The Relationship Between Knowledge and Preventive Behavior HIV/AIDS Among Students at Duta Bangsa University Surakarta

Moises Gusmão[1*], Endrat Kartiko Utomo[2], Insanul Firdaus[3]
Universitas Duta Bangsa Surakarta[1], Universitas Duta Bangsa Surakarta[2], Universitas Duta Bangsa Surakarta[3]
Email : moisesgusmao32@email.com

ABSTRACT

Background: HIV is an acronym for Human Immunodeficiency Virus, a virus that can potentially cause AIDS. The human immune system is vulnerable to infection because this virus specifically attacks white blood cells (CD4), making the body less effective at fighting disease. AIDS, which stands for Acquired Immune Deficiency Syndrome, is a series of symptoms caused by the HIV virus, which weakens the immune system. As a result, HIV/AIDS is a fatal disease for which there is no cure and has become a serious public health problem throughout the world, including in Indonesia. Objective: The purpose of this study was to determine the relationship between knowledge and HIV/AIDS prevention behavior among students at Duta Bangsa University in Surakarta.

Method: This study used a cross-sectional design to analyze the correlation. A total of 96 students were selected as samples using proportional random sampling. After ensuring its validity and reliability, a closed questionnaire was used to collect data. The Chi-Square test was used for data analysis.

Results: A statistically significant correlation between the level of knowledge and HIV/AIDS prevention behavior was found in this study (p-value < 0.05). Prevention behavior was better among students who had more information. Conclusion: There is a significant correlation between understanding and HIV/AIDS prevention behavior among university students. More extensive health education and awareness campaigns are needed to improve students' understanding and reduce the risk of HIV/AIDS transmission on campus.

KEYWORDS HIV/AIDS, Knowledge, Prevention behavior, university students.

INTRODUCTION

As an acronym, HIV stands for Human Immunodeficiency Virus, a virus that can potentially cause AIDS. The human immune system is vulnerable to infection because this virus specifically attacks white blood cells (CD4), making the body less effective at fighting disease. AIDS, which stands for Acquired Immune Deficiency Syndrome, is a series of symptoms caused by the HIV virus, which weakens the immune system. As a result, HIV/AIDS is a fatal disease for which there is no cure and has become a serious public health problem worldwide, including in Indonesia (Hidayat et al., 2022).

HIV infection can be transmitted through blood, semen, vaginal fluid, and breast milk (Ministry of Health of the Republic of Indonesia, 2022). Once it enters the body, HIV seeks out CD4 cells and replicates thousands of times within them, then destroys them. A progressive decline in CD4 counts weakens the immune system, making the patient susceptible to opportunistic infections (Polang et al., 2023). The decline in CD4+ T lymphocyte count can occur within months to years after infection, with normal levels of 800–1300 cells/mL of blood falling to below 200 cells/mL, a condition that indicates the onset of AIDS.

Based on global data, in 2020 there were 37.7 million people living with HIV and approximately 680,000 people died from AIDS (WHO, 2022). In Indonesia, the Ministry of Health (2022) recorded 329,581 confirmed cases of HIV and 137,397 cases of AIDS. In Central Java, the number of HIV cases in 2020 was recorded at 2,749 people, while data from the Sukoharjo City Health Office (2021) reported 727 cases of HIV/AIDS. In Surakarta City, from January to October 2024, 399 new cases of HIV/AIDS were found (Teropongjateng, 2024). This data shows an increasing trend in cases that requires serious attention.

In addition to epidemiological aspects, various risk factors also influence the spread of HIV, including risky behaviors such as promiscuous sexual relations, intravenous drug use, and low knowledge about HIV/AIDS (Nurhazlina et al., 2021). Low knowledge can lead to ineffective preventive behaviors. Arini & Kasanah (2021) found that 57.14% of respondents had insufficient knowledge about HIV/AIDS. Other studies also show that most respondents only have adequate knowledge (Sumartini & Maretha, 2019), and low knowledge is associated with poor preventive behavior (Sary & Winarsih, 2019; Timah, 2019).

A preliminary study conducted on May 9, 2025, at Duta Bangsa University in Surakarta showed that of the 10 students interviewed, most did not understand HIV/AIDS, how it is transmitted, or how to prevent it. This indicates that student awareness of the dangers of HIV/AIDS is still low. These findings are reinforced by research by Dwi Lestari & Widiastuti (2023), which reported that 53% of new students in nursing programs had low knowledge of premarital sex prevention, with a significant relationship between low knowledge and risky behavior.

RESEARCH METHOD

This study used an analytical quantitative method with a cross-sectional design. The study was conducted at Duta Bangsa University Surakarta in May–June 2025. The study population consisted of all undergraduate students, with a sample size of 96 respondents selected using simple random sampling.

The research instrument used was a structured questionnaire consisting of questions about knowledge and behavior related to HIV/AIDS prevention. Data collection was conducted through self-administered questionnaires, which were then analyzed using the Chi-Square test with a significance level of $p < 0.05$.

