

Overview of the Level of Knowledge Regarding HIV/AIDS Among High School Students in Kupang, Indonesia

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ABSTRACT

Introduction: HIV/AIDS is still one of the serious public health problems in the world, including in Indonesia, because it can lower the immune system thereby increasing the risk of various diseases. Adolescents are a group that is vulnerable to HIV/AIDS transmission so that adequate knowledge is the basis for carrying out prevention efforts.

Objective: to identify the overview of adolescent knowledge about HIV/AIDS in students of SMA Negeri 3 Kupang.

Method: this study uses a quantitative method with a descriptive design. The research sample amounted to 245 respondents who were selected using *a simple random sampling* technique. Data were collected using a knowledge questionnaire and analyzed univariately.

Results: The study showed that most of the respondents had a level of knowledge about the prevention of HIV/AIDS transmission in the adequate category, which was 69.8%, followed by the good category at 22.0%, and the poor category at 8.2%. These findings show that most adolescents have sufficient knowledge, but there is still a need for improved health education to improve their understanding of HIV/AIDS, especially regarding how it is transmitted and prevented. With increasing knowledge, adolescents are expected to be able to implement appropriate preventive behaviors and play an active role in reducing the risk of HIV/AIDS transmission in the school environment and the community.

Conclusion: The level of adolescent knowledge about HIV/AIDS at SMA Negeri 3 Kupang is dominated by the sufficient category, so continuous educational efforts are needed to increase adolescent knowledge to the good category.

Keywords : HIV/AIDS, knowledge, adolescents.

INTRODUCTION

HIV/AIDS is still one of the serious public health problems in the world, including in Indonesia. This disease is caused by the *Human Immunodeficiency Virus* (HIV) which attacks the immune system so that it decreases the body's ability to fight infection and can develop into *Acquired Immunodeficiency Syndrome* (AIDS) if not treated properly. Although various prevention and treatment programs have been available, HIV/AIDS cases continue to be found every year, making it a challenge in health development.

According to *World Health Organization (WHO)*, by the end of 2024 there are an estimated 40.8 million people living with HIV worldwide, about 1.3 million people with new HIV infections, and 630,000 people dying from HIV-related diseases (WHO, 2025). The data shows that HIV/AIDS is still a major challenge for global health, so continuous prevention, early detection, treatment, and health education efforts are needed to reduce the rate of transmission and improve the quality of life of people living with HIV/AIDS. Meanwhile, according to *Joint United Nations Programme on HIV/AIDS (UNAIDS)*, by 2026 there are an estimated 40.9 million people living with HIV worldwide, about 1.2 million people will have new HIV infections, and 570,000 people will die from AIDS-related diseases (UNAIDS, 2026).

Based on data from the Central Statistics Agency of the Republic of Indonesia (BPS), HIV/AIDS cases are still found throughout Indonesia. Nationally, the number of HIV/AIDS cases recorded in Indonesia in 2025 will reach 63,297 cases. Of these, 17.5% are 20-24 years old, and 9% are 15-19 years old (B. P. S. BPS, 2025). Meanwhile, the discovery of AIDS cases successfully recorded by the Indonesian Ministry of Health in 2023 was 16,410, of which 26.1% were aged 20-29 years, 2.3% were aged 15-19 years and 1.3% were aged 5-14 years.

According to data from the Central Statistical Agency of East Nusa Tenggara Province (NTT), the number of new cases of HIV/AIDS reached 1,165 cases. The distribution of cases shows that Kupang City is the region with the highest number of new cases, namely 327 cases, followed by Alor Regency with 99 cases, South Central Timor with 72 cases, Kupang Regency with 68 cases, and Belu with 65 cases. Meanwhile, the lowest number of cases was found in Rote Ndao Regency with 9 cases, followed by Sabu Raijua with 10 cases and Central Sumba with 15 cases. Based on data from the Kupang City Health Office, it shows that HIV and AIDS cases in 2021 were 91 cases, then in 2022 it increased to 151 cases, then in 2023 it increased to 202 cases, until in 2024 it will increase to 217 cases, including in adolescents aged 10-19 years and in adults aged 20-24 years. The distribution of HIV and AIDS cases in Kupang City is highest in Oebobo District at 21% (BPS-NTT 2025).

Adolescent knowledge is an important factor in HIV/AIDS prevention. Adolescents need to understand how to transmit and how to prevent the transmission of HIV/AIDS. Good knowledge of HIV/AIDS prevention measures can help individuals take care of their own personal health. Adolescents' ignorance of HIV/AIDS is one of the reasons why adolescents always rank first as the largest group of HIV/AIDS infected compared to other ages. Adolescents who have good knowledge can help adolescents to carry out HIV/AIDS transmission prevention behaviors. Actions that adolescents can take to prevent HIV/AIDS transmission are, adolescents must have the awareness to take appropriate precautions to protect themselves and others. The negative impact of adolescents on the prevention of HIV/AIDS transmission can make adolescents feel excessive fear and anxiety which can hinder adolescents from establishing healthy and intimate relationships because of the fear of getting HIV. Adolescents are one of the vulnerable populations to be infected with HIV/AIDS, because adolescence is a transition period from childhood to adulthood, where they enter the phase of finding their identity by interacting a lot with the environment and trying various new things, one of which is sexual behavior, adolescent risky behaviors include holding hands, watching pornographic videos, kissing, and petting to sexual intercourse.

