

The Relationship Between Adolescents' Knowledge About Hiv/Aids and Adolescents' Sexual Behavior

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Abstract

Adolescents who lack adequate knowledge about risky sexual behavior are highly likely to engage in such behaviors—such as having multiple sexual partners or unprotected sex. The Indonesia Health Profile 2023 indicates that reported HIV-positive cases have tended to increase over the past eleven years. In 2023 alone, there were 57,299 reported HIV cases and 16,410 AIDS cases. The objective of this study was to examine the association between adolescents' knowledge of HIV/AIDS and their sexual behavior at Al-Falah Orphanage in Padang. This study employed a quantitative, cross-sectional design. Data were collected at the Al-Falah orphanage in Padang from May to August 2025, involving 40 adolescent participants selected through simple random sampling. Data analysis included univariate and bivariate techniques, using chi-square tests. Among the 40 respondents, 23 (57.5%) had poor knowledge of HIV/AIDS. Additionally, 26 respondents (65.0%) reported engaging in sexual activity. A statistically significant association was found between knowledge of HIV/AIDS and sexual behavior among the adolescents ($p = 0.017, < 0.05$). The study confirms a significant relationship between adolescents' knowledge of HIV/AIDS and their sexual behavior at the Al-Falah orphanage in Padang. It is recommended that the orphanage provide educational programs on HIV/AIDS and sexual health. Such programs should address adolescent sexual development, the effects of early sexual activity, and the importance of prevention to help adolescents make informed decisions regarding their sexual health.

Keywords: HIV/AIDS knowledge; sexual behavior; adolescents

Introduction

Based on existing data that of the approximately 40 million world population who have been infected with HIV, more than 95% are in developing countries, and young people

today have become part of the AIDS pandemic with data stating that more than half of new cases infected with HIV are teenagers aged between 15-24.¹ This is reinforced by WHO estimates: 50% of all infected cases are young people, or in other words, 7000 young people (aged 15-24 years) are infected every day, and 30% of the 40 million people with HIV / AIDS (PLWHA) infected worldwide are in the 15-24 age group. The majority of young people who are infected do not know that they have actually been infected, and young people who are involved in sexual relations, only a few know whether their partner has been infected with HIV or not ².

According to data from the Population, Family Planning, and Family Development Program (SKAP) Performance and Accountability Survey for adolescents, 69% of young women between the ages of 15 and 24 have dated. The survey on dating behavior found that the most common behaviors among adolescents during dating were holding hands (76%), hugging (33%), kissing (14%), and touching or stimulating (4%). Furthermore, 34% of young women had their first premarital sexual intercourse between the ages of 15 and 17 ³.

According to the Indonesian Demographic and Health Survey (SDKI), the majority of women (80%) and men (84%) have dated. The age of first dating is 44% for boys and 45% for girls. Typical dating behaviors include holding hands, hugging, kissing, and touching or being touched. It is through this dating behavior that adolescents can engage in deviant behavior. Teenagers first engage in premarital sex at the age of 17-18, with a percentage of 74% ⁴.

The Indonesian Ministry of Health recorded 36,902 HIV cases in 2021, the majority of whom were of productive age. The majority of HIV cases were in the 25-49 age group (69.7%), followed by those in the 20-24 age group (16.9%), and those in the 15-19 age group (3.1%). The majority of advanced HIV or AIDS cases in Indonesia in 2021 were in the 30-39 age group ⁵.

A report from the Indonesian Child Protection Commission (KPAI) for West Sumatra found 107 cases of sexual behavior, 17 of which were premarital sexual behavior among adolescents, consisting of 7 cases in junior high school students and 10 cases in high school students. Of these 17 cases, 80% occurred in Padang City ⁶. Research conducted by the Indonesian Family Planning Association (PKBI) in Padang City found that 10.5% of adolescents in Padang City were sexually active ⁷. Research on adolescent

sexual behavior in Padang City found that 20.9% of adolescents engaged in risky sexual behavior and 5.1% had engaged in sexual intercourse. Based on data from the Padang City Health Office in 2021, 227 HIV cases were found, a slight increase from the previous year (225 cases). There were 19 new AIDS cases (18 males and 1 female). By gender, HIV and AIDS cases are more common in men than in women. This is because the highest risk factors are also in men, namely MSM and Male Sex Workers (PPS)⁸. Based on data from the Padang City Health Office in 2022, 286 HIV cases were found, a slight increase from the previous year (227 cases). When viewed by gender, HIV cases are more common in men than women, this is because the highest risk factors are also in the male group, namely MSM and Male Sex Workers (PPS)⁹.

