. Adolescent health services should provide confidential entry points for younger clients, including low-visibility STI care pathways, counselling and same-day treatment access.

Multivariate analysis showed that age, occupational skill level 2, and marital status were significant predictors of treatment utilization, with utilization increasing with age, being lower in that major occupational skill category, and higher among married respondents. This may be explained by the fact that older and married individuals often perceive infections as more serious

and are more motivated to seek formal care due to greater responsibility and health awareness, while occupational demands and income instability among certain skill groups may limit time, affordability, and access to healthcare services. This is similar to a descriptive cross-sectional study conducted around September 2019 among 190 youths aged 15–24 years in the Abuakwa South Municipal Assembly of Ghana, which reported that convenience, privacy and perceived effectiveness strongly influenced where and when youths sought treatment.³² Similarly, a cross-sectional descriptive study conducted among 310 adolescents in Atani, Ogbaru LGA, Anambra State, Nigeria, showed that affordability was a major reason for treatment location choice among adolescents with STI symptoms.³¹ This finding has important public health implications because structural barriers tied to age, marital status and livelihood can create unequal access to timely STI care even when knowledge is present. The state ministry of health should integrate low-cost youth-friendly STI treatment into primary healthcare services and extend service hours to accommodate students, apprentices and other young workers.

Contribution to knowledge

This study contributes to knowledge by addressing its key objectives within the local context. In assessing the knowledge of sexually transmitted infections among young people in Ovia North East LGA, it shows that although awareness and overall knowledge are relatively high, important misconceptions and low personal risk perception still persist.

With respect to attitude, the study demonstrates that attitude is a key driver of behavior. Positive attitude was a stronger predictor of good preventive practices than knowledge alone after adjusting for other factors. This highlights the need for STI interventions to move beyond

awareness creation and address beliefs, perceived susceptibility, embarrassment, and prevailing social norms.

In terms of preventive practices, the study identifies a clear gap between knowledge and actual behavior, as reflected in the low uptake of screening, vaccination, and other preventive measures despite good awareness. This emphasizes the importance of implementing practical, behavior-focused prevention strategies.

Regarding treatment options and healthcare-seeking behavior, the study shows that treatment utilization remains suboptimal and is influenced not only by knowledge but also by factors such as privacy, accessibility, cost, trust in healthcare providers, and stigma.

Overall, by identifying the factors associated with preventive practices and treatment utilization, this study provides context-specific evidence that can inform the development of more targeted, effective, and youth-friendly STI prevention and control programs in Edo State and similar settings.

Policy implications

The findings of this study suggest that STI control policies targeting young people should move beyond general awareness campaigns to more comprehensive, behavior-focused interventions. Given that positive attitude was a stronger predictor of preventive practices than knowledge alone, policies should support the integration of behavior change communication strategies into existing sexual health programs, with emphasis on risk perception, condom negotiation skills, and reduction of stigma.

Education policy should prioritize the implementation and strengthening of comprehensive sexuality education in schools and youth programs, ensuring that it is practical, skills-based, and culturally appropriate. This includes promoting consistent condom use, regular STI screening, and increasing awareness and uptake of preventive measures such as HPV and hepatitis B vaccination.

Health system policies should focus on expanding access to youth-friendly STI services. This includes ensuring confidentiality, reducing waiting times, subsidizing or eliminating user fees for STI testing and treatment, and improving the availability of services at primary healthcare levels. Mobile clinics and community-based services may also help reach young people who face barriers to accessing care.

Given the influence of cost, accessibility, and trust on treatment utilization, policies should also address financial and structural barriers to care. This could involve strengthening health insurance coverage for young people, improving provider training on youth-friendly and non-judgmental care, and enhancing community engagement to build trust in formal healthcare systems.

Finally, public health policies should incorporate targeted campaigns to address stigma and misconceptions surrounding STIs, condom use, and testing. Reducing stigma will be critical in improving both preventive practices and treatment-seeking behavior among young people. Overall, these policy directions can support more effective, equitable, and youth-centered STI prevention and control efforts in Edo State and similar settings.

