Exploring the Association Between HIV Knowledge and Prevention Attitudes Among Health Science Students

Wahyuni Lukita Atmodjo[1], Neneng Suryadinata[1], Shirley Moningkey[2], Rohana Uly Pradita Siregar[2]

[1]Department of Anatomy and Histology, Faculty of Medicine, Universitas Pelita Harapan, Tangerang, Indonesia
[2]Department of Public Health and Epidemiology, Faculty of Medicine, Universitas Pelita Harapan, Tangerang, Indonesia

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Correspondance : Shirley Moningkey
E-mail : smoningkey@yahoo.com
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Abstract

Background: HIV continues to be a major public health concern worldwide, and comprehensive understanding has shown that HIV knowledge enhances effective prevention behaviors and helps prevent the transmission of the disease. Previous research conducted indicated that higher levels of knowledge were associated with more positive attitudes toward HIV prevention, specifically, 58.7% demonstrated good knowledge and 70.7% engaged in preventive actions. Health science students are a key group for HIV education, as they are future healthcare providers. However, limited research has been done among health science students.

Methods: A cross-sectional study was conducted with 295 health science students consisting of 193 medical and 102 non-medical students. Participants completed two questionnaires, i.e., HIV knowledge with 24 true/false items and HIV prevention attitudes with 23 items on a Likert scale. Descriptive and inferential statistics, including chi-square tests and multivariate logistic regression, were used to analyze the data.

Results: Of the respondents, 43.4% demonstrated good HIV knowledge, while 56.6% had poor knowledge. Regarding prevention attitudes, 59.7% exhibited favorable attitudes, while 40.3% had unfavorable attitudes. A significant positive association was found between HIV knowledge and prevention attitudes ($p < 0.001$, OR: 2.525, 95% CI: 1.546–4.123). Gender differences were noted, with females displaying more favorable attitudes ($p < 0.001$, OR: 2.551, 95% CI: 1.487–4.379). Medical students showed less favorable attitudes toward HIV prevention compared to non-medical students ($p = 0.042$, OR: 1.681, 95% CI: 1.017–2.778).

Conclusions: This study highlights the influence of HIV knowledge, gender, and faculty on HIV prevention attitudes among health science students, with females and non-medical students showing more engagement in prevention efforts. These findings underscore the need for comprehensive HIV education in university curricula to enhance both knowledge and preventive behaviors.

Introduction

The global health crisis posed by the Human Immunodeficiency Virus (HIV) and acquired immunodeficiency syndrome (AIDS) persists, prompting sustained efforts from both international and local initiatives to combat the pandemic.[1] HIV, a virus causing immune system deterioration culminating in Acquired Immunodeficiency Syndrome (AIDS), is a significant public health concern.[2] According to the Joint United Nations Program on HIV/AIDS (UNAIDS), an estimated 38.0 million individuals were infected with HIV

worldwide in 2019, with 36.2 million being adults. Additionally, approximately 7.1 million people are unaware of their HIV-positive status.[3.] The millennium development goals (MDGs) spurred a collective global response to address the escalating spread of HIV/AIDS.[4] Urgent action is needed to develop proactive programs emphasizing prevention education to curb the increasing incidence of HIV. In Indonesia, there were 640,000 cases of HIV/AIDS, with 46,000 being new cases, and the number of deaths increased by approximately 60% between 2010 and 2018.[5] The provinces with the highest number of HIV/AIDS cases include DKI Jakarta, West Java, Central Java, East Java, and Papua. The most affected age groups were 30-39 and 40-49 years old, with high school graduates being the largest educational group affected (54,5%).[6,7]

According to the provided data, Papua has one of the highest rates of HIV/AIDS among the provinces. The provincial government, especially in Merauke, is actively engaged in prevention and control efforts that have been made. These efforts include enhancing information and education, expanding the use of condoms, increasing efforts to prevent mother-to-child HIV transmission, and raising awareness about Regulation No. 3 of 2013 regarding STI, HIV, and AIDS prevention and control. The government's efforts in the field of prevention include the VCT Program which aims to provide HIV counselling and testing services to the community.[8]

