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Knowledge and Attitude of UNIMAS undergraduate Nursing Students Towards Sexually
Transmitted Diseases (STDs)

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This project is submitted in partial fulfilment of the
requirements for degree of Bachelor of Nursing with Honours

Faculty of Medicine and Health Sciences

UNIVERSITI MALAYSIA SARAWAK

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DECLARATION

I hereby declare that the research for this final year project entitle ‘Assessing Knowledge and Attitude of UNIMAS Undergraduate Nursing Students toward Sexually Transmitted Diseases (STDs)’ is entirely original and was conducted from 2024 to 2025 at the Faculty of Medicine and Health Sciences (FMHS), University Malaysia Sarawak (UNIMAS). I confirm that all citations and references used have been appropriately acknowledged in the text. I further declare that this research has not been previously submitted for any evaluated qualification.

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ABSTRACT

Background: Sexually transmitted diseases (STDs) are infections transmitted primarily through sexual contact and remain a major global public health concern. Nursing students, as future healthcare providers, must be well-informed and possess the right attitudes to ensure quality patient care and reduce stigma. **Objectives:** This study aimed to determine the level of knowledge and attitude regarding STDs among undergraduate nursing students at Universiti Malaysia Sarawak (UNIMAS) and to assess the relationship between knowledge and attitudes. **Methodology:** A cross-sectional quantitative study was conducted using simple random sampling. A total of 163 undergraduate nursing students from Year 1 to Year 4 participated in the study. Data were collected using a structured, self-administered questionnaire adopted from (Folasayo et al., 2017), and analysed using IBM SPSS Version 27. **Results:** The majority of participants had a poor level of knowledge ($n = 86, 52.8\%$) but showed a generally positive attitude towards STDs ($n = 99, 60.7\%$). The mean knowledge score was 29.22 ($SD = 3.34$), while the mean attitude score was 38.92 ($SD = 4.80$). A weak positive correlation was found between knowledge and attitude, though not statistically significant ($r = .070, p = .377$). **Conclusion:** While most nursing students demonstrated positive attitudes toward STDs, their knowledge was found to be suboptimal. The weak correlation between knowledge and attitude highlights the need for more comprehensive sexual health education in the nursing curriculum to bridge this gap.

Keywords: Sexually transmitted diseases, knowledge, attitude, nursing students, UNIMAS.

ABSTRAK

Latar Belakang: Penyakit jangkitan seksual (STDs) ialah jangkitan yang disebarkan terutamanya melalui hubungan seksual dan masih menjadi isu kesihatan awam global yang utama. Pelajar kejururawatan sebagai penyedia penjagaan kesihatan masa depan perlu mempunyai pengetahuan yang kukuh dan sikap yang betul untuk memastikan penjagaan pesakit yang berkualiti dan mengurangkan stigma. **Objektif:** Kajian ini dijalankan untuk menentukan tahap pengetahuan dan sikap terhadap penyakit jangkitan seksual (STDs) dalam kalangan pelajar kejururawatan prasiswazah di Universiti Malaysia Sarawak (UNIMAS) serta menilai hubungan antara pengetahuan dan sikap tersebut. **Metodologi:** Satu kajian keratan rentas kuantitatif telah dijalankan dengan menggunakan kaedah persampelan rawak mudah. Seramai 163 pelajar kejururawatan prasiswazah dari Tahun 1 hingga Tahun 4 telah mengambil bahagian dalam kajian ini. Data dikumpul menggunakan borang soal selidik berstruktur yang diadaptasi daripada (Folasayo et al., 2017), dan dianalisis menggunakan IBM SPSS Versi 27. **Keputusan:** Majoriti peserta menunjukkan tahap pengetahuan yang rendah ($n = 86, 52.8\%$) tetapi memiliki sikap yang positif terhadap STD ($n = 99, 60.7\%$). Skor min pengetahuan ialah 29.22 ($SD = 3.34$), manakala skor min sikap ialah 38.92 ($SD = 4.80$). Terdapat hubungan positif yang lemah antara pengetahuan dan sikap, namun tidak signifikan secara statistik ($r = .070, p = .377$). **Kesimpulan:** Walaupun kebanyakan pelajar menunjukkan sikap positif terhadap STD, tahap pengetahuan mereka masih tidak memuaskan. Hubungan yang lemah antara pengetahuan dan sikap menekankan keperluan untuk pendidikan kesihatan seksual yang lebih menyeluruh dalam kurikulum kejururawatan bagi menjembatani jurang ini. **Kata kunci:** Penyakit jangkitan seksual, pengetahuan, sikap, pelajar kejururawatan, UNIMAS

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LIST OF ABBREVIATIONS

STDs	Sexually Transmitted Diseases
FMHS	Faculty of Medicine and Health Sciences
M	Mean
Mdn	Median
SD	Standard Deviation
SPSS	Statistical Package for the Social Sciences
UNIMAS	University Malaysia Sarawak

CHAPTER 1

INTRODUCTION

1.0 Introduction

This chapter described about background of the study, statement of problem, research question, research aim, and research objective. Other than that, in this chapter the researcher will also explain the significance of this study, definition of terms which include conceptual and operational definitions, and lastly summary of this chapter.

1.1 Background of Study

Sexually transmitted disease (STDs), also referred as sexually transmitted infections (STIs), are typically caused by bacteria or viruses, and spread through sexual contact involving the penis, vagina, anus, or mouth (National Institute of Child Health and Human Development). Transmission occurs primarily through sexual contact but can also happen via shared needles or from mother to child during childbirth (World Health Organization [WHO], 2024).

Sexually Transmitted Diseases continue to be a significant public health concern globally (WHO, 2024). According to WHO (2020) a billion people worldwide suffered from genital herpes another billion suffered from oral herpes. In 2019, Ministry of Health reported that, at the end of the year 2018 an estimated 87,041 people in Malaysia were positive with HIV. Common STDs include chlamydia, gonorrhoea, syphilis, HIV, and herpes. Many STDs may not present noticeable symptoms initially, but they can lead to severe health issues if left untreated. For instance, women can develop pelvic inflammatory disease (PID) if gonorrhoea is not treated, that potentially resulting in infertility (WHO, 2024).

Nursing students are in a unique position to learn about STDs and to help others understand the risks and prevention methods. However, studies have shown that there may be gaps in their knowledge, or that they may hold misconceptions about people who have STDs (Sham et al., 2020). This can lead to stigma, judgment, or discomfort when treating patients with these diseases. By assessing the knowledge and attitudes of nursing students, we can determine whether more education is needed to improve ability to care for patients with STDs in the future.

This research aims to fill the gap by evaluating how much nursing students know about STDs, their attitudes are towards STDs, and how this may impact their future role as healthcare providers. The results will help inform nursing education programs and promote better patient care.

1.2 Problem Statement

Sexually Transmitted Diseases (STDs) are a serious health issue worldwide, affecting millions of people every year (Anderson 2019). Sexually transmitted diseases (STDs) continue to be a public health issue globally, with rising rates of infection across diverse populations. In Malaysia, the Ministry of Health has reported an increasing trend in new STD cases, particularly among young adults and adolescents (Ministry of Health Malaysia, 2022). As frontline healthcare providers, nurses are instrumental in preventing, diagnosing, and managing STDs, and their role in patient education about prevention and treatment is critical. The success of nursing interventions is heavily influenced by the knowledge and attitudes of nurses, including students nurse who will soon enter the workforce.

Previous studies have shown that nursing students' knowledge and attitudes towards STDs are often suboptimal, which may affect their confidence and ability to provide appropriate

care. For instance, research conducted by (Memon et al., 2024) revealed that nursing students had insufficient knowledge regarding the transmission and prevention of STDs, while another study in Turkey by (Akin et al., 2013) indicated that nursing students displayed negative attitudes towards patients where the students expressed a preference not to work with HIV/AIDS patients, potentially leading to stigma and inadequate care. Similarly, research conducted in the Namibia by (Hamunyela et al., 2024) highlight gaps in nursing students' knowledge about the symptoms, transmission methods, and preventive strategies for STDs.

Despite these findings, there is limited research focusing specifically on the knowledge and attitudes of nursing students in Malaysia, and more specifically, at University Malaysia Sarawak (UNIMAS). Understanding the current knowledge and attitudes among nursing students at UNIMAS is essential, as it will provide insights into whether existing educational programs are sufficient or if there are gaps that need to be addressed. Previous studies in Malaysia, such as those by (Sham et al., 2020) and (Mansor et al., 2020), have examined STD awareness among the general public or healthcare professionals. However, no specific studies have assessed nursing students' knowledge and attitudes towards STDs at UNIMAS.

Understanding the knowledge and attitudes of nursing students towards STDs is important for identifying gaps in their education and ensuring that they are well-prepared to address this public health issue. This study aims to assess what nursing students know about STDs, how they feel about them, and whether they are confident in providing information and care related to STDs.

1.3 Research Aim, Questions and Objectives

1.3.1 Research Aim

The aim of this study is to examine the knowledge and attitude among UNIMAS undergraduate nursing student toward sexually transmitted diseases.

1.3.2 Research Question

- i. What is the level of knowledge of UNIMAS nursing students regarding sexually transmitted diseases (STDs)?
- ii. What are the attitudes of UNIMAS nursing students towards STDs?
- iii. Is there a relationship between UNIMAS nursing students' knowledge of STDs and their attitudes towards STDs?

1.3.3 Research Objectives

- i. To determine the level of knowledge of UNIMAS nursing students regarding sexually transmitted diseases (STDs).
- ii. To assess the attitudes of UNIMAS nursing students towards STDs.
- iii. To determine the relationship between UNIMAS nursing students' knowledge of STDs and their attitudes towards STDs.

1.4 Hypotheses

1.4.1 Null Hypothesis

There is no significant correlation between knowledge of sexually transmitted diseases and attitude towards sexually transmitted diseases among undergraduate nursing students in UNIMAS.

1.4.2 Alternative Hypothesis

There is a significant correlation between knowledge of sexually transmitted diseases and attitude towards sexually transmitted diseases among undergraduate nursing students in UNIMAS.

1.5 Significance of The Study

1.5.1 Nursing Education

This study is important for nursing education as it helps identify gaps in students' knowledge and attitudes about sexually transmitted diseases (STDs). By understanding these gaps, educators can develop better teaching strategies and improve the curriculum to ensure students are well-prepared to address STDs in their future careers.

1.5.2 Nursing Practice

For nursing practice, the study highlights the need for students to have accurate knowledge and positive attitudes towards STDs. This is crucial because nurses often provide education and support to patients. Enhancing students' understanding and approach will lead to better patient care, improved health outcomes, and reduced stigma around STDs.

1.5.3 Nursing Profession

This study benefits the nursing profession by promoting a culture of competence and professionalism in managing STDs. Nurses who are knowledgeable and have positive attitudes are better advocates for public health. This not only strengthens the nursing role in sexual health but also builds trust and credibility in the profession.

