

MEDICA

(International Medical Scientific Journal)

Vol.8, No.6, June 2026, pp. 418 – 426

ISSN 2622-660X (Online), ISSN 2622-6596 (Print)

<https://journal.ahmareduc.or.id/index.php/medica>



Association between Knowledge, Preventive Attitudes, and HIV/AIDS Preventive Behaviors Among High School Students

Dolfinus Yufu Bouway¹✉, Fathu Rahmah Azizah¹, Inriyanti Assa¹, Katarina Lodia Tutuop¹, Agustina Regina Yufuai¹

¹ Faculty of Public Health, Cendrawasih University, Jayapura, Papua, Indonesia

Info Article

Article History:

Received:

27 May 2026

Accepted:

24 June 2026

Published:

30 June 2026

Keywords:

HIV/AIDS

High School

Students

Knowledge

Preventive Attitudes

Prevention Efforts

Abstract

HIV/AIDS remains a major global health problem, particularly among adolescents who are vulnerable to risky behaviors. This study aimed to analyze the association between HIV/AIDS knowledge, preventive attitudes, and HIV/AIDS preventive behaviors among high school students in Jayapura City. A quantitative cross-sectional design was conducted in 17 high schools in Jayapura City from September to October 2025 involving 540 students selected as respondents. Data were collected using a structured questionnaire distributed through Google Forms and analyzed using descriptive statistics and Spearman Rank correlation test with a significance level of $p < 0.05$. The results showed that most respondents had good HIV/AIDS knowledge (85.6%) and positive preventive attitudes (78.9%), while 65.2% demonstrated good prevention efforts. The Spearman Rank test indicated a significant but weak positive relationship between HIV/AIDS knowledge and prevention efforts ($r = 0.230$; $p = 0.000$), and a moderate positive relationship between preventive attitudes and prevention efforts ($r = 0.403$; $p = 0.000$). In conclusion, both HIV/AIDS knowledge and preventive attitudes are significantly associated with prevention efforts among high school students in Jayapura City, with preventive attitudes showing a stronger relationship than knowledge, and strengthening school-based HIV/AIDS education programs is recommended to improve adolescent preventive behaviors. This study is limited by its cross-sectional design, which precludes causal inference, and its reliance on self-reported data, which may be subject to social desirability bias.

© 2026 Borneo Scientific Publishing

Corresponding Author:

✉ Dolfinus Yufu Bouway

Faculty of Public Health, Cendrawasih University, Jayapura, Indonesia

Email: yuboepidfkm@gmail.com

1. INTRODUCTION

Human Immunodeficiency Virus (HIV) remains a major global public health problem. HIV attacks the immune system by damaging white blood cells, leading to decreased body immunity and increasing susceptibility to opportunistic infections (Bekker et al., 2023). The advanced stage of HIV infection is known as acquired immunodeficiency syndrome (AIDS) (Prabhu & van Wagoner, 2023). Despite significant progress in treatment and prevention programs, HIV/AIDS continues to contribute to high morbidity and mortality worldwide (Boyd et al., 2020; Folayan et al., 2022; Janighorban et al., 2022).

Approximately 39 million people were living with HIV globally in 2022, and HIV-related illnesses have caused more than 40 million deaths since the epidemic began. Adolescents and young adults remain one of the most vulnerable groups (World Health Organization, 2025). Risky sexual behavior, limited access to sexual health education, and inadequate awareness contribute to the increasing vulnerability of adolescents to HIV infection (Mbengo et al., 2022; Paul et al., 2024; Shangase et al., 2021).

In Indonesia, HIV/AIDS cases continue to rise. More than 515,000 people were living with HIV, with the majority occurring among individuals aged 25–49 years. However, (Jocelyn et al., 2024; J. Sun et al., 2023; Yang et al., 2024; J. Zhang et al., 2022). Papua Province is one of the regions with the highest HIV/AIDS prevalence in Indonesia. Reports from the Papua Provincial Health Office indicated that HIV/AIDS cases continue to increase annually, including in Jayapura City, where the number of reported cases rose from 597 cases in 2022 to 1,278 cases in 2024.

