THE RELATIONSHIP BETWEEN KNOWLEDGE ABOUT HIV/AIDS AND ADOLESCENT SEXUAL BEHAVIOR IN THE WORKING AREA OF PATI I PUBLIC HEALTH CENTER

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Abstract

HIV/AIDS remains a global health problem, including in Indonesia, with a significant impact on adolescents as a high-risk group. Adequate knowledge about HIV/AIDS is expected to foster healthier sexual behaviors, thereby minimizing the risk of transmission. The increasing prevalence of risky sexual behavior among adolescents can contribute to high rates of HIV/AIDS transmission. to determine the relationship between the level of knowledge about HIV/AIDS and adolescent sexual behavior. This research is quantitative with a correlational design using a cross-sectional approach. The study population was adolescents aged 15–19 years in the Pati I Community Health Center working area, with a sample of 100 respondents selected using proportional random sampling. The research instrument was a questionnaire that had been tested for validity and reliability, including 10 questions for the HIV/AIDS knowledge variable and 10 questions for the sexual behavior variable. Data analysis was performed univariately to observe the frequency distribution and bivariately using the Spearman correlation test. showed that most respondents had a level of knowledge about HIV/AIDS in the category of less (49%), sufficient (28%), and good (23%). As many as 55% of respondents were classified as having risky sexual behavior, with forms of behavior varying from holding hands to penetrative sexual intercourse. The results of the bivariate test showed a significant relationship between the level of knowledge about HIV/AIDS and adolescent sexual behavior (p-value = 0.031) with a weak positive correlation (r = 0.215). Conclusion: There is a significant relationship with a positive direction between knowledge about HIV/AIDS and adolescent sexual behavior.

Keywords: *Adolescent Sexual Behavior, Knowledge, HIV/AIDS, Pati*

INTRODUCTION

HIV/AIDS remains a serious global health problem, including in Indonesia, because it attacks the immune system and has not yet found a cure. According to UNAIDS data (2023), approximately 39.9 million people worldwide are living with HIV, with 1.3 million new cases and 630,000 deaths annually. In Indonesia, there are an estimated 640,000 HIV cases with a prevalence of 0.4–0.5% in those aged 15–49, including adolescents as a productive age group. In Pati Regency, 344 new HIV cases were recorded in 2023, with 36% of them occurring in those aged 15–24, indicating the high vulnerability of adolescents to HIV/AIDS transmission (Pati Regency Health Office, 2023).Adolescents face significant challenges in accessing accurate health information, as exposure to misinformation, particularly through social media, can influence their sexual behavior. In the Pati 1 Community Health Center (Puskesmas Pati 1) work area, which encompasses the city center and educational areas, adolescents' social and digital interactions are highly significant. Therefore, without adequate education and support, the risk of engaging in risky sexual behavior increases. Previous research has demonstrated a relationship between adolescent knowledge and HIV/AIDS prevention behavior. Rahman (2021) found that adolescents who obtained information from teachers and electronic media had more positive attitudes toward HIV/AIDS prevention, while Sari (2022) added that although knowledgeable adolescents tended to reject risky behavior, some still engaged in risky activities without environmental support. Based on this, this study aims to analyze the relationship between HIV/AIDS knowledge and adolescent sexual behavior in the Pati 1 Community Health Center work area. This is expected to

provide a basis for developing targeted education and prevention programs and fill local data gaps regarding adolescent behavior and understanding of HIV/AIDS.

The following are some previous studies that are relevant and can be used as references:

No	Researcher (Year)	Research Title	Design & Sample	Research result	Similarities with This Research	Differences with This Research
1	Princess (2020)	The Relationship Between Adolescents' Knowledge about HIV/AIDS and Risky Sexual Behavior at State Senior High School X Surabaya	Correlational quantitative, 100 students	There is a significant relationship between knowledge and adolescent sexual behavior.	Together we researched the relationship between HIV/AIDS knowledge and adolescent sexual behavior.	This research was conducted at Pati I Health Center, not at school, with a population of adolescents in the community.
2	Rahman (2021)	Factors Influencing Adolescents' Attitudes Towards HIV/AIDS in Semarang City	Descriptive quantitative, 80 adolescents	Education level & media information influence adolescent attitudes	Both highlight the HIV/AIDS knowledge factor	This study focuses on attitudes, while this study focuses on adolescent sexual behavior and the research locations are different.
3	Hidayat et al. (2022)	The Relationship between Knowledge Level and Attitude with HIV/AIDS Prevention Behavior among Students of SMKN 1 Cirinten	Quantitative correlational, cross-sectional, 78 students	There is a significant relationship between HIV/AIDS prevention behavior and level of knowledge.	Together we examine the relationship between knowledge and behavior related to HIV/AIDS.	This study specifically examined risky sexual behavior, not general preventive behavior, and the study location was different.
4	Syafitri (2022)	The Influence of HIV/AIDS Education on the Knowledge and Attitudes of Adolescents	Pre-experiment, 60 students	There is an increase in knowledge & attitude after education	Both researched knowledge of HIV/AIDS in adolescents	This research is non-experimental, focusing on the relationship between knowledge and sexual

