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Research article

Sibling's Support and Menstrual Hygiene among Early Adolescent Girls in Serang District, Banten Province, Indonesia

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Abstract

Menstrual hygiene is critical for preventing adverse health outcomes, yet many adolescent girls in low and middle-income countries, including Indonesia, face barriers such as inadequate knowledge, limited access to sanitary materials, and cultural taboos, increasing their risk of reproductive tract infections. This study aims to determine the prevalence of bad menstrual hygiene and its association with sibling support and information exposure among early adolescent girls in Banten Province, Indonesia. This cross-sectional study involved 367 early adolescent girls aged 12–15 years who had experienced menarche, selected using a simple random sampling technique. Data were analyzed using multivariable logistic regression. The prevalence of bad menstrual hygiene was 53.68% (197/367). Sibling support (adjusted OR = 0.92, 95% CI: 0.85–0.99, p = 0.045) was a protective factor, while information exposure (adjusted OR = 2.79, 95% CI: 1.81–4.30, p < 0.001) significantly increased the risk of bad menstrual hygiene. A high prevalence of bad menstrual hygiene was observed among early adolescent girls in Banten Province. Strengthening sibling support and improving information exposure could be effective strategies to enhance menstrual hygiene management.

INTRODUCTION

The onset of menstruation is one of the vital changes happening in all females during their period of adolescence [1]. Personal hygiene is a way of self-care for humans to maintain their health physically and psychologically. 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 necessities and requirements such as the use of sanitary pads or clean and soft absorbents, adequate washing of the genital area, proper disposal of used absorbents, and other special healthcare needs of women during the monthly menstrual cycle. In a woman's life, good hygiene practice during menstruation is very important which prevents adverse health outcomes [5,6].

Girls and women in low and middle-income countries can face significant challenges in managing their menstruation. Inadequate knowledge, lack of access to quality sanitary

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materials, taboos around menstruation and menstrual hygiene management, and poor water, sanitation, and hygiene facilities are common challenges that can negatively affect education, employment, health, and psychosocial outcomes [7,8]. Menstrual hygiene management has not been adequately addressed in developing countries. Menstruation practices are still surrounded by socio-cultural restrictions and restrictions that adversely affect the health of female adolescents [9].

Personal hygiene behavior fewer during menstruation is a major cause of reproductive tract infection. Therefore, the cleanliness of the genitalia area must be maintained because germs are easy to enter and can cause disease in the reproductive tract with complaints that are felt such as itching caused by the candida fungus which will thrive during menstruation.[3,7] The highest number of reproductive tract infections in the world is in adolescence (35% -42%). Among countries in Southeast Asia, Indonesian women are more prone to experience reproductive tract infection which is triggered by Indonesia's hot and humid climate [3].

The view that girls feel about menstruation also affects 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 falling of sanitary napkins during their class schedules. It can also have a negative impact on their concentration, class participation and learning confidence [10].

Women have developed their own personal strategies to handle this period of time. Globally, these strategies vary greatly due to the personal preferences, availability of resources, economic status, cultural traditions and beliefs, education status, and knowledge about menstruation. Practices related to menstruation hygiene are of major concern as it has a health impact; if neglected, it leads to toxic shock syndrome, reproductive tract infections (RTI), and other vaginal diseases. Poor genital hygiene negatively affects adolescents' health. Most girls are unaware and unprepared for menarche as they are not informed or ill-informed about menstruation. Previous study in India found that there were consistent association between poor menstrual hygiene practices and higher prevalence of lower RTIs [11,12].

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. Children who grow up in a family environment with more than one sibling tend to socialize more easily and understand their intimate needs, including menstrual hygiene problems[13,14]. Previous study shows that the among menstruating girls ranged from 10 to 19 years, 72% found between the age group of late adolescents (15–19 years) revealed that the type of the family highly influenced the status of hygiene.[1] The main objective of this study was to determine the prevalence and the associated factors of menstrual hygiene among early adolescent's girls in Banten Province, Indonesia.

METHODS

Study Design and Sampling

This study uses a cross-sectional study design, used simple random sampling technique with inclusion criteria were early adolescent girls age 12-15 years old, and had menarche. The total respondents in this study were 367. Respondents' recruitment was carried out by researcher, research's assistant and students in Baros Subdistrict, a rural area in Banten Province. Before conducting this study, researcher and team explained the aim of study and participants who agreed involved sign the consent form.

Measurement

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 right way according to health standards. Instrument of menstrual hygiene conducted from questionnaire with 15 questions, calculated with total of the score and classified based on 2 x-tile, categorical (dichotomous): Bad/Good.

The independent factors were 1) sociodemographic factors include age, class, organization, menarche, and routine menstruation; 2) behaviour factors include sibling support, information exposure, information resources, information frequently, and information partner.

Sibling support is information related to menstrual hygiene provided by the siblings as a form of support, calculated as a continuous data, the higher the score showed the greater support provided.

Information exposures were assessed with the question, "I get information about menstruation from.....". The answer was lecture, parents, friends, media, with multiple choices. Then the data transform to categorical (dichotomous) data divided 1 exposure (lecture or parents or friends or media) or >1 exposure (more 1 exposure information).