Adolescence is a transitional stage characterized by physical, psychological, and social changes that may influence behavior. During this period, adolescents are more likely to engage in risky behaviors, including unsafe sexual practices and substance abuse, which increase the risk of HIV transmission (Bossonario et al., 2022). Previous studies have shown that knowledge and attitudes toward HIV/AIDS play an important role in shaping preventive behaviors among adolescents (Qing et al., 2022). Adequate knowledge about HIV transmission and prevention can encourage positive attitudes and healthier behaviors, while limited understanding may lead to stigma, misconceptions, and poor prevention practices (Saad et al., 2024). Several studies have demonstrated that HIV/AIDS prevention behavior among adolescents is associated with factors such as knowledge, educational background, socioeconomic conditions, and access to information (Ssali et al., 2025). Adolescents with better knowledge about HIV/AIDS are more likely to adopt preventive measures, including avoiding risky sexual behavior, refusing drug abuse, and seeking health services when necessary (Ofole & Ola, 2026).

Considering the increasing number of HIV/AIDS cases in Papua, particularly among adolescents, high school students in Jayapura City represent an important target population for prevention programs. Limited knowledge and inappropriate attitudes toward HIV/AIDS may negatively affect prevention efforts among students. The Theory of Planned Behavior provides a useful theoretical framework for understanding how knowledge and attitudes shape preventive intentions and behaviors, particularly in sensitive health domains such as HIV/AIDS. Furthermore, limited local evidence from Jayapura specifically examining behavioral determinants of HIV prevention among high school students represents a critical research gap that this study aims to address. Therefore, understanding the relationship between knowledge, preventive attitudes, and HIV/AIDS prevention efforts is essential for developing effective school-based health education programs. Based on these conditions, this study aims to analyze the association between HIV/AIDS knowledge, preventive attitudes, and prevention efforts among high school students in Jayapura City. The findings are expected to provide scientific evidence

regarding the importance of HIV/AIDS education in promoting positive preventive behavior among adolescents.

2. METHOD

This study employed a quantitative approach using an analytical cross-sectional design to examine the correlation between HIV/AIDS knowledge, preventive attitudes, and HIV/AIDS prevention efforts among high school students in Jayapura City. The cross-sectional design enabled data collection at a single point in time to assess the relationship between the study variables.

The study was conducted from September to October 2025 in 17 senior high schools in Jayapura City, Papua, Indonesia. The target population consisted of all active high school students enrolled in grades 10–12, with a total population of 9,301 students. A total of 540 students were selected as respondents. The minimum sample size was calculated using the Slovin formula ($n = N / (1 + Ne^2)$), with a margin of error of 5%, yielding a minimum of 383 respondents; 540 participants were recruited to account for potential non-response and to ensure proportional representation across the 17 schools. Participants were recruited using a sampling technique based on predetermined inclusion criteria, including students aged 15–19 years, actively enrolled in school, possessing a mobile phone with WhatsApp access, being present during the study period, and willing to participate by providing informed consent.

Primary data were collected using a structured online questionnaire distributed through Google Forms. The questionnaire link was shared with class representatives, who subsequently distributed it to students through class communication groups. The instrument consisted of several sections covering demographic characteristics, HIV/AIDS knowledge, preventive attitudes, and HIV/AIDS prevention efforts. The questionnaire was pilot-tested with 30 students not included in the main study to assess content validity and internal consistency. Items were refined based on expert review, and Cronbach's alpha coefficients were computed to confirm acceptable reliability ($\alpha \geq 0.70$) for all scales before data collection commenced. The overall response rate was 98.5%, with 532 of 540 distributed questionnaires returned fully completed.

The independent variables included demographic characteristics (gender, age, ethnicity, and domicile), HIV/AIDS knowledge, and preventive attitudes toward HIV/AIDS. The dependent variable was HIV/AIDS prevention efforts among students. Knowledge regarding HIV/AIDS was assessed using multiple-choice questions related to HIV/AIDS definition, transmission, prevention, and education. Correct answers were scored as one, while incorrect or "do not know" responses were scored as zero. Preventive attitudes and prevention efforts were measured using Likert-scale questions ranging from "always" to "never."

