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## **THE RELATIONSHIP BETWEEN ADOLESCENTS REPRODUCTIVE HEALTH KNOWLEDGE AND PERSONAL HYGIENE ATTITUDES AND THE RISK OF SEXUALLY TRANSMITTED INFECTIONS (STIS) IN KEDUNG JAYA VILLAGE, BABELAN, IN 2025**

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### **Abstract**

Sexually Transmitted Infections (STIs) are a reproductive health problem that remains prevalent among adolescents and is influenced by various factors, including reproductive health knowledge and personal hygiene practices. According to data from the Babelan Community Health Center (Puskesmas) (2023), approximately 20% of the 15,000 reproductive-age population in Kedung Jaya Village, Babelan District, Bekasi City, reported mild STI symptoms. Therefore, this research is expected to provide a basis for developing reproductive health education programs and fostering personal hygiene behaviors for adolescents as an STI prevention effort. Methods this study employed a cross-sectional method, a research design that involves observations or measurements of both variables at the same time. In this study, the relationship between variables was analyzed using the Chi-Square test to determine whether there is a significant relationship between the independent and dependent variables. Results based on the Chi-Square test, the Asymp. Sig. (p-value) was 0.000 ( $p < 0.05$ ), indicating a significant relationship between personal hygiene attitudes in adolescents and the risk of sexually transmitted infections (STIs). Therefore, personal hygiene attitudes are an important factor in reducing the risk of STIs in adolescents. Conclusions and recommendations the results of the relationship analysis indicate a tendency that low levels of reproductive health knowledge are followed by a higher risk of sexually transmitted infections (STIs). Most respondents were in mid-adolescence, specifically between the ages of 14 and 16, which is a critical phase in the formation of knowledge, attitudes, and behaviors related to reproductive health. It is hoped that there will be increased reproductive health education and fostering personal hygiene attitudes among adolescents as an effort to prevent sexually transmitted infections (STIs).

**Keywords:** Adolescents, Reproductive Health Knowledge, Personal Hygiene Attitudes, Sexually Transmitted Infections (STIs)

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## INTRODUCTION

Adolescent growth is a period of transition from children to adults, which is characterized by physical, cognitive, and social changes that occur rapidly. At this stage, adolescents have not fully reached mental and social maturity, so they are vulnerable to internal and external pressure. This condition makes them more susceptible to engaging in risky behaviors, including unsafe sexual behavior. Factors such as peer influence, evolving social roles, and limited access to information often drive risky decision-making for reproductive health (Yamani et al., 2025).

Adolescent growth is closely related to the level of knowledge about reproductive health that can shape adolescent attitudes and behaviors in efforts to prevent Sexually Transmitted Infections (STIs). Several studies in Indonesia show that low knowledge is related to unhealthy reproductive practices. On the other hand, the provision of reproductive health education has been proven to be able to increase adolescents' knowledge and positive attitudes towards reproductive health issues. Thus, the level of knowledge can be used as one of the indicators of the success of the STI prevention program (Adjie et al., 2022).

In addition to the knowledge aspect, adolescents' attitudes towards personal hygiene also play a role in influencing the risk of STIs. The habit of maintaining personal hygiene, especially in the reproductive organs, is closely related to infection prevention. Previous research has shown a significant association between personal hygiene behaviors and the incidence of sexually transmitted diseases in adolescents. This shows that the aspect of personal hygiene needs to be a major concern in STI prevention strategies (Mariani et al., 2021).

Adolescents aged 15 to 24 years are among the most vulnerable groups to STIs. This is due to several things, such as changes in the body, early sexual activity, limited access to information about reproductive health, and the stigma of talking about sexual topics. In Indonesia, reports from health programs show an increase in STI cases in adolescents, making it a major concern in efforts to develop adolescent reproductive health.

However, adolescents' level of understanding of reproductive health and STIs is still low. The Indonesian Demographic and Health Survey (SDKI)

states that adolescents do not understand in depth, especially about how STIs are transmitted and how to prevent them. This low understanding is closely related to the high risk of engaging in unsafe sexual behavior, which has the potential to make adolescents more susceptible to STIs (Rahayu & Elliana, 2022).

