Buletin Ilmu Kebidanan dan Keperawatan (BIKK) **E-ISSN 2962-4142**
DOI: 10.56741/bikk.v2i02.260 **P-ISSN 2962-5734**

The Relationship between Knowledge and the Occurrence of Vaginal Discharge

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Abstract

This study aimed to investigate the relationship between knowledge of vulva hygiene and the occurrence of vaginal discharge among female students in the female boarding high school in Indonesia. A total of 48 students were selected through purposive sampling and data was collected using a questionnaire. The results showed that 31.8% of unmarried women or adolescent girls aged 12-24 years experienced vaginal discharge. Lack of knowledge about vaginal discharge among adolescents and feeling embarrassed to consult health professionals were the reasons for not seeking treatment. This puts adolescent girls at a higher risk of experiencing vaginal discharge. The analysis using the Chi-square test showed a significant relationship ($p<0.05$) between knowledge of vulva hygiene and the occurrence of vaginal discharge, with a correlation coefficient of 0.416, indicating a moderate relationship. Therefore, it is recommended that respondents increase their knowledge of vulva hygiene, and those experiencing pathological vaginal discharge should improve genital hygiene to avoid future health issues.

Keywords: *Female Students, Knowledge, Vaginal Discharge, Vulva Hygiene*

Introduction

According to WHO, nearly all women and adolescents have experienced vaginal discharge, with 60% of cases found in adolescents (12-22 years) and 40% in women (23-45 years). Lack of knowledge about vaginal discharge among adolescents and feeling embarrassed to consult health professionals are the reasons for not seeking treatment. Vaginal discharge is a serious issue that should not be underestimated, as it can lead to fatal consequences if not treated immediately, such as infertility, pelvic inflammatory disease, and cervical cancer. The early symptom of cervical cancer, which is indicated in 95% of cases, is vaginal discharge, and if left untreated, it can result in death [1].

Vaginal discharge is also experienced by unmarried women or adolescent girls aged 12-24 years, accounting for 31.8% of cases. Around 75% of Indonesian women have experienced vaginal discharge, with 50% occurring in adolescents and 25% in women of childbearing age. This puts adolescent girls at the highest risk of experiencing vaginal discharge [2]. Based on statistical data from the Yogyakarta Special Region in 2018, 68% of the 2.9 million adolescent girls (aged 11-24 years) have experienced pathological vaginal discharge [3].

The incidence of vaginal discharge is often caused by vulvovaginal candidiasis bacteria, due to many women not knowing how to clean the vaginal area. Other causes include bacterial vaginosis and trichomonas vaginalis. Abnormal discharge is caused by infection or inflammation, which occurs due to unhealthy behaviors such as washing the vagina with unclean water, using excessive vaginal cleansers,

incorrect vaginal washing methods, prolonged stress, and frequently using shared bathing facilities that facilitate the spread of discharge [4].

The Adolescent Reproductive Health program has been integrated into the Adolescent Health program in Indonesia since 2003. The Ministry of Health has developed a health service model called Adolescent-Centered Health Services. The hallmark of adolescent-centered health services is counseling and improving the ability of adolescents to apply Health Education and Life Skills. Puskesmas (public health centre) with a programs provide services both inside and outside the building for school-based or community-based adolescent groups. This is done to ensure that the services provided reach all adolescent groups (aged 10-18 years) [5].

Regarding the Midwifery Profession Standards, there is Competency Area 5 which is about Clinical Skills in Midwifery Practice, which includes the ability to apply knowledge and skills to actively contribute to improving the quality of women's and children's health through education and counseling on health issues, particularly in the field of women's reproductive health, including early detection of complications, disorders, or problems in the reproductive system of adolescents [6].

