

THE CORRELATION BETWEEN KNOWLEDGE AND BEHAVIOR OF VULVA HYGIENE WITH PATHOLOGICAL LEUKORRHEA INCIDENCE

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Abstract

Vulva hygiene is important to prevent pathological vaginal discharge. Adolescent girls are susceptible to such discharge due to insufficient awareness of proper hygiene practices. A preliminary study identified instances of improper wiping techniques and failure to adequately dry the vulva before donning underwear among students. Moreover, some students reported experiencing genital itching. The purpose of this study was to determine the correlation between knowledge and behavior of vulva hygiene with pathological vaginal discharge. This study employed a correlational cross-sectional design. The population consisted of 52 female students at Al-Hasani Islamic Boarding School, selected through total sampling. Data were collected using validated and reliable questionnaires. Statistical analysis utilized Kendall's Tau correlation test. This research has passed an ethical review with letter number 1450/UN22.9/PG/2024 which considers research ethics in the form of informed consent, anonymity, privacy, confidentiality, justice, and beneficence. The results are 65.4% of respondents had good knowledge of vulva hygiene, 53.8% exhibited good vulva hygiene behavior, and 50% experienced pathological leucorrhea. Correlation analysis revealed no significant correlation between knowledge (p value = 0.087) or behavior (p value = 0.582) of vulva hygiene and pathological leucorrhea incidence. Further research is needed regarding factors associated with the occurrence of pathological vaginal discharge.

Keywords: Behavior, knowledge, pathological leucorrhea, vulva hygiene.

INTRODUCTION

Vulva hygiene is the act of cleaning the external female reproductive organs, which consist of the mons pubis, labia majora, labia minora, clitoris, perineum, and anus (Istiana et al., 2021). Vulva hygiene is beneficial for maintaining the cleanliness and health of the external female genitalia to prevent infections (Humairoh et al., 2018).

Infection of the vulva area can lead to many health problems of the female reproductive organs, one of which is vaginal discharge (Sangadah et al., 2021). The vaginal infection would increase vaginal secretion, vulvar irritation, unpleasant odor, discomfort: itching, and urination problems (Solehati et al., 2018). Vaginal discharge can occur physiologically and pathologically (Muftadiyah & Zubairi, 2022). Physiological vaginal discharge occurs naturally when a woman is approaching menstruation and after menstruation which is influenced by hormones (Dayaningsih & Septediningrum, 2022). Pathological vaginal discharge appears due to infection or malignancy that occurs in the female reproductive organs. Pathological vaginal discharge is characterized by thick discharge that causes spots on the underwear, yellow-white to grayish-green in color, smells unpleasant to fishy or rotten, accompanied by redness and itching, burning in the vulva area, and pain when urinating (Harahap, 2021).

In Indonesia, the possibility of a woman having vaginal discharge is 90% (Sihombing & Lubis, 2023). This is because the climate in Indonesia is a tropical climate and the weather tends to be humid, making it easier for fungi or bacteria to multiply and infect (Febria, 2020). In addition, in Indonesia itself there is a taboo culture that makes it difficult for women, especially adolescent girls, to get information about reproductive organ problems, especially the correct vulva hygiene method (Hubaedah, 2019).

Adolescents are at higher risk of developing vaginal discharge due to lack of exposure to information about reproductive health. The vulnerability that occurs in adolescents is also due to a lack of knowledge which impacts on behaviors that do not maintain hygiene in the genital area properly and correctly (Muftadiyah & Zubairi, 2022). Several studies that examined the incidence of pathological vaginal discharge in adolescent girls showed that adolescent girls are at risk of experiencing

pathological vaginal discharge with a percentage of more than 50%, both adolescent girls in regular schools and boarding schools and junior and senior high school levels.

Preliminary studies conducted on female students in boarding schools using the interview method were used to determine the preliminary description of vulva hygiene behavior and complaints about pathological vaginal discharge of female students. The preliminary study found that there are still students who wash from the back to the front and do not dry the vulva before wearing underwear, besides that there are also students who complain of itching in the vaginal area. Of the many complaints that occurred, there has not been a collaborative program between the boarding school and the health center to educate female students to practice proper vulvar hygiene. In addition, female students are not allowed to hold gadget, which makes it difficult for them to access information about vulvar hygiene independently. The purpose of this study was to determine the characteristics of research respondents, description of knowledge and behavior of vulva hygiene, description of the incidence of pathological vaginal discharge, and to determine the correlation between knowledge and behavior of vulva hygiene with pathological vaginal discharge.