1.6 Operational and Conceptual Definition of Terms

Table 1.1 *Conceptual and Operational definition*

Terms	Conceptual definition	Operational definition
Knowledge	understanding and awareness of facts, information, concepts, and principles gained through experience or study, either held by an individual or shared collectively by people. (Cambridge Dictionary, 2024).	Understanding of STDs including their modes of transmission, types, preventive practices, symptoms, and complications. A 14-item questionnaire on STD knowledge, adapted from (Folasayo et al., 2017), was used. Participants provided "yes" or "no" answers, with correct responses scored as 1 and incorrect ones as 0.
Attitudes	Described as the way a person feels, thinks, or behaves toward someone or something. Represent our personal views or opinions about different situations, people, or	A perception and viewpoint towards STDs. A 20-question questionnaire from (Folasayo et al., 2017) was used. It employed a 4-point Likert scale, with

	<p>issues, often based on our past experiences and knowledge. Can be positive or negative and can change over time as we learn more or have new experiences (Cambridge Dictionary, 2024).</p>	<p>1= strongly disagree, 2= disagree, 3= for “agree, 4= strongly agree, to rate attitude-related items.</p>
<p>Sexually transmitted disease</p>	<p>A bacterial, viral, or other microorganism infection that can be transmitted between individuals by blood, semen, vaginal secretions, or other body fluids when engaging in oral, anal, or genital contact with an infected person (Sexually Transmitted Infections, n.d.).</p>	<p>STDs will include common infections such as gonorrhoea, chlamydia, syphilis, human immunodeficiency virus (HIV), human papillomavirus (HPV), herpes and other diseases transmitted through sexual activity. The study will assess the knowledge and attitudes of UNIMAS undergraduate nursing students regarding these</p>

		conditions, focusing on their awareness, understanding, and perceptions of prevention, symptoms, and transmission
Undergraduate nursing student	Undergraduate nursing student refer to individual pursuing a Bachelor of Nursing course at university and deliver care to the patient but do not yet becoming a certified graduate nurse (Law Insider,2013).	Undergraduate nursing student is an individual who are currently enrolled in Bachelor of Nursing with Honours programs at the Faculty of Medicine and Health Science at the University Malaysia, Sarawak (UNIMAS) from year 1 to year 4.

1.7 Summary

In conclusion, numerous research has proved that nursing students have moderate knowledge and attitude regarding sexually transmitted diseases (STDs). Many studies on level of knowledge and attitude were conducted in worldwide basis, but only few focus on nursing students. Thus, this study aims to evaluate the knowledge level and attitude toward sexually transmitted diseases (STDs) among UNIMAS undergraduate nursing students. It is essential to improve preparedness for future healthcare professionals and enabling better educational strategies.

CHAPTER 2

LITERATURE REVIEW

2.0 Introduction

This chapter will present the literature review. The literature review provides a general comprehension regarding level of knowledge toward STDs in Section 2.1, overview of attitudes toward STDs in section 2.2 followed by section 2.3 which discuss the relationship between level of knowledge and attitude toward STDs. lastly section 2.4 presents the summary. All the article used in this literature review are from several trusted online databases including Research Gate, Google scholar, PubMed, Science Direct and other sources. Multiple keywords including “knowledge”, “attitude” and “sexually transmitted diseases” was used.

2.1 Overview of Knowledge towards Sexually Transmitted Disease (STDs)

STDs are widespread infections that may cause severe health problem if not properly treated. Effective prevention and treatment strategies, such as safe practices and early screening, play a vital role in reducing the burden of STDs (WHO, 2023). Understanding the knowledge levels of nursing students is crucial, as they are future healthcare providers responsible for educating patients and promoting STD prevention.

Several studies have been conducted globally to assess the level of knowledge nursing students have regarding sexually transmitted diseases. However, there is a lack of studies focusing on nursing students in Malaysia. (Folasayo et al., 2017) conducted a cross-sectional study among university students in Malaysia's central region to evaluate their knowledge of sexually transmitted diseases (STDs). Out of 700 students from both health and non-health

sciences backgrounds, the majority (86.6%) were aware of STDs, but only 50.4% recognized that STDs could sometimes be asymptomatic.

In contrast, a study by (Jadoon et al., 2022) involving 195 nursing students from public and private institutions in Pakistan. The researchers found that a majority (78.5%) of students were interested in taking sexual health histories and had some basic knowledge of STDs. While 89.7% of participants correctly identified gonorrhoea as curable, misconceptions persisted. For example, over half of the participants believed that HIV causes all STDs, and many did not know that HPV can cause cervical cancer.

Other research outside of Malaysia also demonstrates that nursing students tend to have moderate knowledge of sexually transmitted diseases. (Lagadinou et al., 2024) conducted a descriptive cross-sectional study at the University of Patras, Western Greece. It involved 231 students, including 106 medical and 125 nursing students. The results revealed that medical students had better knowledge of STDs compared to nursing students. However, 65.8% of the participants correctly identified unprotected sex as the primary route of STD transmission.

A cross-sectional study at the Isra School of Nursing, Isra University, Hyderabad, Pakistan, assessed the knowledge of STDs among 42 final-year female BSN students selected through non-probability convenience sampling. The study revealed that all participants (100%) were aware of STDs; however, only 79% recognized HIV/AIDS as an STD. While most participants (71%) correctly identified viruses as causative agents, knowledge of other agents was limited, with only 26% recognizing bacteria and 2% identifying fungi. Understanding of transmission routes was moderate, with 43% of participants identifying blood transfusion and 33% mentioning shared needles as common methods of transmission.

These findings highlight the need for enhanced education on diverse aspects of STDs, including causative agents and less commonly understood transmission routes, even among nursing students nearing the completion of their studies.

Overall, the researcher concludes that most undergraduate nursing students have moderate knowledge of STDs. This emphasizes the importance of awareness campaigns and targeted education to ensure all nursing students become well-informed about these infections, thereby equipping them to educate and advocate for STD prevention in their future roles as healthcare providers.

2.2 Overview of Attitudes towards Sexually Transmitted Disease (STDs)

Several research studies have examined the attitudes of undergraduate students toward sexually transmitted diseases (STDs) globally, using various methods and instruments.

The study by (Folasayo et al., 2017). The results showed that participants had positive attitudes toward STDs. Specifically, the participants strongly agreed that condoms can provide protection against STDs. Furthermore, 54.2% of participants strongly disagreed with the claim that having multiple sexual partners does not contribute to STD transmission. Additionally, 85.5% strongly agreed that they would seek treatment promptly if they experienced symptoms of an STD.

Similarly, a study by (Jadoon et al., 2022) assessed the attitudes of 195 nursing students toward STDs and found that participants exhibited positive attitudes. For example, 74.9% of participants agreed that nurses should adopt a non-judgmental approach when taking sexual health histories. Furthermore, 35.9% of participants reported feeling comfortable discussing sexual health problems with others. This study highlighted a positive shift in attitudes toward STDs among nursing students.

According to (Lagadinou et al., 2024), most participants demonstrated a satisfactory understanding of risky sexual behaviours, such as unprotected sex and having multiple partners. However, the study revealed that students relied heavily on family, teachers, and media as their primary sources of information about STIs. This reliance could lead to inconsistencies or misinformation. While most students expressed a willingness to engage in STI prevention efforts, the study also noted discomfort among nursing students in discussing sexual health topics.

A study conducted by (Memon et al., 2024) found that most participants displayed favourable attitudes toward STD screening. Specifically, 47.6% agreed that screening is beneficial, and 40.5% supported premarital screening. However, some participants expressed reservations about discussing STD prevention in educational institutions. Approximately 28.6% disagreed with the idea that institutions should play a role in raising awareness about STD prevention.

Akin et al. (2013) explored nursing students' attitudes toward patients with HIV/AIDS. The study reported a mean attitude score of 42.03 (SD = 7.35), indicating generally positive attitudes. Most students expressed compassion and a willingness to care for patients with HIV/AIDS. However, over 50% of participants preferred not to work with HIV/AIDS patients, and 21.4% were uncertain about their willingness to provide care. These concerns were often attributed to fears of infection and apprehension from their families regarding the risks of treating HIV/AIDS patients.

In Malaysia, Sham et al. (2022) examined the attitudes of students at a public university toward STDs. The study showed that participants had positive attitudes, with 84.4% agreeing that condoms protect people against STDs and play a vital role in STD prevention.

Overall, these studies demonstrate that most undergraduate nursing students exhibit positive attitudes toward STDs. However, certain barriers, such as discomfort in discussing sexual health and misconceptions about STD prevention, highlight the need for enhanced educational efforts to further improve their attitudes.

2.3 Relationship between Knowledge and Attitude toward STDs.

The relationship between knowledge and attitudes toward sexually transmitted diseases (STDs) has been widely explored, with mixed findings.

Hamunyela et al. (2024) highlighted a significant relationship between knowledge and attitudes, indicating that better knowledge correlates with more positive and ethical attitudes toward STI patients. Students with adequate knowledge were more likely to exhibit caring and non-discriminatory attitudes, emphasizing the role of knowledge in shaping professional behaviour. Conversely, knowledge gaps contributed to uncertainty, including hesitations about asymptomatic STIs and diagnostic symptoms, which could hinder effective patient care.

Similarly, Lagadinou et al. (2024) discovered that students with a greater understanding of STIs were more inclined to have positive attitudes and engage in preventive behaviours, such as using condoms and being aware of HPV vaccination options. Medical students, who demonstrated superior STI knowledge, exhibited more responsible sexual behaviours and a clearer understanding of prevention strategies compared to nursing students. This relationship was statistically significant, with medical students providing more accurate answers regarding STI transmission routes and prevention.

In contrast, a study conducted by (Jadoon et al., 2022) found no significant relationship between knowledge and attitude. While nursing students displayed a positive attitude toward sexual health history-taking with 78.5% expressing interest and 77.4% acknowledging its importance these attitudes were not supported by adequate knowledge. Correct responses to STD-related questions ranged from 36.9% to 89.7%, with many misconceptions about key topics such as HIV transmission, HPV-related complications, and chlamydia. Despite their willingness to engage in sexual health discussions, students were not fully prepared or comfortable doing so. For example, only 35.9% felt comfortable discussing sexual health issues, and just 13.3% were comfortable discussing such matters with individuals of the opposite gender.

