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Menstrual hygiene among early adolescent girls and its' related factors

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ABSTRACT

This study aimed to determine the prevalence of menstrual hygiene and the association between mother's role function and menstrual hygiene among early adolescent girls. This cross-sectional study used a simple random sampling technique. The target population including early adolescent girls aged 12-15 years old, had menarche. Hence, 367 respondents in this study passed the analysis's inclusion criteria. Multivariable logistic regression was used to determine the association. There were 46.32 % of respondents noticed the prevalence of good menstrual hygiene. There were 170 out of 367 respondents who reported the presence of good menstrual hygiene. The ultimate model of a multiple logistic regression designated that mother and information exposure support (adj. OR=6.89, 95% CI: 3.84–12.38, p<0.001; adj. OR=2.17, 95% CI: 1.36–3.45, p=0.001) were meaningfully linked by the bad menstrual hygiene. Other significant covariate factors were organization (adj. OR=1.79, 95% CI: 1.10–2.91, p=0.018). The study found a high prevalence of good menstrual hygiene. Mother support, information exposure, and organization were linked with menstrual hygiene among early adolescent girls.

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1. INTRODUCTION

Menarche time is one of the most important vicissitudes that occur in all women throughout their teenage years [1]. Menstrual hygiene is a way of caring for humans to maintain physical and psychological health. In everyday life, cleanliness is very important and must be considered because cleanliness will affect one's health and psychology [2]–[4]. Menstrual hygiene means the need and necessities for caring for the genital area such as the use of clean and soft sanitary napkins or absorbents, passable laundry of the venereal region, suitable clearance of utilizing sanitary napkins, and additional singular health care needs for women through their period phase. In a woman's life, decent cleanliness performed throughout menses are very imperative to prevent opposing health effects [5], [6]. Mother has a great role function to influence family, as she was the main and first figure known to the child [7].

Teenagers and women in low- and middle-revenue nations could encounter substantial tests in managing their menses. Insufficient knowledge, absence of admittance to excellent hygienic ingredients, restrictions about menses and menstrual hygiene management, and deprived water, cleanliness, and sanitation amenities are general ultimatums that can damagingly impact education, service, health, and psychosocial consequences [8], [9]. Menses cleanliness management has not been adequately spoken in the raising nations. Menstrual practices are still enclosed by socio-cultural boundaries and abstinence which have a negative impact

on the health of adolescent girls [10]. Poor personal hygiene behavior during menstruation is the main cause of reproductive tract infections. Therefore, the cleanliness of the genital area must be maintained because germs can easily enter and can cause disease in the reproductive tract with complaints that are felt such as itching due to the candida fungus which will thrive during menstruation [3], [8]. Most reproductive tract infections in the world occur in adolescence (35%-42%). Among countries in Southeast Asia, Indonesian women are more susceptible to reproductive tract infections triggered by Indonesia's hot and humid climate [3].

The views that girls feel about menstruation also affect their hygienic practices during menstruation. In addition, girls often experience feelings of fear, confusion, and embarrassment during menstruation due to body odor, leaks, stains on clothes, and sanitary napkins that fell off during their class schedule. It can also hurt their concentration, class participation, and learning confidence [11].

Women have settled their strategies for dealing with this period. Universally, these approaches differ widely due to private partialities, obtainability of sources, economic level, cultural backgrounds and beliefs, educational level, and knowledge of menses. Applies related to menstrual cleanliness are a foremost apprehension because they have an impact on health; if inattention, it can lead to toxic shock syndrome, reproductive tract infections (RTI), and other vaginal illnesses. Deprived genital cleanliness has a negative impact on adolescent health. Most lasses are unconscious and unrehearsed for menarche because they have bad information or do not have information about menstruation [12].

Family is an information medium that is very influential in changing children's behavior, including knowledge, attitudes, and menstrual hygiene behavior. The family is also an example of a child in implementing daily life during his growing up. Mother plays an important role in this matter. Not only in conveying information, but mothers also play a role in menstrual hygiene behavior [13], [14]. The previous research indicates that among menses girls ranged from 10 to 19 years, 72% found amid the age group of late and adolescents (15–19 years) revealed that the type of the family highly predisposed the status of hygiene [15]. This study aims were to determine the prevalence of menstrual hygiene and the association between mother's role function and menstrual hygiene among early adolescent girls in Serang district, Banten province, Indonesia.

