

THE IMPACT OF PERSONAL HYGIENE BEHAVIOR ON VAGINAL DISCHARGE INCIDENCE AMONG ADOLESCENT GIRLS AT JUNIOR HIGH SCHOOL 29 SURABAYA IN 2023

Rani Siti Nur'aini¹, Eighty Mardiyani Kurniawati², Budi Utomo³

¹Midwifery Study Program, Faculty of Medicine, Universitas Airlangga, Indonesia.

²Department of Obstetrics & Gynecology, Faculty of Medicine, Universitas Airlangga, Indonesia.

³Department of Public Health, Preventive Medicine, Faculty of Medicine, Universitas Airlangga, Indonesia.

ABSTRACT

The teenage years are a period of rapid growth and development. Adolescence is a period of rapid growth and development, especially in the reproductive system. Many teenagers do not receive adequate knowledge about how to care for their reproductive organs because it is still considered taboo, so some teenagers may experience problems with their reproductive organs. A common issue faced by teenagers is leucorrhea. Leucorrhea is one of the problems that can arise due to the lack of knowledge among teenagers about maintaining reproductive health. Leucorrhea can develop into a serious problem if the care of the reproductive organs is not appropriately managed. This observational analytical study utilizes quantitative methods with a cross-sectional research design. The population was female Junior High School (SMPN) students 29 Surabaya. The sample was selected using purposive sampling. Data analysis employed univariate and bivariate methods, with the Chi-Square Test used for statistical analysis. The findings indicated that 78.8% of respondents experienced physiological vaginal discharge, 17.7% had pathological vaginal discharge, and 3.5% reported never having vaginal discharge. Statistical analysis revealed a significant relationship between personal hygiene and the incidence of vaginal discharge, with a p-value of 0.001. The research demonstrated a clear relationship between personal hygiene and the incidence of vaginal discharge. Educating adolescents about reproductive health and proper care for reproductive organs can help reduce the incidence of vaginal discharge among girls.

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Corresponding author

Eighty Mardiyani Kurniawati
 eighty-m-k@fk.unair.ac.id
Department of Obstetrics & Gynecology, Faculty of Medicine, Universitas Airlangga, Indonesia.

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Highlights:

1. Five of the fifteen students in this study who had pathological leukorrhea had good personal hygiene practices, three had adequate personal hygiene, and seven had poor personal hygiene.
2. The prevalence of pathological leucorrhea is higher among students aged 15 and older (nine students in total).

3. Because poor cleanliness impacts the moisture in the reproductive organs, there is a connection between leucorrhea and personal hygiene. This can promote the growth of fungus and bacteria, causing issues with the reproductive organs, including leucorrhea.

INTRODUCTION

Adolescence is a dynamic developmental phase in an individual's life. It is a transition period from childhood to adulthood, characterized by rapid physical, mental, and emotional development¹. The World Health Organization (WHO) defines adolescence as 12 to 24, while the Indonesian Ministry of Health specifies this range as 10 to 19².

Significant changes occur during adolescence, particularly in the reproductive system³. Many teenagers may lack knowledge about maintaining good reproductive health, which is crucial for overall well-being in both women and men. Additionally, reproductive health can impact the health of infants, children, adolescents, and individuals beyond their reproductive years⁴.

Research conducted by the World Health Organization (WHO) on reproductive health indicates that 75% of women will experience vaginal discharge at least once in their lifetime, with 45% encountering this issue two or more times⁵.

In Indonesia, data from 2012 shows that 43.3 million teenagers aged 15-24 engage in unhealthy behaviors. Among the 23 million young women in this age group, 83% have had sexual intercourse, thereby increasing their chances of experiencing premenstrual syndrome (PMS), which is one of the causes of vaginal discharge⁶. Research highlights that vaginal discharge is the second most common reproductive health issue after menstrual disorders that occur during adolescence⁷.

Reproductive health is a state of complete physical, mental, and social well-being, not just the absence of disease or disability. It encompasses freedom in all matters related to the reproductive system, function, and processes⁸. Maintaining reproductive organ health starts with personal hygiene, including vaginal hygiene, which aims to keep the vagina clean, normal, healthy, and free from the possibility of disease⁹.

Personal hygiene, derived from the Greek words for "individual" (personal) and "healthy" (hygiene), is crucial for overall health⁴. Poor personal hygiene can lead to infections, particularly in the reproductive organs¹⁰.

One common symptom of such diseases is vaginal discharge, which refers to fluid that exits the vagina (other than blood) and may be unusual in odor or consistency, often accompanied by localized itching¹¹. Furthermore, leucorrhea and inadequate personal hygiene can contribute to mental issues, including tension and anxiety, as well as discomfort from odor and itching that interferes with day-to-day activities¹².

