



# The Relationship between Knowledge and Personal Hygiene Behavior of Menstrual in Adolescent Girls at SMP Negeri 1 Sukamaju Selatan

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**Abstract.** *Personal hygiene plays an important role in improving health through proper hygiene practices during menstruation. Most adolescents do not yet understand how to perform personal menstrual hygiene correctly, including when to change sanitary pads and how to clean them. This occurs due to the lack of education on menstrual hygiene in the family and school environment, combined with limited access to clean water and inadequate sanitation facilities at school, as well as minimal and poorly structured reproductive health and menstrual hygiene education. This study aims to determine the relationship between knowledge and personal menstrual hygiene behavior among adolescent girls at SMP Negeri 1 Sukamaju Selatan. This study used a quantitative method with a cross-sectional design. The sample consisted of 147 respondents selected using total sampling technique. Data were collected using a questionnaire and analyzed using the Chi-Square test. The results showed a significant relationship between adolescent girls' knowledge of personal menstrual hygiene and their behavior in practicing personal menstrual hygiene. The Chi-Square test yielded a significance value (p) of 0.000, which is smaller than 0.05, indicating that the relationship is statistically significant at a 95% confidence level. There is a relationship between knowledge and personal menstrual hygiene behavior among adolescent girls at SMP Negeri 1 Sukamaju Selatan.*

**Keywords:** Knowledge; Personal Hygiene Behavior; Menstruation

## 1. Introduction

Adolescence is a transitional phase characterized by changes in physical, emotional, and mental aspects. According to the World Health Organization (WHO), adolescents are those aged 10–19 years, while the Ministry of Health of the Republic of Indonesia defines adolescents as individuals aged 10–18 years (Dewi, 2022). Puberty marks the beginning of adolescence, characterized by the emergence of secondary sexual characteristics. During this phase, adolescents undergo physical, emotional, and social changes. Boys experience wet dreams, while girls experience menstruation (Anastasya, 2022). Menstruation is a natural process occurring within the female reproductive cycle, in which blood is regularly expelled from the uterus through the vagina, signifying the attainment of puberty and the transition from childhood to adulthood. Menarche, or the first period, is often considered a significant milestone for young women, requiring proper self-care to maintain reproductive health (Fauziah et al., 2021).

Personal hygiene during menstruation includes changing sanitary pads every 3–4 hours, cleaning the intimate area from front to back after using the toilet, showering regularly, exercising, and consuming foods rich in iron and calcium to help prevent issues such as infections or menstrual cramps (Anastasya, 2022). One of the reproductive health issues faced

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by young people is the challenges surrounding menstruation, compounded by a lack of knowledge about how to maintain hygiene during menstruation. This can lead to reproductive health problems such as vaginal discharge, urinary tract infections, pelvic inflammatory disease, and even an increased risk of cervical cancer.

According to WHO data, adolescents have the highest prevalence of reproductive tract infections (RTIs) worldwide, ranging from 35% to 42%, while young adults show rates between 27% and 33%. Compliance with personal hygiene during menstruation is notably low, at 83% (Anak, 2020). In 2012, RTI experienced by adolescents globally consisted of candidiasis at 25%–50%, bacterial vaginosis at 20%–40%, and trichomoniasis at 5%–15%. Data from 2022 indicates that personal hygiene practices during menstruation remain inadequate globally. More than 50% of women worldwide are unaware of this (Notoatmodjo, 2012).

A study by Apsari et al., 2025 revealed that rates of inadequate personal hygiene practices were approximately 60% in the United States, 72% in Sweden, 75% in Egypt, and 55% in Indonesia. Moreover, results of the Riskesdas survey (2018) showed that adolescent girls aged 10–14 face issues related to their reproductive health. In Indonesia, statistical data indicates that there are 43.3 million adolescent girls in the 10–14 age group who have hygiene routines that are severely inadequate (Rahmawati & Laili, 2025). Reproductive health is a global priority, as outlined in the third Sustainable Development Goal (SDG), which emphasizes healthy and prosperous lives (Djaguna et al., 2024). Reproductive health is a crucial aspect for every individual, particularly for adolescents undergoing physical, emotional, and social development (Amin et al., 2025). This study is aligned not only with SDG 3 (Good Health and Well-being), particularly Target 3.7, which emphasizes universal access to sexual and reproductive health-care services, but also with SDG 4.7, which promotes comprehensive sexuality education, and SDG 5.6, which focuses on ensuring universal access to reproductive health and rights, including menstrual health management.