2. RESEARCH METHOD

2.1. Study design and sampling

This study employed a cross-sectional design. It was using a simple random sampling technique with inclusion criteria: early adolescent girls aged 12-15 years old, and had menarche. The total number of respondents in this study was 367. Respondents' recruitment was carried out by the researcher, research assistant, and students in Baros Subdistrict, a rural area in Banten province, Indonesia. Before conducting this study, the researcher and team explained the aim of the study, and participants who agreed involved signed the consent form. This study was approved by the health research ethics commission Universitas Pembangunan Nasional Veteran Jakarta, No 2726/VII/2020/KEPK.

2.2. Measurement

The outcome of this study was menstrual hygiene. Menstrual hygiene referred to the early adolescent girls who had menarche, care and clean their genital area in the right way according to health standards. An instrument of menstrual hygiene was conducted from the questionnaire with 15 questions, calculated with a total of the score and classified with categorical (dichotomous): bad/good. The independent factors were: i) Sociodemographic factors include age, class, organization, menarche, and routine menstruation; ii) Behavior factors include mothers' support, information exposure, information resources, information frequently, and information partner.

Mother support is information related to menstrual hygiene provided by mothers as a form of support, calculated as continuous data and classified as three categories (low/moderate/high). Information exposure was assessed with the question, *"I get information about menstruation from...."*. The answer was lectures, parents, friends, media, with multiple choices. Then the data transform to categorical (dichotomous) data divided 1 exposure (lectures or parents or friends or media) or >1 exposure (more than 1 exposure information).

Information resources were assessed with the question, *"I watch/watch pictures/videos of menstruation from the media…*.". The answer was the internet, magazine, television, movie, friends. Then the data transform into categorical (dichotomous) data divided into 1 resource (internet or magazine or television or movie or friend) or >1 resource (more 1 resources information).

Information frequently was assessed with the question: *"How many times I watch/watch pictures/videos about menstruation?"*. The answer was more than 2 times a week or less than 2 times a week, categorical (dichotomous) data. Information partners were assessed with the question, *"I most often watch pictures/videos of menstruation together with…."*. The answer was with partner (friend, family, and teacher) or alone, categorical (dichotomous) data.

2.3. Statistical analysis

This was an observational analytic study, using the descriptive study to determine the characteristics of this study, and to determine the factors associated with menstrual hygiene using inferential study. Simple logistic regression is used at the bivariate stage. Initial models included independent variables that have a p-value of the Wald test <0.25 (9). Backward Elimination is used to determine the factors associated with menstrual hygiene in the multivariable model stage using multiple logistic regression. Multicollinearity between the independent variables was checked by using the STATA version 10 software package. The results were presented as adjusted odds ratio (ORadj) and their 95% confidence interval (CI). The interpretation was presented as no association if ORadj approached 1.00, a protective effect if ORadj was less than 1.00, and risk factors if ORadj was bigger than 1.00.

3. RESULTS

3.1. Demographic characteristic

There were entire of 367 early adolescent girls in Serang's district who approved our inclusion and exclusion criteria with a mean of age of 14.21 (±0.98), 63.76% were class 9, 52.86% active in the organization, and 90.19% routine menstruation. The mean of mother's support was 52.96 (±13.62), 55.04% with >1 information exposure, 60.49% with >1 information resource, and 77.93% less than 2 times a week for getting information. In looking for information about menstrual hygiene, they looking with partner 60.76% as shown in Table 1.

Table 1. Baseline characteristic of menstrual hygiene

Characteristic	Number	%
Age		
12	29	29
13	58	58
14	88	88
15	192	52.32
Mean (±SD)	14.21 (±0.98)	
Median (min: max)	15 (12:15)	
Class		
7	33	8.99
8	100	27.25
9	234	63.76
Organization		
No	173	47.14
Yes	194	52.86
Menarche		
10	48	13.08
11	43	11.72
12	49	13.35
13	33	8.99
14	9	2.45
15	185	50.41
Mean (±SD)	13.27 (±1.93)	
Median (min: max)	15 (10:15)	
Routine menstruation		
No	36	9.81
Yes	331	90.19
Mother support		
Low	150	40.87
Moderate	104	28.34
High	113	30.79
Mean (±SD)	52.96 (±13.62)	
Median (min: max)	53 (25: 100)	
Information exposure		
1	165	44.96
>1	202	55.04
Information resources		
1	145	39.51
>1	222	60.49
Information frequently		
Less than 2 times a week	286	77.93
More than 2 times a week	81	22.07
Information partner		
Alone	144	39.24
With partner	223	60.76

3.2. Prevalence of menstrual hygiene

The Good Menstrual Hygiene prevalence among early adolescent girls in Serang district was 46.32% (95%CI: 41.25–51.47). There were 197 of the respondents having bad menstrual hygiene 53.68% (95%CI: 48.53–58-75). The mean (±SD) was 35.35 (±5.75) with median (min: max) was 36 (15:30) as presented in Table 2.