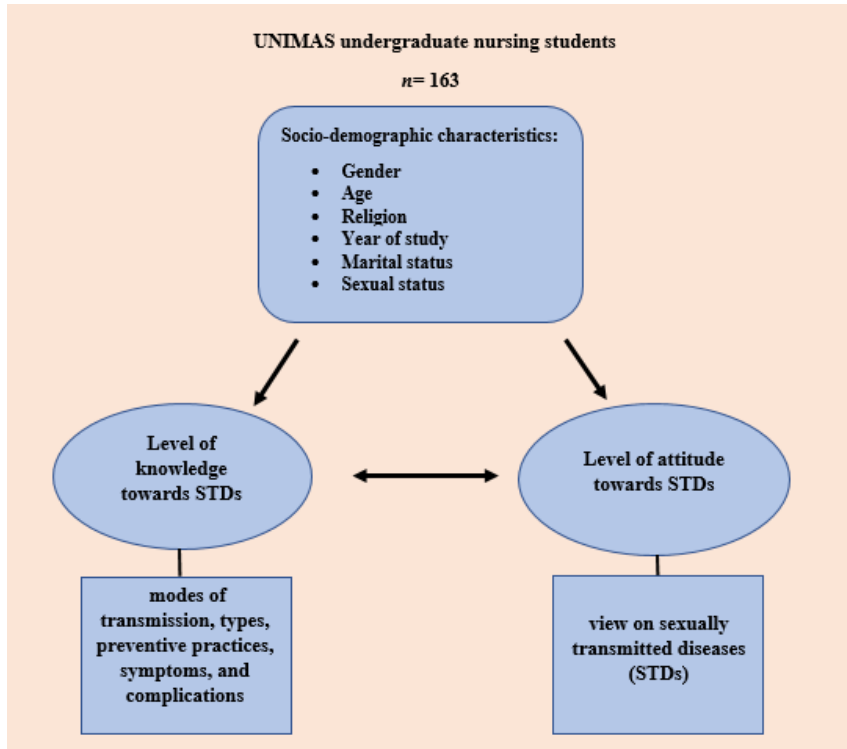
Likewise, Akin et al. (2013) found no significant correlation between nursing students' knowledge of HIV/AIDS and their attitudes toward caring for HIV/AIDS patients ($p > 0.05$). While students demonstrated moderate knowledge, with a mean score of 21.85 (SD = 3.99), this did not translate to a stronger willingness to care for HIV/AIDS patients. Although the mean attitude score of 42.03 (SD = 7.35) suggested generally positive attitudes, over 50% of participants preferred not to work with HIV/AIDS patients, and 21.4% were uncertain about their willingness to provide care. These findings indicate that knowledge alone may not be sufficient to positively influence attitudes.

In summary, while some studies support a positive relationship between knowledge and attitudes, others suggest that knowledge alone is not enough to significantly influence attitudes. Factors such as discomfort in discussing sexual health, fear of infection, and misconceptions may play a role in shaping attitudes, highlighting the need for comprehensive education and training to bridge these gaps.

2.4 Conceptual Framework

Figure 2.1

Conceptual framework



This study's conceptual framework is based on various essential factors that shape the knowledge and viewpoints of UNIMAS undergraduate nursing students about STDs. The level of knowledge and attitude towards STDs among UNIMAS nursing student serves as crucial factor influencing their attitude toward STDs. By examining the relationship between knowledge and attitude towards STDs, the study seeks to contribute insights that can provide a better educational and strategies to enhance nursing students' understanding and positive attitude towards STDs.

2.5 Summary

Thus, the literature review shows that many undergraduate nursing students have moderate knowledge about STDs but lack understanding of certain aspects, such as asymptomatic infections and less common transmission routes. While students generally displayed positive attitudes toward STD prevention and care, discomfort in discussing sexual health topics remains a challenge. The review highlights that the relationship between knowledge and attitudes is inconsistent, and further research is needed, particularly in Malaysia, where studies on nursing students' knowledge and attitudes toward STDs are limited.

CHAPTER 3

METHODOLOGY

3.0 Introduction

This chapter will elaborate the research setting, research design, research population (inclusion and exclusion criteria), sampling method and sample size. In this chapter also includes research instrument, validity and reliability, ethical consideration, data collection procedure (pilot study) and data analysis methods.

3.1 Research Setting

The researcher conducted the research study at University of Malaysia, Sarawak (UNIMAS) which located at Jalan Datuk Musa, Kota Samarahan, Sarawak, Malaysia. This research study focused on students in Faculty of Medicine and Health Sciences (FHMS) at UNIMAS, specifically student that enrolled in nursing programme.

3.2 Research Design

The aim of research design is to establish a suitable framework for the study (Sileyew, 2019). In this study, the researcher conducted the research using a quantitative approach. Quantitative research involves collecting numerical data and applying statistical techniques to analyse and interpret phenomena observed within a specific population (Apuke, 2017). This research explores the relationship between knowledge and attitude levels among undergraduate nursing students at UNIMAS. To achieve this, numerical data was necessary for analysis, making a quantitative design well-suited to the research objectives. A cross-sectional study, a form of observational research, assesses participants' exposure and outcomes at a single point in time. Additionally, it provides valuable insights such as prevalence and correlations between variables based on current data (Setia, 2016). Moreover, cross-sectional studies are cost-effective and time efficient. Cross-sectional

studies often utilize questionnaires to collect data on the phenomenon of interest (Wang & Cheng, 2020). Thus, a cross-sectional study design was selected for this research, as it aligns with the time and budget limitations.

3.3 Research Population

A population refers to the entire group of individuals from which a statistical sample is drawn (Noor et al., 2022). For this research, the population included all students within the nursing department at the FHMS at UNIMAS. The nursing program is structured into four academic years, which constituted the study population. From this group, the researcher randomly selected a sample of 148 nursing students from FHMS at UNIMAS.

3.3.1 Inclusion and Exclusion criteria

The inclusion criteria for this study consists of UNIMAS undergraduate nursing students from Year 1 until Year 4.

The exclusion criteria for this study were post-registration students, postgraduate nursing students, international students, students who participate in pilot study and individuals unwilling to participate.

3.4 Sampling Method and Sample Size

3.4.1 Sampling Method

This research utilized simple random sampling, a type of probability sampling. This approach is frequently applied to large populations and ensures that each individual has an equal chance of being selected through a randomized process (Bhardwaj, 2019). Simple random sampling helps minimize research bias by providing a representative sample of the entire population (Noor et al., 2022). The researcher

selected this method because it guarantees that all individuals in the target population are both eligible and reachable (Elfil & Negida, 2017). The list comprises a total of 234 undergraduate nursing students from the first to the fourth year. Each participant is assigned a sequential number from 1 to 234 and uses IBM SPSS Statistics (Version 27) to generate random numbers.

To conduct a simple random sampling of the 234 students using SPSS Version 27, the researcher opens the data file in SPSS, navigates to Data, and selects Cases. A random sample of cases is chosen by clicking Sample. The researcher then selects the sampling method, specifies the desired number of cases in the Sample field, and completes the process by clicking OK (IBM Corp., 2020).

3.4.2 Sampling Size

The sample size was calculated using Taro Yamane's (1973) simplified formula.

The sample size calculation was as follows:

Table 3.1

sample size calculation

$n = \frac{N}{1+N(e)^2}$	where	n = number of participants N = population size e = margin of error *95% confidence level and $p = 0.05\%$
		$n = \frac{234}{1 + 234(0.05)^2}$ $n = 147.63$ $n \approx 148$

Based on this formula, the researcher estimated the sample size for this research is (n=148). However, by considered a 10% attrition rate, some selected participant might drop out or refuse to participate in this study. Attraction rate refers to the percentage of the sample that drop out from the study. Therefore, after adding 10% to the calculated population size, the sample size for this study is 163 participants in total with extra of 15 participants.

Table 3.2

Calculation of sample size with attrition rate

$$\begin{aligned}\text{Final sample size} &= \text{sample size} + (\text{calculated sample size} \times 10\%) \\ &= 148 + (148 \times 10\%) \\ &= 148 + 14.8 \\ &= 162.8 \\ &\approx 163\end{aligned}$$

In conclusion, in this study the researcher required a total sample size of 163 participants to meet the research's aims and objectives.

3.5 Research Instrument

This study used a paper-based questionnaire to collect data from the participants. All questionnaires were distributed to the participants in a physical format. Consent from the original author of the study was obtained before utilizing or modifying the questionnaire to better suit the present study. A structured questionnaire was used, which was divided into three sections: Section A, Section B, and Section C.

Section A consisted of the sociodemographic data of the participants, including their gender, age, ethnicity, religion, marital status, sexual status, and year of study. This section included multiple-choice items and fill-in-the-blank questions.

Section B assessed the level of knowledge toward STDs using an adopted self-administered questionnaire from a previous study by (Folasayo et al., 2017). This section comprised 14 structured statements related to STD knowledge, measured using a dichotomous scale.

Section C assessed the attitudes of nursing students regarding STDs, also using an adopted self-administered questionnaire from the same study by (Folasayo et al., 2017). This section included 20 items using a 4-point Likert scale format ranging from 1 (strongly disagree) to 4 (strongly agree).

3.6 Ethical Consideration

A researcher approval letter was obtained from the Research and Ethics Committee of the Faculty of Medicine and Health Sciences, Universiti Malaysia Sarawak (UNIMAS). Formal informed consent was obtained from participants before the commencement of the study, and they were informed of their right to withdraw at any point during the research. Written permission was also obtained from the original authors prior to using the questionnaire. All data collected in this study were kept private and confidential, and were used solely for research purposes, accessible only to the researcher and their supervisor.

3.7 Validity and Reliability

The instrument utilized in this study was adapted from (Folasayo et al., 2017). As the original study did not report the reliability of the instrument, a pilot study was conducted involving 15 participants, representing approximately 10% of the total sample size, who were randomly selected from the target population. The internal consistency of the

questionnaire was assessed using Cronbach's alpha coefficient, a widely accepted statistical measure of reliability. The results indicated that the knowledge section yielded a Cronbach's alpha value of 0.655, which falls within the moderate reliability range, while the attitude section achieved a value of 0.780, indicating good internal consistency. According to established guidelines, a Cronbach's alpha value of 0.6 to 0.7 is considered acceptable, while values above 0.7 indicate good reliability (Hair et al., 2010). Therefore, the instrument was considered sufficiently reliable for use in the main study.

3.8 Data Collection Procedure

3.8.1 Pilot Study

A pilot study was a small-scale, preliminary inquiry conducted to assess the feasibility of important research components (In, 2017). Conducting a pilot study was essential prior to implementing the full-scale study, as it evaluated the practicality of the research plan, identified potential weaknesses, determined whether the study instruments effectively addressed the intended questions, assessed the clarity of the format, and ensured the suitability of the validated tools for the target population (Simkus, 2023). Data gathered from participants regarding the clarity of the questionnaires were analysed to inform necessary improvements based on the pilot study findings.