		at State Vocational Schools in Bandung				behavior without intervention and different research locations.
5	Yuliana (2023)	Correlation Study of HIV/AIDS Knowledge and Sexual Behavior of Students at University X Yogyakarta	Correlational, 150 students	Higher knowledge correlates with safer sexual behavior	Together we examine the relationship between HIV/AIDS knowledge and sexual behavior.	This research was conducted on adolescents in the community, not specifically in the working area of the health center and different research locations.

Table 1. Comparison of similarities and differences with other researchers

Based on the table above, this study shares similarities with previous studies in that both examined the relationship between HIV/AIDS knowledge and health or sexual behavior. However, this study is unique in that it was conducted among adolescents aged 15–19 in the Pati I Community Health Center (Puskesmas Pati I) working area, with a specific focus on adolescent sexual behavior in the community, rather than in school or university settings. Furthermore, this study updates the local context in Pati Regency, which has not been widely explored in previous research.

LITERATURE REVIEW

Human Immunodeficiency Virus (HIV) is a virus that attacks the immune system, specifically CD4 cells, which play a crucial role in fighting infection. If left untreated, HIV can progress to Acquired Immunodeficiency Syndrome (AIDS), the final stage of the disease characterized by significant immune decline (Ministry of Health of the Republic of Indonesia, 2023). The virus is transmitted through blood, semen, vaginal fluids, and breast milk, with unsafe sexual behavior being a common mode of transmission among adolescents (WHO, 2021). HIV/AIDS is not only an individual health issue but also a social and economic challenge due to its impact on the productive age group and community development.

HIV infection progresses through three stages: the acute phase with flu-like symptoms, the latent phase, which lasts for years without symptoms, and the AIDS phase, with a severely weakened immune system (Ministry of Health of the Republic of Indonesia, 2023). CD4 cells function to coordinate the immune response, and a decrease in their number is an indicator of the stage of infection (WHO, 2021). Antiretroviral therapy (ARV) is used to suppress viral replication, improve immune function, and prevent opportunistic infections, with success measured by an increase in CD4 counts and a viral load <200 copies/mL (UNAIDS, 2022; Ministry of Health of the Republic of Indonesia, 2023). Although effective, ARVs have varying side effects depending on the regimen, such as neuropsychiatric disorders with Efavirenz or gastrointestinal disorders with Dolutegravir (WHO, 2021; Ministry of Health of the Republic of Indonesia, 2023).

Adolescents, aged 10–19 years (WHO, 2022), are in a transitional period marked by physical, cognitive, social, and sexual behavioral changes (Santrock, 2020; Putri et al., 2023). Sexual behavior develops gradually, from light contact to intimacy, influenced by hormones, cultural norms, the media, parental involvement, and peers (Li et al., 2021; Yuliani, 2023). The lack of comprehensive sexual education increases the risk of STIs, HIV, and unintended pregnancy, as well as psychological and social impacts such as guilt, stigma, and isolation (Molete & Chola, 2022; Nsabimana et al., 2021). Therefore, appropriate sexual education and youth-friendly health services are important strategies to reduce risky sexual behavior (WHO, 2023). Knowledge plays a crucial role in health decision-making,

including sexual behavior and HIV/AIDS prevention (Pakpahan et al., 2021; Notoatmodjo, 2020). Knowledge levels are influenced by education, access to information, experience, culture, socioeconomic conditions, and the social environment (Notoatmodjo, 2023). Access to modern media such as the internet, social media, and television can broaden horizons, but the validity of the information must be considered to avoid misunderstandings. Improving adolescent knowledge is key to planning effective educational and health promotion interventions to reduce risky sexual behavior and the spread of HIV/AIDS (UNESCO, 2022; WHO, 2023).

