



A Descriptive Study of Students' Knowledge of HIV and AIDS at Santo Yoseph Catholic Senior High School, Kalabahi, Alor Regency, Indonesia

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ABSTRACT

This study aimed to describe the level of knowledge regarding HIV/AIDS among eleventh-grade students at SMAK St. Yoseph Kalabahi, Alor Regency. The aspects assessed included the definition of HIV/AIDS, modes of transmission, prevention, signs and symptoms, and its impacts. This research employed a quantitative descriptive design involving 144 students who met the inclusion criteria. Data were collected using a questionnaire and analyzed descriptively using frequencies and percentages. The results showed that the majority of respondents were 17 years old (64.6%) and female (58.3%). Students' knowledge of the definition of HIV/AIDS was categorized as good in 100% of respondents, knowledge of transmission modes in 96.5%, prevention in 95.8%, signs and symptoms in 92.4%, and the impacts of HIV/AIDS in 98.6%. Overall, 99.3% of students demonstrated a good level of knowledge regarding HIV/AIDS, while 0.7% had a moderate level of knowledge. These findings indicate that eleventh-grade students at SMAK St. Yoseph Kalabahi possess a very good level of knowledge about HIV/AIDS. Therefore, continuous health education and promotion programs on HIV/AIDS should be maintained and strengthened to sustain and further improve students' knowledge, as well as to foster positive preventive behaviors among adolescents.

INTRODUCTION

Human Immunodeficiency Virus (HIV) and Acquired Immune Deficiency Syndrome (AIDS) remain major public health concerns worldwide. HIV is a virus that attacks the human immune system, particularly Cluster of Differentiation 4 (CD4) cells, thereby reducing the body's ability to fight infections. If left untreated, HIV infection can progress to AIDS, the advanced stage of the disease characterized by the occurrence of opportunistic infections (Ministry of Health of the Republic of Indonesia, 2022). Globally, the number of people living with HIV remains high. The World Health Organization (WHO) reported that new HIV infections continue to occur annually, including among adolescents and young adults. In 2024, approximately 40.8 million people were living with HIV worldwide, with an estimated 1.3 million new infections reported during the same year (WHO, 2024).

HIV/AIDS continues to be a significant public health issue in Indonesia, particularly among adolescents and individuals of productive age who are more vulnerable to engaging in risky behaviors. Adolescence is a transitional stage from childhood to adulthood, characterized by substantial physical, psychological, and social changes. During this period, adolescents generally possess a high level of curiosity and a tendency to experiment with new experiences. Insufficient knowledge regarding HIV and AIDS may increase the likelihood of engaging in behaviors that place them at risk of infection. According to the Ministry of Health of the Republic of Indonesia (2025), as of March 2025, approximately 2,700 Indonesian adolescents were living with HIV. The highest prevalence was reported among individuals aged 15–19 years.

An increasing trend of new HIV cases has also been observed in several provinces, including East Nusa Tenggara (NTT). The province recorded a significant increase in new HIV cases, with 997 cases reported in 2023, including 59 cases among adolescents aged 15–19 years. In 2024, the number increased to 1,315 cases, with 55 cases reported in the same age group (East Nusa Tenggara Provincial Health Office Profile, 2023 & 2024).

The Regional AIDS Commission (KPAD) of Kupang City reported 2,539 HIV/AIDS cases as of September 2025. Among these cases, high school and university students represented the largest proportion of people living with HIV/AIDS, exceeding the number of female sex workers (FSWs) (Kupang City Regional AIDS Commission, 2025). Likewise, Alor Regency has demonstrated a consistent increase in cumulative HIV cases. According to the Regional AIDS Commission and the Alor Regency Health Office through *Warta Alor*, there were 664 HIV cases recorded in 2023, increasing to 761 cases in 2024, comprising 115 deaths and 646 individuals living with HIV. Furthermore, 62 new HIV cases were identified in August 2025. Most AIDS cases occurred among individuals aged 15–40 years (Alor Regency Regional AIDS Commission, 2025).

The increasing incidence of HIV/AIDS is influenced by several factors, one of which is the low level of HIV/AIDS knowledge among adolescents. Knowledge about HIV/AIDS has been shown to significantly influence an

individual's attitudes toward the disease (Rahmadini et al., 2024). Knowledge is defined as an individual's level of understanding regarding a particular concept or phenomenon, acquired through learning, experience, observation, and interaction with the surrounding environment (Aallya Faj et al., 2022). Inadequate knowledge and understanding of HIV among adolescents may negatively affect their behavior, both directly and indirectly (Asep, 2023).