CONCLUSION

Most respondents had good knowledge of STIs, including their types, transmission, symptoms, and prevention, although some misconceptions remained; increasing age and religion were significant predictors of better knowledge.

The majority showed positive attitudes toward STI prevention and care, but low personal risk perception and some embarrassment persisted, with attitude significantly influenced by factors such as education, religion, and knowledge.

While many respondents demonstrated generally good preventive practices, gaps such as low screening, low vaccination uptake, and some risky behaviors remained, with positive attitude being the strongest predictor of good practice.

Utilization of appropriate STI treatment was generally poor despite preference for hospital care, with barriers such as cost, accessibility, and privacy, while age and marital status significantly influenced treatment-seeking.

Utilization of appropriate STI treatment was generally poor despite preference for hospital care, with barriers such as cost, accessibility, and privacy, while age and marital status significantly influenced treatment-seeking.

RECOMMENDATIONS

To the Federal Ministry of Health Nigeria (FMoH)

1. Develop and implement national STI strategies that go beyond awareness to include behavior change interventions targeting risk perception, stigma reduction, and condom negotiation skills.
2. Expand and subsidize HPV and hepatitis B vaccination programs for young people, ensuring nationwide access and affordability.
3. Strengthen national guidelines on youth-friendly STI services, emphasizing confidentiality, accessibility, and integration of screening into routine care

To the National Primary Health Care Development Agency (NPHCDA)

1. Scale up youth-friendly services at primary healthcare centers, ensuring privacy, reduced waiting times, and non-judgmental care.
2. Integrate routine STI screening, counseling, and vaccination into primary healthcare services, especially for adolescents and young adults.
3. Deploy mobile clinics and community outreach programs to improve access for young people who face barriers due to cost, distance, or time constraints.

To Schools

- 1 School authorities should strengthen sexuality education programmes to ensure that students receive correct and age-appropriate information about STI prevention, symptoms, vaccination, screening and treatment.

- 2 Teachers and school counselors should create safe spaces where students can discuss sexual and reproductive health issues without fear, embarrassment or stigma.
- 3 Schools should collaborate with health workers to organize regular STI awareness campaigns, vaccination drives and counseling sessions for students.
- 4 Peer education clubs should be encouraged in schools so that young people can learn from trained peers and challenge harmful myths and misconceptions about STIs

To the community and parents

1. Community members, including religious leaders, traditional leaders and youth leaders, should be sensitized to support STI prevention efforts and reduce stigma associated with STI screening and treatment.
2. Parents and guardians should communicate more openly with young people on sexual and reproductive health matters so as to provide accurate guidance and reduce dependence on misinformation from peers or unreliable media sources.

To Young People

- 1 Should be encouraged to seek timely and appropriate treatment from health facilities whenever they notice symptoms suggestive of STIs, rather than resorting to self-medication or herbal treatment.
- 2 Should actively participate in STI education programmes and make use of screening, counseling and vaccination services available in their communities and health facilities.
- 3 Seek accurate information from trusted sources and avoid misconceptions, while encouraging peers to adopt healthy sexual practices.

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APPENDIX I

KNOWLEDGE, ATTITUDE AND PREVENTIVE PRACTICES TOWARDS SEXUALLY TRANSMITTED INFECTIONS AMONG YOUNG PEOPLE IN OVIA NORTH EAST LOCAL GOVERNMENT AREA, EDO STATE

Dear Sir/Ma,

We are 600L medical students at the University of Benin, Benin City. This questionnaire is designed to assess the KNOWLEDGE, ATTITUDE AND PREVENTIVE PRACTICES TOWARDS SEXUALLY TRANSMITTED INFECTIONS AMONG YOUNG PEOPLE in Ovia North East Local Government Area, Edo state. All information given will be treated as confidential. Please kindly answer all questions as accurately as possible. Thank you.