Knowledge can be acquired through various means, including tradition, authority, personal experience, induction, deduction, intuition, and the scientific method (Syapitri et al., 2021). Social interaction and discussions with others are also important avenues for broadening and deepening one's understanding. Knowledge measurement is typically conducted through questionnaires or written tests designed based on the desired knowledge indicators, both quantitatively and qualitatively through interviews or group discussions (Notoatmodjo, 2020). The validity and reliability of measurement tools are crucial to ensure that the results reflect the actual situation, so that the data obtained can be used to assess the effectiveness of educational interventions or the need for further outreach.
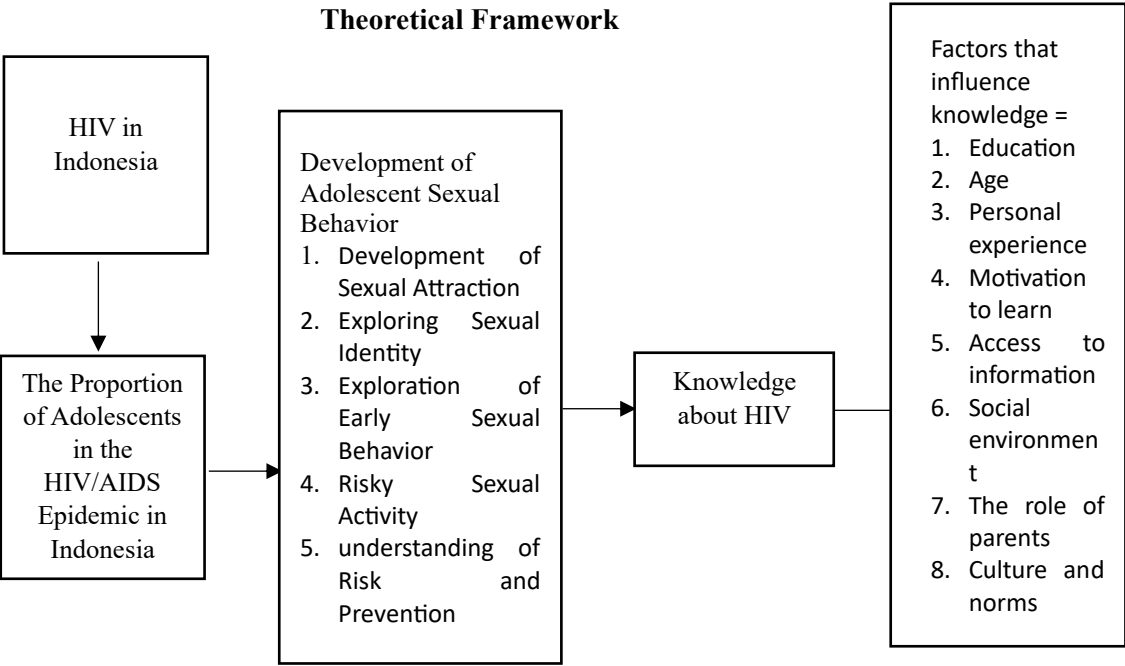
Theoretical Framework

Figure 2.1 Theoretical Framework
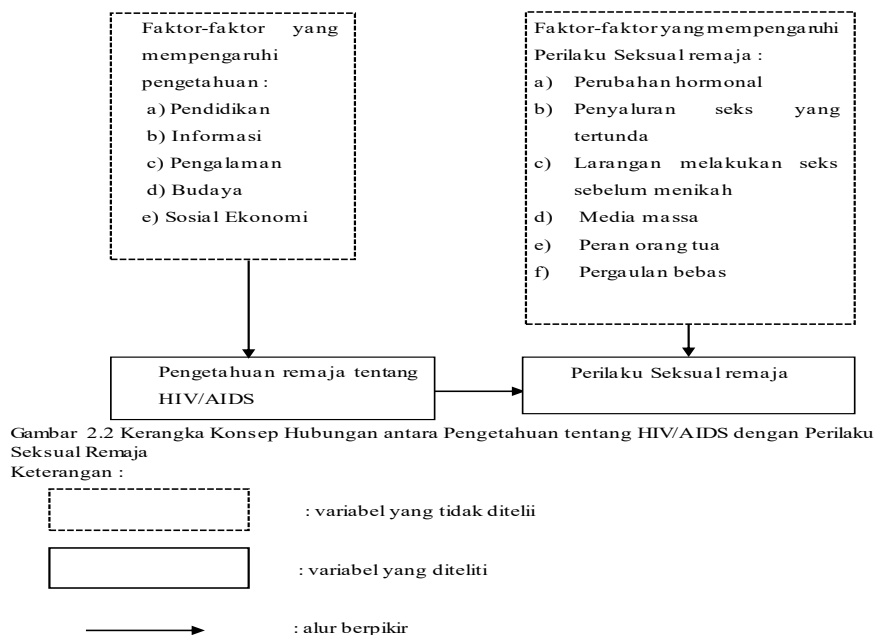Modifications from Notoatmodjo (2023), Santrock (2020), Setiawan et al. (2021)

Conceptual Framework

A conceptual framework is a visual representation that shows the relationships between variables in a study. In this study, the conceptual framework illustrates how adolescents' knowledge of HIV/AIDS influences their sexual behavior, including the risks of unsafe behavior that can increase the likelihood of HIV transmission.