A study conducted by Yoannita et al. (2019) at Senior High School 4 Kupang found that knowledge significantly influenced HIV/AIDS preventive behavior ($p = 0.033$), whereas attitudes did not show a significant effect on HIV/AIDS preventive behavior ($p = 0.151$) (Kedang et al., 2019). Similarly, a study by Dea et al. (2023) describing the levels of knowledge, attitudes, and behaviors of adolescents regarding HIV/AIDS in Galang District reported that the majority of respondents had a moderate level of knowledge (57.7%), positive attitudes (79.8%), and good preventive behaviors (99%) (Yosepha et al., 2023).

LITERATURE REVIEW

A preliminary study conducted by the researcher on March 26, 2026, involving 10 senior high school students revealed that seven students correctly answered questions regarding the causes, modes of transmission, symptoms, treatment, and prevention of HIV/AIDS in the pre-test questionnaire. Meanwhile, three students were uncertain and answered several questions incorrectly, indicating gaps in their understanding. These findings suggest that schools play a strategic role in providing health education for adolescents.

In this study, the researchers selected SMAK St. Yoseph Kalabahi as the research site because it is one of the secondary educational institutions responsible for developing students' knowledge and character. Adequate knowledge regarding HIV prevention is particularly important for adolescents, who belong to a high-risk age group. Assessing students' level of knowledge will enable schools and healthcare providers to design educational programs that are tailored to students' needs and levels of understanding. SMAK St. Yoseph Kalabahi operates a school publication platform known as *Smaseph News*, which is used to disseminate important announcements and publish various student activities, including social campaigns such as the "Stop Bullying" initiative. This publication platform also has the potential to serve as a medium for sharing information about the importance of HIV/AIDS awareness and prevention. However, to date, the level of students' knowledge regarding HIV/AIDS at SMAK St. Yoseph Kalabahi has not yet been comprehensively assessed.

METHODOLOGY

This study employed a quantitative research design using a descriptive cross-sectional approach. Descriptive research aims to describe the level of students' knowledge regarding HIV and AIDS at a specific point in time without examining relationships between variables. The study was conducted at SMAK St. Yoseph Kalabahi, Alor Regency, Indonesia. Data collection was carried out in April 2026, including the stages of preparation, data collection, data processing, data analysis, and report writing.

Population and Sample

A sample is a subset of the population that possesses the characteristics of the target population (Sugiyono, 2019). The sample in this study consisted of Grade XI students of SMAK St. Yoseph Kalabahi who met the inclusion criteria. A total of 151 students were eligible and included in the study. Therefore, all Grade XI students who fulfilled the inclusion criteria and agreed to participate during the study period were recruited as research participants.

Sampling Technique

The sampling technique used in this study was **total sampling**, in which all members of the population who met the inclusion criteria were selected as research participants.

Inclusion criteria:

- Grade XI students of SMAK St. Yoseph Kalabahi.
- Willing to participate as respondents.
- Present during the data collection process.

Exclusion criteria:

- Students who were absent during data collection.
- Students who declined to participate as respondents.

Types and Methods of Data Collection

Types of Data

This study collected both primary and secondary data. Primary data consisted of respondents' knowledge and preventive behaviors regarding HIV/AIDS, obtained directly through questionnaires. Secondary data, including respondents' age and sex, were obtained from the administrative records of SMAK St. Yoseph Kalabahi.

Data Collection Procedure

The data collection process was conducted through the following steps:

1. After the research proposal was approved by the academic supervisors and examiners, ethical approval was obtained from the Health Research Ethics Committee of the Health Polytechnic of the Ministry of Health, Denpasar.
2. The researcher obtained a research permit from the Alor Regency Investment and Licensing Office.
3. After receiving the research permit, the researcher submitted the official approval letter to the principal of SMAK St. Yoseph Kalabahi. The principal subsequently informed the homeroom teachers about the research activities.
4. After obtaining permission from the school, the sampling process was conducted.
5. All selected students were gathered in the school hall, where the researcher explained the objectives of the study, research procedures, and the rights and responsibilities of the participants. This process was

assisted by several teachers and homeroom teachers. Students who agreed to participate were asked to sign a written informed consent form.

6. The researcher administered the questionnaires and collected the data.
7. After all data had been collected, data processing and statistical analysis were performed.
8. Finally, the researcher prepared the research report.

Research Instrument

The research instrument used in this study was a structured questionnaire adapted from a previous study conducted by Putri (2022). The original questionnaire had been tested for validity and reliability. The researcher further modified the questionnaire to suit the objectives of the present study while maintaining its validity. The questionnaire consisted of a series of written questions designed to assess respondents' knowledge regarding HIV/AIDS.