Based on data from the Padang City Health Office, the discovery of new HIV cases in 2023 was 333 cases. This HIV case is higher than in 2022, which was 286 cases, with 23 cases of AIDS. The 2023 HIV application reporting no longer differentiates between HIV and AIDS because AIDS is an advanced stage of HIV. The high number of HIV positive cases is due to the team's active testing both in health facilities and providing mobile services in the field. In 2023, the target for achieving the Minimum Service Standards (SPM) for HIV testing in Padang City is 21,000 with a reach of 24,407 people (106%). Koto Tangah District is the district with the most HIV cases in Padang City. For Koto Tangah itself, the number of HIV cases reached 40 cases¹⁰.

Method

1. Research design

This research is quantitative with an analytical and cross-sectional design. This study was designed to examine one event at a time. This study aims to simultaneously test the independent and dependent variables. The independent variable in this study is student knowledge, while the dependent variable is the relationship between adolescent knowledge about HIV/AIDS and adolescent sexual behavior.

2. Setting and samples

The research was conducted at the Al-Falah Orphanage in Padang during May 2025 - August 2025. Data collection was carried out on June 1, 2025. In this study, samples were taken based on the Slovin formula. So, based on the Slovin formula, the number

of samples taken in this study was 40 people. To obtain samples from each class, simple random sampling is carried out using a lottery or random system.

3. *Measurement and data collection*

Mention and describe the instrument used for data collection. Clearly state whether the researchers develop, adopt, or modify the instrument from previous studies, including its citations and references. Mention the validity and reliability of the instrument, the scale, interpretation, and administration. If a translation was conducted from the original language, authors should explain the procedures used to maintain the validity and reliability of the translated instruments. Describe how data were collected. If the data were collected by research assistants, please identify this in the manuscript

4. *Data analysis;*

Data analysis can be done in two ways, namely univariate analysis, which aims to obtain an overview of each variable, the frequency distribution of the variables studied, both dependent variables and independent variables. Bivariate analysis in this study is to analyze the relationship between knowledge about HIV/AIDS and sexual behavior of adolescents at the Al-Falah Padang Orphanage. To see whether there is a relationship between knowledge about HIV/AIDS and sexual behavior in adolescents at the Al-Falah Padang Orphanage, a chi-square test was conducted.

Results

Univariate Analysis

The results of the univariate analysis consist of two variables: knowledge about HIV/AIDS and sexual behavior of adolescents at the Al-Falah Orphanage in Padang.

Knowledge of HIV/AIDS

Table 1. Frequency Distribution of Knowledge of HIV/AIDS at Al-Falah Orphanage, Padang

Knowledge of HIV/AIDS	Frecquency	Persentage
Good	17	42,5
Poor	23	57,5
Amount	40	100

Based on table 1, it can be seen that of the 40 respondents, 23 respondents (57.5%) had insufficient knowledge about HIV/AIDS at the Al-Falah Padang Orphanage.

Adolescent Sexual Behavior

Table. 2 Frequency Distribution of Adolescent Sexual Behavior at Al-Falah Padang Orphanage

Adolescent Sexual Behavior	Frequency	Percentage
Yes	14	35
No	26	65
Amount	40	100

Based on Table 2, it can be seen that of the 40 respondents, 26 people (65%) said they engaged in sexual behavior at the Al-Falah Padang Orphanage.

Bivariate Analysis

The next analysis examined the relationship between knowledge about HIV/AIDS and sexual behavior among adolescents at the Al-Falah Orphanage in Padang, as described below.