Berdasarkan kerangka tersebut, maka dapat dibuat skema sebagai berikut:

Gambar 2.2 Kerangka Konsep Hubungan antara Pengetahuan tentang HIV/AIDS dengan Perilaku Seksual Remaja
Keterangan :

The conceptual framework explains that adolescents' knowledge about HIV/AIDS is influenced by factors such as education, information, experience, culture, and socioeconomic status. Meanwhile, sexual behavior is influenced by biological, social, and cultural factors, including hormonal changes, sexual drive, premarital norms, the media, parental role, and promiscuity. The greater an adolescent's knowledge about HIV/AIDS, the lower their likelihood of engaging in risky sexual behavior.

Hypothesis

A hypothesis is a tentative assumption about the relationship between variables that is tested empirically to help make research more systematic. In this study, the hypotheses are divided into two: The null hypothesis (H0) states that there is no relationship between adolescents' knowledge about HIV/AIDS and sexual behavior, while the alternative hypothesis (H$_a$) states that there is a significant relationship between adolescents' knowledge about HIV/AIDS and their sexual behavior.

METHOD

This study uses a quantitative approach to measure phenomena through numerical data, allowing for objective analysis and identification of patterns of relationships between variables. This approach was chosen because the focus of the study is the relationship between adolescent knowledge about HIV/AIDS and risky sexual behavior, and supports the use of statistical analysis to determine the significance of the relationship. The research design uses correlative analytics with a cross-sectional approach, which allows for observation of relationships between variables at a single point in time without changing the variables. Data were collected over a specific period in the working area of the Pati I Community Health Center, Pati District, Central Java, with a population of 7,999 adolescents aged 15–19 years. Then, data were analyzed to see the relationship between adolescent knowledge levels about HIV/AIDS and risky sexual behavior.

The research variables are divided into independent variables, namely the level of adolescent knowledge about HIV/AIDS, and dependent variables, namely risky sexual behavior, including premarital relations, changing partners, and not using condoms. This study took samples from adolescents aged 15–19 years who visited the Pati I Community Health Center and participated in the Youth Posyandu activities, using a purposive sampling technique based on inclusion criteria, such as willingness to be respondents and being able to understand the questionnaire instrument, as well as exclusion criteria for those who did not meet the requirements. The study was conducted in June–July 2025, with the results reported in July–August 2025, using standardized instruments such as questionnaires to obtain data that can be tested scientifically and support research replication.

The sample size is determined using the Slovin formula with an error ratio (e) of 10%:

Slovin's formula:
$$n = N / (1 + N \times e^2)$$

Information:
n = number of samples
N = population size
e = desired error rate (e.g. 0.1 for 10%

Calculation:
N = 7999
e = 0.1
n = 7999 / (1..+ 7999 ×..0.01)
n = 7999 / 80.99
n ≈ 98.8

So the number of samples used is 99 respondents, we round it up to 100 respondents. This number is considered to be sufficiently representative of the population and able to describe the relationship between knowledge about HIV/AIDS and sexual behavior among adolescents in the working area of Pati 1 Health Center. The operational definition of a variable is the elaboration of a concept into a form that can be measured and observed empirically, including indicators, measurement methods, and the scale or assessment units used, based on theory, previous research, or other relevant provisions (Notoatmodjo, 2020).

No	Variables	Operational Definition	Parameter	Measurement Results	Scale
1	Independent Variable: Knowledge about HIV/AIDS	Knowledge is the understanding of adolescents in the Pati I Community Health Center work area regarding HIV/AIDS which includes: • Definition of HIV/AIDS • signs and symptoms • mode of transmission • how to prevent HIV/AIDS. • Myths / facts about HIV / AIDS	The measuring instrument is a questionnaire. Measurement method = data is obtained by collecting the results of statements to respondents using the Guttman scale. The questionnaire contains positive and negative statements with correct and incorrect answer choices. A correct answer to a positive statement is scored 1, and a wrong answer is scored 0.	In the measurement results, the greater the total score, the greater the respondent's knowledge, then the total score for each respondent will be categorized as follows: 1. Good, if the total number of statements answered correctly by respondents is (76% - 100%) 2. Sufficient, if the total number of questions answered correctly by respondents is (56% - 75%). 3. Less, if the total number of questions answered correctly by respondents is (<56%)	Interval

| 2 | Dependent Variable: Adolescent sexual behavior | Behavior that can increase the risk of contracting HIV/AIDSincludes an action, activity or deed carried out by teenagers in the work area of Pati I Health Center who are not married and tend to carry out physical activities such as kissing, necking, touching breasts, hugging each other and even having intimate relations. | Measuring instrument in the form of a questionnaire Measurement method : Data collection is carried out by giving statements to respondents, and the Guttman scale will be used. The questionnaire contains positive and negative statements with the answer options "Yes" and "No". score 0 for choice "No" and score 1 for choice "Yes" . | Based on whether they have engaged in sexual behavior such as intercourse, groping breasts, touching sensitive areas changing partners in sexual relations | Interval |

Table 3.1 Operational Definition of Variables

The research instrument was a closed questionnaire based on the Guttman scale, with "true/false" answers for the knowledge variable and "yes/no" for the adolescent sexual behavior variable, compiled based on the theory and indicators in the operational definition (Widiastuti et al., 2022).

