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The Factors Affecting Menstrual Hygiene Management among Adolescents

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Abstract:
Menstrual hygiene management is an action to maintain cleanliness and health when women experience menstruation. If not appropriately implemented, young women will not be able to meet their needs for cleanliness, appearance, and reproductive health during pregnancy. So, it is easier to get urinary tract infections, vaginal discharge, cervical cancer, and other reproductive health problems. This study aimed to determine what factors influence menstrual hygiene management. This study used a sample of 103 adolescents in the Klaten area. This research was conducted using a cross-sectional method using a total sampling technique. The menstrual hygiene management questionnaire has been tested for validity and reliability with a value of r = 0.69. after being tested using Kendall's Tau test, the results showed that menarche's age (0.077 > 0.05) did not correlate with menstrual hygiene management. Cycle menstruation (0.025 < 0.05) influences menstrual hygiene management. Knowledge (0.043 < 0.05) influences menstrual hygiene management. Attitude (0.592 > 0.05) does not influence menstrual hygiene management. Myth or trust (0.049 < 0.05) influences menstrual hygiene management. The most influential factor in menstrual hygiene management is cycle menstruation.

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INTRODUCTION

In Latin, "adolescence" refers to the growth phase towards physical and psychological maturity. Adolescents are individuals aged between 10 and 19 years. Adolescence is a period of transition from childhood to adulthood, marked by various changes during puberty. One of the significant changes in adolescent girls is the onset of menarche (Kartikasari et al., 2024; Adyani et al., 2022; Kurniyawan et al., 2023).

Menarche is the first menstrual period experienced by adolescent girls when they enter puberty. Menarche marks the beginning of the reproductive period in adolescent girls and is an important indicator that her body is starting to produce hormones. This process involves the secretion of hormones by the hypothalamus, which are then passed on to the ovaries and uterus (Schreiber & Solebo, 2024; Zhang et al., 2024; Anggraini et al., 2023).

Menarche usually occurs between the ages of 10 and 15, although some experience it earlier. According to WHO, the average age of menarche is 13 years. Worldwide, it is estimated that there are around 1.2 billion adolescents, 18% of the population aged 10 to 24 years, with 85% living in developing countries. In the United States, the average age of menarche is 12.8 years. Based on data from the Ministry of Health of the Republic of Indonesia in 2018, the prevalence of menarche in

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Indonesia occurred at an average age of 12.4 years with a percentage of 60%. Adolescents who experience menarche will feel various physical, psychological, cognitive, and social impacts (Jiang et al., 2025; Vannuccini et al., 2022; Yu et al., 2020). To reduce these impacts, adolescents must consider several aspects, including maintaining and implementing menstrual hygiene management during menstruation (Behera et al., 2024; Andriani et al., 2022; Ramadhani et al., 2024).

Menstrual hygiene is an action taken to maintain cleanliness and health when women menstruate. This can build good habits in adolescents in maintaining cleanliness during menstruation. Actions taken during menstruation include using pads, changing pads, having a place to dispose of pads, access to toilets, soap, and water, and cleaning the genitals by washing them from front to back. When adolescents menstruate, maintaining cleanliness of the external genitalia is very important to avoid reproductive tract infections (Eroğlu et al., 2024; Talukdar et al., 2023).

According to WHO, adolescents have the highest proportion of Reproductive Tract Infections (RTIs) globally, between 35-42%. The prevalence of RTIs in adolescent girls includes candidiasis at 25-50%, bacterial vaginosis at 20-40%, and trichomoniasis at 5-15%. The high incidence of RTIs in adolescents is caused by a lack of attention to reproductive organ hygiene during menstruation, such as using pads for more than 6 hours (Daher et al., 2022; Yadanar & Win, 2020). In Indonesia, women are more susceptible to RTIs, mainly because of the hot and humid climate in this country. Most RTIs are caused by the Candida albicans fungus, which thrives in high humidity conditions, such as during menstruation, with a proportion reaching 77% (Pandit et al., 2024; Maritim et al., 2023; Apriliana et al., 2023).

