



THE INFLUENCE OF HEALTH EDUCATION THROUGH BOOKLET ON KNOWLEDGE AND PRACTICE OF MENSTRUAL HYGIENE COMPARES AT BOARDING SCHOOLS IN RURAL AND URBAN AREA

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ABSTRACT

Abnormal discharge from the vagina and infections of the reproductive tract can be prevented by practicing good menstrual hygiene. The ease by which adolescents are able to access information will affect the level of knowledge adolescents have about menstrual hygiene. This study aimed to determine the differences in levels of knowledge and practices of menstrual hygiene in boarding school students in rural and urban areas, before and after having being given health education using booklet media. This study was quasi experimental research. The research took place at MTs Al Falaah Pandak Bantul representing the rural area and MTs Mu'allimat Yogyakarta representing the urban area between December 2016 and January 2017. Knowledge and practice of menstrual hygiene was measured by a questionnaire. There was no statistically significant difference between knowledge of menstrual hygiene in the boarding schools of both rural and urban groups $p=0.473$, whereas the difference between hygiene practice regarding menstruation in both groups showed a significant difference $p=0.000$. There were significant differences in the levels of knowledge and practice of menstruation hygiene between the boarding school students in both the rural areas and urban areas before and after health education using a booklet. A higher mean value was indicated by the boarding school students in urban areas.

Key words: Knowledge, Practice, Menstrual hygiene, Boarding school

ABSTRAK

Cairan abnormal dari vagina dan infeksi pada saluran reproduksi dapat dicegah dengan kebersihan menstruasi. Kemudahan remaja dalam mengakses informasi akan mempengaruhi pengetahuan remaja tentang kebersihan menstruasi. Penelitian ini bertujuan untuk mengetahui perbedaan pengetahuan dan praktik kebersihan menstruasi pada siswa sekolah berasrama di daerah pedesaan dan perkotaan, sebelum dan sesudah diberikan pendidikan kesehatan menggunakan media buklet. Penelitian ini adalah penelitian eksperimental semu. Penelitian ini dilaksanakan di MTs Al Falaah Pandak Bantul yang mewakili wilayah pedesaan dan MTs Mu'allimat Yogyakarta mewakili wilayah perkotaan dari Desember 2016 hingga Januari 2017. Pengetahuan dan praktik tentang kebersihan menstruasi diukur dengan kuesioner. Tidak ada perbedaan yang signifikan secara statistik antara pengetahuan tentang kebersihan menstruasi di sekolah asrama baik kelompok pedesaan dan perkotaan $p = 0,473$, sedangkan perbedaan praktik kebersihan menstruasi pada kedua kelompok menunjukkan perbedaan yang signifikan $p = 0,000$. Pengetahuan dan praktik kebersihan menstruasi siswi di sekolah berasrama di desa dan kota memiliki perbedaan yang signifikan sebelum dan sesudah pendidikan kesehatan dengan menggunakan buklet, nilai rata-rata yang lebih tinggi ditunjukkan oleh siswa sekolah asrama di daerah perkotaan.

Kata kunci: Pengetahuan, Praktik, Kebersihan menstruasi, Sekolah berasrama

BACKGROUND

An adolescent is defined as someone who has entered the age period of 10-19 years old (World Health Organization, 2014). WHO data (2014) mentioned that the number of adolescents in the world is estimated to reach 1.2 billion or 18% of the total population in the world. The number of adolescents in Indonesia aged between 10-19 years old are as many as 43.5 million people or about 18% of the population in Indonesia. Adolescence is a period where individuals are vulnerable to engaging in risky behavior, due to the rapid development of physiological, psychological and intellectual changes, that can impact on both their physical and psychosocial health.

Menstrual hygiene is a woman's behavioral practice of maintaining hygiene during menstruation. Good menstrual hygiene can prevent the onset of reproductive tract infections and discharge of abnormal fluid from the vagina (Anand et al., 2015). Examples of good menstrual hygiene practices are using sanitary napkins (replacing it 4-5 times a day) and regular cleaning of the genital organs (Kusmiran, 2012; Fitriyah, 2014; Sevita, 2015).

Boarding school is one type of school system developed in Indonesia where students and administrators live together in a building where complex or organised activities are held. The students' activities in the boarding school are usually arranged from morning until evening. Good menstrual hygiene practices become constrained by the density of a person's schedule, as is the case with students in boarding schools. In addition, the practice of menstrual hygiene is also affected by the availability and quality of menstrual hygiene facilities as well as by the volume of students using the existing facilities one after another.

A person's knowledge is attained by accessing sources of information. Sources of information about menstrual hygiene for female students in rural areas and in urban areas are significantly different (Paria et al., 2015). This may be because access to information sources in

the city is more adequate, whereas in the village the things associated with menstruation are still considered taboo for dissemination (El Gilany et al., 2005). A person's knowledge can be enhanced by the addition of information resources. One way of increasing sources of information is by providing education through booklet media. Research conducted by Suryati (2012), Ayuningtyas et al., (2011), Winerungan et al., (2013) in several regions in Indonesia such as Depok, West Java, Semarang, Central Java and Manado North Sulawesi showed that the knowledge of menstrual hygiene was still low and it influences the hygiene practice as well as the incidence of infection of reproductive organs. This research aimed to examine the differences of knowledge and practice between the boarding school students in the rural area and in the urban area related to menstrual hygiene before and after health education through booklet media.