METHODS

The research design used was correlational studies and cross sectional. The population in this study were female students at Al-Hasani Pontianak Islamic Boarding School, totaling 52 people with total sampling technique. Data were collected in February 2024. The instruments of this study were three questionnaires consisting of vulvar hygiene knowledge, vulvar hygiene behavior, and pathological vaginal discharge. The three questionnaires have been tested for validity and reliability by previous researchers. This research has passed an ethical review with letter number 1450/UN22.9/PG/2024 which considers research ethics in the form of informed consent, anonymity, privacy, confidentiality, justice, and beneficence. Data analysis in this study is univariate and bivariate analysis, univariate analysis is used to determine the frequency distribution of vulvar hygiene knowledge level, vulvar hygiene behavior, and the incidence of pathological vaginal discharge. Bivariate analysis was used to determine the relationship between knowledge and

vulvar hygiene behavior with the incidence of pathological vaginal discharge. Data correlation analysis using Kendall's-Tau statistical test.

RESULTS

Table 1. Respondent Characteristics

Characteristics	f	%
Age Category		
Early Adolescents	7	13.5
Middle Adolescence	31	59.6
Late Adolescence	14	26.9
Education Level		
MTs	24	46.2
MA	28	53.8
Ethnic		
Melayu	4	7.7
Jawa	3	5.8
Madura	40	76.9
Batak	1	1.9
Sunda	2	3.8
Bugis	2	3.8
Vulva Hygiene Resource Information		
Teacher/Ustadzah	28	53.8
Internet	1	1.9
Parents	8	15.4
Never	15	28.8

Source: Primary Data (2024)

Table 1 characteristics of respondents shows that based on age characteristics most (59.6%) are in middle adolescence, based on the level of education most (53.8%) are at the MA education level, based on ethnic characteristics the majority of respondents (76.9%) have Madura ethnicity, and based on the source of vulva hygiene information most (53.8%) respondents said that they got vulva hygiene information from teachers/ustadzah..

Table 2. Vulva Hygiene Knowledge

Vulva Hygiene Knowledge	f	%
Good	34	65.4
Enough	15	28.8
Poor	3	5.8
Total	52	100.0

Source: Primary Data (2024)

Based on table 2, it is known that most respondents have good vulva hygiene knowledge as many as 34 people (65.4%), enough vulva hygiene knowledge as many as 15 people (28.8%) and poor vulva hygiene knowledge as many as 3 people (5.8%).

Table 3. Vulva Hygiene Behavior

Vulva Hygiene Behavior	f	%
Good	28	53.8
Bad	24	46.2
Total	52	100.0

Source: Primary Data (2024)

Table 3 shows that 28 respondents (53.8%) had good vulva hygiene behavior and 24 respondents (46.2%) had bad vulva hygiene behavior.

Table 4. Incidence of Pathological Vaginal Discharge

Pathological Vaginal Discharge Incidence	f	%
Yes	26	50.0
No	26	50.0
Total	52	100.0

Source: Primary Data (2024)

Based on table 4, the results showed that 26 respondents (50.0%) had pathological vaginal discharge and 26 others (50.0%) did not have pathological vaginal discharge.

Table 5. Correlation between Knowledge of Vulva Hygiene and the Incidence of Pathological Vaginal Discharge

Vulva Hygiene Knowledge	Pathological Vaginal Discharge Incidence				Total	ρ value	
	Yes		No				
	f	%	f	%	f	%	
Good	20	58.8	14	41.2	34	100.0	0.087
Enough	5	33.3	10	66.7	15	100.0	
Poor	1	33.3	2	66.7	3	100.0	

Source: Primary Data (2024)

Table 5 shows that of the 34 respondents who had good vulva hygiene knowledge, 20 of them (58.8%) had pathological vaginal discharge and 14 others (41.2%) did not had pathological discharge.

The results of correlation testing using Kendall's Tau test obtained ρ value = 0.087. Where the value is greater than the α value of 0.05 (ρ > 0.05) which means

that there is no correlation between vulva hygiene knowledge and the incidence of pathological vaginal discharge.