Adolescents and young adults, particularly university students, undergo significant social transitions such as completing education, transitioning to independent living, and experiencing their first sexual relationships.[2] This transitional phase, coupled with increased sexual activity, presents a substantial challenge in HIV prevention efforts targeting this demographic.[9] HIV prevention behaviour is influenced by personal beliefs and perceptions of the disease, as well as the availability of prevention strategies.[10] These personal perceptions are shaped by various intrapersonal factors affecting health behaviour. The lack of awareness or understanding of HIV is also a significant factor impeding changes in sexual behaviour among youth, placing them at a heightened risk of HIV infection.[11] Prevention of HIV/AIDS can be done by providing basic knowledge about infectious diseases to adolescents. Inappropriate forms of information can lead adolescents to promiscuity and other things that can lead to transmission of infectious diseases. Thus, so that adolescents understand and are aware of how dangerous HIV/AIDS is, it can be helped by providing basic knowledge about HIV/AIDS, so that they will have healthy attitudes and behaviours to avoid infectious diseases. In Indonesia,

socialisation efforts through education or counselling about HIV/AIDS among adolescents have not had a significant impact on increasing knowledge.[12]

A study by Khotibul et al. illustrates that a comprehensive understanding of HIV/AIDS significantly enhances prevention strategies and correlates with increased condom use among university students, thereby facilitating effective HIV/AIDS prevention behaviors.[13] This finding is supported by research conducted in Sumedang, which indicated that higher levels of knowledge were associated with more positive attitudes toward HIV/AIDS prevention; specifically, 58.7% of respondents demonstrated good knowledge, 50.0% exhibited moderate attitudes, and 70.7% engaged in preventive actions.[14] Furthermore, a comparative analysis in China revealed that students in education or minority-focused programs had the lowest levels of knowledge, intentions to use condoms, and self-efficacy, likely due to their rural backgrounds, which often lack adequate AIDS educational resources.[15] In addition, research among Indonesians across six major islands identified regional disparities in HIV/AIDS knowledge levels, with participants who had backgrounds in health education and prior involvement in HIV/AIDS programs scoring higher in knowledge, positively impacting their attitudes toward prevention.[16] However, medical students received the highest average score for AIDS-related knowledge and had a medium level (tending towards good) in attitudes towards risk behaviour, intention, and self-efficacy of condom use. This may be attributed to the extensive AIDS-related education and possibly their conservative attitudes towards sexual behavior. Supporting this, a study among fourth-year nursing students in Indonesia found that 44 out of 88 respondents had good knowledge of HIV/AIDS, 43 had sufficient knowledge, and 1 had insufficient knowledge; additionally, 67 respondents held positive attitudes, 12 exhibited sufficient attitudes, and 9 showed poor attitudes. Overall, the research suggests that knowledge significantly influences attitudes, which in turn affect behavior, indicating that improved health knowledge can lead to proactive measures aimed at preventing the transmission of infectious diseases.[17] This research employed the HIV knowledge and HIV prevention attitudes questionnaires, based on the work of Ratyas Ekartika Puspita. The HIV knowledge questionnaire comprised 24 true-or-false statements, while the HIV prevention attitudes questionnaire included 23 items with response options of Strongly Disagree, Disagree, Agree, and Strongly Agree.[18]

However, previous research at Tribhuwana Tunggadewi University showed that 7 out of 10 students had good knowledge but poor preventive behaviour,

indicating no relationship between knowledge and HIV/AIDS preventive behaviour.[19] Two factors influencing attitudes towards HIV/AIDS knowledge and prevention attitude include education and residency (rural or urban). Parental education levels contribute to enhancing children's understanding of HIV and strategies for preventing its transmission. Higher parental education correlates with increased awareness among children about HIV prevention and protection, whereas lower education levels may elevate the risk of HIV/AIDS transmission.[20] A study showed that there is a significant relationship between place of residence and knowledge about HIV/AIDS and prevention attitude. The results showed that a person living in the countryside has a lower probability of having comprehensive knowledge about HIV/AIDS compared to those living in the city.[21] Based on the explanation above, there is limited research investigating the relationship between HIV/AIDS knowledge and HIV/AIDS preventive behaviors at the university level, particularly among medical students. Furthermore, similar studies have not been extensively conducted in other health-related faculties, such as nursing and health science students. Therefore, this study aims whether the knowledge of HIV/AIDS among health science students is related to their HIV prevention attitude that can be initiated by health science students.

Material And Methods

A cross-sectional study was conducted on health sciences students at Universitas Pelita Harapan, Indonesia. Data were collected through self-administered questionnaires.

The study targeted health science students from the Faculty of Medicine, Nursing, and Pharmacy. Inclusion criteria required participants to be in their third year or higher of study with no marital status. A convenience sampling technique was used to select participants from these faculties. The final sample included 295 students, consisting of 193 medical students and 102 non-medical students from faculty of nursing and pharmacy.