A healthy vaginal discharge serves as a lubricant and protection. The body may effectively resist unwanted foreign items with the help of vaginal mucus¹³. Nevertheless, some leucorrhea symptoms can be morbid because they produce moisture in the vaginal area, which causes itching and irritation that interferes with all activities, particularly sexual ones, and makes them less comfortable¹⁴.

Research conducted by Ratna Indriyani, Yuli Indriyawati, and Iva Gamar Dian Pratiwi in 2012 regarding the relationship between personal hygiene and vaginal discharge among female students at Ma Al-Hikmah Aeng Deke Bluto. This research used a cross-sectional approach with a sample size of 63 respondents. After analyzing the data using the contingency coefficient, it was found that there was a relationship between personal hygiene and the incidence of vaginal discharge¹⁵.

Preliminary research at Junior High School (SMP) Negeri 29 Surabaya involved interviews with 10 female students. The findings showed that 8 of them had experienced vaginal discharge. Of these, seven students reported experiencing vaginal discharge both before and after menstruation and described the discharge as usual—neither excessive nor itchy. In contrast, one student reported experiencing smelly vaginal discharge accompanied by itching, while two students stated they had never experienced vaginal discharge.

SMP Negeri 29 Surabaya was chosen as the research site because adolescent girls are particularly vulnerable to experiencing vaginal discharge, especially at the junior high school level, which coincides with early adolescence. Significant changes mark this period as individuals transition from childhood to adulthood. During adolescence, there is an acceleration in the development of reproductive organs, commonly referred to as puberty¹⁶. This stage includes the onset of menarche or menstruation, which can leave young girls unsure of how to care for their reproductive health properly. Consequently, they are more susceptible to experiencing vaginal discharge.

Based on these considerations, the author intends to conduct research in 2023

on the relationship between personal hygiene and the incidence of vaginal discharge among adolescent girls at SMP Negeri 29 Surabaya.

MATERIALS AND METHODS

The research was conducted using an analytical survey, specifically observational analytics. It employs a cross-sectional research design to examine the relationship between personal hygiene and the incidence of vaginal discharge. In this design, both the independent variable (risk factor) and dependent variable (effect) are measured simultaneously at a single point in time to explore their relationship¹⁷.

The population targeted in this study consists of all female students at SMP Negeri 29 Surabaya during the 2023/2024 academic year. The sample size was determined using the Slovin formula, which indicated that a minimum of 85 respondents was required for the study.

Sampling was conducted according to the researcher's specific inclusion and exclusion criteria¹⁸. The inclusion criteria are as follows: the respondent must be a female student at SMP Negeri 29 Surabaya, aged between 11 and 15, must reside with their family, and must have experienced menstruation. Exclusion criteria included respondents who were undergoing special medical treatment, those who had engaged in excessive douching, or those who voluntarily withdrew from the study.

The analysis methods employed in this research include univariate and bivariate analyses using the Chi-square test. Data was collected through a closed questionnaire designed as a rating scale to assess personal hygiene behavior. This study was approved by the ethics committee with ethics number

248/EC/KEPK/FKUA/2023 issued by the Health Research Ethics Committee of Universitas Airlangga, Faculty of Medicine Surabaya, Indonesia on October 10, 2023.

RESULTS

Table 1. Characteristics of Respondents Based on Age

Age	Frequency	Percentage (%)
12 y.o	7	8.3%
13 y.o	33	38.8%
14 y.o	21	24.7%
15 y.o	24	28.2%
Total	85	100%

Source: Primary Data 2023

Table 1 indicates that most respondents in this study were 13 years old, comprising 33 individuals (38.8%)

Table 2. Characteristics of Respondents Based on Age At Menarche

Menarche	Frequency	Percentage (%)
≤ 10 y.o	13	15.3%
11 - 12 y.o	63	74.1%
> 12 y.o	9	10.6%
Total	85	100%

Source: Primary Data 2023

Table 2 shows that most respondents in this study, specifically 63 respondents (74.1%), experienced menarche between the ages of 11 and 12.

Table 3. Characteristics of Respondents Based on The Incidence of Vaginal Discharge

Vaginal discharge	Frequency	Percentage (%)
Fisiologis	67	78.8%
Patologis	15	17.7%
Never Vaginal Discharge	3	3.5%
Total	85	100%

Source: Primary Data 2023

In Table 3, 67 respondents (78.8%) reported physiological vaginal discharge, 15 respondents (17.7%) reported

pathological vaginal discharge, and 3 respondents (3.5%) have never experienced vaginal discharge.

