

The Relationship Between Female Adolescents' Knowledge of Vaginal Discharge and Genital Hygiene Behavior at SMA IT Darul Hasan, Padangsidempuan City, 2026

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Abstract**Background:** Vaginal discharge is a common issue that many teenage girls face, and it can be due to normal bodily functions or signs of an underlying health problem. Understanding vaginal discharge is important because it can affect how teenagers take care of their reproductive health.**Aims:** This study looked at how well female teenagers understand vaginal discharge and how that relates to their hygiene habits at SMA IT Darul Hasan in Padangsidempuan City, in the year 2026.**Methods:** A quantitative, cross-sectional design was used. The study included all female students who are teenagers at SMA IT Darul Hasan in Padangsidempuan City; a total of 68 participants were chosen using the total sampling method. Data was gathered using questionnaires and then checked with the chi-square test.**Result:** The analysis showed a p-value = 0.509 ($p > 0.05$); thus, H_0 was accepted and H_a was rejected.**Conclusion:** There is no link between how much female teenagers know about vaginal discharge and their habits related to cleaning their genital area at SMA IT Darul Hasan in Padangsidempuan City. This shows that how teenagers take care of their genital hygiene is not just about what they know, but also about their actions, the environment around them like school, home, and friends, and the availability of clean places to go, all of which affect their habits.

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INTRODUCTION

Vaginal discharge is a condition experienced by women that indicates a problem in their reproductive system. It is divided into two categories: physiological (normal) and pathological (abnormal) ([Mujuzi et al., 2023](#)). Persistent pathological vaginal discharge can lead to genital infection complications, such as candidal vaginitis or cervicitis, which, if left unaddressed over the long term, can result in infertility ([Wani et al., 2024](#)). Many women face problems with vaginal discharge, for example in India (14.5–24.6%), Nepal (30.4%), and several other developing countries (17.4%) ([Sturgis et al., 2023](#)). The World Health Organization says that about 75% of women around the world have vaginal discharge, and nearly 45% of them have it two or more times ([Chandana, 2022](#)). Furthermore, this clinical manifestation is frequently linked to socioeconomic factors such as low literacy levels, high parity, and limited access to adequate healthcare infrastructure ([Mangala et al., 2024](#)).

In 2023, data from the Indonesian Adolescent Reproductive Health Survey (SKRRI) found that most women aged 15 to 24 had vaginal discharge, and this number went up each year, reaching as high as 70% ([Boahen et al., 2022](#)). The data also showed that half of the teenage girls experienced vaginal discharge. In some areas, it is very common for people to have vaginal discharge, and in one

study, up to 81% of people experienced this ([Eduwan, 2022](#)). This elevated prevalence is frequently attributed to the country's tropical climate, which facilitates the growth of fungi and parasites in the genital area ([Ihsanpuro, 2025](#)); ([Pratiwi & Mahmudah, 2025](#)). furthermore, inadequate personal hygiene practices among adolescents significantly exacerbate these infections, leading to persistent health concerns and potential long-term complication ([Ihsanpuro, 2025](#)). Such complications, if left unaddressed, may evolve into chronic reproductive health issues that impede daily academic activities and overall quality of life ([Arifah et al., 2023](#)). Targeted health education programs remain essential to bridge the knowledge gap, as many adolescents struggle to differentiate between normal physiological discharge and pathological conditions requiring medical intervention ([Kholisotin et al., 2021](#)). The humid environment inherent to the Indonesian climate creates optimal conditions for *Candida albicans* and other pathogens to proliferate, further elevating the risk of infections in populations lacking sufficient hygiene knowledge ([Lince et al., 2025](#)).