Table. 3 Relationship between Knowledge about HIV/AIDS and Sexual Behavior among Adolescents at the Al-Falah Orphanage in Padang

Knowledge of HIV/AIDS	Sexual Behavior Adolescent						p-value
	No		Yes		Total		
	f	%	f	%	f	%	
Good	10	58,8	7	41,2	17	100	0,017
Poor	4	17,4	19	82,6	23	100	
Amount	14	35	26	65	40	100	

Based on Table 3, it can be seen that of the 23 respondents who had insufficient knowledge about HIV/AIDS, 19 (82.6%) engaged in sexual behavior. The results of the statistical test using the chi-square test obtained a p-value of 0.017 ($p < 0.05$), meaning there is a relationship between knowledge about HIV/AIDS and sexual behavior of adolescents at the Al-Falah Orphanage in Padang.

Discussion

Univariate Analysis

Knowledge of HIV/AIDS at Al-Falah Orphanage, Padang

The results of this study indicate that out of 40 respondents, 23 (57.5%) had insufficient knowledge about HIV/AIDS at Al-Falah Orphanage, Padang. These results align with previous research conducted by ¹¹ on the Relationship between Adolescent Knowledge Levels about HIV/AIDS and Sexual Behavior of Adolescents in Grades 10 and 11 at SMKN 1 Babelan, Bekasi. The study found that 52.1% of adolescents had insufficient knowledge. This is also supported by previous research conducted by ¹² on the Overview of Adolescent Knowledge about HIV/AIDS, which found that 52.3% had insufficient knowledge about HIV/AIDS.

Adolescents are an age group in transition from childhood to adulthood, characterized by biological, psychological, and social changes. During this period, curiosity and the search for identity often lead to risky behavior, including unsafe sexual behavior. This is a major concern in the context of the spread of HIV/AIDS. Adolescents' knowledge of HIV/AIDS remains low or inadequate. Many adolescents are unaware of how HIV is transmitted, how to prevent it, or have misconceptions about those living with HIV/AIDS. For example, some adolescents believe that HIV can be transmitted through shaking hands or using the same restroom, but this is a myth ¹³.

Knowledge is the result of a person's learning process and experiences through interaction with their environment. Generally, knowledge is defined as information or understanding an individual has about an object, fact, concept, or principle, acquired through experience, education, observation, or reasoning ¹⁴.

The researchers' analysis of the study results revealed a lack of knowledge among adolescents. This was also evidenced by questionnaire responses, which showed that 40% of adolescents did not know that HIV/AIDS symptoms appear after 5-10 years, 55% of adolescents did not know that someone can be infected with HIV/AIDS through mosquito bites, and 67.5% of adolescents did not know that HIV/AIDS cannot be prevented. This lack of knowledge can be caused by several factors. First, the lack of comprehensive sexuality education in the community. Many schools and foundations still consider HIV/AIDS a taboo topic to be discussed openly, resulting in incomplete and often erroneous information for students. Second, the role of family and social environment is also very influential. In many cases, adolescents do not receive accurate information from their parents or community leaders due to a lack of transparency and communication about reproductive and sexual health issues. Third, despite widespread access to information through social media and the internet, not all information adolescents consume comes from reliable sources. Many adolescents obtain information from peers or unreliable platforms, thus reinforcing myths or false stigmas about HIV/AIDS ¹⁵.

The lack of knowledge about HIV/AIDS among adolescents in orphanages is a significant issue that requires attention. Many adolescents living in orphanages lack access to adequate information regarding HIV/AIDS transmission, prevention, and its impact. This situation can be caused by limited information sources, minimal health

education activities, and low awareness among adolescents about the importance of maintaining reproductive health. As a result, adolescents are at risk of developing misconceptions, developing stigma, or even engaging in risky behaviors due to a lack of understanding of how HIV/AIDS is transmitted.

In this regard, the role of orphanage staff is crucial. They serve not only as caregivers but also as educators and facilitators in providing understanding about health, including HIV/AIDS issues. Through ongoing education, staff can help increase adolescents' knowledge about prevention methods, the importance of health check-ups, and foster empathy and reduce stigma toward people living with HIV/AIDS. This education can be delivered through various methods, such as group discussions, showing educational videos, or inviting health workers to provide counseling. Thus, educational efforts carried out by the orphanage staff are expected to increase knowledge, shape healthy behavior, and protect adolescents from the risk of HIV/AIDS transmission.