Adolescents need knowledge about reproductive health. Correct information and knowledge can prevent adolescents from various reproductive health disorders, including abnormal vaginal discharge. Adolescents can make the right decisions with a healthy mindset, because they already know the positive and negative impacts on their health [7]. Based on the results of interviews conducted with 10 female students at a certain femal boarding high school in Indonesia, 4 students (40%) do not know much about proper genitalia care. For example, they do not dry their genital area after urinating or defecating, do not change their sanitary pads frequently enough, and wash their vagina in the wrong direction. Two students (20%) use feminine soap, and all students (100%) have experienced abnormal vaginal discharge before and after menstruation. There are 7 students (70%) who have abnormal vaginal discharge characterized by clear, watery discharge that does not cause itching, while the other 3 students (30%) have abnormal vaginal discharge characterized by white discharge and itching, causing discomfort during activities.

Leukorrhea (flour albus) is the discharge of fluid other than blood from the vagina that is odorless and not accompanied by itching in the genital area. Leukorrhea is a common reproductive health problem in women. Normal leukorrhea does not cause complaints. In this condition, secretion increases mainly during ovulation, emotional stress, and when sexually aroused [4]. Pathological leukorrhea is often referred to as abnormal leukorrhea or abnormal discharge and is categorized as a disease. Leukorrhea is one of three women's problems that were initially considered trivial and gradually became serious and even severe. The cause is the candida albicans fungus [1].

Abnormal leukorrhea can be caused by inflammatory infections that occur due to washing the vagina with unclean water, improper internal examination, excessive use of vaginal cleansers, unhygienic examinations, and foreign objects in the vagina. The causes of pathological leukorrhea (due to illness) are leukorrhea due to candida fungus infection, bacterial infections such as gonococcal bacteria, leukorrhea due to parasitic infections such as trichomonas vaginalis that can be transmitted through sexual contact, leukorrhea due to viral infections caused by papilloma virus and herpes simplex

virus [4]. This study aimed to investigate the relationship between knowledge of vulva hygiene and the occurrence of vaginal discharge among female students in the female boarding high school in Indonesia.

Methods

To conduct the research, the first step is to choose the type of study design that will be used. In this case, the researcher has decided to use a quantitative research design with a correlational approach and a cross-sectional design. Next, the researcher will need to determine the sampling technique that will be used to choose the participants. In this study, the researcher will use purposive sampling, which means that they will select participants based on certain criteria. The researcher will choose 48 female students as the sample for the study. To collect data from the selected participants, the researcher will use a questionnaire. The questionnaire will be designed to collect relevant data that will help the researcher answer the research questions. The questionnaire will be distributed to the participants, and the researcher will collect the completed questionnaires for analysis. Once the data has been collected, the researcher will use statistical analysis to determine if there is a correlation between the variables being studied. The results will be analyzed, and the researcher will draw conclusions based on the findings. Finally, the researcher will prepare a report summarizing the results and conclusions of the study.

Results

Table 1 shows the characteristics of the respondents based on the age of female students. The table presents the data in four columns: the first column shows the number of each row, the second column shows the age of the respondents, the third column shows the frequency of the respondents, and the fourth column shows the percentage of the respondents.

Table 1. Characteristics of respondents by age

No	Age (year)	Frequency	Percentage
1	13	11	22.9
2	14	37	77.1
	Total	48	100.0

The data in Table 1 reveals that there are two age groups of respondents, which are 13 and 14 years old. The majority of respondents (77.1%) were 14 years old, while the remaining respondents (22.9%) were 13 years old. The total number of respondents in the study was 48. The data in Table 1 provides a basic understanding of the age distribution of the female students who participated in the study. The table can be used to draw general conclusions about the characteristics of the respondents based on their age.

Table 2 shows the characteristics of respondents based on the age of menarche in the school. The table includes two categories of menarche, namely early menarche and normal menarche.

Table 2. haracteristics of respondents based on menarche age

No	Characteristics	Frequency	Percentage
1	Early Menarche	10	20.8
2	Normal Menarche	38	79.2
	Total	48	100

Out of the 48 respondents, 10 of them (20.8%) experienced early menarche while the remaining 38 respondents (79.2%) experienced normal menarche. It is important to note that the table only provides information on the frequency and percentage of respondents based on their menarche status, and does not provide any additional information on the possible causes or implications of early menarche. Overall, this table provides insight into the menarche characteristics of the respondents and can serve as a basis for further analysis and research into factors that may influence early menarche among female students in the school.