Table 2. Prevalence of menstrual hygiene (n=367)

	F	%	95%CI
Bad	197	53.68	48.53–58-75
Good	170	46.32	41.25–51.47
Mean (±SD)		35.35 (±5.75)	
Median (min: max)		36 (15: 60)	

3.3. Factor associated with menstrual hygiene among early adolescent girls in Banten province

Simple logistic regression is used to examine any factors that may be important with menstrual hygiene. Autonomous factors that have a p value ≤0.25 are treated into the initial model of multivariable analysis. The bivariate analyses showed that organization (OR=1.05, 95%CI: 0.94–1.17, p=0.150), Mother Support (OR=6.67, 95%CI=3.87–11.48, p<0.001), Information Exposure (OR=2.91, 95%CI: 1.89–4.47, p<0.001), Information Resources (OR=2.35, 95%CI: 1.52–3.62, p<0.001), and Information Frequently (OR=1.83, 95%CI: 1.11–3.01, p=0.017) were possibly associated with menstrual hygiene among early adolescent's girls in Serang's district as shown in Table 3.

Multiple logistic regression was used for multivariable analysis to get the final model in this study. The finding revealed that Mother Support (adj. OR=6.89, 95% CI: 3.84–12.38, p<0.001) and Information Exposure (adj. OR=2.17, 95% CI: 1.36–3.45, p=0.001) were significantly associated with the bad menstrual hygiene among early adolescent's girls in Serang's district. Other covariate factors indicated that Organization (adj. OR=1.79, 95% CI: 1.10–2.91, p=0.018) was statistically significant as presented in Table 4.

Table 3. Odds ratios for each category of factors on menstrual hygiene on simple logistic regression (N=367)

Factors	Number	% of event	Crude OR	95%CI	P-value
Age	367	170 (46.32)	1.00	0.81–1.23	0.983
Class					0.821
7	33	17 (51.52)	1		
8	100	46 (46.00)	0.80	0.36–1.76	
9	234	107 (45.73)	0.79	0.38–1.64	
Organization					0.150
No	173	87 (50.29)	1		
Yes	194	83 (42.78)	0.74	0.49–1.12	
Menarche	367	NA	1.05	0.94–1.17	0.367
Routine menstruation					0.554
No	36	15 (41.67)	1		
Yes	331	155 (46.83)	1.23	0.61–2.48	
Mother support					<0.001
Low	150	40 (26.67)	1		
Moderate	104	50 (48.08)	2.55	1.50–4.32	
High	113	80 (70.80)	6.67	3.87–11.48	
Information exposure					<0.001
1	165	53 (32.12)	1		
>1	202	117 (57.92)	2.91	1.89–4.47	
Information resources					<0.001
1	145	49 (33.79)	1		
>1	222	121 (54.50)	2.35	1.52–3.62	
Information frequently					0.017
Less than 2 times a week	286	123 (43.01)	1		
More than 2 times a week	81	47 (58.02)	1.83	1.11–3.01	
Information partner					0.314
Alone	144	62 (43.06)	1		
With partner	223	108 (48.43)	1.24	0.81–1.89	

Table 4. Odds ratios for each category of factors on menstrual hygiene on multiple logistic regressions (n=367)

Factors	Number	% of event	Crude OR	Adjusted OR	95%CI	p-value
Mother support						<0.001
Low	150	40 (26.67)	1	1		
Moderate	104	50 (48.08)	2.55	2.63	1.49–4.62	
High	113	80 (70.80)	6.67	6.89	3.84–12.38	
Information exposure						0.001
1	165	53 (32.12)	1	1		
>1	202	117 (57.92)	2.91	2.17	1.36–3.45	
Organization						0.018
No	173	87 (50.29)	1	1		
Yes	194	83 (42.78)	0.74	1.79	1.10–2.91	