In Indonesia, data indicates that approximately 5.2 million adolescent girls experience post-menstrual disorders such as vulvar pruritus due to inadequate hygiene practices (Kemenkes RI, 2017). Additionally, a survey by the WHO identified personal hygiene and sanitation as the third leading risk factor for pain among adolescents, while reproductive health ranked eighth. In Bali province, 77.3% of adolescents lack adequate understanding of reproductive health, including issues such as dysmenorrhea and cancer (Riskesdas, 2018). A study conducted in Denpasar revealed that 63.46% of adolescent girls exhibited poor personal hygiene practices during menstruation, largely due to the negative attitudes they held (Apsari et al., 2025).

A key factor influencing adolescent health is their personal hygiene, which will impact their future health conditions. Poor management of menstrual hygiene can increase the risk of disease and complications (Baker et al., 2017). Therefore, adolescents must be equipped with the knowledge, attitudes, and practices that support the achievement of optimal reproductive health. The importance of personal hygiene is for the comfort, safety, and health of the individual. A positive attitude toward maintaining cleanliness, especially during menstruation, is the first step in maintaining health (Niar et al., 2024).

Based on the results of preliminary interviews conducted at SMPN 1 Sukamaju Selatan, some female students still do not practice proper reproductive hygiene during menstruation (Zhahirah, 2022). For example, they do not clean their genital area after urinating; some wipe from back to front, while others admit they do not dry the area thoroughly after washing. While previous studies have examined menstrual hygiene

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knowledge and behavior in broader or urban populations, this study provides context-specific evidence from a rural junior high school in South Sulawesi, Indonesia. It focuses on early adolescent girls aged 12–15 years, highlighting the knowledge–behavior gap in menstrual hygiene practices and contributing to the development of targeted school-based reproductive health interventions. Based on this background, the researcher was interested in conducting a study titled “The Relationship Between Knowledge and Menstrual Hygiene Practices Among Adolescent Girls at SMPN 1 Sukamaju Selatan.”

## 2. Methods

This study is a quantitative method with a cross-sectional design. This method can be used to investigate the relationship between predisposing factors (such as beliefs and knowledge) and their effects (such as hygiene practices during menstruation). This study was conducted from October to November 2025 at SMP Negeri 1 Sukamaju Selatan. The population in this study consisted of all female students who had already experienced menstruation at SMPN 1 Sukamaju Selatan. The sampling method used in this study was total sampling, meaning the entire population was included as the sample, totaling 147 respondents. The analysis techniques used were univariate and bivariate analysis. Univariate analysis was used to describe the characteristics of each variable. Bivariate analysis was used to determine the relationship or impact between the two variables under study using the Chi-Square statistical test.

The questionnaire consisted of two main sections: knowledge and behavior. The knowledge section included 23 items covering topics such as the definition of menstruation, frequency of sanitary pad changes, proper genital hygiene practices, and signs of reproductive tract infections. Each correct answer was scored 1, and incorrect answers were scored 0. The total score was categorized into “good” and “poor” knowledge based on a cutoff point of  $\geq 75\%$  correct answers.

The behavior section included 22 items assessing menstrual hygiene practices, such as frequency of changing sanitary pads, cleaning techniques, and personal hygiene habits during menstruation. The measurement method uses a Likert scale with the options strongly agree, agree, somewhat agree, disagree, and strongly disagree. The total score is categorized as “good” and “poor” based on a cutoff point of  $\geq 75\%$  of the sample mean value.