Conducting the pilot study was crucial to improving the efficiency and quality of the main study. For this pilot study, a minimum of 10% of the sample size, equivalent to 15 participants meeting the inclusion criteria, was randomly selected. Participants who took part in the pilot study were deemed ineligible for inclusion in the main study. Data

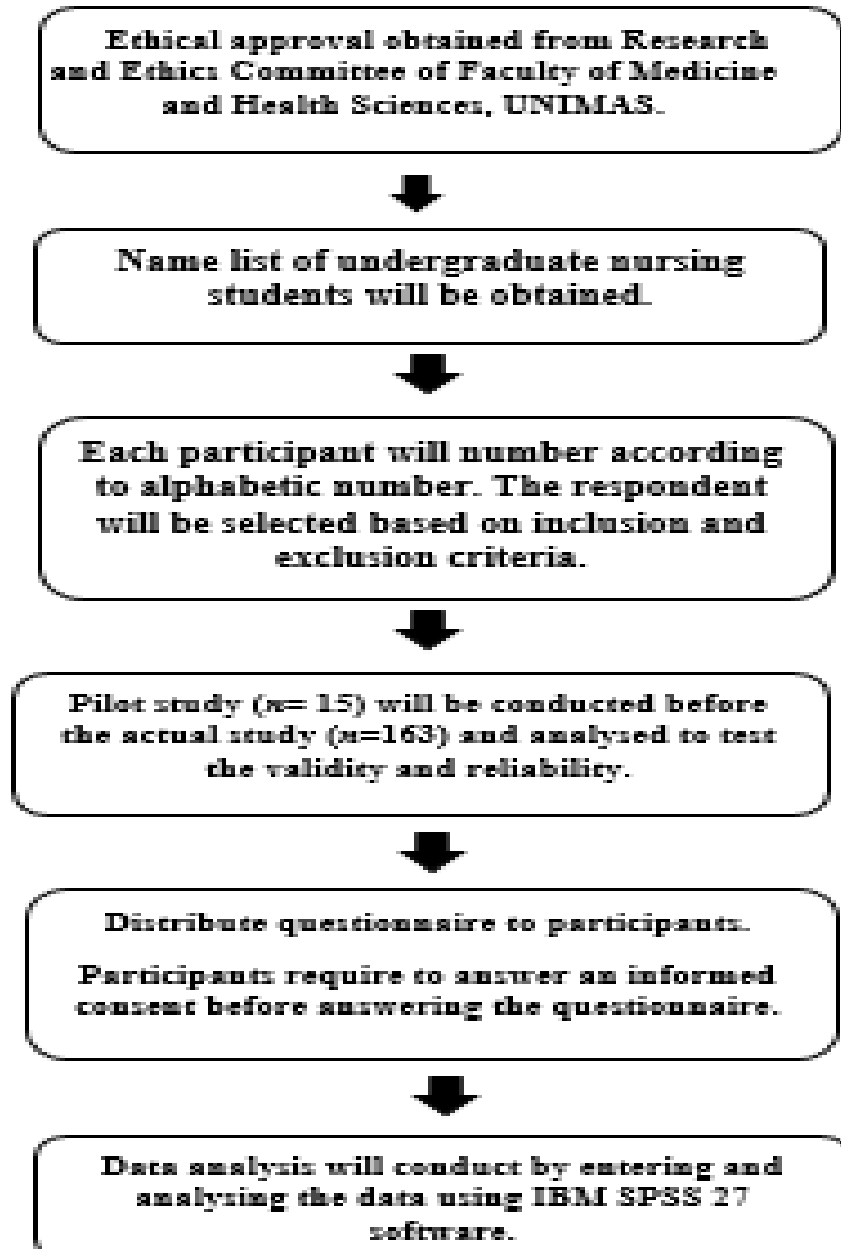
obtained from the pilot study were analysed, and Cronbach's alpha test was used to assess the tool's reliability and ensure its internal consistency.

3.8.2 Actual Study

After obtaining the approval letter from the Research and Ethics Committee, Faculty of Medicine and Health Sciences, UNIMAS, the name list of UNIMAS nursing students was obtained from the academic office. Prior to the main study, a pilot study was conducted to evaluate the validity and reliability of the questionnaire. A formal informed consent form was provided to each participant during the survey. The self-administered questionnaires were distributed to each participant personally. Participants who agreed to take part in the study completed the questionnaires within 10 to 15 minutes. Once the participants had answered all the questions, they submitted the questionnaires, marking the end of the data collection process.

Figure 3.1

Flowchart of data collection procedure



3.9 Data Analysis

All the data collected in this study were analysed using the statistical software IBM SPSS Version 27.0. Descriptive and inferential statistics were employed to describe the sample characteristics, including frequency, percentage, mean, and standard deviation for the variables. The Kolmogorov-Smirnov test was used to test for normality since the sample size exceeded 50 participants. For continuous data that followed a normal distribution, the mean and standard deviation will be reported. For the data that do not follow a normal distribution the median and interquartile range will be reported. For inferential analysis, the relationship between variables was analysed using the Spearman correlation coefficient test, as both sets of data were not normally distributed. The Spearman correlation test is a non-parametric method suitable for assessing the strength and direction of association between variables that do not follow a normal distribution.

3.10 Summary

In conclusion, this study was a quantitative cross-sectional correlational study conducted at the Faculty of Medicine and Health Sciences, UNIMAS. The target population consisted of undergraduate nursing students enrolled in the four-year nursing program at the Faculty of Medicine and Health Sciences, from Year 1 to Year 4. Simple random sampling was employed, and the sample size was determined using the Taro Yamane (1973) formula, resulting in a final sample of 163 participants. The study utilized a self-administered questionnaire divided into three sections, which was distributed to participants at the Faculty of Medicine and Health Sciences, UNIMAS. Ethical approval was obtained prior to data collection. All data collected in this study were analysed using IBM SPSS Statistics version 27.0, employing both descriptive and inferential statistics.

CHAPTER 4

RESULTS/FINDINGS

4.0 Introduction

This chapter presents the result of the data of this study. Section 4.1 presents the sociodemographic characteristics of the respondents. Section 4.2 presents the level of knowledge of UNIMAS nursing students regarding sexually transmitted diseases (STDs). Section 4.3 presents the attitude of UNIMAS nursing students towards STDs. Section 4.4 presents the inferential statistics and 4.5 summary of this chapter.

4.1 Sociodemographic characteristic of the respondents

A total of 163 undergraduate nursing students in UNIMAS were recruited. Table 4.1 shows the socio-demographic characteristics of the respondents. The response rate reached 100% which were 163 respondents. The minimum age of the respondents was 19 years old while the maximum age of the respondents was 25 years old ($M = 21.73$, $SD = 1.357$). No outliers or extreme values were noted from the box plot of age.

For gender, race, religion and year of study variables, there were no outliers or extreme values from screening the data. Out of 163 respondents, the sample consisted of 25 (15.3%) male and 138 (84.7%) female undergraduate nursing students ($n=163$). Most participants were, Malay ($n=72$, 44.2%), followed by Bumiputera Sarawak ($n=47$, 28.8%), Bumiputera Sabah ($n=34$, 20.9%), Chinese ($n=9$, 5.5%), and lastly Indian ($n=1$, 0.6%). There were 97 Muslim respondents (59.5%), 65 Christian respondents (39.9%), and 1 Hindu respondent (0.6%). The analysis of the year of the study shows an almost equal level of participation percentage. (Year 1: 25.2%, Year 2: 25.2%, Year 3: 25.2%, Year 4: 24.5%). (Refer to Table 4.1)

Table 4.1*Socio-demographic variables of the respondents (n = 163)*

Variables	M (SD)	Min (Max)	Frequency (%)
Age	21.73 (1.357)	19 (25)	
Gender			
Male			25 (15.3%)
Female			138 (84.7%)
Race			
Malay			72 (44.2%)
Chinese			9 (5.5%)
Indian			1 (0.6%)
Bumiputera Sabah			34 (20.9%)
Bumiputera Sarawak			47 (28.8%)
Religion			
Islam			97 (59.5%)
Christian			65 (39.9%)
Buddha			0(0)
Hindu			1 (0.6%)
Year			
Year 1			41 (25.2%)
Year 2			41 (25.2%)
Year 3			41 (25.2%)
Year 4			40 (24.5%)

Note: n: frequency, %: percentage, M: mean, SD: standard deviation.

4.2 The level of knowledge of UNIMAS nursing students regarding sexually transmitted diseases (STDs)

Table 4.2 presents the levels of knowledge on sexually transmitted diseases (STDs) among undergraduate nursing students at UNIMAS. Knowledge levels were divided into two

categories: poor (below the mean score of 29.22) and good (29.22 and above). The majority of respondents demonstrated a poor level of knowledge, with 86 students (52.8%) falling into the poor category, while 77 students (47.2%) showed good knowledge.

No outliers or extreme values were observed in the boxplot of knowledge scores. The Kolmogorov-Smirnov test indicated that the knowledge scores were not normally distributed, $D(163) = 0.120$, $p = 0.001$. The median knowledge score was 29.00, with an interquartile range (IQR) of 5. Scores ranged from a minimum of 22 to a maximum of 35 (out of 35), resulting in a range of 13 points.

Table 4.2

The level of knowledge toward STDs among UNIMAS undergraduate nursing students (n=163)

Level of knowledge towards STDs, n (%)				
		<29.22	≥ 29.22	Min (Max)
		(poor)	(good)	
Undergraduate	nursing	86(52.8%)	77(47.2%)	22(35)
students				

Figure 4.1

Bar chart of level of knowledge toward STDs among UNIMAS undergraduate nursing students.

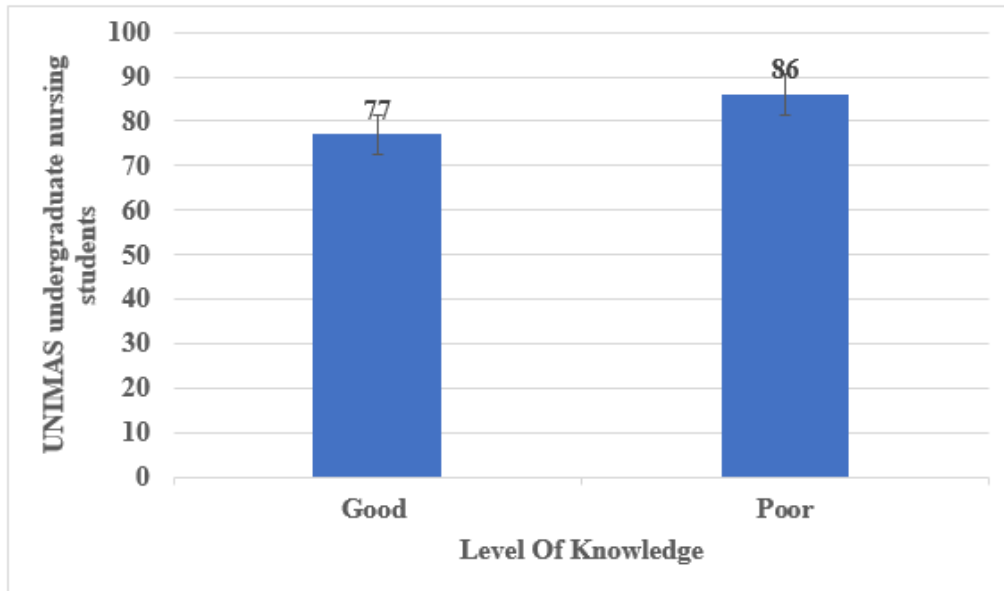


Table 4.3 presents the total mean score response of respondent for knowledge toward STDs. The total mean score for the 35-items questions knowledge toward STDs among UNIMAS undergraduate nursing students was 29.22 with a standard deviation of 3.34. The most frequently answered item correctly was item 10 *“Having multiple sexual partners can increase chances of being infected”* with mean score was 1.04 and standard deviation of 0.800; meanwhile the most frequently answered item incorrectly was item 8 *“Alcohol intake can increase an individual’s susceptibility to STDs”* with mean score was 0.50 and standard deviation of 0.502.