4. DISCUSSION

This study exposed that the frequency of good menstrual hygiene amid early adolescent girls in Serang's district Banten province was 46.32%. A previous study from Uganda of 205 menses schoolgirls (10–19 years) from eight study sites found that 90.5% (95% CI 85.6-93.9) had inadequate management of menstrual hygiene. There is no difference between those wearing reusable sanitary napkins and those using other available methods (71.3% cloth, 14.0% one-use sanitary napkins, 14.7% other methods counting toilet paper and underwear only). Otherwise with the current study (53.68%). The prior studies probably had a precise population, it was described that the menstrual hygiene management behavior stated by the sample was by the rustic setting and poorness in the study region. The sample may be more deprived, at least in rapports of menses cleanliness, than some previous studies [16].

Another previous study from India amid married young women aged 15–24 years found that nearly half of the women (49.3%) repeated hygienic methods to contain menstrual bloodstains [15]. It was similar to the present study because India and Indonesia had a similar demographic area with similar density and socioeconomic levels. Previous research was also conducted in Indonesia with a population of junior high school girls who revealed personal hygiene behavior during menstruation in the positive category 62.9% [17]. It was lower in a negative category (bad menstrual hygiene) compare to this present study. It might be the previous study conducted in Yogyakarta province (urban area).

Family is the easiest and closest access to information for teenagers to be able to share. Based on the results of research in 2019 from The SEMERU Research Institute, it is stated that parents, siblings, neighbors, and friends are societies around schoolchildren who have the prospective to be a source of information about menses and personal hygiene related to menstruation. Moreover, nearly all schoolchildren acquire information from their parents or siblings at menarche. In dealing with menstruation, students need psychological support from people around them such as their mother [18].

This study found that Mother Support (adj. OR=6.89, 95% CI: 3.84–12.38, p<0.001) was statistically significant with menstrual hygiene, this is relevant to previous research which found that information sources from parents had an effect on personal hygiene behaviors on a teenage girl during menstruation (p<0.001) [17]. Previous research found that the source of most of the information on menstrual hygiene lessons was mothers and little attention from teachers to meet the needs of school girls about menstruation (p<0.001) [19]. This study is also in accordance with previous research conducted in Mojowarno, that family support has an important role in menstrual hygiene behavior (p = 0.018) in grade VIII students [13].

Mothers are the prime contact and source of information who guide their daughters in their menstrual days [20]. For most adolescent girls, mothers are found to be the primary sources of information and knowledge about menstruation. Mothers are personally supportive and emotionally engaged with their daughters during their menstrual days. Emotional support by mothers develops positive experiences of menarche whereas unsupportive mothers develop negative experiences of menarche in their daughters. Mothers' support is very important to help their daughters to overcome misconceptions and confusion regarding menstruation. The authors also mentioned in her study about increased openness on the issues of menstruation in contemporary society in comparison to past studies which state menstruation is surrounded by confusion and restrictions [13], [21].

From previous research, it can be concluded that young women mostly learn from their mothers about the most important events in life. It cannot be denied that mothers also convey negative messages about menstruation to their daughters through the communication of social and cultural boundaries that must be followed during menstruation. Therefore, mothers need to be encouraged to communicate positive things about menstruation to their daughters. Overall, mothers have an important role to play in supporting their daughters to manage menstruation effectively [11], [12], [21], [22].

A previous study revealed that mothers were the most significant source of information on menses for adolescent girls, 74 (65.9%) [23]. The source of information about menstruation is their mother and a small

number of them get information from teachers and the mass media [19]. The peer education method with maternal participation has a greater impact on improving menstrual health behavior among girls than the traditional routine method. Therefore, educational organizers use this educational method to teach puberty problems, counting menses healthiness. In addition, the knowledge of mothers about adolescent health problems must be improved to improve adolescent menstrual health behavior. Furthermore, these discoveries highlight the need for passable training for young girls on health problems, including menses healthiness [24].

Menses healthiness promotion in school leftover a subject of concern in developed countries including Indonesia. Getting information from different resources might give an impact on adolescents for understanding menstrual hygiene. This study found that information exposure (adj. OR=2.17, 95% CI: 1.36–3.45, p=0.001) was significantly associated with menstrual hygiene among early adolescent girls in Serang's district. Proof limitations are available on various components of menses cleanliness-friendly schools in India. Although data is available for MHM information sources (educators), studies on whether educators as an origin of information for lases have passable knowledge about MHM are not yet obtainable. We estimate that more than half of the lasses have no information about menses before menarche. Solely 7% of lasses informed educators as a source of MHM information. Menstrual sanitation education in schools is most often left to non-government organizations [25].