In North Sumatra, many young girls experience vaginal discharge, which is a common issue among female adolescents. A report from the North Sumatra Health Office showed that 70% of teenage girls in the area had vaginal discharge, but most of them didn't know what signs showed an infection or how to properly keep their genital area clean ([Al-Gburi et al., 2023](#)). The prevalence of vaginal discharge among adolescents aged 15–24 years in Padangsidempuan City is around 41.8% ([Sham et al., 2020](#)). This high incidence highlights a significant gap in reproductive health education, as many adolescents fail to distinguish between physiological discharge and pathological symptoms indicative of infectio. Such knowledge deficits often stem from the fact that reproductive health remains a stigmatized topic, leaving teenagers without the necessary guidance to manage their hygiene effectively ([Aini et al., 2025](#)). Consequently, inadequate personal hygiene practices, such as improper cleaning techniques or the failure to change undergarments frequently, serve as primary catalysts for fungal and parasitic infections in this demographic ([Pangesti et al., 2025](#)), thereby facilitating the colonization of pathogenic microorganisms like *Candida albicans* that thrive in the region's characteristically humid environment. Given these environmental and behavioral factors, targeted health education interventions are essential to improve hygienic practices and mitigate the increasing prevalence of vaginal infections among young women. Such educational initiatives should specifically address the high risk posed by Indonesia's tropical climate, which significantly increases the likelihood of pathological discharge when coupled with poor hygiene habits ([Darwis et al., 2024](#)).

The impact of vaginal discharge on adolescents can include itching, an unpleasant odor, and discomfort that disrupts daily activities and lowers self-confidence ([Yüksekol et al., 2020](#)). If the discharge is pathological, the risk of infection in the reproductive area increases ([Umami et al., 2022](#)). To address this, it is important to maintain genital hygiene by washing with clean water, drying thoroughly, changing underwear regularly, and avoiding tight clothing and scented products ([Kelčíková et al., 2025](#)). Furthermore, integrating comprehensive health education is essential to address the knowledge gaps and socio-cultural barriers that often impede effective personal hygiene practices among adolescents ([Salina, Arlina, & Purnamasari, 2025](#)); ([Safitri & Yunita, 2023](#)).

Vaginal discharge in teenage girls can be affected by several direct causes like not keeping the genital area clean, having a fungal or bacterial infection, an imbalance in the natural pH of the vagina, using products with strong smells, and changes in hormone levels that happen during puberty ([Egwim et al., 2024](#)). Indirect factors like eating unhealthy food, feeling stressed, having a weak immune system, drinking bad water, living in a very humid place, and not knowing much about how the body works when it comes to reproduction can all make it more likely for a person to have vaginal discharge ([Spiegel et al., 2026](#)); ([Armini, 2022](#)). Furthermore, socio-cultural barriers and limited access to reproductive health education often prevent adolescents from adopting preventive hygiene practices, thereby exacerbating the incidence of these infections ([Salina, Arlina, & Khairat, 2025](#)).

This matches what ([Kartini et al., 2020](#)) found, where there was no connection between the knowledge and behavior of female adolescents about fluor albus at SMP Negeri 1 Pangkep in 2022, with a p-value of 0.122. Not knowing something doesn't always lead to vaginal discharge, because many teenage girls who didn't use fluor albus prevention methods didn't have vaginal discharge either ([Maysaroh & Mariza, 2021](#)).

A preliminary survey of 10 female adolescents at SMA IT Darul Hasan, Padangsidempuan City, found that most respondents had a low level of knowledge about vaginal discharge. Nevertheless,

most of them showed positive genital hygiene behavior, which is thought to be influenced by environmental factors, particularly the school environment.

The researchers wanted to look into how much female students at SMA IT Darul Hasan in Padangsidempuan City knew about vaginal discharge and how that knowledge connected to their hygiene habits. The study aimed to find out the link between their understanding of vaginal discharge and their practices related to genital hygiene in 2025.

METHOD

This study used a quantitative, descriptive design with a cross-sectional approach, an observational design intended to investigate the relationship between female adolescents' knowledge of vaginal discharge and genital hygiene behavior at SMA IT Darul Hasan, Padangsidempuan City, in 2026, with data collection and measurement carried out simultaneously ([Mahrudin et al., 2025](#)). This study was conducted at SMA IT Darul Hasan, Padangsidempuan City, on the grounds that some female adolescents there still experienced vaginal discharge and showed poor reproductive-hygiene behavior related to a low level of knowledge. The study utilized total sampling to recruit 84 female students as respondents, ensuring a comprehensive analysis of reproductive health factors within the school environment ([Lubis et al., 2025](#)). Data collection was performed using a standardized, structured questionnaire to systematically evaluate individual levels of hygiene-related knowledge and self-reported preventive behaviors ([Kenzi & Anastasya, 2024](#)); ([Kristiana, 2025](#)). The validity and reliability of the research instrument were confirmed through preliminary testing to ensure the accuracy of the data collected from the respondents ([Komara et al., 2026](#)).