Data Processing and Analysis

Data Processing

The collected data were processed through the following stages:

- **Editing:** All completed questionnaires were checked to ensure completeness and accuracy of the responses.
- **Coding:** Each response was assigned a numerical code to facilitate data classification and statistical analysis.
- **Data Entry:** The coded data were entered into a computerized database for analysis.
- **Cleaning:** The entered data were carefully reviewed to identify and correct any errors or inconsistencies that occurred during the data entry process.
- **Tabulation:** The cleaned data were summarized into master tables arranged according to the variables of interest to facilitate statistical analysis.

Data Analysis

Since this was a descriptive study, only **univariate analysis** was performed (Sugiyono, 2019). Univariate analysis was used to describe each study variable through frequency distributions and percentages, providing an overview of respondents' characteristics and their level of knowledge regarding HIV/AIDS.

The percentage score for each respondent was calculated using the following formula:

Percentage = (Respondent's total score / Maximum possible score) × 100%

Based on the percentage score obtained, respondents' knowledge levels were classified into the following categories:

- **Good:** 76–100% (Code = 3)
- **Moderate:** 56–75% (Code = 2)
- **Poor:** <56% (Code = 1)

The categorized data were subsequently presented in frequency distribution tables.

RESULT AND DISCUSSION

Study Setting

SMAK St. Yoseph Kalabahi is an accredited Grade A senior high school located in Alor Regency, East Nusa Tenggara Province, Indonesia. The school operates under the Ministry of Education, Culture, Research, and Technology. It is located on Jenderal Sudirman Street, Kalabahi, Alor Regency. The school is led by Rev. Krisantus K. Luan, Pr., S.Fil., MM.

The school's vision is to become a leading institution in science and technology while fostering courtesy and noble character based on Christian values. This vision is implemented through various educational programs, character development activities, talent development initiatives, and continuous improvement of teaching and learning quality. SMAK St. Yoseph Kalabahi consists of 16 classes, including five Grade X classes, five Grade XI classes, and six Grade XII classes. The school is equipped with science laboratories, a library, sports facilities, an art room, a school health unit (UKS), and a chapel.

Characteristics of the Respondents

The respondents in this study were Grade XI students of SMAK St. Yoseph Kalabahi. Initially, 151 students were selected using the total sampling technique. However, during data collection, seven students were absent due to illness or official permission and therefore did not participate. Consequently, data from 144 respondents who met the inclusion criteria were analyzed.

Table 1. Characteristics of the Respondents

Characteristics	Frequency	Percentage (%)
Age		
16 years	45	31.3
17 years	93	64.6
18 years	6	4.2
Total	144	100.0
Sex		
Male	60	41.7
Female	84	58.3
Total	144	100.0

Most respondents were 17 years old (64.6%), while female students (58.3%) outnumbered male students (41.7%).

Students' Knowledge of HIV/AIDS

Knowledge of the Definition of HIV/AIDS

All respondents demonstrated good knowledge regarding the definition of HIV/AIDS.

Table 2. Students' knowledge of the Definition of HIV/AIDS

Category	Frequency	Percentage (%)
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Good	144	100.0
Total	144	100.0

Knowledge of HIV Transmission

Most students demonstrated good knowledge regarding HIV transmission.

Table 3. Students' Knowledge of HIV Transmission

Category	Frequency	Percentage (%)
Good	139	96.5
Moderate	5	3.5
Total	144	100.0

Knowledge of HIV Prevention

The majority of respondents demonstrated good knowledge regarding HIV prevention.

Table 4. Students' Knowledge of HIV Prevention

Category	Frequency	Percentage (%)
Good	138	95.8
Moderate	5	3.5
Poor	1	0.7
Total	144	100.0

Knowledge of Signs and Symptoms

Most students demonstrated good knowledge regarding the signs and symptoms of HIV/AIDS.

Table 5. Students' Knowledge of HIV Signs and Symptoms

Category	Frequency	Percentage (%)
Good	133	92.4
Moderate	7	4.9
Poor	4	2.8
Total	144	100.0

Knowledge of the Impact of HIV/AIDS

Most respondents also demonstrated good knowledge regarding the impact of HIV/AIDS.

Table 6. Students' Knowledge of the Impact of HIV/AIDS

Category	Frequency	Percentage (%)
Good	142	98.6
Moderate	2	1.4
Total	144	100.0

Overall Knowledge of HIV/AIDS

Overall, almost all respondents demonstrated good knowledge regarding HIV/AIDS.