Table 4.3*Total mean score of respondents for knowledge toward STDs (N=163)*

Items	Correct	Incorrect	M(SD)
Do you think it's possible for an individual to have STDs other than HIV without having symptoms?	139(85.3%)	24(14.7%)	0.85(0.36)
Which of the following are sexually transmitted diseases (STDs)?			
Gonorrhoea	136(83.4%)	27(16.6)	0.83(0.37)
Syphilis	156(95.7%)	7(4.3%)	0.96(0.20)
Genital herpes	152(93.3%)	11(6.7%)	0.93(0.25)
Trichomoniasis	104(63.8%)	59(36.2%)	0.64(0.48)
Tuberculosis	135(82.8%)	28(17.2%)	0.83(0.38)
HIV/AIDS	161(98.8%)	2(1.2%)	0.99(0.11)
Chlamydia	129(79.1%)	34(20.9%)	0.79(0.41)
Hepatitis B	106(65.0%)	57(35.0%)	0.65(0.48)
What are the causative organism of STDs?			
Bacteria	117(71.8%)	46(28.2%)	0.72(0.45)
Virus	155(95.1%)	8(4.9%)	0.95(0.22)
Fungus	78(47.9%)	85(52.1%)	0.48(0.50)
Mosquitoes	154(94.5%)	9(5.5%)	0.95(0.23)
What are the routes of sexually transmitted diseases?			
Sexual intercourse	162(99.4%)	1(0.6%)	0.99(0.08)
Blood transmission	141(86.0%)	22(13.5%)	0.87(0.34)
Sharing injection needles	135(82.8%)	28(17.2%)	0.83(0.38)
Infected mother to an unborn child	120(73.6%)	43(26.4%)	

Kissing	105(64.4%)	58(35.6%)	0.64(0.48)
A female who does not want to become infected with STDs should use contraceptive pills.	119(73.0%)	44(27.0%)	0.73(0.46)
Use of condoms will decrease the risk of being infected with an STD	146(89.6%)	17(10.4%)	0.90(0.30)
Avoiding sex beyond marriage can also reduce chances of infection	153(93.9%)	10(6.1%)	0.94(0.24)
Alcohol intake can increase an individual's susceptibility to STDs	82(50.3%)	81(49.7%)	0.50(0.50)
Intake of some drugs can increase an individual's susceptibility to STDs	128(78.5%)	35(21.5%)	0.79(0.41)
Having multiple sexual partners can increase chances of being infected	158(96.9%)	4(2.5%)	1.04(0.80)
Sexual abstinence is the most effective means of avoiding STDs	153(93.9%)	10(6.1%)	0.94(0.24)
What are the symptoms of STDs?			
Ulcers in the genitals	161(98.8%)	2(1.2%)	0.99(0.11)
Pain while passing out urine	156(95.7%)	7(4.3%)	0.96(0.20)
Discharge from penis	154(94.5%)	9(5.5%)	0.94(0.23)
Itching around vagina	157(96.3%)	6(3.7%)	0.96(0.19)
Painless sores on the mouth and genital area	140(85.9%)	23(14.1%)	0.86(0.35)
What are the possible complications of untreated or poorly treated STDs			
Infertility	153(93.9%)	10(6.1%)	0.94(0.24)
Cervical cancer	155(95.1%)	7(4.3%)	0.96(0.20)
Body weakness	133(81.6%)	30(18.4%)	0.82(0.39)
Ectopic pregnancy	133(81.6%)	62(38.0%)	0.62(0.49)
Still birth	110(67.5%)	53(32.5%)	0.67(0.47)

Note: n: frequency, %: percentage, M: mean, SD: standard deviation.

Table 4.4 presents the mean knowledge score by year of study of the respondents. The result revealed that Year 4 students had the lowest mean knowledge score. Specifically, the mean score for Year 4 was 29.050(SD = 3.096), whereas Year 1, 29.292(SD = 3.913), Year 2, 29.195(SD = 3.628) and Year 3, 29.341(SD = 2.707). This suggest that Year 4 students may have contributed the most overall lower knowledge levels observed in this study.

Table 4.4

Mean knowledge scores by year of study (n = 163)

Year of Study	n	Mean	Standard Deviation
Year 1	41	29.292	3.913
Year 2	41	29.195	3.628
Year 3	41	29.341	2.707
Year 4	40	29.050	3.096
Total	163		

4.3 Attitude towards Sexually Transmitted Diseases among UNIMAS undergraduate nursing students.

Table 4.5 presents the levels of attitude toward sexually transmitted diseases (STDs) among undergraduate nursing students at UNIMAS. Attitude levels were categorized into two groups: *poor* (below the mean score of 38.92) and *good* (38.92 and above). The majority of respondents demonstrated a positive attitude, with 99 students (60.7%) scoring in the good category, while 64 students (39.3%) exhibited negative attitudes.

No outliers or extreme values were identified based on the boxplot of attitude scores. Normality testing using the Kolmogorov-Smirnov test indicated that the data were not normally distributed, $D(163) = 0.114, p < 0.001$. The median attitude score was 40.00, with

an interquartile range (IQR) of 8. The scores ranged from a minimum of 28 to a maximum of 48 (out of a total of 48), giving an overall range of 20 points.

Table 4.5

The level of attitude toward STDs among UNIMAS undergraduate nursing students (n=163)

The Level of attitude towards STDs, n(%)			
	<38.92	≥ 38.92	Min (Max)
	(Negative)	(Positive)	
UNIMAS Undergraduate nursing students	64(39.3%)	99(60.7%)	28(48)

Figure 4.2

Bar chart of level of knowledge toward STDs among UNIMAS undergraduate nursing students.

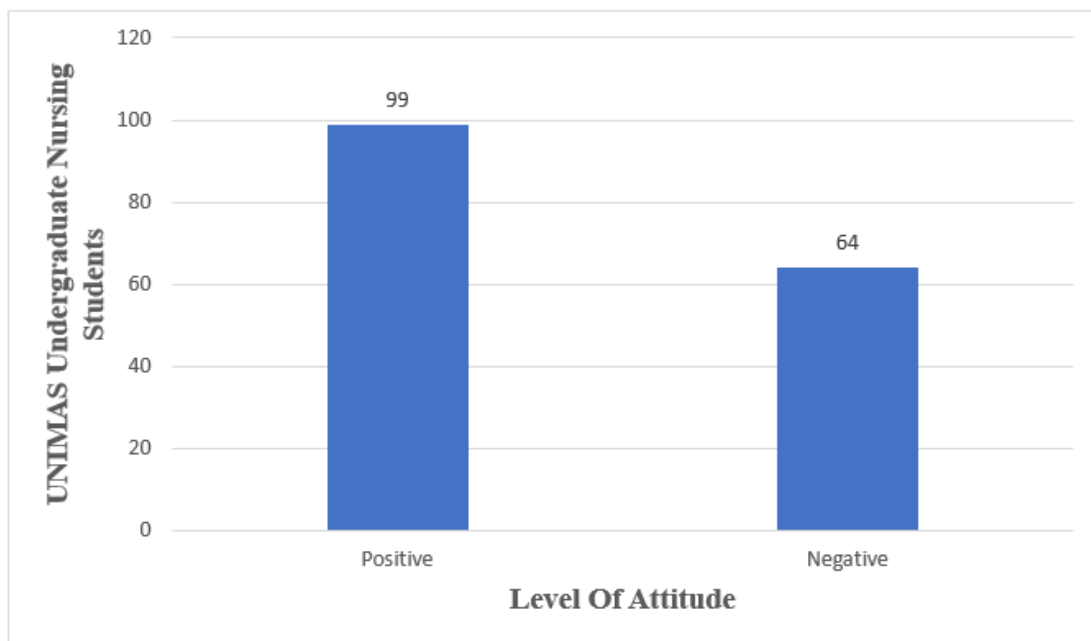


Table 4.6 shows the total mean response of respondents for attitude toward STDs. The total mean score for 16-items questions to assess the level of attitude toward STDs among

UNIMAS undergraduate nursing students was 38.92 with standard deviation of 4.80 The item “I feel condoms are the best tools for the prevention of STDs” reported to have the lowest mean score, which was 1.76 with a standard deviation of 0.823, meanwhile the item “If I notice symptoms of STDs in my partner, I will advise him/her to seek treatment immediately” have the highest mean score which was 2.75 with a standard deviation of 0.432.