Based on the results of a preliminary study at SMA Negeri 3 Kupang in September 2026, the current number of students is 1290 people. As a result of interviews with 10 adolescents, 3 people knew that HIV/AIDS infection caused a decline in the immune system and was harmful to health and also said that HIV/AIDS transmission was caused by free sex and injections, so that they knew the prevention of HIV/AIDS transmission by not having free sex, while 7 people did not know the prevention of HIV/AIDS transmission.

Based on the above background, the researcher is interested in conducting a research entitled "Overview of the Level of Adolescent Knowledge About HIV/AIDS in Students of SMA Negeri 3 Kupang" because until now there has been no similar research carried out at the school, so it is hoped that the results of the research can make a new contribution and become an initial reference for future studies.

MATERIALS AND METHODS

This study uses a descriptive quantitative approach with the research design used is *Cross Sectional*. This research will be carried out in April 2026 at SMA Negeri 3 Kupang with a population of 1,290 people. This study uses a simple *random sampling* technique, where the sample size is determined using the Slovin formula with an error rate of 5% so that a sample of 245 respondents is obtained. The sample was selected using a *simple random sampling* based on inclusion criteria, namely, adolescents who actively attended public high school 3 Kupang City, adolescents who were willing to become respondents, adolescents aged 15-19 years, adolescents in class X and class XI. Data collection was carried out using a questionnaire to measure the level of knowledge with a total of 24 statements which included the definition of HIV/IDS, how HIV/AIDS is transmitted, signs and symptoms of HIV/AIDS, and HIV/AIDS prevention. Respondents were given informed consent before filling out the questionnaire. The statistical test used is a univariate test that produces variable frequency distribution.

RESULTS

In the general data below, a table will be presented about the characteristics of age, type of claim and class of teenagers at SMA Negeri 3 Kupang.

Table 1. Characteristics of respondents based on age, type of class, class in adolescents of SMA Negeri 3 Kupang

Respondent Characteristics	f	%
Teenage		
15-16 Years	148	60.4
17-18 Years	97	39.6
Total	245	100.0
Types of Clams		
Women	134	54.7
Male	111	45.3
Total	245	100.0
Classes		
X	123	50.2
XI	122	49.8
Total	245	100.0

The results of the study on 245 respondents, the characteristics of respondents based on adolescent age showed that most of the respondents were 15-16 years old as many as 148 people (60.4%), while respondents aged 17-18 years amounted to 97 people (39.6%).

Based on gender, most of the respondents were female as many as 134 people (54.7%), while male respondents amounted to 111 people (45.3%).

The characteristics of respondents by class showed that class X respondents amounted to 123 people (50.2%), while class XI respondents were 122 people (49.8%).

Based on the characteristics of respondents, the majority of adolescents are in the age group of 15–16 years old as many as 148 people (60.4%), while adolescents aged 17–18 years are 97 people (39.6%). Based on gender, most of the respondents were women as many as 134 people (54.7%), while men as many as 111 people (45.3%). Based on grade level, the distribution of respondents was almost balanced, namely 123 students (50.2%) were from class X and 122 students (49.8%) were from class XI. These findings show that the study respondents are dominated by adolescents aged 15–16 years, are female, and have almost the same proportion of students in grades X and XI. These characteristics give an idea that the study involved a representative group of adolescents to describe the condition of knowledge about HIV/AIDS in high school students.

The special data is the result of a univariate analysis that describes the research variable, namely the level of adolescent knowledge about HIV/AIDS. The distribution of data is presented based on the categories of good, sufficient, and lacking knowledge.

Table 2. Overview of adolescent knowledge level about HIV/AIDS in students of SMA Negeri 3 Kupang

Adolescent Knowledge	f	%
Good	54	22.0
Enough	171	69.8
Less	20	8.2
Total	245	100.0

Based on the results of the study, it shows that adolescents at SMA Negeri 3 Kupang in 2026 have sufficient knowledge about HIV/AIDS. Among the 245 respondents, 54 respondents (22.0%) had a good level of knowledge, 171 respondents (69.8%) had sufficient knowledge and 20 respondents (8.2%) had limited knowledge.

DISCUSSION

. It was found that the majority of respondents had sufficient knowledge of 69.8%. This is due to the lack of information related to HIV/AIDS, namely about HIV (Human Immunodeficiency Virus) is the virus that causes AIDS (Acquired Immune Deficiency Syndrome). The level of knowledge that is in this sufficient category can also be influenced by other factors such as the lack of interest of respondents in seeking information independently, limited access to reliable information sources, and the lack of optimal role of health workers and educational institutions in providing counseling regularly. Therefore, efforts to improve education that are more effective, interesting, and easy to understand are needed, especially by utilizing media that are close to adolescents such as social media, so that the information conveyed can be well received and able to increase the level of knowledge of respondents more optimally.