The following is a grid for each research variable.

no	variables	Indicator	Item No.	
			+	-
1	Knowledge about HIV/AIDS	Understanding HIV/AIDS	1.2	3.4
		How HIV/AIDS is transmitted	5,6,8	7
		HIV/AIDS Prevention	9,10,11	12
		Impact of HIV/AIDS	13,14,16	15
		HIV myths/facts	20	17,18,19
2	Risky Adolescent Sexual Behavior	Dating activities		1,2,3
		Physical touch (holding hands, hugging, kissing)		4,5,6,7
		Non-penetrative sexual behavior		8,9,10,11
		Sexual intercourse		12,13,14,15
		Knowledge and attitudes towards condoms	16,18,19	17.20

Validity and Reliability Test

Before being used in research, the questionnaire was tested for validity and reliability to ensure that the instrument was able to measure the intended variables accurately and consistently.

Validity Test

Validity testing was carried out using the "Product Moment" correlation level formula (Sugiyono, 2022):

$$r = \frac{N\sum XY - (\sum X)(\sum Y)}{\sqrt{[N\sum X^2 - (\sum X)^2][N\sum Y^2 - (\sum Y)^2]}}$$

Information:
rxy = Correlation coefficient of each item with the score
x = Question score
N = Number of subjects
Xy = Question score multiplied by total score

Reliability Test

Reliability is a measure that shows the extent to which an instrument can provide consistent results when used in repeated measurements (Notoatmodjo, 2023). The research instrument used in this study used the Guttman scale (true/false and yes/no), so the reliability test was carried out using the Spearman-Brown reliability coefficient. Spearman-Brown formula (Sugiyono, 2022):

$$r_{11} = \frac{2r_{hh}}{1 + r_{hh}}$$

Description:- r 11 = reliability coefficient of all items- r hh = correlation coefficient between the two halves of the test (split-half reliability)

Interpretation:- $r \geq 0.70 \rightarrow$ reliable instrument- $r < 0.70 \rightarrow$ less reliable instrument and needs revision.

The questionnaire trial was conducted on 30 respondents who were not included in the main research sample. The data processing techniques in this study included four main stages: editing to check the completeness and logic of the data, coding to assign numerical codes to respondents' answers, tabulating to organize the data into a frequency distribution table, and cleansing to ensure there were no data entry errors. These stages were carried out systematically to ensure the data obtained was suitable for further analysis.

Data analysis was conducted using two methods: descriptive analysis and bivariate analysis. Descriptive analysis describes the characteristics of respondents through frequency distributions and percentages of variables such as HIV/AIDS knowledge levels and adolescent sexual behavior, while bivariate analysis examines the relationship between HIV/AIDS knowledge as an independent variable and risky sexual behavior as a dependent variable using the Chi-Square (χ^2) test because both variables are ordinal categorical data.

Chi-Square Formula

Valarmathi et al. in 2024 stated that the Chi-Square formula is used to test the relationship between two categorical variables. The formula is as follows:

$\chi^2 = \Sigma \left((O_i - E_i)^2 / E_i \right)$

Information:
χ^2 = Chi-Square
O_i = Observed frequency

E_i = Expected frequency

Σ = Sum of all cells

The overall data analysis process will be carried out using IBM SPSS Statistics software version 27 (IBM Corp, 2021), which provides comprehensive, accurate, and efficient statistical analysis features to support data processing in quantitative research. This research was carried out systematically through several interrelated stages. The initial stage included research preparation, such as proposal development, questionnaire instrument development and validation, and permit applications from the university and relevant agencies. Next, a preliminary study was conducted at the Pati 1 Community Health Center for field observations and a pilot test of the questionnaire to ensure the instrument's validity and reliability. The researchers then obtained official permits from the Pati Regency Health Office and the Pati 1 Community Health Center before conducting data collection.

