



Factors That Influence Menstrual Hygiene Behavior in Adolescents in Cipedes Village, Tasikmalaya City

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Abstract: Adolescence is an important period in the individual development process, marked by various biological, psychological, and sexual changes. Menstruation (menarche) is one of the early characteristics for adolescent girls that indicates the functioning of the reproductive system. This condition requires attention to the cleanliness of intimate organs, because the shedding of the endometrium which is rich in blood vessels can increase the risk of infection. Lack of implementation of good menstrual hygiene practices can have an impact on the health of the reproductive tract. Objective: To review the importance of implementing hygiene during menstruation as part of efforts to protect the reproductive health of adolescent girls and prevent infection. Menstrual hygiene includes actions to maintain cleanliness such as choosing the right sanitary napkins, changing them regularly, and cleaning female organs in the right way. Lack of education and information about hygiene management during menstruation is one of the factors that influences this poor practice. Social, cultural factors, as well as individual values and habits also play a role in shaping menstrual hygiene behavior. Counseling and education about menstrual hygiene play an important role in supporting the reproductive health of adolescent girls. Digital media such as Android applications can be used as an effective educational tool to improve understanding and healthy behavior during menstruation.

Keywords: Adolescent; Hygiene; Infection; Menstruation; Reproductive

Introduction

Adolescence is a crucial transition period in a person's life, marked by major changes in physical, emotional, and social aspects (Brooks-Gunn & Paikoff, 2022; Uktamovna, 2025). Based on the definition of the National Population and Family Planning Agency (BKKBN), adolescents are individuals aged 10 to 24 years who are not yet married. In this phase, adolescent girls will experience menarche—their first menstruation—which is an indicator that the reproductive organs are starting to function (Irianto, 2015). Menstruation itself is a monthly physiological process in the form of shedding of the endometrium accompanied by vaginal bleeding (Yousuf, 2025).

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Based on the 2016 Indonesian Demographic and Health Survey (SDKI), around 23% of adolescent girls aged 10–11 years have experienced menarche, and as many as 89% experience it in the age range of 8–15 years. The menstrual period is a period that is prone to infection because of the opening of blood vessels in the endometrium, so maintaining genital hygiene during menstruation is very important (Lestari, 2015).

Maintaining cleanliness during menstruation, or known as menstrual hygiene, is part of a promotional effort to protect adolescent reproductive health. Recommended hygiene practices include using clean and well-absorbent pads, changing pads at least twice a day, and washing the feminine area properly, namely from front to back to prevent bacterial contamination from the anus (Lestari, 2015; Tarwoto & Wartonah,

2010). Lack of appropriate information and education related to this practice can increase the risk of reproductive tract infections, especially because humid conditions and the presence of menstrual blood are an ideal environment for the growth of pathogenic microorganisms (Andira, 2010).

Considering this, early education is needed about menstrual hygiene management. Digital media, especially Android-based applications, have great potential as an effective and easily accessible educational tool for adolescents (Dinengsih et al., 2024; Malaka et al., 2021). Through appropriate education, adolescent girls are expected to be able to increase their knowledge and positive behavior in maintaining reproductive health, while preventing complications that may arise due to inadequate hygiene practices during menstruation.

Early education on menstrual hygiene management (MHM) is essential to support adolescent girls' reproductive health (Sood et al., 2022; Thurairasu, 2023). Lack of understanding of the menstrual process and proper hygiene practices can negatively impact adolescents' physical and mental health, as well as increase the risk of reproductive tract infections. Early education allows adolescents to be better prepared to face their first menstruation with confidence and without embarrassment.

A study showed that providing appropriate information about menstruation can reduce anxiety and increase positive perceptions of the biological changes that occur (Sommer et al., 2016). Therefore, school-based counseling and education are important strategies that must be promoted. In addition, family involvement, especially mothers, is also a determining factor in the formation of good menstrual hygiene behavior. This combination of educational approaches can create a supportive environment for adolescent girls.

