

Menstrual Hygiene Management of Junior High School Students in Rural Areas of Indonesia (Study in Tinambung Sub-District, Poliweli Mandar, West Sulawesi)

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Abstract

In order to avoid diseases that can affect reproductive organs, Menstrual Hygiene Management (MHM) needs to be implemented. This study aims to assess MHM and the determinants of junior high school female students at Tinambung sub-district.

A quantitative approach with a cross sectional design was conducted towards 250 female students proportionally random selected from 3 junior high schools at Tinambung sub-district. Data were collected online using a questionnaire and analyzed using chi square test and multiple logistic regression. A number of 60.8% of female students practiced poor MHM. Female students who had negative attitude towards MHM had almost 8 times the chance to practice poor MHM compared to students who had a positive attitude after being controlled by knowledge on MHM, water facilities, sanitation and hygiene (WASH) at school, education of mother and exposure to information (P= 0.005, OR: 7.98, 95% CI: 3.91, 16.29).

Efforts are needed to provide information related to MHM through mothers, teachers and social media which are now widely accessed by students as well as improving WASH facilities at schools to support female students practice adequate MHM.

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Introduction

Menarche is an important time during transition from childhood to becoming an adult woman¹. Menstruation is often related with misconceptions on personal hygiene practices that can cause various health problems². Menstrual hygiene is still a problem often neglected due to water, sanitation and hygiene (WASH). Around 200 million adolescents and women in low-income countries has difficulty on obtaining clean water and adequate toilets to clean and change their sanitary napkins³.

Menstrual Hygiene Management (MHM) requires adequate resources such as: clean sanitary napkins that can be changed as often as possible and access to their disposal, clean water and soap for self-cleaning and comfortable toilets with maintained privacy conditions⁴. Until

now, MHM in adolescents is still inadequate, due to lack of knowledge and management of menstruation. In South Asia 1 out of 3 teenage girls who has not experienced menarche has insufficient knowledge on menstruation, 48% of teenage girls in Iran and 10% in Indonesia believe that menstruation is a disease⁵. In addition, many people still consider menstruation a very private matter and taboo to be discussed in public or taught openly⁶. Nearly 20% of adolescents in urban and rural areas of Indonesia experience bullying from male friends at school when menstruating, so they choose not to go to school when they are menstruating⁴.

Poor MHM can have detrimental effects on health, such as Reproductive Tract Infections (RTIs) which has become a silent worldwide epidemic. One third of women of reproductive age worldwide experience mild to severe RTIs. Vaginitis is the global main cause of RTIs with symptoms of vaginal discharge, itching and irritation of the vulva and unpleasant odor⁷.

Providing education from an early age will increase menstrual hygiene knowledge and practice among adolescents. In addition, it will also increase self-confidence of teenage girls

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and reduce health problems, specifically RTIs⁸. A study in Indonesia reported that many adolescents especially at the junior high school level did not understand proper MHM⁹. Tinambung is one of 16 sub-districts in Polewali-Mandar Regency a rural area 180 km from Mamuju, the capital city of West Sulawesi. This sub-district face problems of clean water availability especially during the dry season, therefore it may affect water availability at schools¹⁰. For that reason, a study needs to be carried out to assess MHM and the determinants of junior high school female students at Tinambung.

Materials and methods

A quantitative approach with a cross sectional design which was conducted in May 2020 at Tinambung sub-district, Polewali-Mandar Regency, West Sulawesi. A sample of 250 was calculated using a two-proportion hypothesis test and randomly selected from 3 junior high schools in Tinambung¹¹. Inclusion criteria included: having experienced menstruation, able to connect to the internet and willing to be a respondent.