Data collection was conducted in June 2025 through a closed-ended questionnaire completed independently by adolescents meeting the inclusion criteria. The collected data were then processed through editing, coding, tabulation, and analysis using SPSS version 28, both descriptively and bivariately, to examine the relationship between HIV/AIDS knowledge and risky sexual behavior. The final stage was the preparation of a research report in the form of a thesis, which included the analysis, discussion, conclusions, and recommendations. This was then revised and approved by the supervisor. Research ethics are strictly adhered to to protect the rights and well-being of respondents. The principles applied include informed consent, data confidentiality and anonymity, privacy protection, and voluntary participation without coercion. Respondents are provided with complete information regarding the research's purpose, procedures, benefits, and risks, and are guaranteed the freedom to participate or withdraw at any time. The research schedule is designed to ensure each stage is structured, efficient, and within the specified timeframe.

RESULTS AND DISCUSSION

This research was conducted in the working area of Pati I Community Health Center, located at Jalan Supriyadi No. 51, Plangitan Village, Pati District, Pati Regency, Central Java Province. Pati I Community Health Center is a first-level health service facility under the Pati Regency Health Office. Geographically, this location is at coordinates 6°44′20″ South Latitude and 111°2′28″ East Longitude, with an altitude of ±20 meters above sea level, and is included in the semi-urban area. The presence of the Community Health Center in a strategic area facilitates access for adolescents who live around educational centers, public facilities, and active social environments. The working area of the Community Health Center covers 17 villages and sub-districts, such as Plangitan, Puri, Ngarus, Geritan, as well as several sub-districts in the center of Pati city. Pati I Community Health Center was chosen as the research location because it has a large population of adolescents aged 15–19, recorded at 7,999 in 2025, making it a representative location for researching knowledge and risky sexual behavior related to HIV/AIDS. Furthermore, its central location makes it easy for adolescents attending school or participating in activities such as the Youth Integrated Health Post (Posyandu Remaja) to access health services. This area is also a center of social interaction, education, and mobility for adolescents, allowing the study to evaluate the influence of the environment and exposure to health information on their sexual behavior patterns.

a. Respondent Characteristics

This study involved 100 adolescent respondents aged 15–19 years who were in the working area of Pati I Health Center. Respondent characteristics were seen based on age, gender, and educational class.

1) Age Distribution of Respondents

No	Age (years)	Frequency (n)	Percentage (%)
1	15	10	10%
2	16	20	20%
3	17	35	35%
4	18	25	25%
5	19	10	10%
	Total	**100**	**100%**

The majority of respondents were 17 years old (35%), followed by 18 years old (25%). This indicates that the majority of respondents were in the late teenage years, from middle to late adolescence.

2) **Distribution. Type..Gender of Respondents**

No	TypeSex	Frequency(n)	Percentage (%)
1 1	Men	40	40%
W 2	Women	60	60%
	Totali	**100**	**100%**

Table 4.1 Distribution of Respondents' Gender

Gender distribution shows that there are more female respondents (60%) than male respondents (40%).

3) **Distribution of Respondents' Education Class**

No	Class	Frequency (n)	Percentage (%)
1	IX	15	15%
2	X	25	25%
3	XI	30	30%
4	XII	30	30%
	Total	**100**	**100%**

Table 4.2 Distribution of Respondents' Education Classes

The majority of respondents were from grades 11 and 12, 30% each. The fact that respondents were in grades 9–12 indicates that the study also included adolescents in the final years of junior high school and senior high school, who are still in the early to middle adolescent age group.

4) **Information Exposure about HIV/AIDS**

No.	Ever Received Information	Frequency (n)	Percentage (%)
1	Yes	82	82%
2	No	18	18%
	Total	**100**	**100%**

Table 4.3 Information Exposure about HIV/AIDS

The distribution results show that the majority of respondents (82%) have received information about HIV/AIDS, but 18% of respondents have not. This indicates that although the majority of adolescents have been exposed to HIV/AIDS information, there is still a need to increase the scope of education and disseminate information more evenly among adolescents.

b. **Research results on the relationship between respondent characteristics and level of knowledge**

No	Gender	Level of education		
		Good	Enough	Not enough
1	Man	8 (19.5%)	7 (17.1%)	26 (63.4%)
2	Woman	15 (25.4%)	21 (35.6%)	23 (39.0%)

Table 4.4 Results of research on the relationship between respondent gender and level of knowledge

Adolescents' knowledge levels vary by age, with 18-year-olds having the highest percentage in the 'Good' category (37.5%), followed by 19-year-olds (28.6%). Meanwhile, the 'Poor' category was highest among

19-year-olds (57.1%) and 15-year-olds (53.8%). This suggests that increasing age does not always lead to increased knowledge, likely influenced by differences in experience, exposure to information, and educational environment.

c. **Research results on the relationship between respondent characteristics and adolescent sexual behavior**

No	Gender	Teenage behavior	
		At risk	No Risk
1	Man	19 (46.3%)	22 (53.7%)
2	Woman	39 (66.1%)	20 (33.9%)

Table 4.6 Results of research on the relationship between respondent gender and adolescent sexual behavior

Based on table 4.6 it shows that higher proportion of risky sexual behavior in women (66.1%) compared to men (46.3%). In contrast, men have greater percentage in the No Risk category (53.7%) compared to women (33.9%). Findings This may indicate that in this group of respondents, women are more involved in behavioral indicators that include risk category according to criteria used (Q2, Q8, Q9, Q10), which may be influenced by relationship factors, partner pressure, or differences openness in filling out the questionnaire.