Table 6. Correlation between Vulva Hygiene Behavior and the Incidence of Pathological Vaginal Discharge

Vulva hygiene behavior	Pathological Vaginal Discharge Incidence				Total		ρ value
	Yes		No		f	%	
	f	%	f	%			
Good	13	46.4	15	53.6	28	100.0	0.582
Bad	13	54.2	11	45.8	24	100.0	

Source: Primary Data (2024)

Table 6 shows that of the 28 respondents who had good vulva hygiene behavior, 13 of them (46.4%) had pathological vaginal discharge and 15 others (53.6%) did not have pathological discharge.

The results of correlation testing using Kendall's Tau test obtained ρ value = 0.582. This value is greater than the α value of 0.05 ($\rho > 0.05$) which means that there is no correlation between vulva hygiene behavior and the incidence of pathological vaginal discharge.

DISCUSSION

Vulva Hygiene Knowledge

The results showed that most of the research respondents had good vulva hygiene knowledge as many as 34 people (65.4%). Most respondents have good knowledge about the concept of vulva hygiene. A total of 47 respondents (90.4%) knew the definition of vulva hygiene correctly, as evidenced by answering correctly to the statement vulva hygiene is the act of caring for the external organs of the female genitalia. A total of 50 respondents (96.2%) knew that the correct way to do vulva hygiene is by washing the vagina from front to back using clean water. Washing the vagina with clean water from front to back aims to avoid the entry of germs or bacteria from the anus to the vagina (Kurniasari et al., 2023).

Other research that also stated that most of the respondents had good vulva hygiene knowledge was research conducted by Prihatin et al. on adolescent girls in one of the boarding schools in North Aceh Regency which stated that as many as 64% of respondents had good vulva hygiene knowledge (Prihatin et al., 2023). Another study by Qariati & Asrinawaty on adolescent girls in one of the boarding

schools in Banjar Regency also stated that most of the respondents, 57.8%, had good vulva hygiene knowledge (Qariati & Asrinawaty, 2018).

Vulva Hygiene Behavior

The results showed that out of 52 respondents, 28 respondents (53.8%) had good vulva hygiene behavior. An individual's behavior is influenced by many factors, one of which is knowledge. Someone with good knowledge tends to do good behavior too. This is in accordance with research by Humairoh et al. which states that the factor that has the most influence on vulva hygiene behavior is knowledge about vulva hygiene (Humairoh et al., 2018).

Most of the respondents in several vulva hygiene actions were able to do it correctly. As in the action of keeping the vaginal area moist, 42 respondents (80.8%) stated that they never let the vagina feel moist. Letting the vagina in a moist state can increase the risk of the vagina becoming a hotbed of bacterial and fungal growth which will then infect and cause the vagina to smell bad and feel itchy (Anggraeni et al., 2023).

A similar study was the one by Qariati & Asrinawaty on adolescent girls in a boarding school in Banjar Regency, which also stated that most of the respondents (86.7%) had good vulva hygiene behavior (Qariati & Asrinawaty, 2018). Research by Aeni also has similar results, with most of the 54.8% of respondents who are adolescent girls in an Islamic boarding school in Indramayu Regency having good vulva hygiene behavior (Aeni, 2017).

Incidence of Pathologic Vaginal Discharge

Vaginal discharge is defined as a white discharge from the vagina other than blood. Vaginal discharge to some extent is normal and healthy as it is a natural process of the vagina cleansing itself of dead cells and toxic organisms present in the vagina (Sikarwar, 2020). However, vaginal discharge can be abnormal and be one of the signs and symptoms of a disease or malignancy of the reproductive organs. This abnormal vaginal discharge is referred to as pathological vaginal discharge (Marhaeni, 2016).

Pathological vaginal discharge is a symptom caused by an infection in the female reproductive organs. Pathological vaginal discharge is characterized by a lot of discharge and sometimes causes spots on the underwear, the liquid is very thick,

yellow-white to grayish-green in color, accompanied by itching and pain when urinating, smells unpleasant to fishy pungent, and there is irritation or redness in the vaginal area (Harahap, 2021).

