

Knowledge and Personal Hygiene Practices during Menstruation among Adolescent Girls: A Study at Private High School in Bandung

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Abstract

Women with poor personal hygiene behaviors tend to perceive genital cleanliness as unimportant. This condition may lead to reproductive health problems. This study adopting a cross-sectional research design, using a valid and reliable questionnaire. The number of respondents was 60 students in grade 3, only for female students at Private Senior High Schools in Bandung city. This research method used an analytic descriptive design, using a cross-sectional design which is a research design by measuring or observing at the same time between the risk factors or exposure of the independent variable and the effect or dependent variable. Sample was drawn from 625 total population as many as 60 students who had menstruation experienced. The results show that as many as 71.1% students had good knowledge about personal hygiene, and 66.7% had good behavior. There is significant relationship between knowledge and behavior in maintaining female genital. The higher the level of knowledge, the better the students' behavior in practicing personal hygiene, particularly regarding female genital organs. The recommendation for the school, based on this study, is to provide guidance and education on personal hygiene of the genital organs during menstruation. Education for students can be delivered through educational videos, simulations, or by university students based on the findings of this research.

Keywords: behavior; menstruation; personal hygiene; senior high school; students

Introduction

Menstruation is a natural biological process experienced by adolescent girls as they enter puberty. Despite being a normal physiological phenomenon, menstruation is still surrounded by misconceptions, taboos, and inadequate information, especially among adolescents in developing countries, including Indonesia. Lack of appropriate knowledge often leads to poor menstrual hygiene practices, which may increase the risk of reproductive tract infections, school absenteeism, and reduced quality of life among female students (Ramadhani et al., 2024; Trimawartinah & Azzahra, 2024)..

According to the World Health Organization (WHO), menstrual hygiene management (MHM) is defined as the use of clean menstrual management materials, adequate facilities for changing, and proper disposal of menstrual products. However, studies in low- and middle-income countries have shown that many adolescent girls face challenges in managing menstruation due to insufficient knowledge, lack of access to sanitary products, and inadequate school facilities. These barriers may cause discomfort, embarrassment, and anxiety, which can negatively affect school performance and social participation (Determinants of Menstrual Hygiene, 2022).

In Indonesia, several studies have reported that adolescent girls still have limited understanding of menstruation and reproductive health. A survey by UNICEF and the Indonesian Ministry of Health highlighted that only a small

proportion of adolescent girls have comprehensive knowledge about menstruation, and many rely on peers or family members who may also lack accurate information (Bedho et al., 2022). Inappropriate personal hygiene practices, such as infrequent changing of sanitary pads or improper cleaning, are commonly reported and can lead to health risks, including infections and reproductive health problems (Hayuning Qolbah et al., 2023; Wahyuni & Ritanti, 2024)..

Bandung city as one of the major cities in Indonesia, is home to many private schools where adolescent girls come from diverse social and cultural backgrounds. Private schools, such as SMA Angkasa Sulaiman Bandung, provide an important setting to assess the level of knowledge and personal hygiene practices during menstruation, considering that awareness and facilities may vary across different school types. Understanding the current situation in this setting is crucial for designing health education programs and school-based interventions to improve menstrual hygiene management among adolescent girls (Aminah & Mayunita, 2023).

A preliminary study of 10 female high school students in Bandung City revealed that they received no education at school about personal hygiene during menstruation. Furthermore, parents at home did not specifically provide information and education to their children about menstruation, as they considered it a normal occurrence that all women experience. If left untreated, this condition could lead to health problems in women, particularly those related to their genitals. Therefore, research is urgently needed to determine whether their behaviour are related to their knowledge, so that follow-up actions can be taken.

Therefore, this study aims to assess the knowledge and personal hygiene practices during menstruation among adolescent girls at private School at Bandung. The findings are expected to provide valuable insights into the existing gaps in knowledge and practices, and to support recommendations for school health promotion programs that can enhance adolescent reproductive health.

Methods

This study employed a quantitative approach with a cross-sectional design. This design was chosen because it enables the measurement of independent and dependent variables at a single point in time, making it suitable to describe the relationship between knowledge and personal hygiene practices during menstruation among adolescent girls. The target population consisted of female students enrolled at SMA Angkasa Sulaiman Bandung. A total of 60 adolescent girls were selected as the study sample from 625 total population using purposive sampling, with inclusion criteria being: (1) actively enrolled as students, (2) having experienced menstruation, and (3) willing to participate in the study by providing informed consent. The independent variable in this study was the students' knowledge regarding personal hygiene during menstruation. The dependent variable was their personal hygiene practices while menstruating.