Sexual Behavior of Adolescents at Al-Falah Orphanage, Padang

Based on the results of the study, 26 (65%) of 40 respondents engaged in risky sexual behavior at Al-Falah Orphanage, Padang. These results align with previous research conducted by ¹⁶ on the Relationship between Adolescent Knowledge about HIV/AIDS and Sexual Behavior at Mutiara Vocational High School, Bandung City, which found that 69.2% of adolescents engaged in inappropriate behavior. Furthermore, research by ¹¹ on the Relationship between Adolescent Knowledge about HIV/AIDS and Sexual Behavior of Grade 10 and 11 Students at SMKN 1 Babelan, Bekasi, found that 63.5% of adolescents engaged in inappropriate behavior.

Factors influencing adolescent sexual behavior include a lack of knowledge about reproductive health, as many adolescents have not received comprehensive sexual education at school or at home. A study by ¹⁷ stated that adolescents with low reproductive health knowledge are 2.5 times more likely to engage in risky sexual behavior. The influence of internet media, easy access to pornographic content, and social media has created misperceptions about sexual relationships. Media often depicts sexual relationships without real consequences, such as pregnancy or sexually transmitted infections. Peer influence and the drive to be accepted within a group lead many adolescents to imitate the behavior of their friends, including in sexual activity and the orphanage environment ¹⁸.

Researchers' analysis of risky sexual behavior among adolescents is evidenced by questionnaire responses, which showed that 47.5% of adolescents had held hands with a partner, 42.5% had held arms with a partner, 17.5% had stimulated their own genitals with their hands, and 15% had kissed a partner on the cheek.

The lack of sexual behavior among adolescents in orphanages is often influenced by a lack of supervision from caregivers, limited knowledge, access to information, and low awareness of the risks of sexual behavior.¹⁹

In this regard, the role of orphanage staff is crucial as educators, facilitators, and supervisors in providing reproductive health education, including HIV/AIDS. Staff serve not only as caregivers but also as reliable sources of information for adolescents. The education provided can take the form of counseling, group discussions, and individual counseling, emphasizing an understanding of transmission methods, prevention, and the importance of maintaining healthy behaviors. Furthermore, staff also need to foster a supportive environment so adolescents feel comfortable asking questions and discussing issues without fear of judgment.

With the active role of staff in providing ongoing education, it is hoped that adolescents in orphanages will be able to increase their knowledge, develop positive attitudes, and avoid risky behaviors related to HIV/AIDS. This is important to equip them with life skills so they can protect themselves and become a healthy and productive generation.

Bivariate Analysis

Relationship Between HIV/AIDS Knowledge and Sexual Behavior of Adolescents at Al-Falah Orphanage, Padang

Based on the results of the study, adolescents with good knowledge of HIV/AIDS were more likely to abstain from sexual behavior (10 individuals (58.8%)), and adolescents with less knowledge of HIV/AIDS were more likely to engage in sexual behavior¹⁹ individuals (82.6%). The results of the chi-square test yielded a p-value of 0.017 ($p < 0.05$), indicating a relationship between HIV/AIDS knowledge and sexual behavior of adolescents at Al-Falah Orphanage, Padang.

The results of this study are in line with previous research conducted by¹⁶ on the Relationship between Adolescent Knowledge about HIV/AIDS and adolescent sexual

behavior at Mutiara Vocational School, Bandung City. The results of the study showed a relationship between knowledge and adolescent behavior about HIV/AIDS with $p = 0.000$, and also research ¹¹ on the Relationship between Adolescent Knowledge Levels about HIV/AIDS and Sexual Behavior of Adolescent Students in Grades X and XI at SMKN 1 Babelan - Bekasi. It was found that there was a relationship between knowledge and adolescent behavior about HIV/AIDS with $p=0.000$.