Table 3 shows the level of knowledge of vulva hygiene among female students in the school. The data is presented in two categories: "Cukup" (Moderate) and "Baik" (Good). Out of the 48 respondents, 26 students (54.2%) had a "Cukup" level of knowledge, while 22 students (45.8%) had a "Baik" level of knowledge. It can be inferred that the majority of the students have moderate knowledge of vulva hygiene. However, it is important to note that the table does not provide information on the specific aspects of vulva hygiene that the students are knowledgeable or lacking in. Further research or analysis may be needed to identify specific areas for improvement in vulva hygiene education among the students.

Table 3. Knowledge Level of Vulva Hygiene in Female Students

Knowledge Level	Frequency	Percentage
Moderate	26	54.2
Good	22	45.8
Total	48	100.0

Table 4 presents the occurrence of vaginal discharge among female students in the school, categorized into two types: pathological and physiological. The table shows that 52.1% of the students experienced pathological vaginal discharge, while 47.9% experienced physiological vaginal discharge. It is worth noting that the total frequency of students who experienced vaginal discharge is 48, which indicates that all the students who participated in the study had experienced vaginal discharge at some point in time.

Table 4. Incidents of vaginal discharge in female students

Incidents	Frekuensi	Persen
Pathological	25	52.1
Physiological	23	47.9
Total	48	100

The data in Table 4 is important as it highlights the prevalence of pathological vaginal discharge among the students, which is a cause for concern as it may indicate the presence of an underlying health condition. This finding underscores the need for appropriate health education and preventive measures to reduce the incidence of pathological vaginal discharge among young women. The data can also serve as a basis for further research and intervention programs aimed at addressing the issue of vaginal discharge among female students.

Table 5 shows the relationship between the level of knowledge of vulva hygiene and the incidence of vaginal discharge in female students in the school. The table presents three columns: Level of knowledge, Incidence of vaginal discharge, and Total number of participants). The Level of knowledge

column is divided into two categories: Moderate and Good). The Incidence column is divided into two categories: Pathological and Physiological.

Table 5. Example table The relationship between the level of vulvar hygiene knowledge and the incidence of vaginal discharge

Level of knowledge	The incidence of vaginal discharge				Total		(*p*)
	Pathological		Physiological				
	N	%	N	%	N	%	
Moderate	19	73.1	7	26.9	26	100.0	0.002
Good	6	27.3	16	72.7	22	100.0	
Total	25	52.1	23	47.9	48	100.0	

The table shows that out of 26 participants who had moderate knowledge of vulva hygiene, 19 (73.1%) had pathological vaginal discharge, and 7 (26.9%) had physiological vaginal discharge. On the other hand, out of 22 participants who had good knowledge of vulva hygiene, only 6 (27.3%) had pathological vaginal discharge, and 16 (72.7%) had physiological vaginal discharge. The total number of participants with pathological vaginal discharge was 25 (52.1%), while the total number of participants with physiological vaginal discharge was 23 (47.9%).

The table also shows that there is a significant relationship between the level of knowledge of vulva hygiene and the incidence of vaginal discharge (p=0.002). Participants with good knowledge of vulva hygiene have a lower incidence of pathological vaginal discharge compared to those with moderate knowledge. Therefore, the table suggests that having a good level of knowledge of vulva hygiene can help reduce the incidence of pathological vaginal discharge.

Based on the calculation results using the chi-square analysis test, a significance value of 0.002 ($p<0.05$) was obtained, which means that there is a relationship between vulva hygiene knowledge and the incidence of vaginal discharge in female students. The strength of the relationship between the two variables is indicated by the correlation coefficient value of 0.416, which falls in the moderate category.

Discussions

The research findings indicate that most respondents with sufficient knowledge, 26 respondents (54.2%), experienced pathological vaginal discharge, which occurred in 19 respondents (73.1%). The chi-square analysis showed a significant value of 0.002 ($p<0.05$), which means there is a relationship between vulva hygiene knowledge and the occurrence of vaginal discharge in female students. The correlation coefficient value of 0.416 indicates a moderate relationship between the two variables. Knowledge is the result of perception or awareness of a particular object. Human perception occurs through the five senses of sight, hearing, smell, taste, and touch. The majority of human knowledge is obtained through the eyes and ears. Factors such as age, education, experience, information, socio-cultural and economic status, and environment can affect one's knowledge.