Data processing involved editing, coding, data entry, and data cleaning prior to analysis. Statistical analysis was performed using SPSS software. Descriptive (univariate) analysis was used to present the distribution and frequency of respondents' characteristics and study variables. Furthermore, nonparametric statistical analysis using the Spearman Rank correlation test was conducted to determine the relationship between HIV/AIDS knowledge, preventive attitudes, and prevention efforts. Statistical significance was determined at a p-value of <0.05 .

This study received ethical approval from the Research Ethics Committee of the Faculty of Public Health, Universitas Cenderawasih with ethical clearance number 213/KEPK-FKM UC/2025. Participation in this study was voluntary, and all respondents provided informed consent before completing the questionnaire. For participants under 18 years of age, written parental or guardian consent was obtained prior to their involvement

in the study, in compliance with ethical requirements for research involving minors. Confidentiality of all participant data was strictly maintained throughout the study.

3. RESULTS AND DISCUSSION

The study involved 540 high school students in Jayapura City. Most respondents were female (55.7%), while males accounted for 44.3%. The majority of participants were aged 16 years (35.9%), followed by 17 years (32.2%) and 15 years (23.7%). Based on ethnicity, most respondents were categorized as Orang Asli Papua (OAP) (59.6%). In terms of domicile, the highest proportion of students lived in North Jayapura District (28.3%). Social media was identified as the main source of HIV/AIDS information among respondents (60.2%), whereas electronic media represented the lowest source of information (4.4%). This finding indicates that adolescents rely more on digital platforms to access HIV/AIDS-related information. Most respondents demonstrated good knowledge regarding HIV/AIDS (85.6%) and positive preventive attitudes (78.9%). In addition, 65.2% of respondents reported positive HIV/AIDS prevention efforts. These findings suggest that the majority of students had adequate awareness and supportive attitudes toward HIV/AIDS prevention.

Table 1. Characteristics of respondents and distribution of study variables (n = 540)

Variables	Frequency (f)	Percentage (%)
Gender		
Male	239	44.3
Female	301	55.7
Age		
15 years	128	23.7
16 years	194	35.9
17 years	174	32.2
>17 years	44	8.1
Ethnicity		
OAP	322	59.6
Non-OAP	218	40.4
Domicile		
Abepura	139	25.7
Heram	62	11.5
South Jayapura	128	23.7
North Jayapura	153	28.3
Muara Tami	58	10.7
Sources of HIV/AIDS Information		
Printed media	74	13.7
Social media	325	60.2
Electronic media	24	4.4
Direct communication	34	6.3
Health counseling	34	6.3
Others	48	8.9
HIV/AIDS Knowledge		
Good	462	85.6
Poor	78	14.4
Preventive Attitudes		
Positive	426	78.9

Negative	114	21.1
HIV/AIDS Prevention Efforts		
Positive	352	65.2
Negative	188	34.8

The normality test using the Kolmogorov–Smirnov test showed that all variables were not normally distributed ($p < 0.05$). Therefore, Spearman Rank correlation analysis was applied. The results demonstrated a significant positive relationship between HIV/AIDS knowledge and HIV/AIDS prevention efforts ($r = 0.230$; $p = 0.000$). However, the strength of the relationship was categorized as weak. This finding indicates that respondents with better knowledge tended to perform better prevention efforts, although the relationship was not strong. Furthermore, preventive attitudes toward HIV/AIDS showed a significant positive relationship with prevention efforts ($r = 0.403$; $p = 0.000$). The strength of this correlation was moderate, suggesting that students with more positive attitudes toward HIV/AIDS prevention were more likely to engage in preventive behaviors.

Table 2. Spearman rank correlation between study variables and HIV/AIDS prevention efforts.

Independent Variables	Correlation Coefficient (r)	p-value	Interpretation
HIV/AIDS Knowledge	0.230	0.000	Weak positive correlation
Preventive Attitudes	0.403	0.000	Moderate positive correlation

This study found that most respondents had good HIV/AIDS knowledge (85.6%) and positive preventive attitudes (78.9%). However, only 65.2% reported good HIV/AIDS prevention efforts. This gap suggests that cognitive understanding and attitudes do not always translate directly into consistent preventive behavior among adolescents.