Teenagers are more susceptible to urinary tract infections, cervical cancer, and other reproductive health problems if they do not maintain menstrual hygiene. Several factors that affect menstrual hygiene contribute to this impact (Prabhakar et al., 2024; Rani et al., 2022). Three factors influence menstrual hygiene management: biological factors (age of menarche, menstrual cycle), individual factors (knowledge, attitude), and social factors (myths or beliefs). Several factors can be identified: age of menarche, menstrual cycle, knowledge, attitude, and myths that apply in society (Bhoda et al., 2024; Adyani et al., 2022)

Research on adolescent menstrual hygiene management is fundamental because it relates to adolescent reproductive health. Poor menstrual hygiene management can increase the risk of reproductive tract infections, such as urinary tract infections (UTIs) or vaginal infections. Adolescents who do not have access to information or hygienic menstrual products are at higher risk of experiencing long-term health problems. In addition, it includes education and social engagement. In many areas, stigma or taboos around menstruation can prevent adolescent girls from staying in school during their menstrual periods. This can impact their school attendance and academic performance. Research can help identify ways to reduce these barriers and encourage adolescent participation in education and social well-being. Research on Menstrual hygiene management can help provide a deeper understanding of how good menstrual management can improve adolescent self-confidence and mental health.

METHOD

This research is quantitative and has a descriptive approach. This research was conducted through the Cross-Sectional method, which means data collection and measurement of variables simultaneously over a certain period. This study explains how factors influence menstrual hygiene management in early adolescents in the Klaten area. The sampling technique used was total sampling, with 103 respondents. The dependent variable in this study is menstrual hygiene management.

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Meanwhile, the independent variables in this study are factors that influence menstrual hygiene management, which include the age of menarche, menstrual cycle, knowledge, attitude, and a myth or belief. The research was conducted using a questionnaire-filling method. The researcher divided the respondents into two sessions and explained how to complete the questionnaire. The questionnaires given included a menarche age questionnaire, a menstrual cycle questionnaire, a knowledge questionnaire, an attitude questionnaire, a myth or belief questionnaire, and a menstrual hygiene management questionnaire, which were then filled out by the respondents themselves under the supervision of the researcher with the researcher's assistance to the respondents. Filling out the questionnaire took approximately 30 minutes. This research has received ethical approval from the ethics team of the Faculty of Nursing and Technology, University of Muhammadiyah Klaten.

RESULT

Univariate Analysis

The following are the results of research that has been conducted.

Table 1. Average data on age characteristics of female students of Klaten area 2024 (n=103)

Variables	Mean	Median	Minimum	Maximum	Standard Deviation
Age	12.79	13	12	13	0.412

Table 1 shows that the average age of female students is 12.79 years with a standard deviation of 0.412 with a minimum age of 12 and a maximum age of 13.

Table 2. Frequency distribution of characteristics of living together and the last education of mothers of female students of Klaten area (n=103)

Variables	f	%
Living together		
Parent	97	94.2
Guardian	6	5.8
Total	103	100
Parents' Last Education		
SD	12	11.7
JUNIOR HIGH SCHOOL	44	42.7
High School / Vocational School	42	40.8
D3/S1	5	4.8
Total	103	100

Table 2 shows the distribution of respondents living together; most live with their parents at 94.2%. The distribution data of respondents regarding their parents' last education shows that most are junior high school graduates, with a percentage of 42.7%.

Table 3. Frequency distribution of respondents based on the age of menarche, Menstrual cycle, Knowledge, Attitude, Myths or beliefs, and menstrual hygiene management of Early Adolescents (n=103)

Variables	f	%
Age of Menarche		
Early	46	44.7
Normal	57	55.3
Total	103	100
Menstrual Cycle		
Normal	22	21.4
Abnormal	81	78.6
Total	103	100
Knowledge		
Good	46	44.7
Enough	57	55.3
Total	103	100
Attitude		
Positive	102	99
Negative	1	1
Total	103	100
Myth or Belief		
Do not believe	12	11.7
Believe	91	88.3
Total	103	100
Menstrual Hygiene Management		
Good	80	77.7
Bad	23	22.3
Total	103	100