## 3. Results and Discussion

### 3.1. Results

Table 1 shows that of the 147 respondents, the data by grade level indicates that the highest frequency was in 8th grade, with 60 respondents (40,8%). Based on the respondents’ ages, the majority were 13 years old, totaling 69 respondents (46,9%). Based on the age at first menstruation, the majority of respondents began menstruating at age 12, totaling 63 (42,9%). Based on the average duration of menstruation experienced by respondents, it was approximately 7 days, accounting for 68 (46,3%) of the respondents.

**Table 1.** Table of General Characteristics of Respondents

Characteristics	Frequency	Percentage(%)
Grade Level		
IX	47	32,0
VII	40	27,2
VIII	60	40,8
Age (Year)		
12	12	8,2
13	69	46,9
14	52	35,4
15	14	9,5
Age at first menstruation (Year)		
10	7	4,8
11	35	23,8
12	63	42,8
13	37	25,2
14	5	3,4
Average duration of menstruation (days)		
3	2	1,4
4	16	10,9
5	25	17,0
6	20	13,6
7	68	46,3
>7	16	10,9
Total	147	100

Based on the results of statistical analysis using the Chi-Square test on 147 respondents, the cross-tabulation data showed that of the 91 respondents with good knowledge, the majority –62 (68,1%)– exhibited good personal hygiene practices, while only 29 (31,9%) exhibited poor practices. Conversely, of the 56 (38,1%) respondents with poor knowledge, 37 (66,1%) exhibited poor menstrual personal hygiene behavior, while 19 (33,9%) exhibited good behavior.

**Table 2.** Frequency Distribution of Knowledge and Personal Hygiene Practices Related to Menstruation Among Adolescent Girls at State Junior High School 1 Sukamaju Selatan in 2025

Knowledge	Menstrual Hygiene Practices						P Value
	Good		Poor		Total		
	n	%	n	%	n	%	
Good	62	68,1	29	31,9	91	61,90	0,000
Poor	19	33,9	37	66,1	56	38,1	
Total	81	55,1	66	44,9	147	100	

Statistical analysis revealed a p-value of  $<0,05$  (0,000), indicating a significant association between knowledge and menstrual personal hygiene practices among adolescent girls at SMP Negeri 1 Sukamaju Selatan.

### 3.2. Discussion

Human knowledge enables people to respond to and solve problems. A high level of knowledge does not guarantee that a person will behave and act positively. On the contrary, a high level of knowledge enables a person to think more critically when understanding something. In addition to a person's knowledge, thoughts, beliefs, and emotions also influence the formation of consistent attitudes and behaviors. Education, occupation, age, interests, experience, cultural environment, and information are some of the factors that influence a person.

A study on Menstrual Personal Hygiene Knowledge among Adolescent Girls at SMP Negeri 1 Sukamaju Selatan revealed that 91 respondents (61,90%) had good knowledge of menstrual personal hygiene, while 56 respondents (38,1%) had insufficient knowledge. This is due to misconceptions, which lead adolescents to practice incorrect hygiene practices. They also lack experience and knowledge regarding personal hygiene, such as washing the genital area with vaginal cleansers, not changing sanitary pads frequently, and the proper way to wash the genital area from back to front. Thus, adolescents lack sufficient knowledge in this area.

Teenagers lack sufficient knowledge about personal hygiene. This is due to a lack of information from various sources, such as print and electronic media, as well as a lack of education and instruction on personal hygiene in schools, particularly at SMP Negeri 1 Sukamaju Selatan. Poor personal hygiene during menstruation can also lead to postmenstrual issues such as vulvar pruritus (Wana & Azizah, 2025). Poor vulvar care can lead to vulvar pruritus, symptoms such as itching in the genital area, vaginal discharge, and a burning sensation on the skin; therefore, personal hygiene behavior is a factor strongly associated with vulvar pruritus, as adolescents experiencing vulvar pruritus typically do not practice proper personal hygiene. Menstrual personal hygiene practices among female adolescents at SMP N 1 Sukamaju Selatan indicate that 81 (55,1%) respondents demonstrated good practices, while the remaining 66 (44,9%) exhibited poor practices.