Sexually Transmitted Infections (STIs) are diseases that can be transmitted through sexual intercourse. Either through the vagina, rectum, or mouth. STIs can be caused by bacteria, such as gonorrhea or syphilis, fungi, viruses, such as herpes or HIV, or even parasites. Like a tick. STIs can occur in both men and women. This infection attacks the reproductive organs and needs to be taken seriously. If not treated properly, STIs can spread, cause prolonged pain, and even cause impaired fertility (Citasi: Wedayani et al., 2024). In 2022, the WHO stated that more than 1 million people in the world had STIs. In 2020, WHO reported that there were 374 million new cases of infection, with 1 in 4 major STIs being chlamydia (129 million), syphilis (7.1 million), trichomoniasis (156 million), and gonorrhea (82 million) (Putri Osamanita et al., n.d. 2024).

In addition, the 2018 Basic Health Research (Riskesmas) survey revealed that 12.5% of Indonesian adolescents have low knowledge about reproductive health, which contributes to high-risk behaviors such as unprotected sexual intercourse.

In West Java Province, including Bekasi City, data from the West Java Health Office (2022) recorded an increase in syphilis cases by 15% in 2021 compared to the previous year, Bekasi as one of the vulnerable areas due to rapid urbanization and high population mobility. Especially in Kedung Jaya Village, Babelan District, Bekasi City, the current condition shows serious challenges. Based on data from the Babelan Health Center (2023), about 20% of the 15,000 people of reproductive age report mild STIs symptoms, although the actual figure is likely higher due to stigma and lack of regular checkups. The main contributing factors are low reproductive health knowledge (KRR) and suboptimal personal hygiene attitudes, where a local survey by the Bekasi City Health Office (2022) found that only 45% of adolescents in Babelan have adequate knowledge about STI prevention, while 60% admitted that they

rarely practice personal hygiene such as washing hands or using condoms consistently.

The current condition in Kedung Jaya Village, Babelan District reflects a broader problem such as the Bekasi area, where industrialization and migration of young workers lead to changes in sexual behavior patterns. Many residents, especially factory workers and college students, live in densely populated settlements that facilitate the spread of STIs through unsafe sexual contact. Low reproductive health knowledge is often due to a lack of school and family education, while weak personal hygiene attitudes such as neglect of genital hygiene increase susceptibility to bacterial and viral infections. A national study by the Health Research and Development Agency (Balitbangkes, 2020) showed a positive correlation between low KRR knowledge and the risk of STIs up to 2.5 times, and poor hygiene attitudes increased the risk of secondary infections such as candidiasis.

This research needs to be conducted because of the significant local data gap. Although there are national efforts such as the STI Prevention Program through Reproductive Health Education (Ministry of Health of the Republic of Indonesia, 2023), its implementation at the village level such as Kedung Jaya is still minimally evaluated. The main reason for this study was to identify specific relationships between reproductive health knowledge, personal hygiene attitudes, and STI risk, so that it can be the basis for evidence-based interventions, such as community education programs or hygiene campaigns. Without this research, prevention efforts would be general and less effective, potentially exacerbating the public health burden. On the other hand, the results of the research can support the achievement of Sustainable Development Goals (SDGs) number 3 on health and welfare, especially the target of reducing STIs by 90% by 2030. Thus, this research is not only academically relevant, but also contributes to improving the quality of life of the residents of Babelan and Bekasi Villages as a whole.

## METHODS

### Study design and setting

This study is a quantitative research using an analytical descriptive study design that aims to describe the relationship between independent

variables and dependent variables. This study uses a cross-sectional method, which is a research design that conducts observations or measurements at the same time for both variables. In this study, the analysis of the relationship between variables was carried out by checking or testing using the Chi-Square test to find out whether or not there is a significant relationship between independent variables and dependent variables. The research site is in Kedung Jaya Village, Babelan District with the research time to be carried out in December 2025 – January 2026.

