

EXPLORING KNOWLEDGE AND ATTITUDE OF TERTIARY STUDENTS ON SEXUALLY TRANSMITTED INFECTIONS (STIs)

¹John Manuel C. Buniel, ²Juacho A. Intano, ³Elvie Lyka L. Duran
⁴Francis Isidore B. Ambray, ⁵Roey C. Sumaoy,

North Eastern Mindanao State University, Philippines

¹johncotaresbuniel@gmail.com, ²juanchointano@gmail.com, ³francisb.ambray@gmail.com, ⁴roey.sumaoy@gmail.com,
⁵elvielykaduran@gmail.com

ABSTRACT: This descriptive survey examines the knowledge and attitudes of college students at North Eastern Mindanao State University-Cantilan Campus regarding Sexually Transmitted Infections (STIs). With 724 participants gathered proportionately, the questionnaire focused on STI-related knowledge and attitudes. Findings highlighted the presence of respondents between 18 and 19 years old, which are mostly late adolescents and early adults. Differences in knowledge scores across academic departments pointed toward potential disparities in educational emphasis or resource accessibility. Additionally, a correlation between academic year level and knowledge scores suggested a cumulative acquisition of STI-related information throughout the student's academic journey. Notable gender differences emerged in attitudes towards STIs, with female students showing more proactive stances. However, a gap between attitudes and actual practices underscored the need for comprehensive, culturally appropriate interventions to foster consistent, safe sexual behaviors among young adults. Ultimately, the study emphasizes the targeted educational initiatives to address knowledge gaps and align attitudes with behaviors regarding STIs prevention among college students.

Keywords. Knowledge, attitude, sexually transmitted infections (STIs), tertiary students

INTRODUCTION

Sexually Transmitted Infections (STIs) present a formidable global public health challenge, particularly among young adults, including those pursuing higher education. Understanding the knowledge and attitudes surrounding STIs is pivotal, influencing behaviors related to sexual health, preventive practices, and healthcare utilization. Workowski *et al.* [1] underscores the urgent need for effective interventions targeting adolescents and young adults to mitigate STIs. Studies have shown that the majority of affected individuals are adolescents and young adults, as highlighted by Newbern *et al.*[2], who attribute this trend to factors such as frequent partner changes, online partner selection, limited awareness of preventive measures, and overly optimistic perceptions of HIV treatment accessibility and efficacy.

Globally, the burden of STIs among individuals under 25 years old is staggering, with over 100 million new cases reported annually and young people aged 15–24 accounting for over half of new HIV infections [1]. This demographic is particularly vulnerable due to risky sexual behaviors, including unprotected intercourse, as indicated by Tamrat *et al.* [3]. Locally, recent data from the Department of Health (February 2022)[4] reveal a concerning prevalence of HIV-positive cases among individuals aged 15-34, highlighting the urgent need for targeted interventions to address STIs among youth.

In response to the rising prevalence of STIs, studies by Zizza *et al.* [5] have evaluated the effectiveness of educational interventions in improving knowledge and risk perception among high school and university students. However, there remains a critical gap in understanding the attitudes and knowledge of higher education students towards STIs. This study seeks to fill this gap by comprehensively examining awareness levels, attitudes towards safe sexual practices, stigma, healthcare-seeking behavior, and the accuracy of STI-related knowledge among college students. By shedding light on these aspects, the study aims to inform targeted interventions, reduce stigma, and empower students with accurate information, ultimately contributing to enhanced

sexual health outcomes within the higher education community.

Given the significance of STIs as a public health concern, understanding how students in higher education perceive, comprehend, and address this issue is paramount. Through this investigation, we endeavor to foster sexual health awareness among college students, inform future interventions, and promote a culture of informed decision-making regarding sexual health. By addressing these aspects comprehensively, we aim to contribute to better sexual health understanding and practices within the higher education community, ultimately aiding in the prevention and management of STIs among young adults.

METHODOLOGY

This descriptive survey study, conducted at North Eastern Mindanao State University-Cantilan Campus, examined the knowledge and attitudes surrounding Sexually Transmitted Infections (STIs) among college students across five departments. A comprehensive sample of 724 individuals, proportionate to departmental populations, was included in the study. For data collection, prior authorization was obtained from the Campus Director and Department Heads to ensure adherence to ethical guidelines. Moreover, the researchers meticulously crafted the questionnaire addressing STIs knowledge and attitudes, and three experts in the field then validated it. Anonymity was maintained by excluding personal identification details, and respondents were provided with brief explanations to enhance clarity and collect accurate responses.