Digital media is now a very potential tool in supporting health education, including MHM. In the digital era, adolescents tend to be more responsive to information conveyed through devices that are familiar with their daily lives, such as smartphones. Android-based applications designed with an interactive and informative approach can attract adolescents to learn independently. According to L'Engle et al. (2016), the use of digital applications in educational.

Education through digital media not only conveys information, but can also shape positive attitudes and behaviors. Adolescent girls who receive adequate information about MHM tend to have a more open attitude towards reproductive health issues and are more disciplined in maintaining personal hygiene during menstruation. Application-based interventions allow the integration of various contents such as educational videos, interactive quizzes, and menstrual

schedule reminders that encourage active user engagement.

Research by Naved et al. (2024) showed that technology-based education programs can significantly improve menstrual hygiene behavior among adolescents. This digital education also contributes to reducing the stigma around menstruation that is still strong in many communities. Through a fun and adaptive approach, digital applications can help adolescents feel more comfortable talking about and managing their reproductive health. This has a positive impact on their overall quality of life.

Lack of knowledge and proper practices during menstruation can lead to various health complications, such as yeast infections, urinary tract infections, and even future fertility issues. By providing effective education through digital apps, these potential complications can be prevented as early as possible. Quick and easy access to information allows adolescents to immediately understand the important steps in maintaining hygiene during menstruation.

The World Health Organization (WHO, 2024) asserts that menstrual health promotion is an important part of the right to health for women. Therefore, collaboration between the government, private sector, and technology developers is needed to create educational applications that are inclusive and meet the needs of adolescents. With this approach, it is expected to create a generation that is more aware and concerned about reproductive health. This awareness is an important foundation in creating a healthy and productive society in the future.

Method

This research is included in the type of descriptive research with a cross-sectional approach, which aims to describe certain phenomena or conditions at one point in time. This approach is very useful for obtaining an initial picture of prevalence, behavior, or characteristics in a particular population. As explained by Setia & Singh (2016), cross-sectional studies allow researchers to measure various variables simultaneously without the need for further intervention. Because only one measurement is taken, this method is also efficient in terms of time and cost. This approach is often used in the fields of public health and education.

The research method uses actual and factual situation analysis, as well as considerations based on literature. In this case, it will be possible to find the latest problems on the research topic raised this time, with the literature review method it will get some knowledge that can add insight for researchers. The method used in this research descriptive qualitative research is a

literature review and actual and factual situation analysis (Sugiyono, 2021).

The main objective of the cross-sectional approach is to obtain data that describes the actual conditions at the time of the study. In the context of menstrual hygiene management, this approach can provide important information regarding the level of knowledge, attitudes, and practices of adolescents at a certain time. Levin (2006) stated that although this method cannot show a cause-and-effect relationship, the results are still relevant for developing intervention programs. The data obtained can serve as a basis for designing educational strategies or policies that suit the needs of the target population. Therefore, this method is very appropriate for exploratory or mapping research.

Another advantage of cross-sectional studies is their ability to reach a wide sample in a short period of time. With standardized instruments, such as questionnaires, researchers can collect data that is representative and easy to analyze. According to Wang & Cheng (2020), this method allows the identification of ongoing trends or problems in society. However, researchers should still pay attention to the limitations of this method, such as the possibility of information bias or inaccuracy in measuring latent variables. Combination with other methods in the follow-up stage may strengthen the findings obtained from this initial study.

In this second stage, we find a problem. The problem raised in this research is how to implement a smart consumer loyalty system with a chatbot based on web methods and internet media. The initial stage in Natural Language Processing is Text Preprocessing, which is the first step in the model-building process (Sihombing, 2022).

In this last section, the author conducts research based on data that has been collected through previous research studies, and researchers' research so that the reset can produce data and the data can be a proposal for a new system, which will be used in the future by conducting research. Then the problem raised can be solved and a solution can be found. The study used unobtrusive research techniques to analyze objectively the impact of AI (Mhlanga, 2020).