The independent variable was the HIV knowledge of health science students. The dependent variable was the HIV prevention attitudes of the students. Potential confounders considered in this study included gender, faculty, parental education, and the hometown of the students.

HIV Knowledge Questionnaire consisted of 24 items, each with a binary response option “correct” or “incorrect”. HIV knowledge scores were categorized into two levels: “good” for scores within the range of 76% to 100%, and “poor” for scores below 75%. HIV Prevention Attitude Questionnaire consisted of 23 items, each rated on 4-point Likert scale, namely “strongly agree”, “agree”,

"disagree", and "strongly disagree". Scoring for favorable statements was assigned as follows: higher scores indicated more positive attitudes. For unfavorable statements, the scoring was reversed: higher scores indicated less favorable attitudes.

Data was processed and analyzed using SPSS version 26. Descriptive statistics were used to summarize the demographic characteristics of the participants, as well as their HIV knowledge and prevention attitudes. The Chi-square (χ^2) test was performed to assess the bivariate association between HIV knowledge and prevention attitudes. A multivariate analysis was conducted using logistic regression to adjust for potential confounders, including gender, faculty, and parental education. Odds ratios (OR) with 95% confidence intervals (CI) were calculated to determine the strength of these associations. A p-value of < 0.05 was considered statistically significant.

This study was reviewed and approved by the Research Ethics Committee of the Faculty of Medicine, Universitas Pelita Harapan with approval number: 237/K-LKJ/ETIK/VIII/2024. Participants were informed about the study's objectives and methods, and written informed consent was obtained from all participants. Participation was voluntary, and confidentiality was maintained throughout the study.

Result

A total of 336 respondents were initially included in the study, with 295 participants remaining who met the inclusion criteria. The sample was predominantly composed of 65.4% medical students, with the remaining 34.6% representing non-medical students. Most respondents were female, accounting for 75.3%, with only 24.7% male participants. Regarding hometown, 92.9% of respondents came from urban areas, and 7.1% were from rural areas. In terms of parental education, 22.7% of respondents had parents with a high school education or lower, 56.3% had parents with an undergraduate degree, and 21% had parents with a graduate degree.

The HIV knowledge questionnaire included 24 true-or-false questions. Based on the responses, 43.4% of the respondents demonstrated good HIV knowledge, while 56.6% exhibited poor knowledge. The HIV prevention attitudes questionnaire consisted of 23 items with responses on a four-point Likert scale. Overall, 59.7% of respondents exhibited favorable attitudes, while 40.3% demonstrated unfavorable attitudes.

Table 1. Characteristics and Distribution of HIV Knowledge and HIV Prevention Attitudes Among Health Science Students (n=295)

	Frequency (n)	Percentage (%)
Gender		
Male	73	24.7
Female	222	75.3
Hometown		
Rural	21	7.1
Urban	274	92.9
Parent Education		
Senior High School or Lower	67	22.7
Undergraduate Degree (D3/S1)	166	56.3
Graduate Degree (S2/S3)	62	21.0
Faculty		
Medical	193	65.42
Non-Medical (Nursing and Pharmacy)	102	34.57
Knowledge		
Good	128	43.38
Poor	167	56.62
Attitudes		
Favorable	176	59.66
Unfavorable	119	40.34

The relationship between HIV knowledge and HIV prevention attitudes was assessed using the Chi-Square test. Among those with good HIV knowledge, 71.9% had favorable HIV prevention attitudes, while 28.1% had unfavorable. In contrast, 50.3% of those with poor HIV knowledge showed favorable attitudes, and 49.7% exhibited unfavorable attitudes. The Chi-Square test revealed a statistically significant association between HIV knowledge and prevention attitudes (p-value = 0.000). The odds ratio (OR) of 2.525 (95% CI: 1.546–4.123) indicated that those with good HIV knowledge were 2.5 times more likely to have favorable attitudes toward HIV prevention compared to those with poor knowledge.

Regarding the association between faculty and HIV prevention attitudes, 67.6% of non-medical students demonstrated favorable attitudes, while 32.4% showed unfavorable attitudes. Among medical students, 55.4% exhibited favorable attitudes, and 44.6% had unfavorable attitudes. The Chi-Square test for faculty showed a p-value of 0.042, with an OR of 1.681 (95% CI: 1.017–2.778), indicating that non-medical students were 1.6 times more likely to have favorable HIV prevention attitudes than medical students.