Table 3 shows that the respondents' menarche age distribution is primarily normal at 55.3%. The distribution of respondents' menstrual cycles is abnormal, with a percentage of 78.6%. The distribution of knowledge is sufficient, primarily at 55.3%. The distribution of attitudes is mostly positive at 99%. The distribution of myths or beliefs is mostly believed at 88.3%. Distribution of menstrual hygiene management frequency is mostly good, with a percentage of 77.7%

Bivariate Analysis

Table 4. Factors influencing menstrual hygiene management in early adolescence (n=103)

No	Factor	Menstrual Hygiene Management				Total		p-value
		Good		Bad				
		f	%	f	%	f	%	
1	Age of menarche							0.077
	Early	32	69.5	14	30.5	46	100	
	Normal	48	84	9	16	57	100	
2	Menstrual Cycle							
	Normal	21	95	1	5	22	100	0.025
	Abnormal	59	72.8	22	27.2	81	100	
3	Knowledge							
	Good	40	86.9	6	13.1	46	100	0.043

No	Factor	Menstrual Hygiene Management				Total		p-value
		Good		Bad				
		f	%	f	%	f	%	
	Enough	40	70	17	30	57	100	
4	Attitude							
	Positive	79	77.5	23	22.5	102	100	
	Negative	1	100	0	0	1	100	0.592
5.	Myth or Belief							
	Don't believe	12	100	0	0	12	100	0.049

The table above shows that several factors influence menstrual hygiene management. Based on the bivariate analysis results on the Age of Menarche factor, it has a p-value = 0.077 > 0.05. The menstrual cycle has a p-value = 0.025 < 0.05. Knowledge has a p-value = 0.043 < 0.05. The Attitude factor has a p-value = 0.592 > 0.05, and the Myth factor has a p-value = 0.049 < 0.05.

Multivariate Analysis

Multivariate analysis in this study uses linear regression.

Table 5. Bivariate selection of factors affecting menstrual hygiene management

No	Variables	P value
1	Age of menarche	0.077
2	Menstrual cycle	0.025
3	Knowledge	0.043
4	Attitude	0.592
5	Myth or belief	0.049

Based on Table 5, the results of the bivariate analysis are the variables of the age of menarche (p = 0.077), menstrual cycle (p = 0.025), knowledge (p = 0.043), attitude (p = 0.592), myth or belief (p = 0.049). Each variable with a p-value <0.25 is the age of menarche, menstrual cycle, knowledge, and myth or belief. So, these four variables are entered into the multivariate modeling. Age of menarche and menstrual cycle are shown in Table 6 below as variables entered into the final regression model.

Table 6. Final Linear Regression Model

No	Variables	B	p-value	OR	95% CI	
					Lower	Upper
1	Age of menarche	-1,087	0.031	0.337	0.125	0.907
2	Menstrual cycle	2.313	0.030	10.104	1.244	82.083
	Constant	-5.032	0.015	0.007		

The results of the multivariate analysis showed that, with a p-value = 0.030. The menstrual cycle is the most influential factor in menstrual hygiene management.

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DISCUSSION

Correlation between age of menarche and menstrual hygiene management

Menstrual hygiene management (MHM) is the management of women's hygiene and health during menstruation. Menstrual hygiene management discusses how women obtain, use, and dispose of sanitary napkins, what facilities, education, guidance, and counseling are available, and how cultural myths prevent them from doing so. According to the analysis of this study, age at menarche is one of the factors that influences menstrual hygiene management. This is not following the results of the analysis in this study.

Correlation analysis was used to analyze the relationship between the age of menarche and menstrual hygiene management. A p-value was found =0.077 (p>0.05), which shows no significant correlation between the two. The results of this study are not in line with research by Dinda, (2020), which shows that most female students of MIN Sleman Regency experience early menarche. The bivariate analysis results produced a p-value of 0.002 (<0.05), which shows a relationship between the age of menarche and menstrual hygiene behavior. The results of the bivariate correlation test produced a value of 0.524, which shows that there is a moderate relationship between the age of menarche and menstrual hygiene behavior

Correlation between Menstrual Cycle and Menstrual Hygiene Management

This study's results indicate a relationship between the menstrual cycle and menstrual hygiene management. This is in line with the results of a review of several articles conducted by Adyani et al., (2022). The results showed a relationship between the menstrual cycle and menstrual hygiene management. The menstrual cycle and menstrual hygiene management are inherently connected. The flow, duration, and variability of the menstrual cycle influence the types of hygiene practices needed to maintain health and comfort. Proper menstrual hygiene management is not only about using the right products but also about understanding the menstrual cycle and how it impacts hygiene practices. Ensuring access to safe, effective menstrual products, adequate education, and supportive environments is essential for improving menstrual hygiene management and reducing the risks of health issues related to menstruation. Improving menstrual hygiene management practices can promote better overall health, self-esteem, and empowerment for individuals during their menstrual cycle.