Meanwhile, the gathered data were subjected to rigorous statistical analysis, facilitating the tabulation of results and offering pertinent insights into the surveyed population's understanding and perceptions regarding STIs. The methodological rigor employed in this study underscores its significance as a valuable contribution to public health research, particularly within university settings.

By encompassing diverse departments, the study provided a comprehensive representation of student perspectives on

STIs, offering insights that can inform targeted educational interventions and policy initiatives. The meticulous attention to ethical considerations, including obtaining necessary permissions and ensuring respondent anonymity, underscores the integrity and ethical conduct inherent in the research process. Furthermore, the comprehensive statistical analysis enhances the credibility and reliability of the study outcomes. Ultimately, this study serves as a pivotal resource for stakeholders invested in promoting sexual health awareness and mitigating the prevalence of STIs among college populations. Elucidating knowledge gaps and prevalent attitudes among students provides a foundation for tailored interventions to foster informed decision-making and proactive healthcare-seeking behaviors. Additionally, the methodological framework established herein can guide future research endeavors within academic environments, contributing to advancing evidence-based practices in public health promotion and education.

RESULT AND DISCUSSION

Profile of the respondents

The demographic distribution of respondents provides valuable insights into the composition of the study's participants. Notably, the majority, accounting for 67.68%, fall within the 18-19 age bracket, indicating a predominant representation of late adolescents and young adults. This demographic trend aligns with global statistics highlighting the susceptibility of individuals aged 16 to 24 to sexually transmitted infections (STIs), emphasizing the significance of targeting interventions toward this age group. Despite a slight deviation from the reported mean by the World Health Organization - Western Pacific Regional Office (WHO-WPO), the respondents' age distribution underscores the relevance of understanding the perspectives and knowledge of young adults in addressing the challenge of STIs.

Moreover, adolescents between 16 and 24 years old are particularly vulnerable to STDs, as evidenced by statistics from the World Health Organization [6], indicating that around 20% of individuals with HIV/AIDS are in their twenties. Similarly, one in every twenty teenagers acquires a sexually transmitted infection annually. The gender distribution in this study shows a nearly equitable representation between males and females, with males constituting 50.28% and females 48.76% of the participants. This balanced representation mitigates potential gender bias in epidemiological investigations, ensuring a comprehensive analysis of STI knowledge and attitudes across gender lines.

In examining departmental affiliations, the highest representation comes from the College of Criminal Justice Education (CCJE) at 28.91%, followed by the Department of General Teaching Training (DGTT) at 20.19%. This diversity in departmental distribution reflects varied academic backgrounds among the surveyed population, offering multifaceted insights into STI knowledge and attitudes. Furthermore, the overwhelming presence of first-year students, comprising 85.64% of the sample, suggests that the findings predominantly reflect the perceptions and knowledge of individuals new to higher education. This underscores the

importance of early intervention and comprehensive sexual health education initiatives targeting incoming college students to address gaps in STI awareness and prevention effectively.

Table 1. Profile of the respondents

Age	Count	%
18-19	490	67.68%
20 – 21	165	22.79%
22 – 23	50	6.91%
24 and above	19	2.62%
Gender	Count	%
Male	364	50.28%
Female	353	48.76%
Prefer not to say	7	0.97%
Department	Count	%
DGTT	146	20.19%
DIT	132	18.26%
DCS	103	14.25%
DBM	133	18.40%
CCJE	209	28.91%
Year Level	Count	%
First Year	620	85.64%
Second Year	38	5.25%
Third Year	48	6.63%
Fourth Year	18	2.49%

Knowledge on sexually transmitted Infection

The table analysis reveals significant insights into the respondents' understanding of sexually transmitted infections (STIs). There seems to be a consensus among participants regarding knowledge-based statements concerning STIs. Notably, the statement "I know how to protect myself from STIs" received the highest mean score of 3.87, indicating a strong understanding of this area. Conversely, the statement "I am familiar with the available treatment options for STIs" received the lowest mean score of 3.24, suggesting comparatively lower awareness or certainty regarding treatment options.