Lawrence Green's theory posits that a person's health is influenced by two factors: behavioral factors (behavioral causes) and non-behavioral factors (non-behavioral causes), which are influenced by knowledge as a predisposing factor. In 1980, Lawrence Green's theory also stated that a person's knowledge of personal hygiene has a significant influence

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on their behavior regarding the maintenance and care of their reproductive health, particularly during menstruation (Pakpahan, A. F., et al, 2021). Poor personal hygiene can lead to the overgrowth of microorganisms, which can cause disorders of the reproductive organs (Widarini et al., 2023).

According to Lawrence Green's theory, knowledge acts as a predisposing factor that influences behavior through several mechanisms. First, knowledge contributes to the formation of positive attitudes toward menstrual hygiene. Adolescents who understand the health risks associated with poor hygiene are more likely to develop a sense of responsibility toward maintaining cleanliness. Second, knowledge enhances perceived benefits, where individuals recognize that proper hygiene practices can prevent infections and discomfort. Third, knowledge serves as a cue to action, encouraging adolescents to adopt appropriate hygiene behaviors such as regularly changing sanitary pads and maintaining genital cleanliness (Green & Kreuter, 2005; Notoatmodjo, 2012).

Based on the research findings, it was found that knowledge is related to menstrual hygiene behavior. The higher a person's knowledge of menstrual hygiene, the higher the likelihood that they will practice good menstrual hygiene behaviors, and vice versa. The results of the study conducted at SMPN 1 Sukamaju Selatan indicate that the menstrual hygiene behaviors exhibited by the students fall into the "good" category, although there are still respondents with insufficient knowledge, which reduces the percentage of students with good knowledge who exhibit poor menstrual hygiene behaviors (Elfiyani et al., 2024). The students at SMPN 1 Sukamaju Selatan possess good knowledge of menstrual hygiene, which is undoubtedly encouraged by information from parents, teachers, friends, and even social media regarding menstrual hygiene and health, thereby equipping them with sound knowledge on the subject. The majority of respondents with good knowledge (68.1%) also demonstrated good hygiene practices, supporting the theoretical pathway that improved knowledge leads to better behavior. However, some respondents with good knowledge still exhibited poor behavior, indicating that additional factors such as environmental support, access to facilities, and social influences may also play important roles.

These findings are supported by a study conducted by (Silvia, 2023) which demonstrates a correlation between knowledge of personal hygiene and hygiene practices during menstruation among seventh-grade girls at SMP Negeri 3 Gamping. As indicated by the correlation coefficient and p-value of  $0,000 < 0,05$ . Additionally, the findings of (Widarini et al., 2023) indicate that knowledge has a significant relationship with menstrual personal hygiene behavior among adolescent girls in Denpasar, with a p-value of 0,006 ( $p \leq 0,05$ ). A total of 71,59% of adolescent girls with good knowledge also exhibited good behavior, while 51,92% of adolescent girls with insufficient knowledge demonstrated poor attitudes toward personal hygiene during menstruation.

This study has several limitations. First, the cross-sectional design limits the ability to establish causal relationships between knowledge and behavior. Second, the study was conducted in a single school, which may limit the generalizability of the findings to other settings. Third, the use of self-reported questionnaires may introduce social desirability bias. Finally, this study did not assess other potential influencing factors such as parental education, socioeconomic status, and the availability of sanitation facilities at school.

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## Conclusions

This study demonstrates a significant relationship between knowledge and menstrual hygiene behavior among adolescent girls. Improving knowledge is essential but not sufficient alone, supportive environments and access to adequate sanitation facilities are also needed. Schools are recommended to integrate menstrual hygiene education into the curriculum and ensure the availability of clean water and proper sanitation facilities. Parents are encouraged to provide open communication and guidance regarding menstrual health. Future research should focus on intervention-based studies and explore environmental and socio-cultural factors influencing menstrual hygiene practices.

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## Conflicts of Interest

The authors declare no conflict of interest

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