No	Age	Teenage behavior	
		At risk	No Risk
1	15	10 (76.9%)	3 (23.1%)
2	16	12 (52.2%)	11 (47.8%)
3	17	18 (54.5%)	15 (45.5%)
4	18	14 (58.3%)	10 (41.7%)
5	19	4 (57.1%)	3 (42.9%)

Table 4.7 Results of research on the relationship between respondent age and adolescent sexual behavior

Based on the results of table 4.7, it shows that the proportion of sexual behavior The highest risk group is at the age of 15 years (76.9%), followed by aged 18 years (58.3%) and 19 years (57.1%). Meanwhile, the lowest percentage was at the age of 16 years (52.2%). This finding indicates that even though age increases, the level of risky sexual behavior does not always decrease. This is possibly influenced by environmental factors social interactions, emotional maturity, and the influence of peers can influence adolescent sexual behavior.

d. **Univariate Research Results – Knowledge of HIV/AIDS**

No	Statement	Correct f (%)	Wrong f (%)
1	HIV is a virus that attacks the human immune system.	85 (85%)	15 (15%)
2	People who appear healthy can still have HIV.	80 (80%)	20 (20%)
3	HIV can be transmitted through sexual intercourse without a condom.	83 (83%)	17 (17%)
4	Sharing needles can transmit HIV.	90 (90%)	10 (10%)
5	HIV can be transmitted from Mother to children during pregnancy, childbirth, or breastfeeding.	78 (78%)	22 (22%)
6	Being faithful to one sexual partner can reduce the risk of HIV.	75 (75%)	25 (25%)
7	It is important to get tested for HIV regularly.	70 (70%)	30 (30%)

8	Washing the syringe with plain water is enough to prevent HIV.	20 (20%) 80 (80%)
9	HIV/AIDS can cause death if left untreated.	88 (88%) 12 (12%)
10	Hugging someone with HIV can cause HIV transmission.	18 (18%) 82 (82%)

Table 4.8 Distribution Frequency of Adolescent Knowledge Statements about HIV/AIDS (n=100

No.	Knowledge Category	Frequency (n)	Percentage (%)
1	Good	23	23%
2	Enough	28	28%
3	Not enough	49	49%
	Total	**100**	**100%**

Table 4.9. Distribution of Categories of Knowledge Levels about HIV/AIDS (n=100)

The majority of respondents were classified as having poor knowledge (49%), followed by sufficient (28%) and good (23%). However, they were quite knowledgeable about the definition and main transmission routes of HIV, as evidenced by their correct answers to positive statements such as "Sharing needles can transmit HIV" (90%), "HIV/AIDS can cause death if left untreated" (88%), and "HIV attacks the immune system" (85%). However, several misconceptions persisted, particularly in negative statements, such as "Washing syringes with plain water is sufficient to prevent HIV" (20%) and "Hugging someone living with HIV can cause HIV transmission" (18%), indicating the need for further education to improve adolescents' understanding. These results highlight the need for more comprehensive and sustainable educational initiatives in the service area of Pati I Community Health Center, particularly to dispel myths and increase knowledge about HIV/AIDS transmission prevention.

4. **Univariate Research Results – Risky Sexual Behavior in Adolescents**

No	Statement	Yes f(%)	No f(%)
1	I once went out with my girlfriend without anyone else accompanying me.	60 (60%)	40 (40%)
2	I once stayed overnight with my boyfriend	20 (20%)	80 (80%)
3	I once held hands with my boyfriend	65 (65%)	35 (35%)
4	I once had a passionate hug with my boyfriend	55 (55%)	45 (45%)
5	I once kissed my boyfriend	50 (50%)	50 (50%)
6	I was once asked to touch my girlfriend's sensitive body parts.	35 (35%)	65 (65%)
7	I was once touched by my boyfriend on a sensitive part of my body	32 (32%)	68 (68%)
8	I was once asked to touch/grope my girlfriend's breasts	28 (28%)	72 (72%)
9	I have had sexual intercourse (penetration)	18 (18%)	82 (82%)
10	I have had sexual relations with more than one partner	12 (12%)	88 (88%)

Table 5.0 Frequency Distribution of Adolescent Risky Sexual Behavior (n=100)