Table 4. Characteristics of Respondents Based on Personal Hygiene Habits

Personal Hygiene	Frequency	Percentage (%)
Good	33	38.8
Enough	39	45.9
Not enough	13	15,3
Total	85	100

Source: Primary Data 2023

The table above shows that 33 respondents (38.9%) demonstrated good personal hygiene. Hygiene, while 13 Additionally, 39 respondents (45.9%) had adequate personal hygiene, while 15.3% exhibited inadequate personal hygiene.

Table 5. Frequency Distribution of Respondents Based on Respondents' Age Characteristics Regarding The Incidence of Vaginal Discharge

Age	Vaginal discharge						Total	
	Fisiologis		Pathologist		Never Vaginal Discharge			
	N	%	N	%	N	%	N	%
12	7	8.3	0	0	0	0	7	8.2
13	30	35.3	0	0	3	3.5	33	38.8
14	15	17.6	6	7.1	0	0	21	24.7
15	15	17.6	9	10.6	0	0	24	28.3
Total	67	78.8	15	17.7	3	3.5	85	100

Source: Primary Data 2023

In Table 5, the results indicate that the most common type of vaginal discharge reported by respondents was physiological vaginal discharge, experienced by 67 respondents (78.8%). The highest incidence of physiological vaginal discharge was observed among respondents aged 13, with 30 individuals (35.5%) reporting this condition. In contrast, 15 respondents (17.6%) reported experiencing pathological vaginal discharge, with the majority of

these cases occurring in respondents aged 15, totaling nine individuals (10.6%). Additionally, three respondents (3.5%) aged 13 reported that they had never experienced vaginal discharge.

According to the data in Table 6, the average education level of the mothers of the respondents was high school. Among the respondents, 48 individuals (56.5%) reported experiencing vaginal discharge, which included both physiological and pathological types. Specifically, 36 respondents (42.4%) reported physiological vaginal discharge, while nine respondents (10.6%) reported pathological vaginal discharge.

Based on Table 7, the results indicate that 28 respondents (32.9%) experienced physiological vaginal discharge while maintaining good

personal hygiene. Additionally, 33 respondents (38.8%) had sufficient personal hygiene, and 6 (7.1%) reported poor personal hygiene. In contrast, five respondents (5.9%) experienced pathological vaginal discharge with good personal hygiene, three respondents (3.5%) had adequate personal hygiene, and seven respondents (8.3%) had inadequate personal hygiene. Furthermore, three respondents (3.5%) reported that they had never experienced vaginal discharge, despite having adequate personal hygiene.

The bivariate analysis using the chi-square test revealed a p-value of $p = 0.001$. According to established criteria, a p-value of less than 0.05 indicates a significant relationship between personal hygiene and the incidence of vaginal discharge.

Table 6. Frequency Distribution of Respondents Based on The Mother's Last Education Regarding The Incidence of Vaginal Discharge

Mother's Last Education	Incidence of Vaginal Discharge						Total	
	Vaginal discharge							
	Fisiologis		Pathologist		Never Vaginal Discharge		N	%
	N	%	N	%	N	%	N	%
Elementary School	6	7.1	0	0	0	0	6	7.1
Junior High School	9	10.5	0	0	0	0	9	10.5
Senior High School	36	42.4	9	10.5	3	3.5	48	56.5
D1/D2/D3	3	3.5	0	0	0	0	3	3.5
S1/D4	13	15.3	6	7.1	0	0	19	22.4
Total	67	78.8	15	17.6	3	3.5	85	100

Source: Primary Data 2023

Table 7 The Relationship Between Personal Hygiene and The Incidence of Vaginal Discharge

Vaginal discharge	Personal Hygiene						Total	%	P-value
	Good	%	Enough	%	Not enough	%			
Fisiologis	28	32.9	33	38.8	6	7.1	67	78.8	0.001
Patologis	5	5.9	3	3.5	7	8.3	15	17.7	
Never Vaginal Discharge	0	0	3	3.5	0		3	3.5	
Total	33	38.8	39	45.8	13	15.4	85	100	

Source: Primary Data 2023

DISCUSSION

Respondent Characteristics

In this study, the oldest respondents were 13 years old, with 33 individuals (38.8%) at this age. At 13, respondents are in the early adolescent stage (ages 10-13), during which the growth of reproductive organs occurs rapidly.

Parents' knowledge about personal hygiene and reproductive health awareness influences teenagers' hygiene. Parental knowledge can be assessed based on the highest level of education. A mother plays a crucial role in educating her daughter about personal hygiene and the anatomy of the female reproductive organs¹⁹. According to the research data presented in Table 6, the average highest level of education for the respondents' mothers was high school, with 48 respondents (56.5%) falling into this category.

