Myths about Menstrual Personal Hygiene among Female Adolescents

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Abstract

Poor personal hygiene during menstruation among adolescents can lead to urinary tract infection, reproductive tract infection, and skin irritation. This study aimed to determine the relationship between belief in myths and personal hygiene during menstruation. Cross-sectional quantitative study was conducted using a sample of 119 10th grade female students from Tangerang 13 State Senior High School selected through purposive sampling. Logistic regression analysis was used in this study to determine the relationship between myths and personal hygiene after age of menarche, attitude, socioeconomic status, information, and maternal education were controlled. In the bivariate selection, modeling was completed by entering confounding and interaction variables then reducing the confounding variables by examining changes in the odds ratio. Results showed that the students who believed the myths were 3.7 times more likely to not practice personal hygiene during menstruation compared with those who did not believe the myths after attitude and status socioeconomic status were controlled. No interaction was observed between the myths and socioeconomic status.

Keywords: adolescence, menstruation, myth, personal hygiene

Introduction

According to the World Health Organization (WHO), adolescent health is the health of members of the population between the ages of 10 and 19 years.¹ The youth population is estimated at 1.2 billion or 18% of the world's population.² Specifically, in Indonesia, the total of adolescents is 43.5 million, or comprising approximately 18% of the total population.¹ Health care services in the form of communication, information, and education on reproductive health must be provided for adolescents.³ One such topic is puberty, with menstruation as a physical indicator.⁴

Menstruation is the process of bleeding from the uterus owing to the collapse of the inner uterine lining, which contains abundant blood vessels and unfertilized eggs. The risk of bacterial infection is high during menstruation. Women should maintain cleanliness to ensure that their reproductive organs are clean and free from infection. Therefore, women should clean their intimate areas thoroughly and choose the best sanitary pads.⁵

A study in Ethiopia on 428 households consisting of 349 women and 79 men stated that nearly all the

residents lack knowledge on menstruation, which can affect personal hygiene during the cycle. The community considers self-care during menstruation costly, especially the use of disposable pads. This issue is a problem, as access to disposable pads is difficult, especially for low-income families. Thus, a few school-age adolescents are not allowed by their family members to attend school while menstruating.⁶

Various myths and misconceptions about menstruation abound in Pondicherry, India. Nearly two thirds of the respondents of a study believe that menstrual blood is dirty. In addition, myths about placing stick brooms, pulpit leaves, and footwear around adolescents to prevent the intrusion of evil spirits exist. Moreover, in the country, the belief that a purifying bath is necessary after menstruation is common.⁷

According to a study by the Burnet Institute on 1,159 female students in Indonesia, the majority (87.8%) of the female students use disposable pads, but only 48.6% change their pads every 4 - 8 hours a day and 48% wash their hands before and after replacing their pad.⁸ Numerous young females in Indonesia do not have a proper understanding of menstruation as a normal

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biological process and only gain knowledge of it during menarche or their first menstruation cycle. This situation is compounded by the fact that girls often encounter difficulties purchasing or obtaining sanitary napkins when needed. In 2015, a study by the United Nations Children's Fund (UNICEF) in Indonesia found that one in six girls is forced to stay home from school for one day or more during menstruation. The impact of not maintaining cleanliness during menstruation includes susceptibility to urinary tract infections, reproductive tract infections, and skin irritation.⁹

The present study was a preliminary study at the Tangerang 13 State Senior High School, which involved direct interviews with 16 female students. The results indicated that 12 students complained of itchiness of their genitals, and as many as 15 female students experienced vaginal discharge. Such conditions can occur when personal reproductive hygiene during menstruation is poor and the students believe myths about menstruation. Therefore, examining the relationship between belief in myths and menstrual personal hygiene in young women by considering different control variables is important. This study aimed to describe several characteristics of female adolescents and determine the relationship between belief in myths and personal hygiene during menstruation.

Method

This cross-sectional study was conducted in 2018 at the Tangerang 13 State Senior High School. The population of the study was 170 students of the 10th grade. The sample of the study consisted of 119 menstruating female students of the 10th grade at the Tangerang 13 State Senior High School Tangerang selected through purposive sampling. The dependent variable was menstrual personal hygiene, the independent variable was belief in myths, and the potential confounding variables were age at menarche, attitude, socioeconomic status, source of information, and maternal education.

Data were collected using a questionnaire consisting of 40 questions on personal hygiene during menstruation, belief in myths, age of menarche, attitude, socioeconomic status, source of information, and maternal education. The respondents were asked to answer the questionnaire provided. Three questions focused on problems experienced by female students during menstruation. The question on itchiness of reproductive organs was answered with "yes" or "no," and the questions regarding the presence of whitish discharge and difficulty urinating were answered with "always," "often," "sometimes," or "never." The six questions on the myths about menstruation included the following: a female who is menstruating is considered dirty and sick, menstruation

can make a woman weak, hair should not be washed during menstruation, drinking soft drinks, and eating chocolate can hasten the completion of the menstruation cycle, ice should not be drunk during menstruation, and swimming should not be done during menstruation. These questions were answered with "believe" or "do not believe."