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

Statistical Analysis

This research is an observational analytic study. Descriptive research is used to determine the characteristics of this study. Inferential research is used to determine the factors associated with menstrual hygiene. At the bivariate stage using simple logistic regression. Initial models include 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 by 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 greater than 1.00.

Ethical Consideration

This data has been reviewed and approved by the health research ethics commission Universitas Pembangunan Nasional Veteran Jakarta, No 2726/VII/2020/KEPK.

RESULTS

Demographic Characteristic

There were a total 367 early adolescent's girls in Serang District passed our inclusion and exclusion criteria with an average of age

14.21 (±0.98), 63.76% were class 9, 52.86% active in organization, and 90.19% routine menstruation. Mean of sibling support was 2.86 (±2.58), 55.04% with >1 information exposure, 60.49% with >1 information resources, and 77.93% less than 2 times a week for getting information. **(see Table 1)**

Prevalence of Menstrual Hygiene

The menstrual hygiene prevalence among adolescent girls in Serang Province was 53.68% (95%CI: 48.53 – 58-75). There were 170 of the respondents having good menstrual hygiene 46.32% (95%CI: 41.25 – 51.47). **(see Table 2)**

Factor Associated with Menstrual Hygiene among Early Adolescent Girls in Banten Province

Simple logistic regression is used to analyse any factors that might be significant with menstrual hygiene. Independent factors that have a p value ≤ 0.25 are processed into the initial model of multivariable analysis. The Bivariate analyses indicated that Organization (OR = 1.35, 95%CI: 0.90 – 2.04, p = 0.150), Sibling Support (OR = 0.90, 95%CI = 0.83 – 0.98, p = 0.011), 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 – 3.02, P = 0.017) were possibly associated with menstrual hygiene among Early Adolescent Girls in Banten Province**. (see Table 3)**

Multiple logistic regression used for multivariable analysis to get final model in this study. The result revealed that **Sibling Support** (adj. OR = 0.92, 95% CI 0.85 – 0.99, p = 0.045) and **Information Exposure** (adj. OR = 2.79, 95% CI 1.81 – 4.30, p <0.001) were significantly associated with menstrual hygiene among Early Adolescent Girls in Banten Province**. (see Table 4)**

Table 1
Baseline Characteristic of Menstrual Hygiene (n= 367)

Characteristics	n	%
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
Sibling Support		
Low	!46	39.78
Moderate	109	29.70
High	112	30.52
Mean (±SD)	2.86 (±2.58)	
Median (min : max)	3 (0 : 6)	
Information Exposure		
>1	202	55.04
1	165	44.96
Information Resources		
>1	22	60.49
1	145	39.51
Information Frequently		
More than 2 times a week	81	22.07
Less than 2 times a week	286	77.93
Information Partner		
With Partner	223	60.76
Alone	144	39.24

Table 2
Prevalence of Menstrual Hygiene (N= 367)

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

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

Factors	n	% of event	Crude OR	95%CI	p-value
Age	367	197 (53.68)	1.00	0.81 – 1.23	0.983
Class					0.821
7	33	16 (48.48)	1		
8	100	54 (54.00)	1.25	0.57 – 2.75	
9	234	127 (54.27)	1.26	0.61 – 2.62	
Organization					0.150
No	173	86 (49.71)	1		
Yes	194	111 (57.22)	1.35	0.90 – 2.04	
Menarche	367	197 (53.68)	0.95	0.86 – 1.06	0.367
Routine Menstruation					0.554
No	36	21 (58.33)	1		
Yes	331	176 (53.17)	0.81	0.40 – 1.63	
Sibling Support	367	197 (53.68)	0.90	0.83 – 0.98	0.011
Information Exposure					<0.001
>1	202	85 (42.08)	1		
1	165	112 (67.88)	2.91	1.89 – 4.47	
Information Resources					<0.001
>1	222	101 (45.50)	1		
1	145	96 (66.21)	2.35	1.52 – 3.62	
Information Frequently					0.017
More than 2 times a week	81	34 (41.98)	1		
Less than 2 times a week	286	163 (56.99)	1.83	1.11 – 3.02	
Information Partner					0.313
With Partner	223	115 (51.57)	1		
Alone	144	82 (56.94)	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
Sibling Support	367	197 (53.68)	0.90	0.92	0.85 – 0.99	0.045
Information Exposure						<0.001
>1	202	85 (42.08)	1	1		
1	165	112 (67.88)	2.91	2.79	1.81 – 4.30	

DISCUSSION

This study revealed that the prevalence of menstrual hygiene among Early Adolescent Girls in Banten Province was 53.68%. It is menstrual hygiene in a negative category (bad menstrual hygiene). Pervious study from India among young currently married women aged 15–24 years found that nearly half of the women (49.3%) practice hygienic methods to contain menstrual bloodstains [15]. It was similar with present study because India and Indonesia had similar demographic area with similar density and socioeconomic level.