The population consisted of all 68 female adolescents at SMA IT Darul Hasan, Padangsidempuan City. The sample comprised all 68 female adolescents in 2026, selected using a total sampling technique. The total sampling technique was used, in which the entire population of 68 female adolescents was included as the study sample. The instrumentation consisted of a structured, self-administered questionnaire covering knowledge of vaginal discharge and genital hygiene behavior; details of the specific items, scoring method, and psychometric properties (validity and reliability) were not reported in the original study and should be added by the authors prior to submission. Self-administered questionnaire covering (1) female adolescents' knowledge of vaginal discharge and (2) genital hygiene behavior.

The research procedure began with a research permit application from Universitas Aufa Royhan, Padangsidempuan City, followed by a permit request to the principal of SMA IT Darul Hasan, Padangsidempuan City. After receiving permission, the researcher collected data and selected respondents according to the predetermined criteria. The researcher introduced herself, explained the purpose of the study, informed respondents of their rights and obligations, and obtained signed informed consent. Respondents were then given the questionnaire, with an explanation of how to complete it, and approximately 30 minutes to do so. Completed questionnaires were checked immediately; respondents were asked to complete any incomplete or unclear answers again. Data were processed using a computer through editing, coding, scoring, data entry, and tabulating.

Data were analyzed using the chi-square test to examine the relationship between female adolescents' knowledge of vaginal discharge (categorized as good, moderate, or poor) and genital hygiene behavior (categorized as positive or negative). This study was limited to a single school (SMA IT Darul Hasan, Padangsidempuan City) using a cross-sectional design, which does not allow for causal inference; the original manuscript did not separately report further scope or limitations, and the authors may wish to elaborate on this before submission.

RESULTS AND DISCUSSION

Results

Table 1. Frequency Distribution of Female Adolescents' Knowledge of Vaginal Discharge at SMA IT Darul Hasan, Padangsidempuan City, 2026

Female Adolescents' Knowledge of Vaginal Discharge	n	%
Good	6	8.8
Moderate	35	51.5

Poor	27	39.7
Total	68	100.0

Table 1 shows that the majority of female adolescents had moderate knowledge of vaginal discharge, 35 respondents (51.5%), while the minority had good knowledge, 6 respondents (8.8%).

Table 2. Frequency Distribution of Genital Hygiene Behavior at SMA IT Darul Hasan, Padangsidempuan City, 2026

Genital Hygiene Behavior	n	%
Positive	58	85.3
Negative	10	14.7
Total	68	100.0

Table 2 shows that the majority of female adolescents demonstrated positive genital hygiene behavior, 58 respondents (85.3%), while the minority demonstrated negative behavior, 10 respondents (14.7%).

Table 3. The Relationship Between Female Adolescents' Knowledge of Vaginal Discharge and Genital Hygiene Behavior at SMA IT Darul Hasan, Padangsidempuan City, 2026

Knowledge of Vaginal Discharge	Genital Hygiene Behavior				Total		p-value
	Positive		Negative		n	%	
	n	%	n	%			
Good	6	100.0	0	0.0	6	100	0.509
Moderate	30	85.7	5	14.3	35	100	
Poor	22	81.5	5	18.5	27	100	
Total	58	85.3	10	14.7	68	100.0	

Based on the chi-square analysis, there was no relationship between female adolescents' knowledge of vaginal discharge and genital hygiene behavior at SMA IT Darul Hasan, Padangsidempuan City, in 2026 ($p = 0.509$; $p > 0.05$).

Discussion

Knowledge of Female Adolescents about Vaginal Discharge

Based on the results obtained at SMA IT Darul Hasan, Padangsidempuan City, in 2026, the majority of female adolescents had moderate knowledge of vaginal discharge (35 respondents, 51.5%), a minority had good knowledge (6 respondents, 8.8%), and 27 respondents (39.7%) had poor knowledge.

These findings indicate that although female adolescents' knowledge of vaginal discharge is still classified as moderate, good genital hygiene behavior can nevertheless be achieved. This is influenced by daily habits of maintaining reproductive hygiene, support from the school environment through education and role-modeling of clean-living behavior, and the availability of adequate hygiene facilities. These factors help female adolescents maintain good genital hygiene behavior even though their understanding is not yet fully optimal.