The respondents in this study were mostly 13 years old, indicating the development of knowledge during adolescence. As individuals age, their cognitive and psychological maturity increase. However, 12-13-year-olds are still in the early stages of adolescence, and their cognitive and emotional maturity may not be fully developed, unlike those in late adolescence (17-21 years). Lack of knowledge may also be due to an apathetic attitude towards reproductive health, leading to a lack of attention to

matters related to reproductive health [8]. Additionally, the numerous subjects learned in school may cause students to become apathetic towards reproductive health. They tend to respond and seek information outside of school lessons. The lack of activity in extracurricular activities may also affect students' knowledge of reproductive health.

Knowledge can affect the occurrence of health problems. If an individual has low knowledge, their health will likely be low as well [9]. However, having good knowledge does not necessarily mean having good attitudes or behavior if there is no awareness of the importance of such attitudes or behavior. Other factors that can cause vaginal discharge, besides knowledge, include stress and fatigue, both physically and psychologically. Activities in school and an overwhelming workload can also affect hormone levels in the body, including estrogen, which can cause vaginal discharge [10].

The vagina of a woman contains 95% lactobacillus bacteria and the remaining bacteria can cause diseases [11]. Maintaining the acidity level (pH) is crucial for a balanced vaginal environment. Lactobacillus bacteria play a significant role in the vagina's flora by allowing the pH level to remain within normal range, promoting their growth and inhibiting the growth of pathogenic bacteria. However, in certain conditions, the pH level may increase or decrease, and if the pH level increases above 4.2 (less acidic), fungi can grow and develop, leading to a dominance of pathogenic bacteria over lactobacillus bacteria [12].

Lactobacillus bacteria are the predominant bacteria in a healthy vaginal environment, making up approximately 95% of the vaginal microbiota. They play a crucial role in maintaining the optimal acidity level (pH) of the vagina, which is typically between 3.8 and 4.5. This acidic environment created by lactobacillus bacteria helps to prevent the overgrowth of harmful bacteria and fungi, maintaining a balanced vaginal flora. However, various factors such as hormonal changes, sexual activity, antibiotic use, poor hygiene, and certain medical conditions can disrupt the natural balance of vaginal pH, leading to an increase in pH level (less acidic) and a decrease in the population of lactobacillus bacteria. This can create an opportunity for pathogenic bacteria and fungi to thrive, potentially leading to conditions such as bacterial vaginosis (BV), candidiasis (yeast infection), or other vaginal infections.

It's important to maintain a healthy vaginal pH level to support the growth of beneficial lactobacillus bacteria and prevent the overgrowth of harmful bacteria and fungi. This can be achieved through practices such as practicing good hygiene, avoiding douching or using harsh soaps in the vaginal area, wearing breathable underwear, maintaining a healthy diet, avoiding excessive use of antibiotics, and seeking medical attention if experiencing symptoms of vaginal infection. Consulting with a healthcare professional is recommended for proper diagnosis and treatment if you suspect an imbalance in vaginal pH or symptoms of a vaginal infection.

Conclusion

Based on the results of the study, it can be concluded that there is a significant relationship between knowledge of vulva hygiene and the occurrence of pathological category vaginal discharge among female students. Most of the respondents had moderate knowledge, and a majority of them were 13 years old, which indicates the development of knowledge during adolescence. Factors that can influence knowledge include age, education, experience, information, socio-culture and economy, as well

as the environment. Inadequate knowledge can be caused by an indifferent attitude towards reproductive health, a lack of attention to matters related to reproductive health, and a lack of participation in extracurricular activities related to reproductive health. In addition to knowledge, factors such as stress and fatigue can also cause vaginal discharge. Maintaining a balanced vaginal flora with a normal pH level is crucial to prevent the growth of pathogenic bacteria that can cause vaginal infections. Therefore, it is important to educate young women about vulva hygiene and reproductive health to promote their overall well-being.

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