The overall weighted mean of these responses, averaging 3.48, falls within the 'Agree' category, signifying a moderate to high level of STI awareness within the surveyed group. Recognizing STIs and their potential implications, along with assessing the attitudes of young individuals toward sexual health, is crucial for devising effective prevention and treatment strategies [7].

While HIV/AIDS awareness may be relatively high due to extensive media coverage and government initiatives, knowledge about STIs other than HIV/AIDS appears limited, particularly in developing nations [8]. This underscores the necessity for targeted educational campaigns and enhanced public health interventions to address gaps in STI awareness and promote overall sexual health literacy.

Table 2. Level of Knowledge on sexually transmitted Infection

Knowledge	Weighted Mean	Verbal Description
1. I can correctly name common STIs.	3.43	Agree
2. I am aware of the modes of transmission of STIs	3.56	Agree
3. I know where to access information about STI prevention.	3.49	Agree
4. I understand the importance of regular STI testing.	3.68	Agree
5. I can identify the symptoms of common STIs.	3.31	Neutral
6. I know how to protect myself from STIs	3.87	Agree
7. I am knowledgeable about the risks associated with STIs.	3.60	Agree
8. I am familiar with the available treatment options for STIs.	3.24	Neutral
9. I can explain the consequences of untreated STIs.	3.25	Neutral
10. I feel confident in my knowledge about STIs.	3.36	Neutral
Average Weighted Mean	3.48	Agree

Legend: 1.00 – 1.80 Strongly Disagree 1.81 – 2.60 Disagree 2.61 – 3.40 Neutral
 3.41 – 4.20 Agree 4.21 – 5.00 Strongly Agree

Attitude on sexually transmitted Infection

The findings reveal a generally positive attitude towards individuals with STIs, with most items scoring above 3.40. Notably, the statement "I think that individuals with STIs should be treated with respect and compassion" received the highest mean score of 3.96, indicating a commendable level of empathy within the respondent group. Conversely, statements like "I feel comfortable discussing STIs with my partner(s)" and "I think that there is a stigma associated with having an STI" scored 3.31, highlighting areas where societal attitudes and individual comfort levels could benefit from targeted educational interventions. The overall weighted mean score of 3.67 further supports the presence of positive attitudes towards STI prevention and education among the sample population.

Understanding the attitudes of adolescents and young adults towards STIs is crucial as it reflects their comprehension and potential risk behaviors. Young individuals face higher risks due to tendencies for unprotected sex and multiple partners, compounded by inadequate knowledge and services for STI prevention (Interventions using new digital media to improve adolescent sexual health: a systematic review, 2012). Social influences have found that the perceived behavior of friends is linked to the progression of sexual activity (Romer et al., 1994)[9]. The research underscores the need for sex education among teenagers, given their exposure to online sexual content and its link to risky sexual health behavior [10]. Substance use frequency has been associated with increased sexual activity

and partners, emphasizing the importance of addressing substance use in sexual risk-taking behaviors [11]. Adolescents who engage in substance use, particularly alcohol and drugs, exhibit higher sexual risk behaviors, highlighting the importance of supportive educational programs to mitigate risks and enhance knowledge on STI prevention[12].

Table 3. Level of Attitude on sexually transmitted Infection

Attitude	Weighted Mean	Verbal Description
1. I believe that practicing safe sex is important.	3.89	Agree
2. I feel comfortable discussing STIs with my partner(s).	3.31	Neutral
3. I think that there is a stigma associated with having an STI.	3.31	Neutral
4. I am supportive of regular STI testing for sexually active individuals.	3.39	Neutral
5. I believe that comprehensive sex education should include information about STIs.	3.77	Agree
6. I am confident that I can protect myself from contracting an STI.	3.88	Agree
7. I think that individuals with STIs should be treated with respect and compassion.	3.96	Agree
8. I consider regular STI testing as a responsible behavior.	3.76	Agree
9. I feel that discussing STIs openly can help reduce the spread of STIs.	3.91	Agree
10. I am aware of the resources available for STI testing and treatment.	3.56	Agree
Average Weighted Mean	3.67	Agree

By fostering educational initiatives and open discourse, institutions and society can play a pivotal role in promoting safer behaviors and improving awareness of STI prevention strategies. The study reveals a strong and significant positive correlation, with an R-value of 0.725 and a p-value of 0.000, indicating a direct connection between individuals' knowledge of sexually transmitted diseases (STIs) and their attitudes toward these conditions. This statistically significant relationship underscores the idea that well-informed individuals are more likely to adopt positive perspectives on STI prevention, highlighting the critical role of education and awareness in shaping public attitudes and behaviors towards STIs.