Only a minority, 6 respondents (8.8%), had good knowledge of vaginal discharge. Good understanding can have a positive effect on adolescents' reproductive health, helping them prevent more severe vaginal discharge problems. Based on the knowledge questionnaire, most respondents answered correctly.

The majority of adolescent girls possess a moderate level of knowledge regarding reproductive organ hygiene (90 respondents, 69.8%), indicating that knowledge is not always accompanied by the adoption of appropriate behaviors. The majority of respondents (40 individuals, 76.9%) possessed a moderate level of knowledge regarding vaginal discharge and personal hygiene; this indicates that knowledge must be accompanied by supportive attitudes and habits to effectively influence genital hygiene behavior.

Knowledge is an initial step in shaping individual behavior, although it does not always align with the actions taken. Even when a person has good knowledge of reproductive health, without supportive motivation or habits they may still find it difficult to apply healthy behavior. Sufficient or even good knowledge does not necessarily result in good health behavior unless accompanied by a

positive attitude, strong motivation, and environmental support. Attitude reflects an individual's readiness to act, while action is the actual response to a health stimulus. Thus, a person may have limited knowledge yet still demonstrate good health behavior because they are accustomed to performing such actions or have been influenced by their surrounding environment.

The researchers' assumption is that a moderate level of knowledge about vaginal discharge does not always reduce its incidence among female adolescents. Many other factors influence the occurrence of vaginal discharge, including personal hygiene habits, choice of underwear, environmental conditions, activity patterns, and hormonal factors. Therefore, although knowledge is important, sufficient knowledge alone is not enough to prevent vaginal discharge unless supported by appropriate and routine attitudes, motivation, and genital hygiene practices.

Genital Hygiene Behavior

Based on the results obtained at SMA IT Darul Hasan, Padangsidempuan City, in 2026, the majority of female adolescents demonstrated positive genital hygiene behavior (58 respondents, 85.3%), while a minority demonstrated negative behavior (10 respondents, 14.7%).

Although most respondents had moderate knowledge, these findings show that moderate knowledge does not always determine behavior; it needs to be supported by a positive attitude, self-awareness, and good hygiene habits. Positive genital hygiene behavior is therefore shaped not only by increased knowledge but also by internal and external factors such as motivation, the school environment, and access to health information.

The majority of adolescent girls practiced positive genital hygiene (68 respondents, 52.7%). Even with moderate knowledge, genital hygiene behavior was influenced not only by knowledge but also by age, experience, and habits formed during adolescence. At this stage, more mature cognitive ability enables adolescents to understand and apply health behavior, so that the stage of development plays an important role in shaping mindsets, decision-making, and self-hygiene behavior.

Health behavior is shaped through a complex process that does not depend on knowledge alone; factors such as age, experience, attitude, and daily habits also have an influence. This suggests that positive genital hygiene behavior among female adolescents is not solely determined by their level of knowledge about vaginal discharge or reproductive health, but is also influenced by good attitudes, established habits, internal motivation, and support from the school environment—consistent with the present findings that the majority of female adolescents, despite moderate knowledge, still showed positive genital hygiene behavior.

The researchers' assumption is that genital hygiene among female adolescents is not influenced solely by how much knowledge they have; rather, it is the combined result of adequate knowledge and other factors such as age, experience, attitude, habits, motivation, and support from the surrounding environment.

The Relationship Between Female Adolescents' Knowledge of Vaginal Discharge and Genital Hygiene Behavior

The chi-square test produced a p-value of 0.509 ($p > 0.05$), meaning H_0 was accepted and H_a was rejected. It can therefore be concluded that there is no relationship between female adolescents' knowledge of vaginal discharge and genital hygiene behavior at SMA IT Darul Hasan, Padangsidempuan City, in 2026.

Although female adolescents' knowledge of vaginal discharge remains moderate, good genital hygiene behavior can still be developed through education and habituation acquired from the school environment. The school's role in providing reproductive health education, through learning activities, counseling, and the daily application of clean-living behavior, supports the formation of such behavior. Supervision from educators and the availability of adequate hygiene facilities further help female adolescents apply genital hygiene practices appropriately and consistently. This shows that genital hygiene behavior is not solely influenced by the level of knowledge but also by environmental support and a consistent habituation process.