Data were collected using a structured self-administered questionnaire. The instrument consisted of two parts: (1) a knowledge section containing multiple-choice questions to assess the level of understanding related to menstrual hygiene, and (2) a practice section using a Likert-type scale to evaluate hygiene-related behaviors during menstruation, such as frequency of pad changing, body washing, and disposal methods. The questionnaire was developed based on previous validated tools and adapted to the local context.

Before data collection, approval was obtained from the school and informed consent was secured from the participants. The questionnaires were distributed in the classroom setting under the supervision of the researcher. Respondents were given clear instructions and sufficient time to complete the questionnaire. Confidentiality and

anonymity of all participants were ensured. This research has received a certificate of ethical feasibility from the Health Research Ethics Committee of the Immanuel Health Institute, Bandung, number No. 138/KEPK/IKI/VII/2023.

Collected data were coded and entered into a statistical software program. Descriptive statistics (frequency, percentage, mean, and standard deviation) were used to describe the demographic characteristics, knowledge levels, and hygiene practices of the participants. The association between knowledge and personal hygiene practices during menstruation was analyzed using the Chi-square test, with a significance level set at $p < 0.05$.

Results

This research was conducted at a high school in Bandung. The respondents were female students because the focus of the study was on personal hygiene behavior during menstruation. The results are shown in Table 1, which describes the respondents' knowledge and behavior. Table 2 explains the relationship between knowledge and behavior of female high school students regarding personal hygiene during menstruation.

Table 1. Univariate analysis: knowledge and personal hygiene practices

Variables	Frequency	Percent
Knowledge		
a. Poor knowledge	17	21.7
b. Good Knowledge	43	71.7
Behavior		
a. Poor knowledge	20	33.3
b. Good Knowledge	40	66.7
Total	60	100.0

Source: Primary data, 2023

Table 1 shows that some respondents' knowledge is still in the insufficient category, namely 21.7% and also the behavior of female students in carrying out personal hygiene during menstruation is also still there as much as 33.3%

Table 2. Cross Tabulation between Behavior in maintaining female genital hygiene and Knowledge about Personal Hygiene Crosstabulation.

Independent Variable	Behaviour in maintaining Female Genital Hygiene				<i>p value</i> OR (CI 95%)
	Poor		Good		
	f	%	f	%	
Knowledge					0.020*
Poor knowledge	10	58.8	7	41.2	2.53 (1.29-4.96)
Good knowledge	10	23.3	33	76.7	

Source: Primary data, 2023

Table 2 shows a cross-sectional analysis of students' knowledge and behaviour regarding personal hygiene during menstruation. Of the 20 respondents with low knowledge, 50% each had the same behaviour, representing a 50% proportion. Of the 43 respondents with good knowledge, 76.7% had good behaviour, while only 23.3% had poor personal hygiene behaviour.

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The chi-square statistical test yielded a p-value of 0.020. This p-value is smaller than the 5% alpha value. This indicates a relationship between female students' knowledge and practice regarding personal hygiene during menstruation. The OR value was 2.53 (1.29-4.96), meaning that female students with low knowledge were 2.53 times more likely to engage in poor personal hygiene behaviour than those with high knowledge. When viewed from the value of the closeness of the relationship between knowledge and behaviour, it is known that the contingency coefficient value is 0.340, so it can be interpreted that knowledge and behaviour have a fairly close relationship, by looking at the value of the contingency coefficient.

Discussion

The present study assessed the knowledge and personal hygiene practices during menstruation among adolescent girls at a private high school in Bandung. The results revealed that the majority of respondents (71.7%) had good knowledge about menstrual hygiene, while 21.7% demonstrated poor knowledge. Regarding practices, 66.7% of respondents showed good personal hygiene behaviors during menstruation, whereas 33.3% exhibited poor hygiene practices. These findings indicate that although most students were knowledgeable, a considerable proportion still did not apply optimal hygiene practices

his study investigated the relationship between knowledge and personal hygiene practices during menstruation among female high school students in Bandung. The univariate analysis showed that the majority of respondents had good knowledge (71.7%) and good hygiene practices (66.7%). However, a considerable proportion still demonstrated poor knowledge (21.7%) and poor hygiene practices (33.3%), highlighting the need for continuous menstrual health education.