Table 4. Significant values on the relationship between knowledge and attitude on Sexually Transmitted Infections (STIs)

	Mean	SD	r – value	p-value	Decision	Interpretation
Knowledge	3.4785	.73975	0.725	0.000	Reject H ₀	There is a significant relationship
Attitude	3.6740	.79360				

Table 5. Significant values on the difference between the levels of knowledge on STIs when grouped according to profile

Age & Knowledge	Mean	SD	F-value	p-value	Decision	Interpretation
18 – 19	3.4431	.71887	2.426	0.064	Failed to reject H ₀	There is no significant difference
20 – 21	3.4927	.79898				
22 – 23	3.6780	.67470				
24 and above	3.7421	.81603				
Sex & Knowledge	Mean	SD	F-value	p-value	Decision	Interpretation
Male	3.4679	.76862	0.405	0.667	Failed to reject H ₀	There is no significant difference
Female	3.4847	.71007				
Prefer not to say	3.7143	.73808				
Department & Knowledge	Mean	SD	F-value	p-value	Decision	Interpretation
DGTT	3.7110	.78152	6.592	0.000	Reject H ₀	There is a significant difference
DIT	3.3758	.75898				
DCS	3.4748	.64363				
DBM	3.2925	.70824				
CCJE	3.4938	.71690				
Year level & Knowledge	Mean	SD	F-value	p-value	Decision	Interpretation
First Year	3.4174	.72341	14.273	0.000	Reject H ₀	There is a significant difference
Second Year	3.7474	.64713				
Third Year	3.7188	.79430				
Fourth Year	4.3722	.50620				

Becker's health belief model suggests that an individual's understanding of a health issue and their attitude towards it can predict their future health behaviors [13]. This model provides a theoretical framework indicating that changes in health practices, such as STI prevention, are influenced by personal beliefs about health risks and confidence in taking health-related actions. Embracing this model enables a nuanced approach to developing public interventions that enhance awareness and emphasize the perceived seriousness and susceptibility to STIs, promoting more protective behaviors. Studies by El-Tholoth *et al.* [14] and Albanghali & Othman have examined knowledge and attitudes across diverse populations, offering valuable insights into tailoring public health messages to engage specific communities effectively [15]. Building on this research, localized public health campaigns should not only disseminate information about STDs but also address misconceptions and myths that could impede proactive health behaviors. This targeted approach can lead to more impactful and culturally sensitive interventions in promoting STD awareness and prevention

The analysis of knowledge scores across demographic groups highlights significant diversity, particularly in academic departments and year levels. The Department of General Teacher Training stands out with a mean knowledge score of 3.711, indicating a stronger understanding of STI-related information among its students. This suggests that the DGTT's pedagogy or curriculum may offer more comprehensive sexual health education or that students in this department have a proactive approach to seeking STI information. In contrast, the Department of Business Management exhibits the lowest mean knowledge score of 3.2925, revealing a knowledge gap that may result from inadequate emphasis on sexual health in the curriculum or limited access to resources compared to other departments. Targeted educational initiatives are essential to address this gap and enhance STI awareness among departments. The trend of increasing knowledge across academic years, culminating in fourth-year students averaging a score of 4.3722, underscores a progressive accumulation of STI knowledge throughout students' academic progression. This

trend aligns with the expectation that higher academic levels correspond to a deeper understanding of various subjects, including health literacy. While Tenkku *et al.* advocate for educational interventions to enhance teenagers' understanding of sexuality and reproductive health [16], the persistent lack of adolescent comprehension, as highlighted by Kamau and Korit [17], emphasizes the influence of varying cultural factors. Overcoming these barriers necessitates flexible and accessible health education approaches that transcend societal constraints, promoting open discussions on sexuality within familial and educational contexts.