Correlation between Knowledge and Menstrual Hygiene Management

Knowledge is a person's ability to remember or recognize names, words, inspirations, formulas, etc. This study's results indicate a relationship between knowledge and menstrual hygiene management with a p-value = 0.043 (p <0.05). This study is in line with Widarini, (2022) found a significant relationship between knowledge and menstrual hygiene management in adolescent girls in Denpasar with a p-value = 0.006. The correlation between knowledge and menstrual hygiene management is crucial for promoting better menstrual health, preventing infections, reducing stigma, and ensuring that individuals, particularly adolescents, can manage their menstruation confidently and hygienically. Education and awareness about the menstrual cycle, hygiene practices, and available menstrual products empower individuals to make informed decisions, improve their quality of life, and foster social and emotional well-being. Investing in education and access to reliable information ensures that individuals can maintain good menstrual hygiene and protect their health.

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Correlation between attitudes and menstrual hygiene management

The results of this study indicate that there is no relationship between attitudes and menstrual hygiene management. Research by Widarini, (2022) shows a significant relationship between attitudes and menstrual hygiene management in adolescent girls in Denpasar with a p-value = 0.007. This is because attitudes that support menstruation are shaped by personal experiences, culture, the influence of people considered important, media, institutions, religion, and emotional factors. Attitude is a perspective as a response, acceptance, and assessment of something, a situation, an idea, another person, or oneself as a result of the learning process or work experience (Ancheta et al., 2025; Keskin & Molu, 2025).

Correlation between Myths or Beliefs and Menstrual Hygiene Management

This study's results show a relationship between myths or beliefs and menstrual hygiene management in adolescents with a value of p = 0.049 (p <0.05). This result aligns with the study by Amanda, (2020), which shows a relationship between myths or beliefs and menstrual hygiene management in adolescents, with a p-value = 0.003. The study found that myths or beliefs are suggestions or prohibitions to switch during menstruation. The correlation between myths or beliefs and menstrual hygiene management is significant, as myths and misconceptions directly affect how individuals manage their menstrual hygiene. Cultural, social, and personal beliefs often shape practices related to menstrual health, sometimes leading to unhygienic behaviors, stigma, or poor access to menstrual hygiene products. Myths can prevent individuals from understanding menstruation as a natural biological process, which may result in inadequate hygiene practices, increased health risks, and emotional distress. Addressing these myths through education, awareness campaigns, and culturally sensitive interventions is key to improving menstrual hygiene management. By challenging harmful myths and providing accurate information about menstruation, we can help individuals make better choices, reduce stigma, and improve both their physical and mental health.

CONCLUSION

The factors that influence menstrual hygiene management are the menstrual cycle, knowledge, and myths or beliefs. The most influential factor in menstrual hygiene management is the menstrual cycle. The menstrual cycle and menstrual hygiene management are intricately connected. The different phases of the menstrual cycle, menstrual, follicular, ovulation, and luteal, each have specific hygiene needs based on flow, discharge, and hormonal fluctuations. Proper menstrual hygiene is essential for maintaining comfort, health, and dignity.

Nurses play a pivotal role in promoting good menstrual hygiene practices through their direct interaction with patients, community outreach, education, and advocacy. By focusing on education, accessible products, mental health support, and policy change, nurses can help reduce the stigma and challenges associated with menstruation and improve health outcomes. Integrating research, innovation, training, and sustainability in nursing practice will ensure better menstrual hygiene management for all individuals.

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It is hoped that adolescents will be able to increase their knowledge of adolescent girls regarding factors that influence menstrual hygiene management so that they can take good actions during menstruation and maintain the cleanliness of vital organs.

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