Table 2. Association between HIV Knowledge, Other Variables, and HIV Prevention Attitudes (n=295)

Variable	Favorable Attitude	Unfavorable Attitude	Unadjusted OR (95% CI)	p-value
Knowledge				
Good	92 (71.9)	36 (28.1)	2.525 (1.546-4.123)	0.000*
Poor	84 (50.3)	83 (49.7)		
Gender				
Female	145 (65.3)	77 (34.7)	2.551 (1.487-4.379)	0.000*
Male	31 (42.5)	42 (57.5)		
Hometown				
Urban	164 (59.9)	110 (40.1)	1.118 (0.456-2.743)	0.821
Rural	12 (57.1)	9 (42.9)		
Parent Education				
Senior High School or Lower	40 (59.7)	27 (40.3)	1.481 (0.738-2.975)	0.269
Undergraduate Degree	105 (63.3)	61 (36.7)		
Graduate Degree	31 (50.0)	31 (50.0)	1.721 (0.955-3.103)	0.071
Faculty				
Non-medical	69 (67.6)	33 (32.4)	1.681 (1.017-2.778)	0.042*
Medical	107 (55.4)	86 (44.6)		

*Statistically significant at p<0.05, X^2 test

Between gender, HIV prevention attitudes showed significant differences. Of the female respondents, 65.3% demonstrated favorable attitudes, while 40.1% of females exhibited unfavorable attitudes. Among males, 42.5% had favorable attitudes, and 57.5% showed unfavorable attitudes. A Chi-Square test revealed a p-value of 0.000, with female students being 2.5 times more likely (OR: 2.551; 95% CI: 1.487–4.379) to have favorable attitudes compared to their male counterparts.

When examining the effect of hometown, 59.9% of respondents from urban areas exhibited favorable attitudes, while 57.1% of those from rural areas also had favorable attitudes. However, the Chi-Square test for hometown area showed a p-value of 0.821, suggesting that there was no significant association between hometown area (urban vs. rural) and attitudes toward HIV prevention.

Parental education levels were also explored in relation to HIV prevention attitudes. Among respondents with parents who had a high school education or lower, 59.7% demonstrated favorable attitudes, while 40.3% exhibited unfavorable attitudes. Among those with parents who had an undergraduate degree, 63.3% showed favorable attitudes, and 36.7% had unfavorable attitudes. Among respondents with graduate-educated parents, attitudes were split evenly, with 50% showing favorable and 50% unfavorable attitudes. Chi-Square analysis revealed no significant association between parental education and HIV prevention attitudes, with p-values of 0.269 and 0.071 for the respective comparisons.

Multivariate analysis, which included variables such as knowledge, gender, faculty, and parental education, showed that HIV knowledge was the most significant predictor of favorable HIV prevention attitudes. The p-value for knowledge was 0.000, and the odds ratio of 2.841 indicated that students with good HIV knowledge were significantly more likely to have favorable attitudes toward HIV prevention than those with poor knowledge. Gender also had a significant impact on HIV prevention attitudes, whereas parental education and faculty showed no significant association.

Table 3. Association between HIV Knowledge and Prevention Attitudes Adjusted by Other Variables (n=295)

Variable	Adjusted OR (95% CI)	p-value
Knowledge	2.841 (1.698 – 4.752)	0.000*
Gender	2.386 (1.352 – 4.211)	0.003*
Parent education	1.095 (0.744 – 1.613)	0.645
Faculty	1.678 (0.960 – 2.934)	0.069

*Statistically significant at p<0.05

Discussion

This study included a total of 336 respondents, with 295 met the inclusion criteria, while the remaining 41 were excluded due to incomplete or unclear

questionnaire responses. Among the participants, 193 were medical students and 102 were non-medical students. The sample consisted of 75.3% female respondents, 92.9% of whom resided in rural areas. Around, 56.3% of respondents had parents with an undergraduate degree as their highest level of education. Additionally, 65.42% respondents were enrolled in medical faculties and 34.57% non-medical (Nursing and Pharmacy) faculty.