Due to the COVID-19 pandemic that hit the world including Indonesia, data was collected by filling in an online questionnaire independently. The questionnaire used was the modified questionnaire on Knowledge, Attitude and Practice (KAP) on menstrual hygiene management developed by UNICEF. The data covered student characteristics, independent variables which included: age of menarche, knowledge on MHM, attitude towards MHM, WASH facilities at schools, education of mother, family socio-economic status and information exposure. While MHM was the dependent variable which was measured through questions on actions taken by female students during menstruation including: type of sanitary napkins used, frequency of changing sanitary napkins per day, how to clean and dispose sanitary napkins and how to maintain personal hygiene including female organs. Data was analyzed using chi square test and multiple logistic regression using the SPSS program.

Prior to data collection, this study received approval from the research and Community Engagement Ethics Committee Faculty of Public Health, Universitas Indonesia

(Certificate No: 44/UN2.F10.D11/PPM.00.02/2020). Written informed consent was obtained online from all selected female students as respondents and parents who were generally represented by their mothers.

Results

The age of female students ranged from 12-16 years, with a mean of 13.6 years and most were 13-14 years old (86.8%) and in the 7th grade (54%). The father of students 92.4% were fishermen and farmers while 62% of their mothers were unemployed. Majority of the female students (60.8%) practiced poor MHM, 81.2% of them experienced menarche at the age of ≥ 12 years, 60.8% of students had low knowledge and negative attitude towards MHM (50.8%). As many as 59.2% of female students considered that WASH facilities at schools were inadequate, 75.2% of students had mothers with low education, the majority (93.6%) came from families with low socioeconomic conditions and 59.2% of students felt they were not exposed to information related to MHM (Table 1).

Variables	n	%
MHM practices		
Poor	152	60.8
Good	98	39.2
Menarche age		
<12 years	47	18.8
≥ 12 years	203	81.2
Knowledge		
Low	152	60.8
High	98	39.2
Attitude		
Negative	127	50.8
Positive	123	49.2
WASH facilities at school		
Inadequate	138	59.2
Adequate	112	40.8
Socio-economic status		
Low	234	93.6
High	26	6.4
Mother education level		
Low	188	75.2
High	62	28.8
Information exposure		
Inadequate	102	59.2
Adequate	148	40.8

Table 1. Distribution of dependent and independent variables.

The bivariate analysis showed knowledge (P= 0.005), attitude (P= 0.005), WASH facilities at schools (P= 0.048), socio-economic status (P= 0.025), education of mother (P= 0.005) and information exposure (P= 0.005) related to MHM and became a candidate included to the multivariate model. The menarche age showed a contrasting result which proved was not correlated to MHM (P= 0.98), and not included to the multivariate model (Table 2).

Variables	MHM practice		P Value	OR (95% CI)
	Poor	Good		
Menarche age				
<12 tahun	69.6%	40.4%	0.980	0.94 (0.49, 1.79)
≥12 tahun	61.1%	38.9%		
Knowledge				
Low	76.3%	23.7%	0.005	5.55 (3.18, 9.67)
High	36.7%	63.3%		
Attitude				
Negative	85.0%	15.0%	0.005	10.2 (5.54, 18.81)
Positive	35.8%	64.2%		
WASH facilities at school				
Inadequate	66.7%	33.3%	0.048	1.73 (1.04, 2.89)
Adequate	53.6%	46.4%		
Socio-economic status				
Low	62.8%	37.2%	0.025	3.72 (1.25, 11.06)
High	31.3%	68.7%		
Mother education level				
Low	71.8%	28.2%	0.005	6.74 (3.55, 12.81)
High	27.4%	72.6%		
Information exposure				
Inadequate	75.0%	25.0%	0.005	4.46 (2.59, 7.68)
Adequate	40.2%	59.8%		

Table 2. Determinants associated with the MHM practices.

Variables	B	P Value	OR	95% CI
Knowledge	1.613	0.005	5.012	2.45, 10.29
Attitude	2.077	0.005	7.98	3.91, 16.29
WASH facilities at school	1.128	0.002	3.09	1.49, 6.38
Socio-economic status	1.439	0.001	4.21	1.81, 9.79
Mother education level	0.989	0.006	2.69	1.32, 5.46
Information exposure	-3.596			

Table 3. Multivariate result.