SECTION A: SOCIO-DEMOGRAPHICS

1. Age (in years) as at last birthday _____
2. Sex: Male () Female ()
3. Occupation of parent/guardian/Caretaker: _____
4. Ethnicity: Bini () Esan () Igbo () Yoruba () Hausa () Others (specify) _____
5. Religion: Christian () Muslim () African traditional religion ()
6. Marital status: Single () Cohabiting () Married () Widowed () Divorced ()
7. Highest Level of education attained/currently in: No formal education () Primary () Secondary () Tertiary ()
8. Type of school attended: Public () Private () Not in school ()
9. Household size: 1-5 () 6-10 () >10 ()

SECTION B: Knowledge of Sexually Transmitted Infections

10. Have you heard of STIs before? Yes () No ()
11. If Yes, what is your source of information? (Choose all that apply): Health workers [] Television/Radio [] Social Media [] School [] Parents/Family [] Friends [] Faith based organisations []
12. Which of the following are STIs? (Choose all that apply): HIV/AIDS [] Gonorrhoea [] Chlamydia [] Syphilis [] Genital Herpes [] Hepatitis B [] Human Papilloma Virus -HPV [] I don't know []
13. STIs are spread through: (Choose all that apply) Unprotected sexual intercourse [] Pregnant mother to child [] Sharing of sharps [] Mosquito bites [] Toilet seats [] Kissing [] Casual contact (hugging, handshakes) []
14. Is it possible to get an STI from oral sex? Yes () No () I don't know ()
15. Is it possible to get an STI from anal sex? Yes () No () I don't know ()
16. Can someone have an STI without showing symptoms? Yes () No () I don't know ()
17. Which of the following are symptoms of STIs? (Choose all that apply): Genital discharge [] Painful urination [] Genital Sores [] Lower abdominal pain [] Rash [] No symptoms []
18. Can untreated STI lead to infertility? Yes () No () I don't Know ()
19. Can STIs be prevented? Yes () No () I don't know ()
20. Which of this can prevent sexually transmitted infections? (Choose all that apply): Use of condoms [] Abstinence [] Faithfulness to one's partner [] Vaccination e.g. Hep B, HPV []

Regular Screening [] Vaginal douching after sex [] Emergency contraception [] Traditional herbs [] None of the above []

21. When STIs are treated early, they can be cured? Yes () No () I don't know ()

SECTION C: Attitude towards Sexually Transmitted Infections

SD = Strongly Disagree, D = Disagree, N= Neutral, A = Agree, SA = Strongly Agree

S/N		SD	D	N	A	SA
22	I believe young people are at a high risk of STIs					
23	I think anyone who is sexually active can get an STI					
24	I believe I am personally at risk of contracting an STI					
25	I think using condoms effectively prevents STIs					
26	Screening for HIV and other STIs regularly is important					
27	Abstinence is the best way to avoid STIs					
28	I would be willing to visit a health facility if I suspected I had an STI					
29	I think discussing sexual health openly encourages irresponsible behaviour					
30	Buying condoms is embarrassing					
31	I would feel embarrassed to go for an STI testing					
32	STIs are a punishment from God for sinners					
33	I think people who have STIs should be ashamed					

SECTION D: Preventive Practices towards Sexually Transmitted Infections

34. Have you ever had sexual intercourse? Yes () No () *If NO, skip to Q39*

35. If yes, how old were you when you first had sex? _____

36. With whom did you first have sex? Immediate family member () Distant relative () Intimate partner () Casual friend () Sex worker () Others (please specify) _____

37. Did you use a condom during your last sexual intercourse? Yes () No ()

38. How often do you use condoms during sexual intercourse? Always () Frequently () Sometimes () Rarely () Never ()

39. Have you ever been tested for sexually transmitted infections? Yes () No ()

40. If yes, how often do you go for STI screening? Regularly () Occasionally () Only when I have symptoms ()

41. Do you have multiple sexual partners? Yes () No ()

42. Do you share sharps like razor blades, needles with others? Yes () No ()

43. Do you patronize commercial sex workers? Yes () No ()

44. Do you involve in oral sex. Always () Frequently () Sometimes () Rarely () Never ()
45. Do you involve in anal sex. Always () Frequently () Sometimes () Rarely () Never ()
46. Do you take any of the following before or after sex to prevent STIs? (Choose all that apply)
 Hard drugs () Alcohol () Antibiotics () Contraceptives () Others (please specify) _____
47. Have you have received vaccination against STIs (Hep B, HPV)? Yes () No () ***If NO skip to Q50***
48. If yes, which have you received? (Choose all that apply): Human Papilloma Virus (HPV) vaccine [], Hepatitis B [], Others (please specify) _____
49. Did you complete your dose? Yes () No ()
50. Have you received any form of sex education? Yes () No ()

SECTION E: Treatment options utilized by young people for the management of STIs.