In contrast to Masood and Alsonini's findings [18], the analysis challenges the notion of age-based disparities in knowledge. Consistent with Khanal's conclusions [19], the data indicates no significant gender-based differences in sexual health literacy or practices, suggesting that both male and female students demonstrate similar levels of understanding and application of sexual health knowledge. This implies the successful dissemination of STI awareness efforts across genders or the equal capacity of both sexes to comprehend and apply sexual health information when provided with equitable educational opportunities

Table 6. Significant values on the difference between the levels of attitude on STIs when grouped according to profile

<i>Age & Attitude</i>	Mean	SD	F-value	p-value	Decision	Interpretation
<i>18 – 19</i>	3.6422	.74364	1.918	0.125	Failed to reject H ₀	There is no significant difference
<i>20 – 21</i>	3.6800	.89505				
<i>22 – 23</i>	3.8740	.84390				
<i>24 and above</i>	3.9158	.91425				
<i>Sex & Attitude</i>	Mean	SD	F-value	p-value	Decision	Interpretation
<i>Male</i>	3.6027	.82026	4.476	0.012	Reject Ho	There is a significant difference
<i>Female</i>	3.7360	.76138				
<i>Prefer not to say</i>	4.2571	.49618				
<i>Department & Attitude</i>	Mean	SD	F-value	p-value	Decision	Interpretation
<i>DGTT</i>	4.0788	.76169	13.744	0.000	Reject Ho	There is a significant difference
<i>DIT</i>	3.4902	.82387				
<i>DCS</i>	3.6573	.74328				
<i>DBM</i>	3.6158	.73028				
<i>CCJE</i>	3.5464	.76441				
<i>Year level & Attitude</i>	Mean	SD	F-value	p-value	Decision	Interpretation
<i>First Year</i>	3.6063	.77247	16.745	0.000	Reject Ho	There is a significant difference
<i>Second Year</i>	3.7947	.84787				
<i>Third Year</i>	4.0708	.77596				
<i>Fourth Year</i>	4.6944	.28589				

Sexually transmitted diseases present ongoing public health challenges, emphasizing the importance of understanding varied attitudes toward STIs for effective awareness and prevention strategies. The study revealed diverse attitudes across academic departments, year levels, and genders. The Department of General Teacher Training stood out with the highest mean attitude score of 4.0788, reflecting a commendable openness towards STI protection. Attitudes improved progressively with academic advancement, with fourth-year students exhibiting the most enlightened stance, averaging 4.6944.

The research underscores the concerning trend of lower educational levels correlating with reduced access to sexual and reproductive health care, often due to communication barriers and inadequate understanding of the importance of these services. Integrating comprehensive sexual health education into academic curricula becomes crucial to address these disparities and cultivate informed attitudes towards STIs. Gender differences in attitudes were notable, with female students and those who preferred not to disclose their

gender showing more proactive and positive attitudes, highlighting the need for gender-specific educational programs tailored to individual perspectives.

While positive attitudes towards STIs are prevalent, translating these into consistent preventive practices remains a complex challenge. Bridging this gap requires enhanced sexual education and community interventions that consider socio-cultural influences on sexual health behaviors. Efforts to align attitudes with actions must focus on removing systemic barriers to accessing quality sexual and reproductive health care while ensuring interventions are culturally sensitive and responsive to the diverse needs of student populations. By adopting a comprehensive and inclusive approach, we can effectively mitigate the impact of STIs and promote healthier practices within academic settings.

CONCLUSION

The results of this study offer valuable insights into the perceptions and knowledge regarding sexually transmitted diseases (STIs) among college students, particularly late

adolescents and young adults. The demographic analysis highlights the susceptibility of this age group (16-24) to STIs, emphasizing the need for targeted interventions. Moreover, differences in knowledge scores across academic departments and year levels suggest disparities in educational emphasis, underlining the importance of continuous sexual health education throughout students' academic journeys. Gender differences in attitudes further underscore the necessity for gender-sensitive educational programs to address unique perspectives and foster positive attitudes toward STI prevention and education.

The findings also reveal a significant correlation between knowledge of STIs and attitudes toward them, emphasizing the pivotal role of education in shaping constructive viewpoints and behaviors. While the study reflects positive attitudes toward STI prevention, there remains a gap between attitudes and actual practices, indicating the need for comprehensive interventions that bridge this divide. Furthermore, disparities in attitudes based on gender and academic department highlight the importance of tailored educational initiatives that are culturally appropriate and responsive to the diverse needs of student populations. Ultimately, addressing these findings requires intensified efforts to ensure that positive attitudes are translated into consistent and safe sexual practices, thus mitigating the impact of STDs effectively.

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