HIV knowledge among health science students revealed that 43.38% of respondents had good knowledge, while 56.62% had bad/fair knowledge. Among these students, good knowledge of clinical aspects of the disease may be attributed to classroom learning or participation in seminars and workshops. On the other hand, bad/fair HIV knowledge may result from lack of awareness regarding health information, health-related issues, and optimal health solutions. Additionally, insufficient understanding of the information received may lead to misconceptions and incorrect interpretations of certain health facts.[30]

The distribution of HIV prevention attitudes among health science students indicated that 59.66% exhibited favorable attitudes, while 40.34% had unfavorable attitudes. These findings align with research conducted by Pravitasari et al. (2024), which reported that 56% of respondents demonstrated a positive attitude toward HIV prevention, whereas 44% exhibited a negative attitude.[31] This discrepancy may be attributed to respondents' reactions to their knowledge, awareness, and the attitudes they adopt, which contribute to the development of effective strategies for addressing the disease.[30]

The findings indicated that non-health students (Nursing and Pharmacy) had a higher mean score for attitudes toward HIV/AIDS prevention (76.63) compared to medical students (73.07). A statistically significant difference was observed, as reflected by a p-value of 0.004, suggesting a notable variation in prevention attitudes between nursing and pharmacy students and medical students. This aligns with previous studies showing that health students tend to actively seek out information on HIV/AIDS, contributing to a stronger understanding of prevention and management strategies. In contrast, while medical students possess more detailed knowledge about the medical aspects of HIV/AIDS, they may not be as involved in preventive activities outside of clinical practice.[32]

This study found no significant difference in HIV knowledge between medical students and non-medical students, regardless of gender. Among medical students, female students had a higher average HIV knowledge score of 74.22, while in non-medical students, male students scored higher with an average of

74.70. This finding is consistent with research by Haroun et al. (2015), which indicated that females had better HIV knowledge than males, although the difference was not statistically significant (61% vs. 59%; p = 0.06). The respondents' answers revealed that a significant proportion of males answered incorrectly to the question regarding whether HIV is incurable, with 38% of males responding incorrectly compared to 45% of females (p = 0.018). Additionally, males were more likely to incorrectly believe that "mosquito bites could be a mode of transmission," with 27% of males and 20% of females giving this incorrect response (p = 0.008). This suggests that male respondents had gaps in their understanding of crucial facts about HIV transmission and treatment.[33] In terms of HIV prevention attitudes, there was a significant difference between female and male medical students, with a p-value of 0.013 and a higher average score for females (74.41). In contrast, among non-medical students, there was no significant difference in HIV prevention attitudes between genders, although male students had a higher average score of 76.66. Overall, this study concludes that women tend to have a better HIV prevention attitude than men. These findings align with research by Lybella et al. (2015), which demonstrated that women generally exhibit more positive attitudes toward prevention efforts compared to men. Lybella et al. suggested that women are more likely to avoid risky behaviors and are better at fostering a sense of self-protection than men.[34]

The study conducted a bivariate test to examine the relationship between HIV knowledge and HIV prevention attitudes in health science students. The results revealed a significant association with a p-value of 0.000, indicating a strong correlation. The odds ratio (OR) was calculated to be 2.525 (95% CI: 1.546-4.123), suggesting that individuals with bad or fair HIV/AIDS knowledge are at 2.5 times greater risk of having unfavorable HIV/AIDS prevention attitudes. This finding aligns with the findings by Permata et al (2024), which also demonstrated a significant relationship between HIV knowledge and prevention attitudes (p = 0.000).[35] Similarly, Pakpahan et al's study (2020) among NERS students confirmed a significant correlation (p = 0.000).[17] Priastana (2018) stated that there is a relationship between the level of HIV/AIDS knowledge and HIV/AIDS prevention, where adolescents with higher knowledge can determine HIV/AIDS prevention attitudes better.[36] A person's knowledge about something will affect their attitude. Proper knowledge significantly contributes to forming appropriate attitudes and allows for deeper consideration when making decisions. Therefore, knowledge about HIV/AIDS prevention can serve as the main pillar in HIV/AIDS prevention among adolescents, as good knowledge supports

efforts to combat the spread of HIV/AIDS.[37]

On the other hand, a study by Rajikan (2017) discovered that despite having low average HIV/AIDS knowledge scores, health science students exhibited a positive attitude towards HIV/AIDS. This could be attributed to the young age of the respondents (under 23 years old), which may limit their personal life experience. Additionally, Rajikan's study specifically focused on students in their first and second year of medical school, indicating that their level of knowledge might differ from that of students in their third year or higher.[38]