From this study, we can conclude that since the average highest education level of the mothers is high school, they possess sufficient knowledge to share information about personal hygiene with their children. This conclusion is supported by the theory proposed by Notoatmodjo (2018), which states that education impacts an individual's knowledge. Therefore, the higher a mother's level of education, the broader her knowledge base, enabling her to provide adequate information and educate her child on maintaining good personal hygiene^{20,21}.

Personal Hygiene for Young Women at SMP Negeri 29 Surabaya

Table 4 shows that 33 respondents (38.9%) practiced good personal hygiene. Additionally, 39 respondents (45.9%) had adequate personal hygiene, while 13

(15.3%) exhibited inadequate personal hygiene.

From this data, we can conclude that the personal hygiene of the respondents in this study falls within the adequate category. In today's world, access to knowledge, especially regarding reproductive health, has become relatively easy through television, cell phones, and other electronic media²². Nevertheless, there are still individuals who show a lack of concern for reproductive health.

According to Nurrohmatun (2021), several factors influence proper vaginal hygiene behavior, including the impact of those close to an individual, such as teachers, family members, and friends. Moreover, easy access to information via print and electronic media significantly shapes a person's behavior²³.

Incidents of vaginal discharge among young women at SMP Negeri 29 Surabaya

In Table 3, it is shown that 67 respondents (78.8%) reported experiencing physiological vaginal discharge, while 15 respondents (17.7%) reported experiencing pathological vaginal discharge. Additionally, three respondents (3.5%) indicated they have never experienced vaginal discharge.

Table 5 illustrates that the highest incidence of vaginal discharge among respondents is physiological, with 67 respondents (78.8%) affected. The most significant number of physiological vaginal discharge cases occurred in respondents aged 13 years, totaling 30 respondents (35.5%). Conversely, 15 respondents (17.6%) reported experiencing pathological vaginal discharge, with the highest incidence among those aged 15 years, which included nine respondents (10.6%).

Finally, there were three respondents (3.5%) who had never experienced vaginal discharge, all of whom were 13 years old.

To reduce the incidence of vaginal discharge in young women, it is essential to implement treatment and prevention efforts, including providing education on reproductive health. This education should cover proper care for reproductive organs to help decrease the frequency of vaginal discharge, especially in cases of pathological discharge²⁴.

Relationship Between Personal Hygiene and Vaginal Discharge

Based on Table 7, the results indicate that 28 respondents (32.9%) with good personal hygiene experienced physiological vaginal discharge. In comparison, 33 respondents (38.8%) reported sufficient personal hygiene, and six respondents (7.1%) had poor personal hygiene. For pathological vaginal discharge, five respondents (5.9%) had good personal hygiene, while three respondents (3.5%) maintained adequate personal hygiene, and seven respondents (8.3%) had inadequate personal hygiene. Moreover, there were three respondents (3.5%) who had never experienced vaginal discharge and reported having adequate personal hygiene.

In another research study conducted by Sara Jayanti and Triyana Sari in 2022, titled "The Relationship between Knowledge, Attitudes, and Personal Behavior Regarding Reproductive Health and the Incidence of Vaginal Discharge in Female Students of SMA Negeri 3 Merauke," the findings revealed a significant relationship between attitudes toward maintaining reproductive health and the occurrence of vaginal discharge ($p < 0.001$)²⁵.

Research Limitations

From planning the study to finishing the thesis, the researchers encountered difficulties. Because of the few variables examined, it is impossible to conclusively identify other elements that might be connected to the respondents' discharge. Additionally, using Google Forms to complete the survey may result in dishonest replies or misinterpretations of specific statements or questions, producing responses that are not entirely representative.

CONCLUSION

In this study, 67 individuals reported experiencing physiological leukorrhea, 15 reported experiencing pathological leukorrhea, and 3 never experienced leukorrhea at all. Regarding personal hygiene care, 33 respondents maintained good hygiene, 39 had adequate hygiene, and 13 showed poor hygiene.

The results analyzed using the Chi-Square test yielded a p-value of 0.001. This indicates a significant relationship between personal hygiene and the occurrence of leucorrhea in female adolescents at SMP Negeri 29 Surabaya in 2023.

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CONFLICT OF INTEREST

All Authors have no conflict of interest.

ETHICS CONSIDERATION

This research had received Ethical Approval No. 248/EC/KEPK/FKUA/2023 issued by the Health Research Ethics Committee, Universitas Airlangga School of Medicine, Surabaya, Indonesia, on 10 October 2023. This ethics declaration applies from November 2, 2023, until November 2, 2024.

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AUTHOR CONTRIBUTION

All authors have contributed to all processes in this research, including preparation, data gathering, analysis, drafting, and approval for publication of this manuscript.

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