The cross-sectional method is a research approach that involves collecting data at a specific point in time to describe the relationship between variables in a population. This research does not focus on changes or developments in variables over time, but rather on the conditions that exist at the time the data is collected (Sugiyono, 2020). Thus, this method is very suitable for describing the prevalence, perceptions, behaviors, or social phenomena that are occurring during a certain period. In practice, cross-sectional research involves

sampling from a predetermined population using representative sampling techniques, such as random sampling or purposive sampling, depending on the objectives and characteristics of the research.

The data collected can be quantitative through questionnaires and surveys, or qualitative through interviews and brief observations. After the data is collected, analysis is carried out to identify relationships or comparisons between variables, for example using correlation analysis, chi-square, or logistic regression in quantitative research. The advantages of the cross-sectional method lie in its efficiency in terms of time and cost, because the data is obtained simultaneously without the need for repeated observations. In addition, this method is able to provide a quick overview of social phenomena or community behavior.

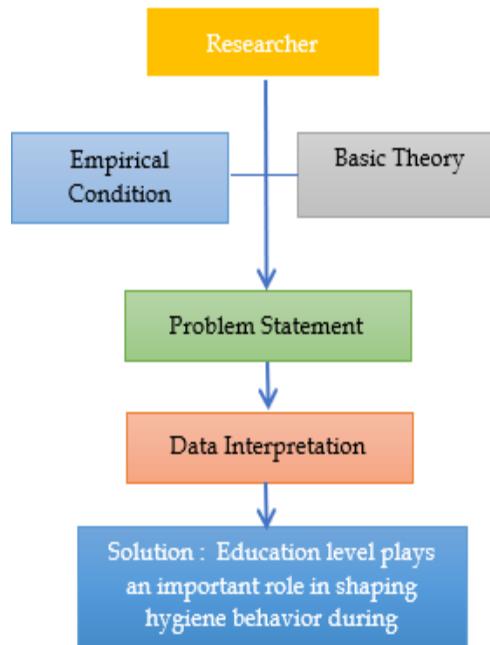


Figure 1. Research Logic Flow

This method is often used in social, communication, education, and public health research because it provides a comprehensive picture of the state of the population at a given time. Researchers can identify relationships between variables, such as demographic factors and certain behaviors, without having to conduct long-term observations. For example, cross-sectional research can be used to determine the level of public knowledge on environmental issues or the use of digital media. Data is collected through surveys, questionnaires, or interviews within the same period of time. The results of the research are then used to understand patterns, trends, and potential factors related to the phenomenon being studied.

Result and Discussion

Respondent Characteristics & Predisposing Factors

Based on the results of the questionnaire to 184 respondents, 68% were included in the late adolescent category (aged 18–24 years), 29% were classified as middle adolescents (aged 14–17 years), and 3% were in the early adolescent category (aged 10–13 years). 45% of respondents were or had completed college education, 43% had a high school education, 12% junior high school, and 0.5% of respondents had only completed elementary school education.

The data shows that 45% of respondents' mothers had a high school education, 23% elementary school education, 16% college education, and 16% junior high school education. The majority of respondents (26%) were 152–155 cm tall. Meanwhile, the height that was least often found was in the range of 168–171 cm (1%). As many as 28% of respondents weigh between 47–51 kg. Only 1% of respondents weigh between 67–71 kg. As many as 33% of respondents reported experiencing menarche at the age of 12.

As many as 76% of respondents have good knowledge regarding menstruation, and 24% have poor knowledge. Most respondents (95%) know the frequency of changing sanitary napkins, and 94% know the definition of menarche. As many as 57% of respondents show a good attitude, while 43% show a poor attitude. This poor attitude is characterized by behavior such as changing sanitary napkins only 2–3 times a day (60%), as well as other unhygienic habits such as rarely ironing underwear or wearing tight underwear during menstruation.

As many as 62% of respondents have correct beliefs, while 38% have incorrect beliefs. For example, 57% still believe that hair and nails should be collected during menstruation, and 51% believe that cold drinks can disrupt the menstrual cycle. As many as 71% of respondents reported poor physical condition during menstruation. Complaints experienced include mood swings (19%), stomach ache (18%), irritability (16%), fatigue (13%), anxiety (8%), and depression (1.5%).