Table 4.6

Total mean score of respondents for attitude toward STDs (n = 163)

Items	Strongly agree	Agree	Disagree	Strongly disagree	M(SD)
	n(%)				
1. STDs are not dangerous because they can be cured	64 (39.3%)	83 (50.9%)	14 (8.6%)	2 (1.2%)	2.28 (0.67)
2. I feel condoms protect against STDs	21 (12.9%)	104 (63.8%)	26 (16.0%)	12 (7.4%)	1.82 (0.75)
3. If both partners are infected with STDs, I feel there’s no need of using condom	61 (37.4%)	80 (49.1%)	17 (10.4%)	5 (3.1%)	2.21 (0.75)
4. I feel numerous sexual partners play no role in STDs transmission	100 (61.3%)	51 (31.3%)	7 (4.3%)	5 (3.1%)	2.50 (0.72)
5. I feel condoms are the best tools for the prevention of STDs	26 (16.0%)	86 (52.8%)	37 (22.7%)	14 (8.6%)	1.76 (0.82)
6. In my opinion, I feel STDs can cause death if left untreated	81 (49.7%)	65 (39.9%)	10 (6.1%)	7 (4.3%)	2.35 (0.78)
7. I feel it’s not necessary for academic institution to discuss issues regarding prevention of STDs	92 (56.4%)	57 (35.0%)	8 (4.9%)	6 (3.7%)	2.44 (0.75)
8. I feel banning of prostitution can control the spread of STDs	66 (40.5%)	81 (49.7%)	12 (7.4%)	4 (2.5%)	2.28 (0.71)
9. I feel screening test for STDs is good	107 (65.6%)	55 (33.7%)	1 (0.6%)	0 (0)	2.65 (0.49)
10. I feel screening test for STDs before marriage is important	115 (70.6%)	47 (28.8%)	1 (0.6%)	0 (0)	2.70 (0.47)
11. If I have unprotected sexual intercourse, I am most concerned about					

a) Getting HIV	114 (69.9%)	48 (29.4%)	1 (0.6%)	0 (0)	2.69 (0.48)
b) Getting STDs aside from HIV	109 (66.9%)	53 (32.5%)	1 (0.6%)	0 (0)	2.66 (0.49)
c) Unwanted pregnancy	108 (66.3%)	51 (31.3%)	3 (1.8%)	1 (0.6%)	2.63 (0.56)
12. I think watching or reading pornographic materials can contribute to risky behaviours	77 (47.2%)	79 (48.5%)	5 (3.1%)	2 (1.2%)	2.42 (0.62)
13. If I notice symptoms of STDs, I think I should seek treatment immediately	117 (71.8%)	45 (27.6%)	1 (0.6%)	0 (0)	2.71 (0.47)
14. If I notice symptoms of STDs in my partner, I will advise him/her to seek treatment immediately	123 (75.5%)	40 (24.5%)	0 (0)	0 (0)	2.75 (0.43)

Note: n: frequency, %: percentage, M: mean, SD: standard deviation.

4.4 Inferential statistics.

4.4.1 Normality test for knowledge and attitude toward sexually transmitted diseases.

Table 4.7 presents the normality test for level of knowledge and attitude among UNIMAS undergraduate nursing students towards sexually transmitted diseases (STDs). A normality test has been utilised to identify whether the data collected from the samples were normally or not normally distributed data and to decide which statistical test should be used for the inferential statistics part in this study. Kolmogorov-Smirnov test has been used as the sample size for this study exceeded 50 samples ($n = 163$). There were no outliers or extreme value noted from the box for knowledge and attitude score. A Kolmogorov-Smirnov test showed the data do not follow a normal distribution, $D(163) = .120, p = .001$. the median score among the participants was 29 points ($IQR = 5$ points). The minimum score was 22 points, while the maximum score of knowledge level was 35 out of 35 points. The range was 13 points. The mode score was 31 points.

For attitude towards STDs Kolmogorov-Smirnov test showed the data do not follow a normal distribution, $D(163) = .114$, $p < .001$. The median score among the participants was 40 points (IQR = 8 points). The minimum score was 28 points, meanwhile the maximum score was 48 out of 48 points. The range was 20 points. The mode score was 39 points. Since the data is not normally distributed, the Non-Parametric Spearman correlation coefficient test was used.

Table 4.7

Normality test for knowledge and attitude toward STDs

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Knowledge	.120	163	<.001	.967	163	<.001
Attitude	.114	163	<.001	.958	163	<.001

4.4.2 The relationship between knowledge and attitude toward STDs.

Table 4.8 presents the relationship between level of knowledge and attitude toward STDs among UNIMAS undergraduate nursing students. The association between level of knowledge and attitude was investigated using Non-Parametric Spearman's correlation coefficient. There was a positively moderate correlation between the two variables ($r = .070$, $p = .377$).

Table 4.8

The relationship between knowledge and attitude toward Sexually Transmitted Diseases (STDs) among UNIMAS undergraduate nursing students (n = 163).

		Correlations		
			Knowledge	Attitude
Spearman's rho	Knowledge	Correlation coefficient	1.000	.070*
		Sig. (2-tailed)		.377
		N	163	163
	Attitude	Correlation Coefficient	.070*	
		Sig. (2-tailed)	.377	
		N	163	163

*Correlation is significant at the level 0.05 level (2-tailed)

4.5 Summary

In summary, based on the findings in this study, most of UNIMAS undergraduate nursing students have poor level of knowledge and exhibits positive attitude toward STDs. The total mean score for level of knowledge was 29.22 with a standard deviation of 3.34 meanwhile, the total mean score for level of attitude was 38.93 with a standard deviation 4.80. The association between level of knowledge and attitude was not significant, with a positively moderate correlation between level of knowledge and level of attitude toward STDs [$r = .070, p = .377$].

CHAPTER 5

DISCUSSION

5.0 introduction

This chapter will discuss the findings/result of this study in Section 5.1. The discussion encompasses the level of knowledge regarding STDs among UNIMAS undergraduate nursing students, level of attitude regarding STDs among UNIMAS undergraduate nursing students and the relationship between level of knowledge and attitude. Section 5.2 presents the summary finding of the study while Section 5.3 presents the implications of the study. Section 5.4 presents the limitations of the study and Section 5.5 presents the conclusion for this study.

5.1. Knowledge regarding STDs among UNIMAS undergraduate nursing students

In this study, the data revealed that a slight majority of the respondents demonstrated a poor level of knowledge on Sexually Transmitted Diseases (STDs), with 86 out of 163 respondents (52.8%) scoring below the mean score of 29.22. Meanwhile, 77 respondents (47.2%) were classified as having good knowledge, scoring at or above the mean. The minimum score was 22, and the maximum was 35 out of a total of 35, indicating a broad range of knowledge levels among participants. The findings highlight that more than half of the UNIMAS undergraduate nursing students possess suboptimal knowledge regarding STDs, signalling a need for strengthened sexual health education within the nursing curriculum.

This finding aligns with a study by (Folasayo et al., 2017), conducted among university students in the central region of Malaysia, which reported significant knowledge gaps regarding STDs, especially non-HIV infections such as chlamydia and trichomoniasis.

Although 86.6% of students had heard about STDs, detailed understanding was lacking, mirroring the trend found in the current study, where only 47.2% of nursing students reached the good knowledge category.

Similarly, a study by (Mansor et al., 2020) among students from public universities in Melaka revealed a mean knowledge score of 24.1 (SD = 5.1) out of 38, with low awareness of certain STIs and common misconceptions. Compared to the current study, which had a mean threshold for good knowledge set at 29.22 out of 35, Mansor's findings suggest a comparable trend of moderate but insufficient understanding among Malaysian university students.

The results are further supported by (Sham et al., 2020), who found that although 75.1% of university students possessed good knowledge about STDs, gaps in knowledge were still evident, particularly in terms of behavioural practices and risk perception. This contrasts with the present study's lower percentage of students with good knowledge (47.2%), which may be attributed to differences in sample size, exposure to sexual health education, or institutional emphasis on the topic.

Overall, the current study's findings demonstrate that although a substantial portion of UNIMAS nursing students have a foundational understanding of STDs, a significant percentage still fall below the desired knowledge threshold. Given the critical role nurses play in public health education and disease prevention, it is imperative to enhance STD-related content in nursing programs. Increasing awareness, addressing misconceptions, and incorporating interactive and clinically relevant teaching methods could help bridge the existing knowledge gap and prepare nursing students to better educate and manage future patients with sexual health concerns.

5.2 Attitude toward STDs among UNIMAS undergraduate nursing student.

In this study, the data revealed that most respondents demonstrated a positive attitude towards sexually transmitted diseases (STDs), with 99 out of 163 respondents (60.7%) scoring at or above the mean score of 38.92. Meanwhile, 64 respondents (39.3%) were classified as having a negative attitude, scoring below the mean. The minimum score was 28, and the maximum was 48 out of a total of 48, indicating a relatively high attitude ceiling among participants. No outliers or extreme values were noted in the box plot for attitude scores. These findings suggest that a significant proportion of UNIMAS undergraduate nursing students hold favourable views toward STDs, which is promising in terms of reducing stigma and promoting patient-centred care.

This finding is consistent with the study by (Folasayo et al., 2017), which showed that participants demonstrated strong agreement with positive statements related to STD prevention and treatment, such as the protective use of condoms and the importance of prompt medical attention when symptoms appear. Similarly, Jadoon et al. (2022) found that nursing students exhibited positive attitudes, particularly in their belief that nurses should maintain a non-judgmental approach when discussing sexual health histories. These findings align with the current study's results, indicating that nursing education plays a significant role in shaping supportive and open-minded attitudes toward STD-related issues.

The present findings also support the results of Lagadinou et al. (2024), which reported that most students understood risky sexual behaviours, yet showed discomfort in openly discussing sexual health topics. This may partially explain why 39.3% of respondents in this study had negative attitudes despite being enrolled in a health science program. It reflects a need for more emphasis on communication skills and attitude-building activities in nursing training.

Additionally, Memon et al. (2024) observed that while most participants agreed with the benefits of STD screening, some showed hesitation about discussing STDs in educational settings. This is mirrored in the current study, where a notable portion of nursing students demonstrated negative attitudes, possibly due to cultural sensitivity, embarrassment, or limited exposure to STD-related clinical cases.

In terms of HIV/AIDS specifically, Akin et al. (2013) found that nursing students were willing to care for infected patients but still expressed fear and stigma, with over 50% preferring not to work with HIV/AIDS patients. This highlights that even among those with general positive attitudes, personal bias or fear may still influence behaviour. In the present study, the proportion of negative attitudes (39.3%) may reflect similar underlying concerns.

A Malaysian-based study by (Sham et al., 2022) also supports these findings, reporting that 84.4% of university students agreed that condoms are vital in preventing STDs. The current study, showing 60.7% of respondents with positive attitudes, suggests that local nursing students are relatively well-informed, though there is still room for improvement in attitude and comfort levels when addressing sensitive health issues.

Overall, this study shows that while most UNIMAS nursing students have a positive attitude toward STDs, a significant minority still hold negative views. This suggests the need to enhance nursing education strategies that target not only knowledge but also the emotional and psychological aspects of sexual health communication. Embedding modules that promote empathy, reduce stigma, and encourage open dialogue can help students become more confident and professional in handling STD-related issues in clinical practice. As future nurses, their attitudes will directly impact patient care outcomes, making this a critical area for ongoing development.

5.3 Relationship between knowledge and attitude towards STDs UNIMAS undergraduate nursing students

The aim of this study was to determine the relationship between the level of knowledge and attitude toward Sexually Transmitted Diseases (STDs) among UNIMAS undergraduate nursing students. The association was examined using the non-parametric Spearman correlation coefficient, and the results revealed a positive moderate correlation ($r = .070$, $p = .377$). This suggests that students with higher knowledge of STDs tend to have more positive and appropriate attitudes, although the relationship is not particularly strong.