A P-value of 0.042 was obtained for the relationship between faculty and HIV/AIDS prevention attitudes, indicating a significant difference in attitudes toward HIV/AIDS prevention among health science students. The odds ratio (OR) was calculated as 1.681 with a 95% confidence interval (CI) of 1.017–2.778, suggesting that nursing and pharmacy students (non-medical) are 1.6 times more likely to have unsupportive attitudes toward HIV/AIDS prevention compared to medical students. These findings align with Ni Putu et al. (2018), who also observed a significant difference in prevention attitudes between medical students and those in Pharmacy and Nursing, with a p-value of 0.000. The discrepancy may be due to medical students receiving more credits for HIV-related topics in their curriculum compared to Pharmacy and Nursing students.[32] Priastana suggested that knowledge acquired through education can shape a person's attitude towards taking preventive measures against HIV/AIDS.[36] Azizah (2016) also asserted that knowledge consistently has a significant impact on attitudes towards HIV/AIDS prevention.[39] This is further supported by Ni Putu's research, which found that medical students had the highest average level of knowledge related to HIV/AIDS.[32]

A significant association was found between gender and HIV/AIDS prevention attitudes among medicine, nursing, and pharmacy students, with a p-value of 0.000. This indicates a notable difference between male and female students in their attitudes toward HIV/AIDS prevention, with female respondents displaying more supportive attitudes than their male counterparts. The odds ratio suggests that females are 2.551 times more likely than males to have favorable attitudes toward HIV/AIDS prevention. These results are consistent with the study by Lybella et al. (2015), which showed that females tend to have more positive attitudes toward prevention efforts than males. Females generally tend to follow societal norms and act more cautiously compared to males. Psychologically, females are also more motivated and diligent in learning, which gives them a better understanding of how to behave in various situations, including those related to HIV/AIDS and its

prevention.[34] This theory is supported by data from KEMENKES in 2014, which indicates that the incidence of HIV/AIDS in Indonesia is higher among males than females.[40]

Analyses were also performed to evaluate the association between hometown (urban or rural) and parental education and toward HIV/AIDS prevention attitude among health science students. A p-value of 0.821 was obtained, indicating no statistically significant relationship between residential location and HIV/AIDS prevention attitudes. These findings are consistent with the study by Tiranda et al. (2018), which found that residence had no significant association with HIV/AIDS prevention attitudes (p-value = 1.000).[41] This suggests that although differences in prevention attitudes may exist between urban and rural university students, overall awareness and positive attitudes toward HIV/AIDS prevention remain consistently high across both groups.[42]

Additionally, the chi-square test results for combining the 'high school or lower' education category with the 'undergraduate degree' category yielded a p-value of 0.269, while the combination of the 'high school or lower' category with the 'graduate degree' category resulted in a p-value of 0.071. These p-values indicate that there is no significant association between parental education and HIV prevention attitudes. This suggests that students' attitudes toward HIV/AIDS prevention are not strongly influenced by their parents' education levels, as they often acquire information from various other sources.[43] Research by Diyanah (2021) states that high parental education does not always guarantee that the parents will provide adequate education to their children about HIV.[43] As a result, many students develop awareness and prevention strategies for HIV/AIDS independently, without significant input from their parents.[43]

In multivariate analysis, it was discovered that knowledge of HIV was the most significant factor influencing HIV prevention attitudes among health science students, as indicated by the lowest p-value (0.000) and the highest odds ratio (OR) of 2.841 compared to the other three variables. According to Pakpahan et al. (2020), education level influences attitudes; more educated adolescents tend to have better attitudes. This is because education plays a crucial role in shaping and developing attitudes.[17] Additionally, Pravitasari et al. (2024) note that a person’s attitude is shaped by their level of knowledge about a subject. Personal experiences, schooling, and emotions can also affect a person's attitude. Both positive and negative perspectives are linked to how much a person understands about HIV/AIDS. Therefore, the more knowledge an individual has about this issue, the more likely they are to have a

positive attitude toward HIV/AIDS prevention.[31]

Conclusion

This study highlights the critical role of HIV knowledge in shaping HIV prevention attitudes among health science students. Furthermore, attitudes toward HIV prevention were influenced by gender and faculty. Female students demonstrated more favorable prevention attitudes than males and non-medical students exhibited more engagement in prevention efforts than their medical counterparts. These findings underscore the importance of integrating comprehensive HIV education into university curricula, which should focus not only on knowledge but also on promoting preventive behaviors. The study's results also emphasize the need for further research to explore the long-term impact of such educational interventions and how they translate into real-world behaviors.

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(Shirley Moningkey)