The high level of HIV/AIDS knowledge among respondents is likely influenced by the dominance of social media as the main information source (60.2%). Digital platforms have become a primary channel for adolescents to access health information, including HIV/AIDS-related content. However, reliance on social media may lead to fragmented or superficial understanding, particularly on specific topics such as mother-to-child transmission. This finding is consistent with the view that access to information alone does not guarantee comprehensive health literacy (Magadi et al., 2022; Mkhondo et al., 2026).

The bivariate analysis showed a significant but weak positive relationship between HIV/AIDS knowledge and prevention efforts ($r = 0.230$, $p < 0.05$). This indicates that higher knowledge is associated with better preventive behavior, but the effect is limited. Although adolescents generally had moderate to good knowledge about HIV/AIDS, knowledge alone was not sufficient to ensure consistent preventive behavior (Libisch et al., 2022; Stewart et al., 2022; Y. Zhang et al., 2025). The adolescents with adequate knowledge may still engage in risky behaviors due to external influences such as peer pressure and social environment (Badru et al., 2020; Chory et al., 2023).

In contrast, preventive attitudes showed a moderate and stronger relationship with HIV/AIDS prevention efforts ($r = 0.403$, $p < 0.05$). This finding is consistent with the Theory of Planned Behavior, which states that attitude is a key determinant of behavioral intention and actual behavior (Ajzen, 2012). In this framework, individuals with more positive attitudes toward a behavior are more likely to perform that behavior. In the context of this study, students with more positive preventive attitudes were more likely to engage in HIV/AIDS prevention behaviors, such as avoiding risky sexual activity and maintaining healthier lifestyles. This result is also supported that attitudes toward HIV/AIDS prevention

are more strongly associated with preventive behavior compared to knowledge (Akello et al., 2023; Estifanos et al., 2021; Shamu et al., 2020; X. Sun et al., 2020). Their study highlighted that emotional and motivational components play a significant role in shaping adolescent behavior, particularly in sensitive health issues such as HIV/AIDS.

Despite generally positive attitudes, some preventive behaviors remained suboptimal, particularly participation in HIV/AIDS education activities such as seminars and counseling sessions. This indicates a gap between attitude and actual behavior. According to Green and Kreuter's PRECEDE-PROCEED Model, behavior is influenced not only by predisposing factors (knowledge and attitudes) but also by enabling and reinforcing factors such as access to health services, social support, and environmental conditions (Green et al., 2022). The limited participation in educational activities may reflect insufficient enabling and reinforcing factors in the school environment.

The findings of this study are consistent with previous literature and behavioral theories, indicating that HIV/AIDS prevention among adolescents is a multifactorial process. While knowledge is necessary, attitudes play a more dominant role in shaping preventive behavior. Therefore, comprehensive interventions that integrate knowledge enhancement, attitude development, and environmental support are essential to improve HIV/AIDS prevention efforts among high school students. It is important to note, however, that the observed associations are weak to moderate in magnitude. These correlation coefficients do not establish causality, and potential confounding factors such as gender, socioeconomic background, peer influence, and religious or cultural norms were not controlled for in the bivariate analysis. Future studies should apply multivariable regression models to isolate the independent contributions of knowledge and attitudes while adjusting for these demographic and contextual variables.

4. CONCLUSION

This study concludes that most high school students in Jayapura City have good knowledge of HIV/AIDS and positive preventive attitudes, although HIV/AIDS prevention efforts are still not fully optimal. The Spearman Rank correlation test showed that HIV/AIDS knowledge has a weak but significant positive relationship with prevention efforts, while preventive attitudes have a moderate and stronger positive relationship, indicating that attitudes play a more dominant role than knowledge in shaping preventive behavior among adolescents. Overall, improving HIV/AIDS prevention among students requires not only increasing knowledge but also strengthening positive attitudes through comprehensive health education programs, and it is recommended that schools and health authorities implement integrated HIV/AIDS education strategies that simultaneously enhance knowledge, build positive attitudes, and promote consistent preventive behaviors. Specifically, schools should integrate structured HIV/AIDS modules into the health curriculum, train teachers to facilitate open discussions, and engage peer educators to reinforce positive social norms. Health authorities are encouraged to collaborate with schools to deliver periodic HIV/AIDS counseling sessions and provide accessible, youth-friendly sexual health services. However, these findings must be interpreted in light of the study's limitations: the cross-sectional design does not permit causal inference, and self-reported measures may be subject to social desirability bias. Future research should employ longitudinal or experimental designs to better understand causal pathways between knowledge, attitudes, and HIV prevention behaviors among adolescents in Papua.