This finding is consistent with the results of (Folasayo et al., 2017), who found that university students with better knowledge of STDs were more likely to demonstrate responsible attitudes, especially in terms of prevention and risk reduction. Their study emphasized that improved awareness significantly influenced how students perceived and reacted to sexual health issues. Similarly, (Mansor et al., 2020) reported that students with higher STI knowledge scores showed better attitudes toward preventive measures, further supporting the importance of education in shaping student perspectives.

The moderate relationship in this study reflects the idea that while knowledge contributes to shaping attitudes, other factors such as personal beliefs, cultural background, and social influences may also play a role. Nonetheless, the presence of a positive trend indicates that improving students' knowledge could potentially foster more supportive and proactive attitudes toward sexual health and STD prevention.

Therefore, it is recommended that sexual health education be introduced earlier and more thoroughly within the nursing curriculum, using interactive methods such as role playing,

case studies, or clinical simulations. Strengthening both theoretical understanding and practical exposure could help nursing students become more confident in addressing STD related concerns in their future professional roles.

5.4 Summary finding of the study

This study found that undergraduate nursing students at Universiti Malaysia Sarawak (UNIMAS) generally demonstrated a positive attitude toward sexually transmitted diseases (STDs), although their overall level of knowledge was limited. While most students appeared to recognize the importance of STD prevention and awareness, their understanding of the subject matter remained inadequate in several key areas.

The relationship between knowledge and attitude was weak and statistically non-significant, indicating that a positive attitude does not necessarily correspond with a higher level of knowledge. This suggests that other factors such as personal experience, cultural beliefs, or prior education may influence students' perceptions and behaviours toward STD-related issues.

These findings emphasize the need for a more structured and comprehensive approach to STD education within the nursing curriculum, integrating both theoretical content and practical application to support the development of competent and confident future healthcare providers.

5.5 Implication of the study

The findings of this study have important implications for nursing education and public health practice. The positive association between knowledge and attitude toward STDs highlights the need to strengthen sexual health education within nursing curricula. Educators

should consider incorporating more comprehensive, interactive, and practical teaching strategies, such as case studies, role-playing, and clinical exposure, to enhance students' understanding and attitudes toward STDs. Improving nursing students' knowledge and attitudes is essential for preparing them to be effective health educators and advocates in their future careers. Moreover, the study emphasizes the importance of early integration of sexual health topics in the curriculum to promote responsible behaviours and reduce stigma associated with STDs. Finally, policymakers and academic institutions should support continuous professional development and training programs focused on sexual health to ensure that future healthcare professionals remain well informed and confident in addressing STD related issues.

5.6 Limitations of the study

Despite the valuable findings, this study has several limitations. First, the sample was limited to undergraduate nursing students from a single university (UNIMAS), which may restrict the generalizability of the results to other nursing student populations or universities in different regions. Second, the cross-sectional design captures data at a single point in time, making it difficult to establish causality between knowledge and attitude toward STDs. Additionally, the use of self-reported questionnaires may introduce social desirability bias, where participants might respond in a way they believe is socially acceptable rather than reflecting their true knowledge or attitudes. Finally, the relatively moderate correlation found suggests that other factors influencing attitude toward STDs were not explored, such as cultural beliefs, personal experiences, or exposure to sexual health education outside the university setting. Limited time to conduct this study and budget constrain also other limitation of this study.

5.7 Recommendations for future research

Future research should consider expanding the sample population to include nursing students from other institutions and geographical regions to enhance the generalizability of the findings. Broader sampling would allow for comparison across different educational settings and potentially reveal regional trends in knowledge and attitude toward sexually transmitted diseases (STDs). Additionally, incorporating qualitative methods such as interviews or focus group discussions could offer deeper insight into the beliefs, perceptions, and cultural influences that shape students' attitudes and understanding of STDs. Exploring these qualitative dimensions would help uncover underlying factors that may not be evident through quantitative analysis alone. Further, it is recommended that future studies investigate the effectiveness of targeted educational interventions such as workshops, e-learning modules, or curriculum enhancements in improving both knowledge and attitude among nursing students. These intervention-based studies could inform the development of more impactful teaching strategies and resources for sexual health education in nursing programs.

5.8 Summary

In conclusion, the majority of UNIMAS undergraduate nursing students demonstrated a poor level of knowledge toward Sexually Transmitted Diseases (STDs), while slightly less than half showed good knowledge. The study found a positively weak correlation between knowledge level and attitude toward STDs, which was not statistically significant. This suggests that although there is a positive association between knowledge and attitude, the strength of this relationship is weak. An increase in knowledge about STDs is associated with a slightly more positive attitude toward the condition. However, the weak correlation

indicates that other factors may play a significant role in shaping attitudes toward STDs. These findings highlight the need for further research to explore additional influences on attitude and to develop strategies that can more effectively improve both knowledge and positive attitudes toward STDs among nursing students.

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APPENDICES

Appendix A: Ethical Approval Letter

Pejabat Akademik
Fakulti Perubatan dan Sains Kesihatan
Academic Office
Faculty of Medicine & Health Sciences
☎: 581000 samb 7768
✉: 665152

UNIVERSITI MALAYSIA
SARAWAK
94300 Kota Samarahan

MEMORANDUM

Reference : UNIMAS/NC-21.05/03-03 Jld. 8(138)

To : Siti Nureliyanna Binti Sapian (81226)
Bachelor of Nursing with Honours
Faculty of Medicine and Health Sciences

From : Dean
Faculty of Medicine and Health Sciences

Date : 05 March 2025

Subject : **Final Year Project - Research Approval: Assessing the Knowledge and Attitudes of UNIMAS undergraduate Nursing Students towards Sexually Transmitted Diseases (STDs).**

The above matter is referred.

The Faculty of Medicine and Health Sciences, Universiti Malaysia Sarawak (UNIMAS) has granted the **RESEARCH APPROVAL** for this Final Year Project research based on the appraisal by the Department of Nursing, Faculty of Medicine and Health Sciences, Universiti Malaysia Sarawak (UNIMAS) on 24 February 2025. The Final Year Project research details stated below:

Student Name : Siti Nureliyanna Binti Sapian

Student ID : 81226

Programme : Bachelor of Nursing with Honours

Research Title : *Assessing the Knowledge and Attitudes of UNIMAS undergraduate Nursing Students towards Sexually Transmitted Diseases (STDs).*

Supervisor Name : Mr Md Fadlisham bin Samsuddin

Supervisor H/P : +60 12-984 5452

All records and data are to be kept strictly **CONFIDENTIAL** and can only be used for the purpose of this study. All precautions are to be taken to maintain data confidentiality. Permission from the all relevant heads of departments/units where the study will be carried out must be obtained prior to the study.

Please note that the approval is valid from **February 2025** to **November 2025** only. The reference number for this letter must be stated in all correspondence related to this study to facilitate the process.

Thank you with regards and well wishes.

Yours sincerely,



Professor Dr. Asri bin Said
Dean

c.c : Deputy Dean of Undergraduate
: Head of Nursing Department
: Bachelor of Nursing with Honours
: MDJ4653 Final Year Project 1 Course Coordinator

Appendix B: Ethical Cover Letter

Siti Nureliyanna binti Sopian,

Faculty Medicine and Health Sciences,

Universiti Malaysia Sarawak,

94300 Kota Samarahan,

Sarawak.

The Chairman,

Medical Research Ethics Committee,

Faculty Medicine and Health Sciences,

Universiti Malaysia Sarawak,

94300 Kota Samarahan,

Sarawak.

15th December 2024

Professor/Associate Professor/Dr/Sir/Madam,

REQUEST FOR APPROVAL TO CONDUCT RESEARCH PROJECT

I am a final-year student pursuing a Bachelor of Nursing with Honours at the Faculty of Medicine and Health Sciences, UNIMAS. I enrolled in MDJ 4653 Final Year Project I, in which the course is coordinated by Madam Shalin Lee Wan Fei. Please find my details as follows:

Full name: Siti Nureliyanna binti Sopian

Matrix number: 81226

IC No.: 010220-13-1248

I would like to request for the kind approval from the Faculty of Medicine and Health Sciences Medical Research Ethics Committee to conduct the following study:

Research title: Assessing Knowledge and Attitudes of UNIMAS undergraduate Nursing students towards Sexually Transmitted Diseases (STDs)

Supervisor's name: Mr Md Fadlisham bin Samsudin

Email address: smfadlisham@unimas.my

Supervisor's HP number: 012-9845452

Please find the required documents as appended for your kind consideration and approval.

Thank you.

Sincerely,

nureliyana

(SITI NURELIYANNA BINTI SAPIAN)

Appendix C: Participant Information Sheet



PARTICIPANT INFORMATION SHEET/ MAKLUMAT KAJIAN PESERTA

- 1. Title of the study/ *Tajuk kajian*** : **Assessing Knowledge and Attitudes of UNIMAS undergraduate Nursing students towards Sexually Transmitted Diseases (STDs)**
- 2. Main Researcher/ *Penyelidik utama*** : **Siti Nureliyanna binti Sopian**
- 3. Supervisor/ *Penyelia*** : **a) Course coordinator: Shalin Lee Wan Fei
b) Main research supervisor: MD Fadlisham bin Samsudin**
- 4. Institution/ *Institut*** : **Department of Nursing
Faculty of Medicine & Health Sciences Universiti
Malaysia Sarawak**
- 5. Name of sponsor/ *Nama Penaja*** : **No external funding/ *Tiada penaja luar***

PARTICIPANT INFORMATION SHEET AND INFORMED CONSENT FORM

(for adult subjects)

6. Introduction:

It is important that you understand why the research is being done and what it will involve. Please take your time to read through and consider this information carefully before you decide if you are willing to participate. Ask the study staff if anything is unclear or if you would like more information. After you are properly satisfied that you understand this study, and that you wish to participate, you must sign this informed consent form.

Your participation in this study is voluntary. You do not have to be in this study if you do not want to. You may also refuse to answer any questions you do not want to answer. If you volunteer to be in this study, you may withdraw from it at any time. If you withdraw, any data collected from you up to your withdrawal will still be used for the study. Your refusal to participate or withdrawal will not affect any medical or health benefits to which you are otherwise entitled.

This study has been approved by the Medical Research and Ethics Committee, Ministry of Health Malaysia.

7. What is the purpose of the study?

The purpose of this study is to assess knowledge and attitudes nursing students towards Sexually Transmitted Diseases (STDs), how they feel about them, and whether they are confident in providing information and care related to STDs. This research is necessary to ensuring that nursing student are well-prepared to address this public health issue and to improve patient care.

This research will be conducted for duration of 6 months (25/1/2025 till 30/6/2024). The expected number of participants is 163 individuals.

8. What are my responsibilities when taking part in this study?

It is important that you answer all of the questions asked by the study staff honestly and completely which will take about 20 minutes of your time. You will be given a questionnaire to be answered. This form contains three sections: demographic data, knowledge towards STDs, and attitude towards STDs.