Multiple logistic regression analysis indicated that attitude towards MHM (P= 0.005, OR: 7.98, 95% CI: 3.91, 16.29) was the most dominant factor related to MHM for junior high school female students in Tinambung. Female students with negative attitudes towards MHM were almost 8 times more likely to practice poor MHM than those with a positive attitude after being controlled by knowledge of MHM, WASH facilities at schools, education of mother and information exposure (table 3).

Discussion

Females need to pay attention to the menstrual hygiene aspect because the uterus becomes very easily infected during menstruation, therefore without proper hygiene management the risk of being infected with diseases will be higher especially related to reproductive organs¹². Females who do not maintain hygiene regularly during menstruation are 1.7 times more likely to experience RTIs than those who maintain hygiene¹³. RTIs and Candidiasis are higher in females who do not practice adequate MHM¹⁴.

Our study found that 60.8% of junior high school female students practiced poor MHM. This finding was like the results of a study in Western Ethiopia where 60.1% of female students were classified with poor menstrual hygiene practices¹⁵. Female students in Tinambung changed their sanitary napkins 3-4 times a day in average and only 5.2% of students did it while at school. Compared to India this figure was higher where 60% of adolescents and 11% in Ethiopia changed their sanitary napkins only once a day⁶. A UNICEF survey at 4 provinces in Indonesia (East Nusa Tenggara, East Java, Papua and Sulawesi) found that 67% of adolescents in urban areas and 41% of adolescents in rural areas changed their sanitary napkins every 4-6 hours/day or 4-6 times/day⁹. According to MHM UNICEF standards, besides using clean sanitary napkins it should be changed every 3-4 hours/day or 5-6 times/day¹⁶. Sanitary napkins with blood clots become a fine place for bacteria and fungi reproduction which can irritate reproductive organs⁶.

Basic hygiene practice principle that needs to be maintained is the hygiene of both hands to avoid transfer of bacteria¹⁶. Therefore, our hands need to be washed with soap and water before and after changing sanitary napkins⁵. Our study found that only 1.2% of female students washed their hands before changing sanitary napkins and neither washed them after changing their sanitary napkins. On the contrary results from studies in DKI Jakarta, East Nusa Tenggara and West Nusa Tenggara, none of the female students washed their hands before changing sanitary napkins but they did do it after changing their sanitary napkins⁹.

The handling of used sanitary napkins in rural areas of Indonesia is generally disposed

into the river, buried, burned or thrown directly into the toilet⁹. Similar results were found in Tinambung where in the rural area many female students buried used sanitary napkins, threw them into the toilet or trash cans without wrapping them up first. If sufficient water supply is available, disposable sanitary napkins should be washed first then wrapped up and thrown away. Washing sanitary napkins is not recommended due to insufficient water supply because used sanitary napkins may contain a large number of bacteria, therefore it must be disposed in a covered trash can⁵.

Several female students in Tinambung have cleaned their genital organs properly which is from the front (vagina) to the back (anus), because if it is done the opposite way there is a possibility that bacteria will enter the vagina and cause irritation and infection⁸. However, there are still quite a number of female students who use special soaps and feminine cleansing liquids, although using clean water should be enough. The use of special soap or liquid will actually kill the good bacteria and trigger the reproduction of bad bacteria and fungi that can cause infection⁵.

Our study shows that menstrual hygiene practice among junior high school female students in Tinambung is affected by MHM knowledge, attitude towards MHM, WASH facilities at schools, education level of mothers and information related to menstruation and its management and the most dominant factor is attitude. The negative attitude of female students towards MHM can be caused by lack of MHM knowledge, also myths in a community especially in rural areas where menstruation is considered dirty and taboo to talk about^{17,9,18}. Several studies reported that MHM knowledge among adolescents in rural areas is generally low which has an impact on poor practice, the higher level of knowledge the better MHM^{19,8,20,18}.