### Population and Sample

Population is the entire object of research to be studied (Notoatmodjo, 2018). The population in this study is adolescents in Kedung Jaya Village, Babelan as many as 1,374 people.

A sample is a part of a population that has certain characteristics and is considered to be representative of the population (Notoatmodjo, 2018). The number of samples in this study was determined using the Slovin formula with an error rate of 10%. The sample was rounded up to 94 respondents.

### Instrument

#### 1. Data Collection Methods

The data collection method used in this study is data collection using an online questionnaire. The researcher provided a link to a google form and contained an approval sheet to respondents who had met the inclusion and exclusion criteria. Each respondent was asked to agree to an agreement sheet. After agreeing to the consent sheet, respondents were redirected to the questionnaire page by filling out a questionnaire on the level of knowledge of reproductive health and personal hygiene attitudes with the risk of sexually transmitted infections (STIs). The data obtained by the researcher based on questionnaires that have been filled out by the respondents are collected and processed for the results of the research conducted.

#### 2. Data Collection

In this study, the data collection tool used was a questionnaire. The data collection tools in this study are described as follows:

##### a. Respondent demographic data

This data contains the identity of the respondents, namely the identity of adolescents which includes initials of name, age, and gender.

- b. Reproductive health knowledge questionnaire  
The questionnaire used to measure the level of knowledge about reproductive health is a questionnaire containing 10 statements about reproductive health. Respondents were asked to choose true or wrong from the statement. If the answer is correct or according to the answer key, it is given a score of 1, if it is wrong or does not match the key, it is given a score of 0. The answer score of each respondent is summed and then calculated and the results are obtained in the form of percentages.
- c. Personal hygiene attitude questionnaire in adolescents
- d. Questionnaire on the risk of successful infectious infections

**Procedure**

The data obtained in the research is then processed through several stages as follows:

1. Data Checking (Editing). Conducting data processing, checking completeness, recording the results of research that has been carried out
2. Coding. It is done to facilitate data processing, namely to provide a symbol of each questionnaire that has been filled out by the respondent so that it can be more concise.
3. Entry data. Enter the data that has been collected using a computer program.
4. Data tabulation. At this stage, the data is then

grouped based on the variables that have been researched and entered into the computer to be processed/tabulated computerized using SPSS (Statistical Product And Service Solution).

**Data analysis**

1. Unvarnished Analysis  
Univariate analysis was carried out on each variable from the research results. In general, this analysis only produces the distribution and presentation of each variable (Notoatmodjo Soekidjo, 2018). The data obtained from the analysis in univariate is explained by each variable.
2. Bivariate Analysis  
This analysis was admitted to find out whether or not there is a relationship between reproductive health knowledge and personal hygiene attitudes in adolescents with the risk of sexually transmitted infections in Kedung Jaya village, Babelan District. To prove the relationship between the two variables, a statistical test was carried out using the Chi Square test with a significant level of  $\alpha=0.05$  or a confidence level of 95%.

**RESULTS AND DISCUSSION**

**Univariate Analysis**

Table 1. Distribution of Respondent Frequency Based on Demographic Data

	<b>RESPONDENT CHARACTERISTICS</b>	<b>FREQUENCY</b>	<b>INTRODUCE YOURSELF</b>
Gender	MALE	46	48,9
	WOMEN	48	51,1
	<b>Total</b>	<b>94</b>	<b>100,0</b>
Age	14	18	19,1
	15	19	20,2
	16	13	13,8
	17	10	10,6
	18	17	18,1
	19	17	18,1
	<b>Total</b>	<b>94</b>	<b>100,0</b>

Based on the respondent characteristics table, it is known that the number of respondents is 94 people, with a relatively balanced gender to 46 people (48.9%), so it can be concluded that female respondents are slightly more dominant than men.

distribution. Female respondents amounted to 48 people (51.1%), while male respondents amounted

to 46 people (48.9%), so it can be concluded that female respondents are slightly more dominant than men.