The data for each variable were categorized as bad-good, believe-do not believe, fast-slow, negative-positive, low-high, and yes-no, and normality was tested. If the data were normal, then categorization was based on the mean. However, if the data were abnormal, then categorization was based on the median. The total score of the answers for each variable that was originally in numerical form was converted into categorical data based on the mean or median cutoff point. The 11 questions on the personal hygiene variable were categorized as "bad" if the total score was less than or equal to the median, as distribution was not normal based on the normality test. However, the questions were categorized as "good" if the total score was greater than the median. For the myth variable, the six questions demonstrated abnormal distribution based on the normality test and were categorized as a "belief" if the total score was less than or equal to the median and a "nonbelief" if the total score was greater than the median. Age of menarche was only one question, with numeric data and normal distribution, and categorized as "fast" if the answer was less than or equal to the mean (12.5 years) and "slow" if the answer was greater than the mean. Attitude consisted of 12 questions with abnormal distribution based on the normality test, which were categorized as "negative" if the total score was less than or equal to the median and "positive" if the total score was greater than the median. Socioeconomic status comprised only one question, with numeric data and abnormal distribution based on the normality test, and categorized as "low" if the answer was less than or equal to the median and "high" if the answer was greater than the median. Source of information consisted of two questions with abnormal distribution based on the normality test, which were categorized as "bad" if the total score was less than or equal to the median and "good" if the total score was greater than the median. Finally, the maternal education variable was categorized as "low" if a respondent's mother graduated from elementary school or junior high school and "high" if a respondent's mother graduated from senior high school or university.

Logistic regression analysis was used in this study. The first step of the analysis was selection bivariate analysis between each potential confounding variable and menstrual personal hygiene. If a result was a p-value less than 0.25, then it was entered in the multivariate model. The final step involved reducing the confounding

variables by removing each one, starting from the largest p-value, and observing changes in the odds ratio (OR), which is derived by dividing the difference between the old and new ORs with the old OR. These changes are expressed in percentages. In the final multivariate analysis, only two confounding variables were entered in the model, that is, attitude and socioeconomic status. The ethical clearance number of this study is B/1428/V/2018/KEPK.

Results

Female adolescent characteristics for personal hygiene during menstruation included belief in myths, age of menarche, attitude, socioeconomic status, source of information, and maternal education. The proportion of female adolescents practicing menstrual personal hygiene was low. Most of the students believed the myths despite the high education level of their mother. Two of the three problems experienced by the female students during menstruation were itchiness of reproductive organs and occasional whitish discharge. However, most of the students claimed that they had never experienced urinating difficulties (Table 1).

Certain myths about menstruation were believed by the female adolescents (Table 2). Among the myths about menstruation, the one about not drinking ice during menstruation was the most common among the female adolescents. The other myths that the students believed were that hair should not be washed during menstruation and drinking soft drinks and eating chocolate could hasten the completion of the menstruation cycle.

The proportion of the female adolescents who believed the myths and had poor menstrual personal hygiene was high. Only three of the six variables had a relationship with personal hygiene, namely, belief in myths, attitudes, and socioeconomic status. Belief in myths had the highest OR with menstrual personal hygiene compared with the other factors. No relationship was observed between the female adolescents' age of menarche, source of information, and maternal education (Table 3).

In the first logistic regression analysis, the variable with the most substantial alleged interactions was socioeconomic status. However, in the final model analysis, socioeconomic status had no interaction with myths, as the p-value was greater than 0.05.

In the final analysis model (Table 4), the female adolescents who believed the myths were 3.7 times more likely (95% CI = 1.5 - 8.9) to have poor menstrual personal hygiene than those who did not believe the myths after attitude and socioeconomic status were controlled.

Two confounding variables influenced menstrual personal hygiene. The female adolescents who possessed a negative attitude were 3.2 times more likely (95% CI = 1.3 - 8.0) to have poor menstrual personal hygiene than those who possessed a positive attitude after myths and socioeconomic factor were controlled. Moreover, the female adolescents with a low socioeconomic status were 3.9 times more likely (95% CI = 1.6 - 9.7) to have poor menstrual personal hygiene than those with a high socioeconomic status.