MHM knowledge should be provided before adolescent girls experience menarche so that they are ready to face menstruation^{2,9}. Information and support from parents especially mothers, is needed by girls entering adolescence²¹. In general mothers in Indonesia, only inform about menstruation when their children experience menarche⁹. Only 18.7% of adolescent girls in South India knew about menstruation 3 months before menarche¹⁷. Most female students in Tinambung received information on menstruation from their mothers,

and the analysis results indicated that there was a relationship between the education level of mothers and menstrual hygiene practices of female students. The education level of most mothers in this study was low, they only graduated from Elementary School and Junior High School and in general were unemployed, so this could be an obstacle to find and understand the information they received. Information provided by mothers to their children when menarche in general was only on changing sanitary napkins, while other information was not provided⁹. In addition, female students had also received information on menstruation and its management from friends and the media where the truth is unreliable, while only 6% of female students received information from teachers.

In general, teenage girls in low-and middle-income countries (LMICs) obtain information on menstruation and its management from mothers and teachers at school^{17,18}. Mother and teacher are two figures that students respect, therefore reproductive health education, especially menstrual management needs to be provided to these two figures. Hopefully by having adequate knowledge they will be able to provide information for their daughters or students before experiencing menarche, therefore adequate menstrual hygiene could be carried out when menstruating and reproductive diseases can be avoided. Inadequate menstrual hygiene management can affect psychologically, self-confidence level, also the ability of teenage girls to perform physical activity²².

Previous studies reported that many students did not attend school during menstruation due to lack of access to adequate sanitation facilities, lack of access to sanitary napkins, and were teased by male and female friends^{8,23}. When menstruating 1 out of 6 teenagers around the world does not attend school for 1-5 days⁴. In Uganda, 88.6% of female students do not attend school during menstruation due to toilet facilities that lack providing privacy¹. At Tinambung, 1 out of 5 junior high school female students did not attend school for 1-2 days when menstruating due to being uncomfortable regarding changing sanitary napkins at school because there were no separate toilets between boys and girls.

In many countries around the world including Indonesia, menstruation is still considered a taboo issue to talk about, so many

parents are reluctant to inform their sons when they enter adolescence^{6,1}. Therefore, it is not surprising that many boys do not understand about menstruation and they bully their female friends when menstruating²³. One of the reasons junior high school female students in Tinambung never change their sanitary napkins at school because mostly they are afraid of being teased by their male friends. A study in rural Zambia found out that when teenage girls are menstruating, they choose not to attend school due to fear of being embarrassed by male friends²³. UNICEF survey in 4 provinces Indonesia reported that generally parents never provide information related to menstruation to their sons⁹. Therefore, male students must be educated so they can respect girls that are menstruating²⁴.

This study founded that poor MHM was also caused by limited WASH facilities at schools. Although Tinambung had problems with clean water availability, the only facility available at school toilets was clean water, while the hand washing area, soap and trash cans for used sanitary napkins disposal were unavailable. In addition, the number of toilets was limited and were not separated between male and female students, whereas according to Permendiknas No. 24 of 2007, namely 1:60 for male toilets and 1:50 for female toilets.

Since the last 10 years MHM at School has been a discussion topic in LMICs because schools do not provide adequate sanitation facilities and lack of guidance by teachers¹². For this reason, the District Education Office needs to take advantage of Corporate Social Responsibility (CSR) of companies in its territory to complement WASH facilities at schools.

Conclusion

The attitude towards MHM is a correlated factor towards junior high school female students at Tinambung sub-district who still practice poor MHM. Students who have negative attitude towards MHM were almost 8 times more likely to practice poor MHM than those who have a positive attitude after being controlled by knowledge of MHM, WASH facilities at schools, education of mothers and information related to menstrual hygiene. Therefore, providing information for female students is required which can be done through social media which is

currently widely accessed by adolescents. The knowledge of mothers and teachers also needs to be improved first in order for them to provide correct and adequate information to their daughters, sons, and student, so that the myth and opinion of menstruation in the community which is not true and considered taboo can be eliminated.

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Declaration of Interest

The Authors report of no conflict of interest.

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