51. Have you ever experienced symptoms suggestive of an STI? Yes () No () ***If NO skip to Q56***
52. If yes, what symptoms? (Choose all that apply) Genital sores [] Discharge [] Itching [] Painful Urination [] Rashes [] Others (please specify) _____
53. What did you do when you experienced these symptoms? Visited a hospital/health centre () Visited a pharmacy/chemist () Used herbal/traditional remedies () Self-medication with drugs () Did nothing () Others (please specify) _____
54. Did you complete the full course of treatment prescribed for the STI? Yes () No ()
55. Did your sexual partner receive treatment as well? Yes () No () Not sure ()
56. Where would you prefer to seek treatment if you had an STI? Hospital () Private clinic () Pharmacy/chemist shop () Traditional Healer () Church () I would not seek treatment ()
57. How soon would you seek treatment after noticing symptoms of an STI? Immediately () Within a few days () After one week () Only if symptoms worsen () I would not seek treatment ()
58. Which of these factors determine the treatment option you prefer when faced with an STI? (Choose all that apply) Ease and speed of accessibility [] Financial cost [] Privacy [] Good reputation from others [] Others (Specify) _____

APPENDIX II

INFORMED CONSENT FORM

TITLE OF STUDY:

Knowledge, Attitude and Preventive Practices to Sexually Transmitted Infections Among Young People in Ovia North East Local Government Area, Edo State

INSTITUTION

Department of Public Health and Community Medicine, College of Medical Sciences, University of Benin, Benin City

PRINCIPAL INVESTIGATORS

Ebiyomare Kelvin Edesiri & Edokpa Osebhaiemen Faith

SUPERVISOR

Prof. V.Y Adam

FINANCIAL SPONSORSHIP

This study is self-sponsored by the researcher, no external funding is involved.

INTRODUCTION

You are invited to participate in a research study that seeks to assess the knowledge, attitude and preventive practices to sexually transmitted infections among young people in Ovia North East local government area, Edo state. Before you decide to participate, it is important for you to understand the purpose of the study and what your participation will involve.

Please read the information below carefully. You may ask questions if anything is unclear.

PURPOSE OF THE STUDY

The purpose of this study is to assess the knowledge, attitude and preventive practices to sexually transmitted infections among young people and to identify treatment options young people in Ovia North East LGA utilise when managing STIs.

PROCEDURE

If you agree to participate in this study:

You will be asked to complete a structured questionnaire.

The questionnaire will ask questions about your knowledge, attitude and preventive practices to sexually transmitted infections.

Completing the questionnaire will take approximately 5–10 minutes.

Your participation in this study is completely voluntary. You are free to decline participation or withdraw from the study at any time without any penalty or loss of benefits.

CONFIDENTIALITY

All information provided will be treated with strict confidentiality. Your name or any personal identifiers will not be recorded on the questionnaire. The information collected will be used solely for academic and research

While there may be no direct personal benefit to you, the findings from this study will help our understanding of the knowledge, attitude and preventive practices to sexually transmitted infections utilised by young people and how to improve the.

Contact for further Information:

- EBIYOMARE Kelvin Edesiri - 07037270139
- EDOKPA Osebhahiemen Faith - 08111334455

ACKNOWLEDGEMENT

I have read and understood the information provided above. I have had the opportunity to ask questions, and my questions have been answered satisfactorily. I voluntarily agree to participate in this study.