Table 2. Distribution of respondents by level of knowledge of reproductive health

KNOWLEDGE	FREQUENCY	INTRODUCE YOURSELF
LESS	15	16,0
ENOUGH	24	25,5
GOOD	55	58,5
<b>Total</b>	<b>94</b>	<b>100,0</b>

Judging from the level of knowledge, most of the respondents had good knowledge, namely 55 people (58.5%). Respondents with sufficient

knowledge amounted to 24 people (25.5%), while respondents with less knowledge were the least, namely 15 people (16.0%).

Table 3. Distribution of respondents based on personal hygiene attitudes

PERSONAL HYGIENE ATTITUDE	FREQUENCY	INTRODUCE YOURSELF
LESS	23	24,5
ENOUGH	34	36,2
GOOD	37	39,4
<b>Total</b>	<b>94</b>	<b>100,0</b>

In the attitude variable, the majority of respondents had a good attitude as many as 37 people (39.4%). Respondents with a moderate attitude amounted to 34 people (36.2%), while

respondents with a less attitude amounted to 23 people (24.5%), so it can be concluded that most of the respondents showed a positive attitude.

Table 4. Distribution of respondents based on the risk of sexually transmitted infections

STI RISK	FREQUENCY	INTRODUCE YOURSELF
HEIGHT	20	21,3
MEDIUM	39	41,5
LOW	35	37,2
<b>Total</b>	<b>94</b>	<b>100,0</b>

Based on the risk category of Sexually Transmitted Infections (STIs), respondents with moderate risk were the largest group, namely 39 people (41.5%). Furthermore, respondents with low risk amounted to 35 people (37.2%), while

respondents with high risk were the fewest at 20 people (21.3%).

### Bivariate Analysis

Table 5. The Relationship between Reproductive Health Knowledge and the Risk of Sexually Transmitted Infections (STIs) in Kedung Jaya Village, Babelan in 2025

REPRODUCTIVE HEALTH KNOWLEDGE	RISK OF SEXUALLY TRANSMITTED INFECTIONS						Total	Asymp. Sig( 2 Sided)	
	HEIGHT		MEDIUM		LOW				
	N	%	N	%	N	%			
LESS	5	33%	9	60%	1	7%	15	100%	0,000
ENOUGH	13	54%	10	42%	1	4%	24	100%	
GOOD	2	4%	20	36%	33	60%	55	100%	
<b>Total</b>	<b>20</b>	<b>21%</b>	<b>39</b>	<b>41%</b>	<b>35</b>	<b>37%</b>	<b>94</b>	<b>100%</b>	

Based on the table of the relationship between reproductive health knowledge and the risk of Sexually Transmitted Infections (STIs), it is known that respondents with lack of knowledge are mostly in the medium risk category, namely 9 people (60%), followed by high risk as many as 5 people (33%), and low risk as many as 1 person (7%). This suggests that low knowledge tends to be followed by a higher risk of STIs.

In respondents with sufficient knowledge, most were in the high-risk category, namely 13 people (54%), followed by medium risk as many as 10 people (42%), and low risk as many as 1 person (4%). This condition illustrates that suboptimal knowledge is still related to the high risk of STIs in adolescents.

Table 6. The Relationship of Personal Hygiene Attitudes in Adolescents with the Risk of Sexually Transmitted Infections (STIs) in Kedung Jaya Village, Babelan in 2025

PERSONAL HYGIENE ATTITUDES IN ADOLESCENTS	RISK OF SEXUALLY TRANSMITTED INFECTIONS						Total	Asymp. Sig( 2 Sided)
	HEIGHT		MEDIUM		LOW			
	N	%	N	%	N	%		
LESS	17	74%	4	17%	2	9%	23	100%
ENOUGH	2	6%	23	68%	9	26%	34	100%
GOOD	1	3%	12	32%	24	65%	37	100%
<b>Total</b>	<b>20</b>	<b>21%</b>	<b>39</b>	<b>41%</b>	<b>35</b>	<b>37%</b>	<b>94</b>	<b>100%</b>

Based on the table of the relationship between personal hygiene attitudes in adolescents and the risk of Sexually Transmitted Infections (STIs), it is known that respondents with less personal hygiene attitudes are mostly in the high-risk category, namely 17 people (74%), followed by moderate risk as many as 4 people (17%), and low risk as many as 2 people (9%). This shows that poor personal hygiene attitudes are associated with an increased risk of STIs.