Table 7. Overall Students' Knowledge of HIV/AIDS

Category	Frequency	Percentage (%)
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Good	143	99.3
Moderate	1	0.7
Total	144	100.0

This study was conducted among 144 Grade XI students at SMAK St. Yoseph Kalabahi, Alor Regency, to describe respondents' characteristics and assess their level of knowledge regarding HIV/AIDS. The findings indicated that the majority of respondents were 17 years old (64.6%), followed by students aged 16 years (31.3%) and 18 years (4.2%). These findings suggest that most participants were in middle adolescence, a developmental stage characterized by significant physical, emotional, and social changes, during which adequate health knowledge is essential for making informed decisions. Regarding sex distribution, female students constituted the majority of the respondents (58.3%), while male students accounted for 41.7%, reflecting the demographic composition of the school population.

Overall, the findings demonstrated that students possessed an excellent level of knowledge regarding HIV/AIDS. Nearly all aspects assessed in this study achieved very high scores. All respondents (100%) demonstrated good knowledge of the basic definition of HIV/AIDS, indicating that students possessed a sound conceptual understanding of the disease. Knowledge regarding HIV transmission was also high, with 96.5% of students correctly identifying the routes of transmission, while only 3.5% demonstrated a moderate level of knowledge. Similarly, 95.8% of respondents showed good knowledge regarding HIV prevention, although a small proportion demonstrated moderate (3.5%) or poor (0.7%) knowledge. Knowledge regarding the signs and symptoms of HIV/AIDS was likewise satisfactory, with 92.4% categorized as having good knowledge, 4.9% moderate knowledge, and 2.8% poor knowledge. Furthermore, 98.6% of respondents demonstrated good understanding of the health, social, and psychological consequences of HIV/AIDS, while only 1.4% showed a moderate level of knowledge. Overall, 99.3% of students were categorized as having good knowledge of HIV/AIDS, whereas only 0.7% demonstrated a moderate level of knowledge.

These findings are consistent with previous studies conducted in similar educational settings. A study at SMK Negeri 1 Pandak Bantul reported that 92.2% of students had good knowledge regarding HIV/AIDS, with most respondents being 17 years old and predominantly female (Ekawati, 2025). The study concluded that although students generally possessed adequate knowledge, some misconceptions regarding HIV transmission and prevention still existed. The similarity of findings suggests that school-based health education programs have generally been effective in providing accurate information about HIV/AIDS.

Although previous studies have reported considerable regional variation in HIV/AIDS knowledge, the present findings provide encouraging evidence from East Nusa Tenggara Province. They are consistent with a national study indicating that the Bali and Nusa Tenggara regions demonstrate levels of

HIV/AIDS knowledge comparable to, or even higher than, those observed in several other regions of Indonesia (Id et al., 2023).

The high level of knowledge observed among students may be attributed to several contributing factors, including adequate health education, the active involvement of teachers, and students' access to reliable sources of health information. Accurate knowledge regarding HIV/AIDS is essential for adolescents, not only to reduce the risk of HIV transmission but also to prevent stigma and discrimination against people living with HIV/AIDS.

Several contextual factors may explain the excellent level of knowledge observed among students at SMAK St. Yoseph Kalabahi. First, HIV/AIDS-related topics are integrated into Biology and Physical Education, Sports, and Health (PJOK) curricula, providing students with a solid theoretical foundation. Second, widespread access to digital information enables students to obtain current and reliable health information. Third, the school's location in Kalabahi, Alor Regency, East Nusa Tenggara—a province with a relatively high HIV prevalence—has resulted in increased attention from local health authorities, making schools more frequently involved in HIV/AIDS education and awareness programs.

Despite the highly satisfactory level of knowledge observed in this study, several issues still warrant attention. A small proportion of students demonstrated incomplete knowledge, particularly regarding the signs and symptoms of HIV/AIDS and preventive measures. Furthermore, numerous studies have emphasized that adequate knowledge alone does not necessarily translate into healthy behavior. Therefore, HIV/AIDS education and health promotion programs should be implemented continuously, focusing not only on improving knowledge but also on fostering positive attitudes and responsible behaviors so that adolescents are able to apply their knowledge effectively in their daily lives.

CONCLUSIONS AND RECOMMENDATIONS

Based on the findings of this study conducted among Grade XI students at SMAK St. Yoseph Kalabahi, Alor Regency, it can be concluded that the overall level of students' knowledge regarding HIV/AIDS was categorized as good. Most students demonstrated a good understanding of the definition of HIV/AIDS, its modes of transmission, and appropriate prevention strategies. In addition, the majority of respondents showed good knowledge of the signs and symptoms of HIV/AIDS and understood the health consequences associated with the disease. These findings indicate that Grade XI students at SMAK St. Yoseph Kalabahi possess an adequate level of knowledge regarding the key aspects of HIV/AIDS..

FURTHER STUDY

This study still has limitations; therefore, further research on the topic is required.

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