Knowledge is fundamental in shaping a person's behavior. Knowledge occurs after people do sensing a certain object. The wider a person's knowledge of an object, the better the behavior or action taken. This is also true with knowledge of HIV and AIDS, where extensive knowledge of HIV and AIDS can help a person to take appropriate measures, especially in the prevention of HIV and AIDS transmission. Therefore, socialization is needed to increase adolescents' knowledge about HIV and AIDS concretely disseminated through communication media and intensify adolescent reproductive health efforts to intervene in HIV and AIDS transmission.

The results of this study have similarities with the research (Tuthanurani Nachrawy, 2023) entitled "Overview of the Level of Knowledge and Attitude of Adolescents about HIV/AIDS Prevention

in Students of SMAN 3 Ternate City". The study showed that adolescents' level of knowledge about HIV/AIDS still varied, with most respondents having a level of knowledge that was in the good and adequate category. The study concluded that adolescents' level of knowledge is influenced by exposure to information, health education obtained in school, and access to various sources of information about HIV/AIDS.

Researchers assume that adolescents in general already have basic knowledge about HIV/AIDS, but still need to improve a deeper understanding, especially about how to transmit, prevent, and the importance of early detection of HIV/AIDS. Therefore, more intensive health promotion efforts are needed through health counseling, integration of reproductive health materials in learning in schools, and the use of digital media and social media as educational means that are interesting and easily accessible to adolescents. With increasing knowledge, it is hoped that adolescents will be able to form positive attitudes and behaviors in efforts to prevent HIV/AIDS.

In addition, there are still some respondents who have a low level of knowledge, this is influenced by environmental factors that are less supportive, access to information is still lacking because it is still considered unimportant among adolescents and also adolescents who are lazy to seek HIV/AIDS information. Therefore, more comprehensive, sustainable, and involving various parties such as schools, health workers, and the appropriate use of digital media is needed, in order to improve adolescents' understanding and form better attitudes and behaviors in HIV/AIDS prevention. In addition, although information about HIV/AIDS has been available through various media, if it is not conveyed in an interesting, contextual, and appropriate manner for adolescents, the information will not be received and understood optimally. This is in line with research conducted by (Mariani et al., 2023), about the description of the level of adolescent knowledge about HIV/AIDS at SMA Pembangunan Kota Bukit Tinggi which shows that adolescents who lack knowledge are caused by teenagers who are lazy to find out and only get information from outside school whose source is unclear and do not get complete counseling from health workers.

This study also shows that some adolescents have good knowledge. Knowledge about HIV/AIDS in adolescents in this study is because in school adolescents have received Biology subjects, health workers and adolescents also get good information from family, friends, the environment and look for information in print/electronic media such as television, the internet about HIV/AIDS, so that this results in some adolescents having a good level of knowledge. This research is supported by research (Rusmariana, 2023), regarding the overview of knowledge about HIV (Human Immunodeficiency Virus) prevention which shows the knowledge of adolescents both because they have been exposed to information from schools and from the surrounding environment.

This study also found that adolescents with less knowledge, so it can be concluded that adolescents' knowledge about HIV/AIDS in adolescents is still lacking and does not even get information about HIV either from other people or social media. Adolescents with lack of knowledge, not only due to lack of education, but can be from environmental factors that are less supportive, access to information is still lacking because it is still considered unimportant among adolescents and also adolescents are lazy to seek HIV/AIDS information. The researcher assumes that the improvement of adolescents' knowledge depends not only on the availability of information, but also on the quality of information, attractive and easy-to-understand ways of delivery, environmental support, and the active role of adolescents in finding the right information. More comprehensive, sustainable, and involving various parties such as schools, health workers, and the appropriate use of digital media is needed, in order to increase adolescents' understanding and form better attitudes and behaviors in HIV/AIDS prevention.

Information about HIV/AIDS has been available through various media, but if it is not conveyed in an interesting, contextual, and appropriate manner for adolescents, then the information will not be received and understood optimally. In addition, researchers assume that improving adolescent knowledge does not only depend on the availability of information, but also requires an active role of schools and health workers in providing structured and sustainable education, as well as

adolescent involvement in filtering and using information critically

CONCLUSIONS

Based on the results of a study conducted in April 2026 on the description of the level of adolescent knowledge about HIV/AIDS among students at SMA Negeri 3 Kupang in the majority is sufficient.

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Availability of data and materials

The data and data materials underlying this study are available from the author if reasonably requested, while maintaining the confidentiality of the respondents.

Authors' contributions

The author is fully responsible for the study concept, design, data collection, data analysis, interpretation of results, and preparation of the final manuscript.

Conflict of Interest

The author states that there is no conflict of interest in this research or in the writing of this article.

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