Based on Table 4.6, risky sexual behavior among adolescents shows variation across indicators, with the highest percentage of "Yes" responses for the indicator of ever holding hands with a boyfriend or girlfriend (65%), followed by walking together unaccompanied (60%) and hugging intimately with a boyfriend or girlfriend (55%), indicating mild physical closeness but still an intimate interaction. High-risk sexual behaviors such as penetrative sexual intercourse (18%) and having more than one partner (12%) were relatively low, while mild physical affection behaviors such as kissing (50%) and touching sensitive body parts (35%) were more common. Intermediate activities, such as staying overnight with a boyfriend or girlfriend (20%), have the potential to become a bridge to more intimate sexual behavior if not accompanied by adequate self-control and education. These findings emphasize the importance of comprehensive education that emphasizes not only prevention of sexual intercourse, but also awareness of the boundaries of safe physical interactions to reduce risks to reproductive health and disease transmission.

No.	Category	Frequency (f)	Percentage (%)
1	No risk	45	45%
2	Risky	55	55%
	Total	**100**	**100%**

Table 5.1. Categories of Adolescents' Free Sexual Behavior (n=100)

Based on table 4.8, it is known that the majority of respondents, namely 55%, are in the risk category in terms of free sex behavior. Meanwhile, 45% of respondents are in the non-risk category. From this data, more than half of the adolescents in the research area have a tendency to engage in sexual behavior that can pose a risk to reproductive health, so that continuous educational interventions and guidance are needed to reduce this number.

5. Bivariate Research Results

Chi-Square Tests			
	Value	df	Asymptotic Significance(2-sided)
Pearson Chi-Square	3.945a	2	.01
Likelihood Ratio	4,058	2	.11
Linear-by-Linear Association	1,037	1	.25
N of Valid Cases	100		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 9.66.

Table 5.2 Relationship between Knowledge of HIV/AIDS and Sexual Behavior of Adolescents in the Pati I Community Health Center Work Area (n=100) Based on the results of the Chi-Square analysis, a p-value of 0.031 (<0.05) with a correlation coefficient of 0.215 was obtained, which indicates a statistically significant relationship between adolescent sexual behavior and their level of knowledge about HIV/AIDS in the working area of Pati I Health Center. The data shows that 55% of adolescents are included in the category of risk of engaging in sexual behavior, while the other 45% are classified as not at risk. This indicates that more than half of the adolescent population in the study area has the potential to engage in behavior that can endanger reproductive health, so that ongoing educational interventions and coaching are needed to reduce these risks.

The low level of knowledge among adolescents about HIV/AIDS, reflected in the many incorrect answers regarding transmission methods and symptoms of infection, is thought to be influenced by limited access to information, minimal routine counseling, limited educational materials, and the influence of the social environment and media. High-risk sexual behaviors, such as hugging, kissing, and sexual intercourse, are also associated with these factors. Spearman's correlation analysis (r = 0.215; p = 0.031) confirmed that lower

knowledge leads to higher risky sexual behaviors, although the correlation is weak. Therefore, recommended intervention strategies include regular counseling in schools, integration of HIV/AIDS materials into the curriculum, strengthening skills to avoid risky behaviors, and utilizing digital media to disseminate accurate information, while taking into account research limitations related to methods, respondent coverage, and external factors that have not been thoroughly analyzed.

CONCLUSION

Based on the results of research conducted on 100 adolescent respondents in the Pati I Community Health Center work area, the following conclusions were obtained:

1. Adolescents' knowledge levels about HIV/AIDS ranged from poor (49%), sufficient (28%), and good (23%). This indicates that there remains a significant information gap regarding HIV/AIDS among adolescents.
2. The majority of respondents (55%) engaged in risky sexual behavior, while 45% were in the non-risk category. Risky sexual behaviors included activities such as hugging, kissing, and premarital sex.
3. Spearman's correlation test results showed a significant relationship between the level of knowledge about HIV/AIDS and adolescent sexual behavior (p-value = 0.031; r = 0.215). The positive correlation indicates that the lower adolescents' knowledge about HIV/AIDS, the higher their tendency to engage in risky sexual behavior.

SUGGESTION

1. **For Community Health Centers and Health Workers**
   There is a need to increase routine, interactive, and evidence-based reproductive health and HIV/AIDS prevention education programs, especially for adolescents, to improve knowledge and prevent risky sexual behavior.
2. **For Schools**
   It is recommended to establish more intensive cooperation with health facilities in implementing reproductive health education at least twice a year and actively involving students.
3. **For Further Researchers**
   Further research is expected to expand the scope of the region, increase the number of respondents, and include other variables such as the influence of social media, the role of parents, and environmental factors to obtain a more comprehensive picture.

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