The results of this study indicate that of the 52 research respondents who experienced pathological vaginal discharge, 26 people or half (50.0%) of the total respondents. As many as 36 respondents (69.2%) said the vaginal discharge was accompanied by itching in the vaginal area and as many as 31 respondents (59.6%) said the discharge from the vagina smelled bad. These complaints already refer to the characteristics of pathological vaginal discharge. This should be treated immediately before it gets worse.

Another study that also examined the incidence of pathological vaginal discharge in a boarding school environment was a study conducted by Ashari et al. in one of the boarding schools in Pontianak City which stated that 53.6% of adolescent girls in the boarding school experienced pathological vaginal discharge (Ashari et al., 2018).

The Correlation Between Knowledge Of Vulva Hygiene And The Incidence Of Pathological Vaginal Discharge

The results of the bivariate analysis using the Kendall's Tau test correlation test obtained a value of p value = 0.087. Where this value is greater than the α value of 0.05 ($p > 0.05$) which means that there is no correlation between vulva hygiene knowledge and the incidence of pathological vaginal discharge.

The results of this study are similar with research conducted by Qariati & Asrinawaty who analyzed the correlation between knowledge of vulva hygiene and the incidence of pathological vaginal discharge in 83 female students at a boarding school, namely there is no correlation between knowledge of vulva hygiene and the incidence of pathological vaginal discharge (Qariati & Asrinawaty, 2018).

This study contradicts research by Fitriani et al. who examined the correlation between vulva hygiene knowledge and the incidence of pathological vaginal discharge in 35 female students at an Islamic boarding school which stated that there was a significant correlation between the two variables (Fitriani et al., 2023).

The incidence of pathological vaginal discharge does not only occur because one's vulva hygiene knowledge is not good. The incidence of pathological

vaginal discharge can be influenced by many factors, such as one of which is a person's economic status (Nikmah & Widyasih, 2018). For example, when a person knows that changing pads ideally is 4-5 times a day, but when the person experiences economic limitations, the person will be more economical in using pads so that they are more at risk of pathological vaginal discharge.

Correlation between Vulva Hygiene Behavior and the Incidence of Pathological Vaginal Discharge

The results of the bivariate analysis using the Kendall's Tau test correlation test obtained a value of ρ value = 0.583. Where this value is greater than the α value of 0.05 ($\rho > 0.05$) which means that there is no correlation between vulva hygiene behavior and the incidence of pathological vaginal discharge.

Research that is similar to this study is research by Wahyuni et al. on 110 female students at SMAN who said that vulva hygiene behavior is not correlated with the incidence of pathological vaginal discharge (Wahyuni et al., 2023). The results of this study contradict research by Qariati & Asrinawaty on 83 female students at an Islamic boarding school, the results of which say that there is a correlation between vulva hygiene behavior and the incidence of pathological vaginal discharge (Qariati & Asrinawaty, 2018).

Pathological vaginal discharge does not only occur because a person's vulva hygiene knowledge and behavior are not good. The occurrence of pathological vaginal discharge can be influenced by many factors, such as one of which is the quality of the water used is not good. According to research by Cahyaningtyas, the presence of organisms such as candida sp. in bathroom water is a factor in the occurrence of pathological vaginal discharge (Cahyaningtyas, 2019). Even though a person with good vulva hygiene knowledge and behavior knows that performing vulva hygiene must use clean water, when the quality of the available water is still in the bad category, there is a high risk of pathological vaginal discharge. This is in line with Blum's theory which says that a person's degree of health is strongly influenced by environmental factors.

CONCLUSION

Based on age characteristics, it was found that most of the research respondents were in the middle adolescent age category, based on the

characteristics of the education level, most of the respondents were in MA, based on ethnic characteristics, the majority of respondents were Madura, and based on the characteristics of vulva hygiene information sources, most of them got information from teachers/ustadzah.

Most of the respondents had good vulva hygiene knowledge and good vulva hygiene behavior. Half of the total respondents have pathological vaginal discharge. The correlation test results showed that there was no correlation between knowledge (ρ value = 0.087) and behavior (ρ value = 0.582) of vulva hygiene with the incidence of pathological vaginal discharge.

Further research is needed regarding the factors that influence the occurrence of pathological vaginal discharge. In addition, education about vulva hygiene is needed for adolescent girls to increase knowledge and concern in maintaining reproductive organ health.

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