5. ACKNOWLEDGEMENT

The author would like to express sincere gratitude to all parties who have provided support, assistance, and contributions in the preparation of this article until its successful completion.

REFERENCES

- Ajzen, I. (2012). The theory of planned behavior. *Handbook of Theories of Social Psychology*: 1, 438–459. <https://doi.org/10.4135/9781446249215.n22>
- Akello, K. O., Ogendi, J., & Asweto, C. O. (2023). *The role of knowledge and attitude on HIV and AIDS prevention practices among secondary school students: a cross-sectional study of Gwassii South Sub-County, Homa Bay County, Kenya*. <https://doi.org/10.1101/2023.01.10.23284403>
- Badru, T., Mwaisaka, J., Khamofu, H., Agbakwuru, C., Adedokun, O., Pandey, S. R., Essiet, P., James, E., Chen-Carrington, A., Mastro, T. D., Aliyu, S. H., & Torpey, K. (2020). HIV comprehensive knowledge and prevalence among young adolescents in Nigeria: evidence from Akwa Ibom AIDS indicator survey, 2017. *BMC Public Health*, 20(1), 45. <https://doi.org/10.1186/s12889-019-7890-y>
- Bekker, L.-G., Beyrer, C., Mgodhi, N., Lewin, S. R., Delany-Moretlwe, S., Taiwo, B., Masters, M. C., & Lazarus, J. V. (2023). HIV infection. *Nature Reviews Disease Primers*, 9(1), 42. <https://doi.org/10.1038/s41572-023-00452-3>
- Bossonario, P. A., Ferreira, M. R. L., Andrade, R. L. de P., Sousa, K. D. L. de, Bonfim, R. O., Saita, N. M., & Monroe, A. A. (2022). Risk factors for HIV infection among adolescents and the youth: a systematic review. *Revista Latino-Americana de Enfermagem*, 30(spe). <https://doi.org/10.1590/1518-8345.6264.3696>
- Boyd, A. T., Oboho, I., Paulin, H., Ali, H., Godfrey, C., Date, A., & Sean Cavanaugh, J. (2020). Addressing advanced HIV disease and mortality in global HIV programming. *AIDS Research and Therapy*, 17(1), 40. <https://doi.org/10.1186/s12981-020-00296-x>
- Chory, A., Gillette, E., Callen, G., Wachira, J., Sam-Agudu, N. A., Bond, K., & Vreeman, R. (2023). Gender differences in HIV knowledge among adolescents and young people in low-and middle-income countries: a systematic review. *Frontiers in Reproductive Health*, 5. <https://doi.org/10.3389/frph.2023.1154395>
- Estifanos, T. M., Hui, C., Tesfai, A. W., Teklu, M. E., Ghebrehiwet, M. A., Embaye, K. S., & Andegiorgish, A. K. (2021). Predictors of HIV/AIDS comprehensive knowledge and acceptance attitude towards people living with HIV/AIDS among unmarried young females in Uganda: a cross-sectional study. *BMC Women's Health*, 21(1), 37. <https://doi.org/10.1186/s12905-021-01176-w>
- Folayan, M. O., Sam-Agudu, N. A., & Harrison, A. (2022). Exploring the why: risk factors for HIV and barriers to sexual and reproductive health service access among adolescents in Nigeria. *BMC Health Services Research*, 22(1), 1198. <https://doi.org/10.1186/s12913-022-08551-9>
- Green, L., Gielen, A., & Kreuter, M. (2022). Epidemiological Assesment I: Population Health. (2022). *Health Program Planning, Implementation and Evaluaci3n. Creating Behavioral, Environmental, and Policy Change*, 96–118.
- Janighorban, M., Boroumandfar, Z., Pourkazemi, R., & Mostafavi, F. (2022). Barriers to vulnerable adolescent girls' access to sexual and reproductive health. *BMC Public Health*, 22(1), 2212. <https://doi.org/10.1186/s12889-022-14687-4>
- Jocelyn, Nasution, F. M., Nasution, N. A., Asshiddiqi, M. H., Kimura, N. H., Siburian, M. H. T., Rusdi, Z. Y. N., Munthe, A. R., Chairenza, I., Ginting Munthe, M. C. F. B., Sianipar, P., Gultom, S. P., Simamora, D., Uswanas, I. R., Salim, E., Khairunnisa, K., &