Discussion

The majority of the female students in this study demonstrates poor personal hygiene during menstruation. This finding is in line with a study in Kranji Subdistrict of Bekasi City, Indonesia stating that personal hygiene practices during menstruation are lacking.¹⁰ The study population of the West Bengal study likewise

Table 1. Problems during Menstruation

Problem	Category	n	%
Itchiness of reproductive organs	Yes	102	85.7
	No	17	14.3
Whitish discharge	Always	13	10.9
	Often	24	20.2
	Sometimes	82	68.9
	Never	0	0.0
Difficulty urinating	Always	1	0.8
	Often	1	0.8
	Sometimes	30	25.2
	Never	87	73.2

Table 2. Myths about Menstruation Believed by the Female Adolescents

Question	Category			
	No Belief		Belief	
	n	%	n	%
Menstruating women are considered dirty and sick	79	66.4	40	33.6
Menstruation can make a woman weak	58	48.7	61	51.3
Hair should not be washed during menstruation	30	25.2	89	74.8
Drinking soft drinks and eating chocolate can hasten the completion of the menstruation cycle	43	36.1	76	63.9
Ice should not be drunk during menstruation	17	14.3	102	85.7
Swimming should not be done during menstruation	50	42.0	69	58.0

Table 3. Relationship between Belief in Myths and Female Adolescents' Menstrual Personal Hygiene

Variable	Category	Personal Hygiene				Total	OR	95% CI	p-value
		Poor		Good					
		n	%	n	%				
Myths	Belief	63	80.0	15	19.2	78	4.0	1.7 - 9.2	0.002
	Nonbelief	21	51.2	20	48.8	41	Ref		
Age of menarche	Fast	43	68.3	20	31.7	63	0.8	0.3 - 1.7	0.696
	Slow	41	73.2	15	26.8	56			
Attitude	Negative	55	80.9	13	19.1	68	3.2	1.4 - 7.3	0.008
	Positive	29	56.9	22	43.1	51	Ref		
Socioeconomic status	Low	60	81.1	14	18.9	74	3.7	1.6 - 8.6	0.003
	High	24	53.3	21	46.7	45	Ref		
Source of information	Bad	49	69.0	22	31.0	71	0.8	0.4 - 1.9	0.800
	Good	35	72.9	13	27.1	48	Ref		
Maternal education	Low	21	72.4	8	27.6	29	1.1	0.4 - 2.9	0.989
	High	63	70.0	27	30.0	90	Ref		

Notes: n = number of sample, OR = Odds Ratio, CI = Confidence Interval, Ref = Reference

Table 4. Belief in Myths, Negative Attitude, Low Socioeconomic Status, and Relationship with Female Adolescents' Menstrual Personal Hygiene

Variable	Category	ß	SE	Wald	OR	95% CI	p-value
Myths	Belief	1.3	0.5	8.1	3.7	1.5 - 8.9	0.005
	Nonbelief	Ref					
Attitude	Negative	1.2	0.5	6.4	3.2	1.3 - 8.0	0.011
	Positive	Ref					
Socioeconomic status	Low	1.4	0.5	8.8	3.9	1.6 - 9.7	0.003
	High	Ref					

Notes: SE = Standard Error, OR = Odds Ratio, CI = Confidence Interval, Ref = Reference

demonstrated that menstrual hygiene is poor.¹¹ Moreover, study at a boarding school indicated that the students of the institution do not practice self-care during menstruation.¹² However, the results of the present study do not accord with the study by Dolang in 2012 claiming that the majority of the 174 students from the Sesean 1 State Senior High School in North Toraja District has sufficient personal hygiene.¹³

The questionnaire in the present study was answered by the respondents simultaneously, which could have generated bias. The respondents could ask one another question or see the answers of the other respondents despite efforts to minimize such occurrences through the direct supervision, study assistants, and teachers. This issue is a limitation of the study. However, in terms of advantages, this study is a pioneering study in the field of personal hygiene, specifically, among female adolescents during menstruation, which performed multivariate analysis rather than analysis of only one factor.

In this study, indicators of menstrual personal hygiene practices include frequency of changing a sanitary napkin, the practice of removing a sanitary napkin, frequency of bathing and hair washing, frequency of changing underwear, and the practice of cleaning the vagina.^{4,11,14}

Based on the primary data of the study on personal hygiene during menstruation, most respondents (68.1%) did not replace their sanitary pads for a maximum of six hours or four times a day. Moreover, 61.3% of the respondents did not wash or shampoo their hair during menstruation, and 88.2% washed their hair with shampoo less than three times a week. In addition, 50.4% of the respondents did not practice proper washing of the vagina, that is, from front to back, with 73.9% washing their vagina with bath soap or betel leaf soap. Finally, 58% of the respondents did not wrap their sanitary napkin before disposal. Thus, the majority of the respondents in this study demonstrated poor menstrual personal hygiene practices.