The cross-sectional analysis revealed a significant relationship between knowledge and hygiene practices ($p = 0.020$). Students with higher knowledge levels were more likely to engage in good personal hygiene behaviour compared to those with lower knowledge. The odds ratio ($OR = 2.53$; 95% CI: 1.29–4.96) indicated that female students with poor knowledge were 2.53 times more likely to practice inadequate menstrual hygiene than their peers with good knowledge. The contingency coefficient value (0.340) further suggests that knowledge and practice are fairly closely related, although other external factors may also contribute.

These findings are consistent with previous research in Indonesia and other developing countries, which demonstrated that menstrual knowledge is an important predictor of hygiene practices (Trimawartinah & Azzahra, 2024). A study in Tangerang similarly found that students with higher knowledge were significantly more likely to maintain proper menstrual hygiene (Determinants of Menstrual Hygiene, 2022). Likewise, Hayuning Qolbah et al. (2023) reported that adolescents with good knowledge tended to change sanitary pads more frequently and dispose of them appropriately compared to those with insufficient knowledge.

Although the majority of students in this study had good knowledge, not all of them translated this knowledge into proper behaviour. This discrepancy may be explained by several contextual factors, such as family support, peer influence, cultural taboos, and the availability of school facilities (Wahyuni & Ritanti, 2024). For example, Bedho et al. (2022) found that even when adolescents were aware of the importance of regular pad changing, economic barriers and lack of privacy at school sometimes hindered them from practicing optimal menstrual hygiene.

The association found in this study underlines the importance of integrating menstrual health education into the

school curriculum. Evidence shows that structured health education, especially through interactive methods and multimedia approaches, can significantly improve both knowledge and practices of adolescent girls (Ramadhani et al., 2024; Aminah & Mayunita, 2023). Schools should therefore not only provide accurate information but also create supportive environments that enable students to apply what they learn in daily practice.

This study has several strengths. First, it addresses an important issue related to adolescent reproductive health, namely menstrual hygiene practices, which are often overlooked in formal education. The use of quantitative statistical analysis, including chi-square tests, odds ratio, and contingency coefficient, provides objective evidence of the relationship between knowledge and behaviour. With a relatively adequate sample size, the findings offer a useful overview of students' knowledge and practices in the selected school. Furthermore, the significant association found ($p = 0.020$, $OR = 2.53$) highlights the relevance of educational interventions to improve menstrual hygiene behaviour among female students.

However, this study also has some limitations. The cross-sectional design restricts the ability to establish a causal relationship between knowledge and behaviour. Since the research was conducted in only one high school with a limited number of respondents, the generalizability of the findings to a wider population is limited. In addition, the data collection relied on self-reported questionnaires, which may have been affected by social desirability bias, as some respondents might have provided answers they perceived as favourable rather than their actual practices. Lastly, this study did not explore other influencing factors, such as the availability of sanitation facilities, parental support, or sociocultural aspects, which could also play a significant role in shaping menstrual hygiene behaviour.

Conclusion

In conclusion, this study demonstrates a statistically significant relationship between knowledge and menstrual hygiene practices. While knowledge serves as a strong determinant of behaviour, efforts to improve practices should also address environmental, social, and cultural barriers. Strengthening school-based programs and ensuring access to adequate facilities are crucial steps to enhance adolescent girls' reproductive health.

Based on these findings, it is recommended that schools strengthen health education programs on menstrual hygiene by using interactive and student-centred approaches, such as workshops, peer education, and multimedia tools. Additionally, schools should ensure the availability of adequate facilities, including clean toilets, water, and proper disposal systems for sanitary pads, to support healthy practices. Collaboration between teachers, parents, and health workers is also essential to provide accurate information and a supportive environment. These efforts will help bridge the gap between knowledge and practice, ultimately improving reproductive health outcomes among adolescent girls.

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Author Contribution and Competing Interest

The roles of each researcher in the development of this article are as follows:

TW: as the principal investigator, was responsible for conceptualizing the research and collecting data in the field;

GY: contributed to data processing and drafting the publication and research report, as well as conducting oral presentations.

FF: contributed to preparing the research questionnaire and assisting with data collection, and was responsible for managing the administration and ethics of the research.

We declared that there are no conflicts of interest in this research.

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