Among respondents with sufficient personal hygiene attitudes, the majority were in the medium risk category, namely 23 people (68%), followed by low risk as many as 9 people (26%), and high risk as many as 2 people (6%). This condition illustrates that an adequate personal hygiene attitude still has the potential to pose a moderate risk of STIs.

Meanwhile, respondents with good personal hygiene attitudes were mostly in the low-risk category, namely 24 people (65%), followed by medium risk as many as 12 people (32%), and only

1 person (3%) were in the high-risk category. This shows that the better the personal hygiene attitude, the lower the risk of STIs.

Meanwhile, the majority of respondents with good knowledge were in the low-risk category, namely 33 people (60%), followed by medium risk as many as 20 people (36%), and only 2 people (4%) were in the high-risk category. This suggests that the better the knowledge of reproductive health, the lower the risk of STIs.

Based on the results of the Chi-Square test, an Asymp value was obtained. Sig (p-value) = 0.000 (p < 0.05), which indicates that there is a significant relationship between reproductive health knowledge and the risk of Sexually Transmitted Infections (STIs) in adolescents in Kedung Jaya Village, Babelan in 2025. Thus, reproductive health knowledge plays an important role in lowering the risk of STIs in adolescents.

Based on the results of the Chi-Square test, an Asymp value was obtained. Sig (p-value) = 0.000 (p < 0.05), which indicates that there is a significant relationship between personal hygiene attitudes in adolescents and the risk of Sexually Transmitted Infections (STIs). Thus, personal hygiene is an important factor in reducing the risk of STIs in adolescents.

Based on the results of the Chi-Square test, an Asymp value was obtained. Sig (p-value) = 0.000 (p < 0.05), which indicates that there is a significant relationship between personal hygiene attitudes in adolescents and the risk of Sexually Transmitted Infections (STIs). Thus, personal hygiene is an important factor in reducing the risk of STIs in adolescents.

## Discussion

### Univariate Analysis

#### a. Reproductive Health Knowledge

Judging from the level of knowledge, most of the respondents had good knowledge, namely 55 people (58.5%), followed by respondents with sufficient knowledge as many as 24 people (25.5%), and 15 people (16.0%) with poor knowledge. This condition shows that the

majority of adolescents in this study already have a good understanding of reproductive health, which can be influenced by the developmental stage of adolescents who are at the age of 14–19 years. According to adolescents, they are in a transition period characterized by physical, psychological, and cognitive maturity, so that the ability to receive, understand, and process information has developed well. Octavia Shilphy A (2020),

In line with the opinion, adolescents have a high sense of curiosity and are in the phase of searching for self-identity, so they are more active in seeking information, including related to reproductive health. In addition, the cognitive development of adolescents who have been able to think abstractly and logically allows adolescents to understand the concepts of reproductive health more deeply. Farhana (2025),

b. Personal hygiene attitude

In the attitude variable, most respondents showed a good attitude, namely 37 people (39.4%), followed by respondents with a sufficient attitude as many as 34 people (36.2%), and respondents with a poor attitude as many as 23 people (24.5%). These findings show that the majority of adolescents already have a positive attitude towards personal hygiene and reproductive health.

According to a high sense of curiosity and the process of self-identity search in adolescents, it encourages the formation of a more open attitude towards health information, including personal hygiene and reproductive health. In addition, it states that attitudes are influenced by cognitive, affective, and conative components, which develop with age and individual experience. Thus, the high proportion of respondents with good attitudes reflects that most adolescents are at a developmental stage that allows the formation of positive attitudes, although there are still respondents with less attitudes who need attention through health education and attitude coaching on an ongoing basis. Farhana Salsabila (2025), Azwar (2019)

c. STI Risks

Based on the results of the study, most of the respondents were in the medium risk category of STIs, which was 39 people (41.5%), followed by respondents with low risk as many as 35 people (37.2%), while respondents with high risk amounted to 20 people (21.3%). This condition shows that the majority of adolescents are in the vulnerable phase of risky behavior, but are not yet fully at high risk.