Another study conducted by (20) on the Relationship between Knowledge and Sexual Behavior of Adolescents Regarding HIV/AIDS Prevention in Pekanbaru High Schools found a significant relationship between knowledge and sexual behavior, with a p-value of $0.000 < 0.05$. This is in line with the results of the study, which found that 7 adolescents (41.2%) had good knowledge of HIV/AIDS but engaged in risky sexual behavior. This could be because adolescents are at a developmental stage characterized by a search for identity, high curiosity, and strong emotional and sexual urges. This often leads them to act impulsively, even though they are aware of the risks.

The findings indicate a significant relationship between adolescents' level of knowledge about HIV/AIDS and their sexual behavior. A study by ¹⁷ revealed that adolescents with high knowledge about HIV/AIDS tend to be more cautious in engaging in sexual relations and use contraceptives such as condoms more frequently. Conversely, a lack of accurate information can lead to low risk perception and unhealthy sexual behavior decisions.

Adequate knowledge about HIV/AIDS is an important protective factor in preventing risky sexual behavior. This knowledge includes understanding transmission methods, prevention, and the myths and facts related to HIV/AIDS. Adolescents with low knowledge tend to be unaware of the risks of unprotected sex, multiple partners, or injecting drug use, all of which can increase vulnerability to HIV infection (11).

The researchers' analysis of the results of the study demonstrated a relationship between knowledge about HIV/AIDS and the sexual behavior of adolescents at the Al-Falah Orphanage in Padang. This finding indicates that adolescents' knowledge can influence their decision-making regarding sexual activity. Adolescents with a good level of knowledge tend to engage in safer and more responsible sexual behavior, such as delaying sexual activity. Adequate knowledge about HIV/AIDS transmission and

prevention provides an understanding of the risks they face, enabling them to better control and consider the consequences of their sexual actions.

This study analyzed the relationship between adolescents' knowledge about HIV/AIDS and their sexual behavior in the orphanage environment. The results showed a significant relationship between adolescents' knowledge about HIV/AIDS and their tendency to engage in risky sexual behavior. Adolescents with low knowledge about HIV/AIDS tended to engage in more unsafe sexual behaviors, such as multiple partners or engaging in sexual activity at an early age. On the other hand, some adolescents with good knowledge about HIV/AIDS transmission and prevention still engaged in risky sexual behavior.

This shows that knowledge alone is not enough to change behavior, as other contributing factors contribute, such as lack of supervision, a lack of comprehensive sexuality education, peer pressure, and the psychosocial conditions in orphanages. The orphanage environment, which lacks intensive sexuality education, is also a contributing factor to this situation. Some adolescents reported only learning about HIV/AIDS from social media or stories from friends, which are often inaccurate or misleading.

This indicates an urgent need for more structured and comprehensive sexual and reproductive health education interventions. Therefore, the researchers concluded that increasing adolescent knowledge about HIV/AIDS needs to be accompanied by educational and psychosocial approaches to foster healthier and more responsible sexual behavior.

Orphanage-based intervention programs, training for caregivers, and the involvement of health workers and psychologists need to be developed to create an environment that supports adolescents in making safe and appropriate decisions regarding sexual behavior.

Limitation

The obstacles and weaknesses in this study are as follows: The lack of a dedicated room for the intervention, resulting in a less private setting. Data collection was conducted at different times for male and female participants due to scheduling constraints. This could potentially impact the results due to varying conditions during data collection.

Conclusion

Based on the research results and discussions, the following conclusions can be drawn: More than half of respondents (57.5%) at the Al-Falah Orphanage in Padang had inadequate knowledge about HIV/AIDS. More than half of respondents (65.0%) at the Al-Falah Orphanage in Padang engaged in adolescent sexual behavior. There is a relationship between knowledge about HIV/AIDS and adolescent sexual behavior at the Al-Falah Orphanage in Padang ($p < 0.05$) or ($p = 0.017$).

Ethical Considerations

Before conducting the research, the researcher obtains informed consent from the respondents and informs them of the intent, purpose, benefits, and impact of the research. Explains the use of study subjects by not providing or listing the respondents' names on the instrument and only writing their initials on the questionnaire. The researcher maintains the confidentiality of all information obtained from research subjects. Confidentiality refers to the researcher's responsibility to protect all collected data. All information provided by respondents is guaranteed confidentiality by the researcher.

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Conflict of Interest

In carrying out this research, there was no conflict of interest between the authors

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