Participant Signature: _____

Date: _____

APPENDIX III



**HEALTH RESEARCH
ETHICS COMMITTEE (HREC)**

UNIVERSITY OF BENIN TEACHING HOSPITAL
P.M.B. 1111 BENIN CITY NIGERIA Telephone: 052-600418 Website: ubth.org

CHIEF MEDICAL DIRECTOR
Prof. (Mrs) I.N Ize-Iyamu

DIRECTOR OF ADMINISTRATION
Jim Uwadike, Esq

CHAIRMAN
Prof. (Mrs.) Antoinette N. Ofili

**HREC OFFICE:**Committee email: ubthresearchethics@gmail.com

Registration Number:

NHREC-UBTH-HREC/24/12/2022B

PROTOCOL NUMBER: ADM/E 22/A/VOL. VII/14865491272115

PROPOSAL TITLE: "KNOWLEDGE, ATTITUDE AND PREVENTIVE PRACTICES TO SEXUALLY TRANSMITTED INFECTIONS AMONG YOUNG PEOPLE IN OVIA NORTH EAST LOCAL GOVERNMENT AREA, EDO STATE"

PRINCIPAL INVESTIGATOR(S): EBIYOMARE KELVIN EDESIRI, EDOKPA OSEBHAHIEMEN FAITH

DEPARTMENT/INSTITUTION: DEPARTMENT OF PUBLIC HEALTH AND COMMUNITY MEDICINE, SCHOOL OF MEDICINE, UNIVERSITY OF BENIN, BENIN CITY, EDO STATE, NIGERIA

DATE CONSIDERED: MARCH 18TH, 2026

DECISION OF THE COMMITTEE: APPROVED

THIS APPROVAL DATES 18/03/2026 TO 17/03/2027. IF THERE IS DELAY IN STARTING THE RESEARCH, PLEASE INFORM THE HREC SO THAT THE DATES OF APPROVAL CAN BE ADJUSTED ACCORDINGLY

REMARK:

CHAIRMAN: PROF. (MRS) A.N. OFILI

SIGNATURE & DATE



SUPERVISOR (S): PROF. V. Y. ADAM

DECLARATION BY INVESTIGATOR(S):**PROTOCOL NUMBER (please quote in all enquiries)**

Note that no participant accrual or activity related to this research may be conducted outside of these dates and you are to furnish the committee with the research activities at the completion of the study. All informed consent forms used in this study must carry the HREC assigned number and duration of HREC approval of the study. In multiyear research, endeavor to submit your annual report to the HREC early in order to obtain renewal of your approval and avoid disruption of your research. No changes are permitted in the research without prior approval by the HREC except in circumstances outlined in the Code. The HREC reserves the right to conduct compliance visit your research site without previous notification.

Signature & Date.....

ubthresearchethics@gmail.com

Registration Number: NHREC/24/01/2020

APPENDIX IV

INTELLECTUAL PROPERTY & TECHNOLOGY TRANSFER OFFICE (IPTTO)
Vice Chancellor's Office
University of Benin
PMB1154, Benin City, Nigeria

 **CLEARANCE FORM**

DATE: 24/04/2026

NAME: EBIYOMARE KELVIN EDESIRI

MATRIC NO: MED1807386

DEPARTMENT: MEDICINE & SURGERY

FACULTY: COLLEGE OF MEDICAL SCIENCE

SESSION OF GRADUATION: 2024/2025

DIRECTOR
DATE: 24/04/2026
IPTTO (VCO)
BENIN CITY
UNIVERSITY OF BENIN

INTELLECTUAL PROPERTY & TECHNOLOGY TRANSFER OFFICE (IPTTO)
Vice Chancellor's Office
University of Benin
PMB1154, Benin City, Nigeria

 **CLEARANCE FORM**

DATE: 24/04/2026

NAME: EDOKPA FAITH OSESHAHIEMEN

MATRIC NO: MED1807388

DEPARTMENT: MEDICINE & SURGERY

FACULTY: COLLEGE OF MEDICAL SCIENCE

SESSION OF GRADUATION: 2024/2025

DIRECTOR
DATE: 24/04/2026
IPTTO (VCO)
BENIN CITY
UNIVERSITY OF BENIN
Head Of Unit (IPTTO)