Absenteeism from school was meaningfully linked with the form of using sanitary napkins, absence of secrecy at school, boundaries compulsory on lasses during menses, maternal education, and sources of information on menses. Women and lasses have been informed in several research that it affects their daily activities at school and that they have to skip class and class exams because of pain, embarrassment, anxiety about leaks, and stains on their uniforms [26], [27]. In school-age children and adolescents, they spend their time in school, so that mentoring children during menstruation is very important for students conveyed by the teacher, but the results of the study show that communication between teachers and students about menstruation is poor by 44.4%, compared to good only by 25% [28].

The sole information from schools is not enough to resolve the problem of mental hygiene knowledge for adolescents, the collaboration with other parties such as family or friends so that the more sources of information that are obtained by adolescents is necessary, the more positive potential for knowledge of mental hygiene for these adolescents. This is certainly in line with the results of this study [29]. In line with prior study, that adolescent menstrual hygiene behavior was significantly influenced by peer support (p=0.018) and family support (p=0.000) [13].

A previous study in India showed that solely 42% of teenagers were conscious of menarche. This demonstrates that there is restricted admission to information on teenager health and sanitation. Inappropriately, 52% of the target population was unaware of menses before menarche in that study. Every lass child must be conscious of menses, which is a vigorous event at the start of a teenager [30].

The common of lasses do not have adequate knowledge about menses alterations and the misinformation they get from defective origin leads them to serious difficulties. Deficiency of consciousness and suitable health information through this period can incline a person to pelvic inflammatory infection and its linked problems, such as sterility, which results in many economic and social problems. The family is the main social unit that plays an important role in teaching and disseminating health information and behavior to teenagers, and among family members, mothers handle the most significant positions. The students in this study identified their mothers as their main source of information about menses. However, a study conducted in Turkey displayed that companies are the most significant origin of information about menses. These results indicate the importance of companied groups in menses healthiness education; not to speak out, these differences can be attributed to variations in culture and geographic location. Based on several studies, female students cited mothers, educators, and friends as the most significant origin of information about menses' healthiness. So that the more sources of information obtained will affect the level of change in menstrual hygiene behavior in adolescents [19], [23], [24].

Actively participating in organizational activities also has a positive impact on menstrual hygiene among adolescents, this study found that organization (adj. OR=1.79, 95% CI: 1.10–2.91, p=0.018) was significantly associated with menstrual hygiene among early adolescent girls in Serang' district. The school organization is one of the learning media for students to be able to develop their knowledge and social skills. The importance of the value of skills development in addition to the acquisition of knowledge in students the learning environment is one of the reasons why it is good for students to be able to participate in organizational activities at school. The participation of students in organizations can stimulate students' curiosity in any matter, including the process of becoming an adult, such as the menstruation phase. Organizations can be a medium for learning both about knowledge and skills. Provide opportunities for students to exchange information and share experiences. Organizations become information media, including indirectly related to menstrual hygiene. The organization has an indirect effect on changes in a person's behavior, including those related to personal/menstrual hygiene [31], [32].

Menses cleanliness management aims to guarantee that women and lasses can regulate their menstruation in a way that is not solely healthy, but that supports their full involvement in school, work, and other activities. The organization is one of the student activities outside of class hours that can influence or be influenced by behavior, it might be causality. Students who are active in organizations tend to have an open social life so that it is easy for them to get access to information, including those that are still considered taboo, namely menstrual hygiene. So that the organization has an important role in the process of growing up students, which includes those related to menstruation, personal hygiene, and menstrual hygiene [10], [15], [33], [34].

5. CONCLUSION

This study found a high prevalence of good menstrual hygiene. Mother support and information exposure, as well as organization, were associated with menstrual hygiene among early adolescent girls. The information sources also have high occurrence for decent menstrual sanitation. This study suggests for mothers to provide positive support about menstrual hygiene in early teens, as well as exposure to good information. The adolescents are also supported to join organizations to increase knowledge about hygiene during menstruation. Mothers, teachers, and friends are important sources of information about menstrual hygiene.

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