- Syahputra, R. A. (2024). HIV/AIDS in Indonesia: current treatment landscape, future therapeutic horizons, and herbal approaches. *Frontiers in Public Health*, 12, 1298297. <https://doi.org/10.3389/fpubh.2024.1298297>
- Libisch, C. A., Marsiglia, F., Kulis, S., Cutrin, O., Gómez-Fraguela, J. A., & Ruiz, P. (2022). The Role of Peer Pressure in Adolescents' Risky Behaviors. In *Cognitive Sciences and Education in Non-WEIRD Populations* (pp. 115–133). Springer International Publishing. https://doi.org/10.1007/978-3-031-06908-6_8
- Magadi, M., Kaseje, D., Wafula, C., Kaseje, M., Ochola-Odhiambo, P., Ogutu-Owii, S., Orton, B., Onukwugha, F., Hayter, M., & Smith, L. (2022). Sexual and reproductive health knowledge and behaviour of adolescent boys and girls aged 10–19 years in western Kenya: evidence from a cross-sectional pilot survey. *Journal of Biosocial Science*, 54(5), 792–811. <https://doi.org/10.1017/S0021932021000353>
- Mbengo, F., Adama, E., Towell-Barnard, A., Bhana, A., & Zgambo, M. (2022). Barriers and facilitators to HIV prevention interventions for reducing risky sexual behavior among youth worldwide: a systematic review. *BMC Infectious Diseases*, 22(1), 679. <https://doi.org/10.1186/s12879-022-07649-z>
- Mkhondo, E. P., Mudau, A. G., & Mugware, A. (2026). The complexities of maternal non-adherence to antiretroviral therapy and its impact on mother-to-child transmission of HIV: a scoping review. *AIDS Care*, 1–19. <https://doi.org/10.1080/09540121.2026.2624593>
- Ofole, N. M., & Ola, A. M. (2026). Risky Sexual Behaviour Among Adolescents in Semi-Urban Settlements in Ibadan, Nigeria: The Role of HIV/AIDS Knowledge and Emotional Intelligence. *International Journal of Research and Scientific Innovation*, 13(2), 2051–2063. <https://doi.org/10.51244/IJRSI.2026.130200190>
- Paul, S., Sharma, A., Dayal, R., Mehta, M., Maitra, S., Seth, K., Nagrath, M., Ramesh, S., & Saggurti, N. (2024). Vulnerability to Sexually Transmitted Infections (STI) / Human Immunodeficiency Virus (HIV) among adolescent girls and young women in India: A rapid review. *PLOS ONE*, 19(2), e0298038. <https://doi.org/10.1371/journal.pone.0298038>
- Prabhu, S. R., & van Wagoner, N. (2023). Human Immunodeficiency Virus Infection and Acquired Immunodeficiency Syndrome (HIV / AIDS): An Overview. In *Sexually Transmissible Oral Diseases* (pp. 51–71). Wiley. <https://doi.org/10.1002/9781119826781.ch5>
- Qing, L., Wang, Y., Yang, T., Chen, X., Zhang, M., Bu, Q., Tan, B., & Deng, D. (2022). Study on HIV/AIDS knowledge, sexual attitudes, sexual behaviors, and preventive services among young students in Chongqing, China. *Frontiers in Public Health*, 10. <https://doi.org/10.3389/fpubh.2022.982727>
- Saad, R. K., Khader, Y., Aqel, A. J., Satyanarayana, S., Wilson, N., & Abaza, H. (2024). HIV-related knowledge, attitude, practices, and stigma among healthcare providers caring for HIV in Jordan: Identification of several organizational challenges. *Heliyon*, 10(2), e24423. <https://doi.org/10.1016/j.heliyon.2024.e24423>
- Shamu, S., Khupakonke, S., Farirai, T., Slabbert, J., Chidarikire, T., Guloba, G., & Nkhwashu, N. (2020). Knowledge, attitudes and practices of young adults towards HIV prevention: an analysis of baseline data from a community-based HIV prevention intervention study in two high HIV burden districts, South Africa. *BMC Public Health*, 20(1), 1249. <https://doi.org/10.1186/s12889-020-09356-3>
- Shangase, N., Kharsany, A. B. M., Ntombela, N. P., Pettifor, A., & McKinnon, L. R. (2021). A Systematic Review of Randomized Controlled Trials of School Based Interventions on Sexual Risk Behaviors and Sexually Transmitted Infections Among Young Adolescents