Another previous study from Uganda among 205 menstruating schoolgirls (10–19 years) from the eight study sites found that 90.5% (95% CI 85.6 - 93.9) had inadequate menstrual hygiene management. This did not differ between those using reusable pads and those using other existing methods (71.3% cloth, 14.0% disposable sanitary pads, 14.7% other methods including toilet paper and underwear alone). It was different from the present study (53.68%.), it might be the previous study had specific population, It reported that menstrual hygiene management behaviours reported by the sample are consistent with the rural context and poverty in the study area. The sample

may be more disadvantaged, at least in terms of menstrual hygiene, than some past studies [16].

Previous research was also conducted in Indonesia with a population of junior high school girls who revealed personal hygiene behaviour during menstruation in the positive category 62.9%. [17] It was lower in a negative category (bad menstrual hygiene) compare 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, neighbours, and friends are people around students who have potential be a source of information about menstruation and personal hygiene related to menstruation. Moreover, almost all students get information from their parents or siblings at menarche. In dealing with menstruation, students need psychological support from people around them such as among them are siblings [18].

This study found that Sibling Support (adj. OR = 0.92, 95% CI 0.85 – 0.99, p = 0.045) was statistically significant with menstrual hygiene, this is relevant to previous research which found that information sources from siblings had an effect on personal hygiene behaviours on teenage girl during menstruation (p < 0.001) [17]. Siblings are one source of information for adolescents related to mentoring [19]. Previous studies on Your Experience in Daily Life in the Family, using qualitative methods. Respondents were interviewed about their experiences of daily family life. The results showed that on the whole siblings experience continuity in many aspects of their family life: they still perceive their family as a source of important support and information / communication, warm and affectionate and as a safe haven where family members aim to protect each other [20]. Family and cultural practices also play significant role on adolescent girls overall health and well-being. Sister / sibling is the second choice after mothers in sharing information related to menstruation and their personal hygiene [21].

An earlier study with 272 participants in grades 9 and 11 from a secondary school in the US Northeast. After three years, time 2 data for 135 students from the original sample were collected. The parenting behavior that is assessed is parenting. The result of sibling relationships is sibling support, warmth, and conflict. The findings indicate the potential for compensatory support offered by siblings in early and late adolescence [22]. During adolescence, feeling greater support and warmth from siblings who have higher social competence and pairs of adolescents who engage in constructive conflict resolution skills also demonstrate these skills in their romantic relationships. Feeling sibling support can has the potential to improve or catalyze intergenerational transmission [23].

Menstrual health promotion in schools remains an issue of concern in developed countries included Indonesia. Getting information from different resources might give impact for adolescent for understanding about menstrual hygiene. This study found that Information Exposure (adj. OR = 2.79, 95% CI 1.81 – 4.30, p <0.001) was significantly associated with menstrual hygiene among Early Adolescent Girls in Banten Province**.** Limited evidence is available on various components of menstrual hygiene-friendly schools in India. Although data is available for MHM information sources (teachers), studies on whether teachers as a source of information for girls have adequate knowledge about MHM are not yet available. We estimate that more than half of girls have no information about menstruation before menarche. Only 7% of girls reported teachers as a source of MHM information. Menstrual hygiene

education in schools is most often left to non-government organizations [24].

Absenteeism from school was significantly associated with the type of absorbent used, lack of privacy at school, restrictions imposed on girls during menstruation, maternal education, and sources of information on menstruation. Women and girls have reported in various studies 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 [25,26].

Because information from schools alone is not enough to solve the problem of mental hygiene knowledge for adolescents, it is necessary to collaborate with other parties such as family or friends, so that the more sources of information that are obtained by adolescents, the more positive potential for knowledge of mental hygiene for these adolescents. This is certainly in line with the results of this study [27].

Previous study in India showed that only 42% of the adolescents were aware about the menarche. This shows that there is limited accessibility to the information of adolescent health and hygiene. Unfortunately, 52% of target population was ignorant about menstruation before menarche in that study. Every girl child must be aware about menstruation, which is vital happening at the beginning of adolescence [28].

The majority of girls do not have sufficient knowledge about menstrual changes and the misinformation they get from unreliable sources leads them to serious problems. Lack of awareness and proper health information during this period can predispose a person to pelvic inflammatory infection and its associated complications, such as infertility, which in turn, results in many economic and social problems. The family is the main social unit that plays a key role in educating and disseminating health information and behavior to adolescents, and among family members, mothers hold the most influential positions. The students in this study identified their mothers as their main source of information about menstruation. However, a study conducted in Turkey showed that friends are the most important source of information about menstruation. These results indicate the importance of peer groups in menstrual health education; on the other hand, these differences can be attributed to variations in culture and geographic location. Based on several studies, female students cited mothers, teachers and friends as the most important sources of information about menstrual health. So that the more sources of information obtained will affect the level of change in menstrual hygiene behavior in adolescents [29–31].

CONCLUSIONS

This study found a high prevalence of personal hygiene in a representative sample of early adolescent's girls population in Serang District, Banten Province. Sibling Support and Information Exposure were statistically significant with of personal hygiene.

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