These findings are in line with the theory of adolescent development which states that adolescence is a transition period from children to adults characterized by physical, emotional, and cognitive changes as well as high curiosity, including sexuality. In mid and late adolescence, individuals begin to seek self-identity, engage in relationships with the opposite sex, and have increased sexual drive, but are not yet fully balanced with mature self-control and understanding. (Octavia Shilphy A., 2020)

**Bivariate Analysis**

**The Relationship between Reproductive Health Knowledge and the Risk of Sexually Transmitted Infections (STIs) in Kedung Jaya Village, Babelan in 2025**

This is in line with the theory of knowledge put forward by , which states that knowledge is a cognitive domain that plays a major role in shaping a person's attitudes and behaviors. Individuals with good knowledge tend to have the ability to understand risks, assess consequences, and make more rational decisions regarding health behaviors. Notoatmodjo Soekidjo (2018)

The findings in this study also support the results of previous research which stated that low reproductive health knowledge is related to an increased risk of Sexually Transmitted Infections in adolescents. Research by shows that adolescents' lack of understanding of reproductive function, how STIs are transmitted, and efforts to prevent them is one of the main factors in the increase in STIs cases among adolescents. Matahari Ratu & Utami Fitriana Putri (2021),

Based on the table of the relationship between reproductive health knowledge and the risk of Sexually Transmitted Infections (STIs), it is known that respondents with lack of knowledge are mostly in the medium risk category, namely 9

people (60%), followed by high risk as many as 5 people (33%), and low risk as many as 1 person (7%).

### **The Relationship of Personal Hygiene Attitudes in Adolescents with the Risk of Sexually Transmitted Infections (STIs) in Kedung Jaya Village, Babelan in 2025**

The results of this study support the attitude theory put forward by , which states that attitude is a behavioral predisposition formed from cognitive, affective, and conative components, so that attitude will affect a person's tendency to act. In the context of personal hygiene, a positive attitude reflects the awareness, acceptance, and readiness of adolescents to maintain personal hygiene, especially the cleanliness of the reproductive organs. (Azwar, 2019)

The findings of this study are in line with several previous studies that showed that poor personal hygiene is associated with reproductive health disorders. Research shows that low knowledge and practice of genital hygiene is related to the incidence of pathological vaginal discharge in adolescent girls, which is one of the early indicators of reproductive health disorders. In addition, research proves that attitude has a significant relationship with menstrual personal hygiene behavior, which suggests that attitude plays an important role in reproductive hygiene practices. Another study at SMA Negeri 03 Bengkulu City also found a significant relationship between personal hygiene and the incidence of vaginal discharge, so the results of this study expand on previous findings by directly linking personal hygiene attitudes to the risk of STIs. Ilmiawati et al., (2017) Widarini et al., (2022) Peronika et al., (2022)

Based on the results of the analysis of the table of the relationship between personal hygiene attitudes in adolescents and the risk of Sexually Transmitted Infections (STIs), it is known that respondents with poor personal hygiene attitudes are mostly in the high-risk category, namely 17 people (74%), followed by medium risk as many as 4 people (17%), and low risk as many as 2 people (9%). Among respondents with sufficient personal hygiene attitudes, the majority were in the medium risk category, namely 23 people (68%), followed by low risk as many as 9 people (26%), and high risk as many as 2 people (6%). Meanwhile, respondents

with good personal hygiene attitudes were mostly in the low-risk category, namely 24 people (65%), followed by moderate risk as many as 12 people (32%), and only 1 person (3%) were in the high-risk category, which shows that the better the personal hygiene attitude in adolescents, the lower the risk of STIs.

### **Conflict of interest**

All authors declare no conflict of interest.

### **Availability of data and materials**

A confidentiality agreement with participants prevents us from sharing the data, therefore, dataset cannot be shared.

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