The lack of proper personal hygiene behavior during menstruation of most respondents can be attributed to their negative attitude to personal hygiene during menstruation. Stimulus-organism-response theory states that a person can exhibit a closed response in the form of knowledge or attitude when receiving a stimulus or stimulation, which can in turn change into an action or open response.¹⁵ Only a small percentage of adolescents are taught personal hygiene during menstruation, especially in urban areas.¹⁶

The results of this study are also supported by primary data on the potential impact of poor personal hygiene during menstruation, such as itchiness of the genitals during menstruation and skin irritation in the genital area owing to the prolonged use of a sanitary pad. Moreover, vaginal discharge may occur occasionally. However, most of the respondents claim that they had not experienced difficulty urinating, thereby indicating the absence of urinary tract infections.¹⁹

The statistical test results show that a relationship exists between myths and personal hygiene during menstruation, with a p-value of 0.002. Based on the OR value, the respondents who believe the myths about menstruation have a fourfold chance of having poor personal hygiene during menstruation compared with those who do not believe the myths. This study is in line with the study by Bujawati and Raodhah in 2016 and the study by Basta, Rahma, and Ikhsan in 2014, which stated that a relationship exists between belief in myths and personal hygiene during menstruation.^{17,18} However, the present study does not accord with the study conducted by Matta and Wuryaningsih,¹⁹ that claimed that no relationship exists between myths about menstruation and the menstrual behavior of the students of the State Junior High School 87 Jakarta.

Trust is the assumption or belief that something that is believed is true or real, such as a myth. For people living in Eastern countries, myths are a part of daily life, including those about menstruation. Myths are often propagated by elderly people who continue to follow traditions from their time.⁴ Lack of knowledge and insights influence their particular thought patterns, which in turn can develop into myths. Although myths are not scientific, many people believe such false information.¹⁴

In India, myths are associated with the menstruation of adolescent girls. Restrictions during menstruation include the drying of clothes by sunlight, taking baths, and performing religious activities; moreover, menstruation is seen as a woman's curse and an impurity.^{20,21} Furthermore, in Sweden, menstruation is considered a complex phenomenon experienced by women.²²

In the present study, most of the respondents believed that the myths about menstruation accord with their personal hygiene practices during menstruation. Out of the 119 respondents, 78 believed the myths about menstruation. Thus, the results of this study demonstrated a negative relationship between belief in myths and personal hygiene during menstruation. Myths about abstaining from washing or shampooing hair are not in line with proper menstrual personal hygiene. During menstruation, women should clean their body frequently, including washing their hair with shampoo, owing to the excess production of sweat and oil during a menstrual cycle, including oil on the scalp.⁴

The more the respondents do not believe the myths, the better their hygiene during their menstrual cycle, and vice versa, if they believe in a myth that has not been proven scientifically. If a female adolescent lacks knowledge on personal hygiene during menstruation, then her belief in myths can influence her menstrual personal hygiene practices.¹⁷ This finding accords with the theory claiming the existence of predisposing factors or factors that can influence a woman to practice personal hygiene during menstruation, such as belief in myths.¹⁵

Lack of privacy and information on menstruation is likewise an important issue.²³ Knowledge, perception, and menstrual hygiene practices differ among urban and rural adolescent girls.¹⁶ In rural families, only a minority of women use hygienic methods during menstruation compared with those who use locally prepared pads as sanitary napkins.^{16,24} This practice may increase reproductive morbidity.²⁴ Moreover, most adolescents experience vaginal discharge during menstruation and suffer from reproductive tract infections and abdominal pain.^{21,24} Menstrual personal hygiene for reproduction is also a crucial issue among female adolescents in Nigeria. Numerous programs have supported this issue by institutionalizing sex education in schools and improving access to youth-friendly services.²⁵

The present study examined personal hygiene practices from sociocultural aspects. However, clinical study on the effects of such practices on health was not supported. Thus, this study recommends a future study to comprehensively analyze the effects of diseases arising from poor personal hygiene practices during menstruation.

Conclusion

Poor menstrual personal hygiene is observed in the female adolescents who believe the myths about menstruation compared with those who do not believe the myths after attitude and socioeconomic status are controlled. Moreover, no interaction is observed in this study. An open attitude to information on menstruation can improve students' personal hygiene during menstruation. Future studies should support clinical study on poor menstrual personal hygiene and its effect on different diseases.

Abbreviations

WHO: World Health Organization; UNICEF: United Nations Children's Fund; OR: Odds Ratio.

Ethics Approval and Consent to Participate

The ethical clearance number of this study is B/1428/V/2018/KEPK.

Competing Interest

Author declares that there are no significant competing financial, pro-

fessional, or personal interests that might have affected the performance or presentation of the work described in this manuscript.

Availability of Data and Materials

Data and materials of this study can be proved upon request.

Authors' Contribution

Tyas Diah Palupi: designed and prepared the manuscript; Terry Y R Pristya: data analysis and revised; Randy Novirsa: reviewed and revised manuscript. All of authors read and approved the final manuscript.

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