9. What are the potential risks and side effects of being in this study?

Participation to this study will not affect your treatment, and the risk is minimal. You are free to decline to answer any of the questions that you feel uncomfortable with.

10. What are the benefits of being in this study?

There may or may not be any benefits to you. Information obtained from this study it will provide valuable insights into the current level of knowledge and attitudes among nursing students, helping to identify gaps that may exist. This information can guide educators in enhancing the nursing curriculum and developing targeted educational strategies to improve understanding and awareness of sexually transmitted diseases (STDs). The findings can also help shape interventions that foster positive attitudes, which are crucial for reducing stigma and improving communication with patients. Additionally, the study contributes to the nursing profession by promoting the development of competent and well-informed nurses who are better equipped to address public health challenges related to STDs, ultimately leading to improved patient care and health outcomes.

11. Who is funding the research?

This study does not receive any external funding. You will not be paid for participating in this study.

12. Will my medical information be kept private?

All your information obtained in this study will be kept and handled in a confidential manner, in accordance with applicable laws and/or regulations. When publishing or presenting the study results, your identity will not be revealed without your expressed consent. Individuals involved in this study, qualified monitors, and auditors, and governmental or regulatory authorities may inspect the study data, where appropriate and necessary.

13. Who should I call if I have questions?

If you have any questions about the study or if you think you have a study related injury and you want information about this study, please contact the main researcher , Siti Nureliyanna binti Sopian at telephone number: 019-9001825 or the supervisor of this study, Mr. MD Fadlisham bin Samsudin, who can reach through the email address: smfadlisham@unimas.my

If you have any questions about your rights as a participant in this study, please contact: The Secretary, Medical Research & Ethics Committee, Ministry of Health Malaysia, at telephone number 03-3362 8407/8205/8888.

14. Who can participate in this study?

This study will involve undergraduate nursing students from Faculty of Medicine and Health sciences, UNIMAS. The inclusion criteria will include undergraduate nursing students from year 1 until year 4 who enrolled in nursing programme UNIMAS. The exclusion criteria is post registration nursing students. These criteria collectively aim

to create a homogeneous participant group, ensuring the study's precision, validity, and relevance to the research objective.

Appendix D: Informed Consent form

INFORMED CONSENT FORM

Title of Study: Assessing Knowledge and Attitudes of UNIMAS undergraduate Nursing students towards Sexually Transmitted Diseases (STDs)

By signing below I confirm the following:

- I have been given oral and written information for the above study and have read and understood the information given.
- I have had sufficient time to consider participation in the study and have had the opportunity to ask questions and all my questions have been answered satisfactorily.
- I understand that my participation is voluntary and I can at anytime free withdraw from the study without giving a reason and this will in no way affect my future treatment. I am not taking part in any other research study at this time. I understand the risks and benefits, and I freely give my informed consent to participate under the conditions stated. I understand that I must follow the study doctor's (investigator's) instructions related to my participation in the study.
- I understand that study staff, qualified monitors and auditors, the sponsor or its affiliates, and governmental or regulatory authorities, have direct access to my medical record in order to make sure that the study is conducted correctly and the data are recorded correctly. All personal details will be treated as **STRICTLY CONFIDENTIAL**
- I will receive a copy of this subject information/informed consent form signed and dated to bring home.
- I agree/disagree* for my family doctor to be informed of my participation in this study. (**delete which is not applicable*)

Subject:

Signature:

I/C number:

Name:

Date:

Investigator conducting informed consent:

Signature:

I/C number:

Name:

Date:

Impartial witness:

Signature:

I/C number:

Name:

Date:

Appendix E: Questionnaire

Section A: Socio- demographics

Answer the question below accordingly. Please complete the following information. Kindly choose or fill in the answer in the blanks provide.

1. Gender

Male

Female

2. Age : _____

3. Ethnicity

Malay

Iban

Chinese

Lain-lain: _____

4. Religion

Islam

Christian

Buddhist

Lain-lain : _____

5. Year of study :

Year 1

Year 2

Year 3

Year 4

6. Marital status

Married

Not married

SECTION B: Respondents' knowledge on Sexually transmitted diseases.

Tick the appropriate answer.

	QUESTIONNAIRE	Yes	No
1.	Do you think it's possible for an individual to have STDs other than HIV without having symptoms?		
2.	Which of the following are sexually transmitted diseases(STDs)?		
	a) Gonorrhoea		
	b) Syphilis		
	c) Genital herpes		
	d) Trichomiasis		

	e) Tuberculosis		
	f) Asthma		
	g) HIV/AIDS		
	h) Chlamydia		
	i) Hepatitis B		
	j) Hepatitis C		
3.	What are the causative organism of STDs?		
	a) Bacteria		
	b) Virus		
	c) Fungus		
	d) Mosquitoes		
4.	What are the routes of sexually transmitted diseases?		
	a) Sexual intercourse		
	b) Blood transmission		
	c) Sharing injection needles		
	d) Infected mother to an unborn child		
	e) Kissing		
5.	A female who does not want to become infected with STDs should use contraceptive pills.		
6.	Use of condoms will decrease the risk of being infected with an STD		
7.	Avoiding sex beyond marriage can also reduce chances of infection		
8.	Alcohol intake can increase an individual's susceptibility to STDs		

9.	Intake of some drugs can increase an individual's susceptibility to STDs		
10.	Having multiple sexual partners can increase chances of being infected		
11.	Sexual abstinence is the most effective means of avoiding STDs		
12.	What are the symptoms of STDs?		
	a) Ulcers in the genitals		
	b) Pain while passing out urine		
	c) Swollen glands, fever and body ache		
	d) Discharge from penis		
	e) Itching around vagina		
	f) Sore throat		
	g) Painless sores on the mouth and genital area		
13.	What are the possible complications of untreated or poorly treated STDs		
	a) Infertility		
	b) Cervical cancer		
	c) Body weakness		
	d) Ectopic pregnancy		
	e) Still birth		

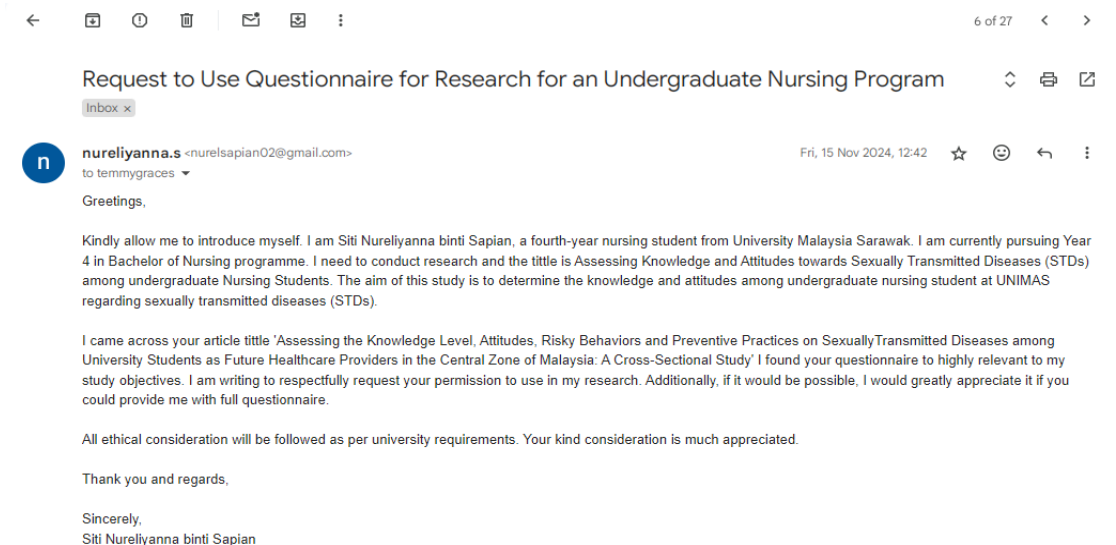
SECTION C: Attitude or view respondents' on sexually transmitted diseases.

The following question seek to know your view on sexually transmitted diseases (STDs). Please choose one answer for each question and tick the correct option.

		Strongly agree	Agree	Disagree	Strongly disagree
1.	STD problem is something which I have not given much thought to				
2.	STDs are not dangerous because they can be cured				
3.	Homosexual men solely to be blamed for the spread of STDs				
4.	I feel condoms protect against STDs				
5.	I feel it's not necessary to use condom during anal sex				
6.	If both partners are infected with STDs, I feel there's no need of using condom				
7.	I feel numerous sexual partners play no role in STDs transmission				
8.	I feel condoms are the best tools for the prevention of STDs				
9.	In my opinion, I feel STDs can cause death if left untreated				
10.	I feel it's not necessary for academic institution to discuss issues regarding prevention of STDs				
11.	I feel banning of prostitution can control the spread of STDs				
12.	I feel screening test for STDs is good				

13.	I feel screening test for STDs before marriage is important				
14.	If I have unprotected sexual intercourse, I am most concerned about				
	a) Getting HIV				
	b) Getting STDs aside from HIV				
	c) Unwanted pregnancy				
15.	I think watching or reading pornographic materials can contribute to risky behaviours				
16.	If I notice symptoms of STDs, I think I should seek treatment immediately				
17.	If I notice symptoms of STDs in my partner, I will advise him/her to seek treatment immediately				
18.	I am worried about contracting STDs				

Appendix F: Permission to use Questionnaire.



Appendix G: Gantt Chart

Activity	Months										
	2024				2025						
	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL
Determination of research title											
Literature review											
Meeting with supervisor											
Submit proposal defence slides											
Ethical approval											
Submission of first draft											
FYP 1: Submission Of research proposal											
Data collection											
Data analysis											
Writing up report											

Submit final draft												
FYP Submission of final project	2:											

Appendix H: Purposed Budget

Items	Cost	Quantity	Estimated cost
Internet data plan	RM 35/month	10 months	RM 350
Printing and binding FYP project	<ul style="list-style-type: none"> • Printing = RM 0.10/ page • Binding = RM5 	<ul style="list-style-type: none"> • Questionnaires 3 pages × 163 • Report printing 50 pages 	RM 58.90
SPSS software	RM 5	1 SPSS	RM 5
		Total	RM 413.90

Appendix I : Turnitin Similarity Index Report

FYP2_TURNITIN1

ORIGINALITY REPORT

15%	12%	7%	5%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	www.mdpi.com Internet Source	1%
2	ir.unimas.my Internet Source	1%
3	"Posters", The Journal of nutrition, health and aging, 2009 Publication	1%
4	www.nichd.nih.gov Internet Source	<1%
5	moscow.sci-hub.se Internet Source	<1%
6	repository.cardiffmet.ac.uk Internet Source	<1%
7	Michael Xin Guo. "Data Analysis for Business Students - A Mind-Mapping Approach", Routledge, 2025 Publication	<1%
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