Enabling & Reinforcing Factors

As many as 51% of respondents experienced complaints that were classified as severe. Among them were a damp feminine area (88%), unpleasant odor (55%), itching (44%), vaginal discharge before menstruation (86%), and acne (75%). However, the majority did not experience complaints about the sanitary napkins used. The majority of respondents (95%) stated that adolescent health services in their area were still poor, with 98% stating that there were no

adolescent health posts available and 95% did not have access to peer education programs for adolescents.

As many as 98% of respondents stated that personal hygiene facilities during menstruation were adequate. This is indicated by easy access to clean water (99%) and necessities such as sanitary napkins and soap (98%). As many as 78% of respondents did not feel any significant obstacles in maintaining hygiene during menstruation. The majority did not feel awkward discussing personal hygiene, and the COVID-19 pandemic did not significantly affect menstrual-related examinations (Hammad et al., 2025).

As many as 93% of respondents received support from their families, especially in the form of education about menstruation, such as information about the length of menstruation (91%), how to clean the genitals (89%), and the right time to change sanitary napkins (83%). As many as 72% of respondents stated that they received support from teachers. Teachers provide important information about menstrual hygiene, including how to wash and dispose of sanitary napkins properly (Ene et al., 2024).

Factors Influencing Menstrual Hygiene Behavior in Adolescents

The results of the questionnaire on 184 respondents showed that support from peers plays an important role in shaping hygiene behavior during menstruation. As many as 84% of respondents reported that they received support from friends in the form of information or discussions about menstruation. The forms of support include: about 83% of respondents received information from friends about the importance of maintaining cleanliness during menstruation; about 99% were open to discussing the topic of menstruation with friends; As a 92% were involved in conversations about how to maintain cleanliness during menstruation; and about 86% discussed the proper way to dispose of sanitary napkins (Mehta et al., 2022).

These findings indicate that peers play a role as an effective source of informal education in encouraging menstrual hygiene practices. Open interaction between friends can reduce stigma or shame, and encourage the formation of healthy habits. However, the role of friends does not always have a positive impact. As many as 44% of respondents still believe in myths conveyed by friends regarding menstruation. This shows that although friends are influential, valid information reinforcement from health workers or educators is still needed so that adolescents do not get caught up in misinformation.

Increased knowledge was also observed through the implementation of digital-based educational interventions. Educational programs on personal hygiene during menstruation carried out through WhatsApp groups have proven successful in increasing

participants' knowledge. Discussions in the group became a medium for exchanging information as well as a means to correct circulating myths. The results of the pre-test and post-test showed a significant increase, with the Wilcoxon test producing a p value = 0.000 ($p < 0.05$), which indicated a statistically significant change.

As many as 85% or 57 of the 67 participants showed an increase in understanding, especially regarding facts and myths about personal hygiene during menstruation. This emphasizes that digital technology-based interventions are the right approach, especially for adolescents who have a high interest in using social media and conversation-based applications.

Conclusion

The results of the study indicate that there are a number of factors that significantly influence menstrual hygiene behavior in adolescent girls in Cipedes Village. The conclusions that can be drawn are as follows: Education level plays an important role in shaping hygiene behavior during menstruation. Adolescents with a higher educational background tend to have better hygiene practices. The age of the adolescent is also an influential variable. As age increases, understanding and maturity in maintaining personal hygiene during menstruation increases. Predisposing factors, which include knowledge, attitudes, and beliefs, have been shown to be closely related to hygiene behavior. Adolescents who have adequate knowledge, supportive attitudes, and rational beliefs about menstruation tend to implement good hygiene behavior. Enabling factors, such as physical complaints felt, access to health services, and obstacles faced, play a role in determining the extent to which adolescents are able to carry out optimal menstrual hygiene practices. Reinforcing factors, such as support from parents, teachers, and peers, contribute positively to encouraging hygiene behavior during menstruation. Strong social support helps create a conducive environment for adolescents to implement proper hygiene management.

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Conflicts of Interest

In this research, there is no interest and or hidden interests among the researchers

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