- in Sub-Saharan Africa. *AIDS and Behavior*, 25(11), 3669–3686. <https://doi.org/10.1007/s10461-021-03242-8>
- Ssali, P. W., Kintu, T. M., Kyagambiddwa, T., Karungi, I., Namuyaba, A. K., Namaseruka, R., Agaba, M., Obua, C., Wakida, E. K., & Kabakyenga, J. K. (2025). Influence of education status, age, and gender on HIV prevention awareness and preferences among youth in a rural Ugandan district: a cross-sectional study. *BMC Public Health*, 25(1), 3608. <https://doi.org/10.1186/s12889-025-24952-x>
- Stewart, J. L., Wallace, D. D., Nance, A., Schalkoff, C. A., Uhrig Castonguay, B. J., Widman, L., Carey, M. P., & Golin, C. E. (2022). Validated HIV Knowledge Scales for Use with Adults and Adolescents: A Systematic Review. *AIDS and Behavior*, 26(5), 1695–1715. <https://doi.org/10.1007/s10461-021-03521-4>
- Sun, J., Qiao, Y., Zhao, M., Magnussen, C. G., & Xi, B. (2023). Global, regional, and national burden of cardiovascular diseases in youths and young adults aged 15–39 years in 204 countries/territories, 1990–2019: a systematic analysis of Global Burden of Disease Study 2019. *BMC Medicine*, 21(1), 222. <https://doi.org/10.1186/s12916-023-02925-4>
- Sun, X., Fan, L., Chang, C., & Shi, Y. (2020). HIV/AIDS related perception and behavior: A comparative study among college students of different majors in China. *International Journal of Nursing Sciences*, 7, S74–S79. <https://doi.org/10.1016/j.ijnss.2020.07.010>
- World Health Organization. (2025). *HIV data and statistics*. WHO. <https://www.who.int/teams/global-hiv-hepatitis-and-stis-programmes/hiv/strategic-information/hiv-data-and-statistics>
- Yang, C., Lv, J., Kong, X., Chu, F., Li, Z., Lu, W., & Li, X. (2024). Global, regional and national burdens of depression in adolescents and young adults aged 10–24 years, from 1990 to 2019: findings from the 2019 Global Burden of Disease study. *The British Journal of Psychiatry*, 225(2), 311–320. <https://doi.org/10.1192/bjp.2024.69>
- Zhang, J., Ma, B., Han, X., Ding, S., & Li, Y. (2022). Global, regional, and national burdens of HIV and other sexually transmitted infections in adolescents and young adults aged 10–24 years from 1990 to 2019: a trend analysis based on the Global Burden of Disease Study 2019. *The Lancet Child & Adolescent Health*, 6(11), 763–776. [https://doi.org/10.1016/S2352-4642\(22\)00219-X](https://doi.org/10.1016/S2352-4642(22)00219-X)
- Zhang, Y., Jin, J., Cheng, F., Zhang, X., & Xu, J. (2025). Impact of Knowledge Access on Risky Sexual Behaviors Among Chinese Youths to Improve HIV Prevention: Cross-Sectional Study. *JMIR Public Health and Surveillance*, 11, e68339–e68339. <https://doi.org/10.2196/68339>