Research ethics considerations were fulfilled through written consent (informed consent) from respondents, maintaining the confidentiality of responses, and obtaining permission from the relevant institutional ethics committee.

RESULT AND DISCUSSION

This study was conducted during June 2025 with a sample size of 137 respondents who met the inclusion criteria. The sampling technique used was probability sampling with proportional random sampling.

The distribution of respondent characteristics in this analysis includes gender, age, and study program of Duta Bangsa University Surakarta students who participated in the study.

Table 1. Distribution Of Characteristics Based On Gender

Gender	n	%
Male	43	44,8
Female	53	55,2
Total	96	100%

Based on the distribution results, the respondents in this study consisted of 43 men (44.8%) and 53 women (55.2%). This shows that the majority of respondents were women.

Table 2. Distribution of Respondent Characteristics Based on Age

Age	n	%
18	11	11,5
19	54	56,3
20	20	20,8
21	8	8,3
22	2	2,1
25	1	1
Total	**96**	**100%**

Based on age distribution, the majority of respondents were 19 years old, totaling 54 people (56.3%). The other respondents were 20 years old (20 people, or 20.8%), 18 years old (11 people, or 11.5%), 21 years old (8 people, or 8.3%), 22 years old (2 people, or 2.1%), and 25 years old (1 person, or 1.0%). These findings indicate that most respondents were in the late teenage age range.

Table 3. Distribution of Respondent Characteristics Based on Study Program

Study Program	n	%
Computer Science	39	40,6
Management	29	30,2
Law	14	14,6
Information System	14	14,6
Total	**96**	**100%**

Based on the distribution of study programs, most respondents came from the Computer Science Study Program, totaling 39 people (40.6%). Other respondents came from the Management Study Program, totaling 29 people (30.2%), and the Law and Information Systems Study Programs, each totaling 14 people (14.6%).

Univariate Analysis

2) Level of Student Knowledge About HIV/AIDS at Duta Bangsa University Surakarta.

Frequency distribution of respondents according to the level of student knowledge about HIV/AIDS at Duta Bangsa University Surakarta.

Table 4. Distribution of Characteristics Based on Knowledge Level

Level of Knowledge	n	%
Good	78	81,3
Bad	18	18,8
Total	**96**	**100%**

The results of the knowledge level distribution show that most respondents had good knowledge, as indicated by 78 people (81.3%) who gave correct answers. Meanwhile, 18 people (18.8%) gave incorrect answers, indicating a lower level of knowledge.

However, there were still 18 respondents (18.8%) who demonstrated a low level of knowledge, as indicated by their low accuracy in answering the research instrument. This condition was likely caused by limited access to information, low interest in health issues, or minimal involvement in HIV/AIDS education programs.

3) Preventive Behavior of Students Regarding HIV/AIDS at Duta Bangsa University, Surakarta

Frequency distribution of respondents according to preventive behavior of students regarding HIV/AIDS at Duta Bangsa University, Surakarta.

Table 5. Distribution of Characteristics Based on Respondents' Preventive Behavior

Preventive Behavior	n	%
Good	65	67,7
Bad	31	32,3
Total	**96**	**100%**

The distribution of preventive behavior shows that the majority of respondents have good preventive behavior, with 65 people (67.7%) answering ‘Yes’. Meanwhile, 31 people (32.3%) showed poor preventive behavior by answering ‘No’.

Bivariate Analysis

Bivariate analysis was conducted to determine the relationship between knowledge variables and HIV/AIDS prevention behavior among students at Duta Bangsa University in Surakarta. The statistical test used was the Chi-Square test, as both variables were categorical.

Table 5. Crosstab table

	Behavior				
Knowledge	Good	Bad	Total	Chi-Square Value	p-value
Good	60	18	78		
Bad	5	13	18	16,156[a]	0.000
Total	**65**	**31**	**96**		

Based on the crosstab table, of the 78 respondents who had correct knowledge about HIV/AIDS, 60 people (76.9%) had good preventive behavior (answered ‘Yes’), and 18 people (23.1%) had poor behavior (answered ‘No’). Meanwhile, of the 18 respondents who had incorrect knowledge, only 5 people (27.8%) had good behavior, while 13 people (72.2%) showed poor prevention behavior. These findings indicate that respondents with correct knowledge tend to have better prevention behavior than respondents with incorrect knowledge

CONCLUSION

From the results of a study conducted on 96 students at Duta Bangsa University in Surakarta regarding the relationship between knowledge and HIV/AIDS prevention
behavior, several things can be stated, namely:

1. The level of student knowledge about HIV/AIDS is in the good category, with 78 respondents (81.3%) answering correctly to the majority of statements in the questionnaire. This indicates that most students have a sufficient understanding of the definition, transmission, and prevention of HIV/AIDS.
2. The majority of students have good preventive behavior against HIV/AIDS, namely 65 respondents (67.7%). This reflects that the majority of respondents have demonstrated actions that support prevention, such as maintaining safe sexual behavior, not using injectable drugs, and willingness to undergo health checks.
3. The Chi-Square test results indicate a significant relationship between the level of knowledge and HIV/AIDS prevention behavior, with a value of $\chi^2 = 16.156$, df = 1, and p-value = 0.000 ($p < 0.05$). This means that the null hypothesis (H_0) is rejected and the alternative hypothesis (H_1) is accepted, indicating that there is a relationship between the two variables.
4. Students with a good level of knowledge have more positive preventive behaviors than students with less knowledge. This means that sufficient knowledge about HIV/AIDS plays an important role in shaping awareness and appropriate preventive actions among students.
5. Increased education and counseling about HIV/AIDS on campus is essential so that students who do not yet have adequate understanding can obtain accurate information, thereby encouraging the formation of broader and more sustainable preventive behavior.

REFERENCES

Annisa Nurhayati Hidayat, Dina Kholifah, & Indah Nurfazriah. (2022). Hubungan Tingkat Pengetahuan Dan Sikap Dengan Perilaku Pencegahan Hiv/Aids Pada Siswa Kelas Xii Di Smkn 1 Cirinten Tahun 2022. *Jurnal Riset Rumpun Ilmu Kesehatan*, *1*(2), 270–277. https://doi.org/10.55606/jurrikes.v1i2.1061

Dwilianto, R., Matondang, A. U., & Yarni, L. (2024). Perkembangan Masa Dewasa Awal. *Jurnal Review Pendidikan Dan Pengajaran*, *7*(3), 12.

Gondivkar, S., Sarode, S. C., Gadbail, A. R., Yuwanati, M., Sarode, G. S., Gondivkar, R. S., Sengupta, N., Patil, S., & Awan, K. H. (2021). Oro-facial opportunistic infections and related pathologies in HIV patients: A comprehensive review. *Disease-a-Month*, *67*(9). https://doi.org/10.1016/j.disamonth.2021.101170

Masa, P., & Awal, D. (n.d.). *A r z u*. *3*, 211–219.

Novita, R., Sahputri, J., & Topik, M. M. (2022). Gambaran Tingkat Pengetahuan dan Sikap Mahasiswa Program Studi Pendidikan Profesi Dokter Fakultas Kedokteran Universitas Malikussaleh Tentang HIV/AIDS di Rumah Sakit Umum Cut Meutia Pada Tahun 2022. *GALENICAL : Jurnal Kedokteran Dan Kesehatan Mahasiswa Malikussaleh*, *1*(2), 32. https://doi.org/10.29103/jkkmm.v1i2.8158

Nurhazlina Mohd. Ariffin, M. J. S. R. K. (2021). Perkembangan Usia Dewasa : Tugas Dan Hambatan Pada Korban Konflik Pasca Damai. *Bunayya : Jurnal Pendidikan Anak*, *7*(2), 114. https://doi.org/10.22373/bunayya.v7i2.10430

Paputungan, F. (2023). Karakteristik Perkembangan Masa Dewasa Awal Developmental Characteristics of Early Adulthood. *Media Online) Journal of Education and Culture (JEaC)*, *3*(1), 2986–1012.

Sari, A. N. (2017). Hubungan Pengetahuan Dengan Sikap Mengenai Perilaku Seksual Remaja. *Jurnal Kebidanan Indonesia*, *7*(2), 119–129.

WHO, 2020. (n.d.). *Hubungan Pengetahuan Tentang Infeksi HIV/AIDS Dengan Perilaku Pencegahan HIV/AIDS Pada Remaja SMKN 2 Mataram*.

Author's short biography (Author's short biography is not displayed in published articles)

Authors Name:
Name : Ns. Endrat Kartiko Utomo, S.Kep., M.Kep., Sp.Kep.MB
Affiliation : Bachelor of Nursing Program, Faculty of Health Sciences, Duta Bangsa University Surakarta.
Phone Number : +62 895-3423-99869
Email :

Authors Name:
Name : Ns. Insanul Firdaus, S.Kep., M.Sc
Affiliation : Bachelor of Nursing Program, Faculty of Health Sciences, Duta Bangsa University Surakarta.
Phone Number :
Email :

Authors Name:
Name : Ns. Ady Irawan AM, S.Kep., M.Kep., Sp.Kep., K
Affiliation : Bachelor of Nursing Program, Faculty of Health Sciences, Duta Bangsa University Surakarta.
Phone Number : +62 813-1801-4868
Email :

Authors Name:
Name : Ns. Adi Buyu Prakoso, M.Kep., Sp.Kep.K
Affiliation : Bachelor of Nursing Program, Faculty of Health Sciences, Duta Bangsa University Surakarta.
Phone Number : +62 822-2552-5447
Email :