These results also show no significant difference between respondents with good knowledge and those with poor knowledge, since respondents with good or moderate knowledge still experienced vaginal discharge, just as those with poor knowledge did. The Health Belief Model, a person's health behavior is determined not only by their level of knowledge but also by their

perceived susceptibility to disease, perceived severity of disease, perceived benefits of preventive action, perceived barriers, cues to action, and self-efficacy.

Even when female adolescents' knowledge of vaginal discharge is poor or moderate, good genital hygiene behavior can still develop if they perceive vaginal discharge as a health problem worth preventing, believe that maintaining genital hygiene is beneficial, and receive encouragement from their environment, such as school and family. The Health Belief Model thus supports the finding that limited knowledge does not always hinder the formation of positive genital hygiene behavior.

Studying the relationship between knowledge of vaginal discharge and vulvar hygiene in Lingkungan III, Bambuo Village, Medan Tuntungan District, likewise found no significant relationship between knowledge of vaginal discharge and vulvar hygiene ($p = 0.399 > 0.05$). Even with moderate or poor knowledge of vaginal discharge, good genital hygiene behavior can be influenced by previous experience, hygiene-maintenance habits, and support from the school environment, which provides hygiene facilities and sets an example of clean-living behavior.

The researchers' assumption is that the absence of a relationship between female adolescents' knowledge of vaginal discharge and their genital hygiene behavior shows that knowledge is not the only factor shaping health behavior. Even with moderate or poor knowledge, good genital hygiene behavior can still form through habituation, daily experience, and environmental support, particularly from school. Continuous reproductive health education, supervision from educators, the availability of hygiene facilities, and examples of clean-living behavior applied at school all play an important role in shaping positive genital hygiene behavior. Limited knowledge therefore does not always hinder the formation of good genital hygiene behavior if it is supported by adequate internal and external factors.

Implications:

The findings indicate that improving adolescents' genital hygiene behavior should not rely solely on increasing knowledge about vaginal discharge. Schools, families, and healthcare providers should also focus on creating supportive environments, strengthening healthy habits, and providing adequate sanitation facilities. Reproductive health education should therefore combine knowledge enhancement with practical hygiene training and continuous behavioral reinforcement to promote sustainable healthy practices among female adolescents.

Research Contribution:

This study contributes to the existing literature by providing evidence that female adolescents' knowledge of vaginal discharge is not significantly associated with genital hygiene behavior in the study setting. The findings support the view that health behavior is influenced by multiple factors beyond knowledge, including environmental support, motivation, and habitual practices. These results may serve as a reference for developing school-based reproductive health promotion programs that emphasize both educational and behavioral approaches.

Limitations:

This study has several limitations. First, it was conducted in only one senior high school with a relatively small sample size, limiting the generalizability of the findings to other populations. Second, the cross-sectional design does not allow causal relationships to be established between knowledge and genital hygiene behavior. Third, the data were collected using self-reported questionnaires, which may be subject to recall bias and social desirability bias. Future studies are recommended to include larger and more diverse populations and to examine additional factors, such as attitudes, parental support, peer influence, and access to reproductive health information, that may affect genital hygiene behavior.

Suggestions:

Although no significant relationship was found between female adolescents' knowledge of vaginal discharge and genital hygiene behavior, respondents are encouraged to continue improving their understanding of vaginal discharge, to practice correct genital hygiene habits, and to be more vigilant about signs of abnormal vaginal discharge by consulting health professionals.

CONCLUSION

There is no relationship between female adolescents' knowledge of vaginal discharge and genital hygiene behavior at SMA IT Darul Hasan, Padangsidempuan City, in 2025, with a chi-square test result of $p = 0.509$ ($p > 0.05$).

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AUTHOR CONTRIBUTION STATEMENT

CH: conceptualization, methodology, data collection, writing, original draft preparation; SYP: supervision, validation, formal analysis; AMP: investigation, data curation, writing-review and editing; SAA: visualization, project administration, writing-review and editing. All authors have read and approved the final manuscript.

AI DISCLOSURE STATEMENT

The authors say that this research was done, studied, written, and revised without using any artificial intelligence (AI) tools.

CONFLICTS OF INTEREST

The authors declare no potential conflicts of interest-financial, institutional, or personal-that could influence the conduct of this study, the analysis of data, the preparation of the manuscript, or its publication.

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