METHODS

The research method was quantitative method and quasi experimental method with pre-test and post-test design to find out the level of knowledge and practice of menstrual hygiene on the boarding school students before and after health education in the rural area compared to the urban area. It was conducted between December 2016 and January 2017 in boarding schools located in Bantul Regency (for the rural area) and in a school located in Yogyakarta City (for the urban area).

According to data collected from Dinas Pendidikan Pemuda dan Olahraga Provinsi DIY, there were 19 boarding schools in urban areas and 8 boarding schools in rural areas. According to Slovin in Sugiyono (2011) regarding a large sample calculation, the minimum sample size for this study would be 83 respondents in the rural area and 97 respondents in the urban area. Random sampling was conducted to select a suitable boarding school for this research and those were MTs Al - Falaah Pandak Bantul for rural areas and MTs Mu'allimat Yogyakarta for urban areas. Respondents

from each school were then selected based on some inclusion criteria including having experienced menstruation, recorded as being a student living in a boarding school, willing to be a respondent and cooperative. At the end of the study, the total students from the rural area were 84 and from the urban area were 110.

This study used several instruments including 3 types of questionnaire. These were a basic data questionnaire, a questionnaire about menstrual practice and a questionnaire regarding menstrual hygiene knowledge. To check the validity of the menstrual practice questionnaire, the researcher referred to a reference recommendation about menstrual practice. The menstrual hygiene knowledge questionnaire developed by the researchers consisted of two indicators of menstruation in general and questions about menstrual hygiene. The questionnaire was generally developed based on several references from various sources (Department of Drinking Water Supply (2008), Manuaba (2008), Kettaneh et al. (2014) El-Gilany et al. (2005), Adhikari et al. 2007), Ali and Rizvi (2010), Sudeshna and Aparajita (2011), House *et al.* (2012), Gultie *et al.*, (2014), Haque *et al.* (2014), Paria *et al.* (2014), Upashe *et al.* (2015)). The questionnaire about menstrual hygiene knowledge consisted of 33 closed statements. The validity test has been done that is resulting r score was greater than the value of r table 0.138 and therefore reliability test with cronbach alpha 0.632 can be declared reliable. Ethical approval was issued with the number KE / FK / 0033 / EC / 2017. Comparative data analysis on the value of knowledge and practice value of menstrual hygiene was done by an independent t-test.

RESULTS

Characteristics of respondents

Table 1. The characteristics of the students in rural and urban groups

Participant characteristics (n = 194)	Rural group (n = 84)		Urban group (n = 110)		p-value
	Total	(%)	Total	(%)	
Class					

Participant characteristics (n = 194)	Rural group (n = 84)		Urban group (n = 110)		p-value
	Total	(%)	Total	(%)	
VII	22	26.2	0	0	0.000
VIII	38	45.3	110	100	
IX	24	28.5	0	0	
Age					
12 years old	8	9.5	1	0.9	0.000
13 years old	34	40.5	51	46.4	
14 years old	28	33.3	56	50.9	
16 years old	14	16.7	2	1.8	
Menarche Age					
10 years old	1	1.1	2	1.8	0.670
11 years old	20	23.8	25	22.7	
12 years old	43	51.2	47	42.7	
13 years old	17	20.3	32	29.1	
14 years old	3	3.6	4	3.7	
History of getting a health education about menstruation					
					0.726
Not yet	1	1.1	2	1.8	
Yes	83	98.9	108	98.2	

Based on the homogeneity test result between the rural group and the urban group that was carried out at the beginning of the study, both groups were not homogenous, especially in the characteristics of the class and the age of the respondents. This is because in the urban group, the students involved in the research were only class VIII, while in the rural group there was an equal distribution between class VII, VIII and IX. Regarding other characteristics, including menarche age and history of getting health education about menstruation, both groups were homogeneous.

Knowledge and practice of menstrual hygiene before health education

Table 2. Early screening of knowledge and practice of menstrual hygiene of the respondents prior to intervention

Participant characteristics (n = 134)	Rural group (n = 84)		Urban group (n = 110)		p-value
	Mean±SD		Mean±SD		
The mean of early knowledge about menstrual hygiene	26.35±2.49		27.51±3.14		0.004

The mean of early practice about menstrual hygiene	16.80±1.36	19.05±0,94	0.000
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Early screening of knowledge and practice of menstrual hygiene showed that the urban group had higher values than the rural group students. The mean differences in both groups was significantly different.

Knowledge and practice of menstrual hygiene after health education

Table 3. Knowledge and practice of menstrual hygiene of the respondents after the intervention

Participant characteristics (n = 134)	Rural group (n = 84)	Urban group (n = 110)	p-value
	<i>Mean</i>	<i>Mean</i>	
	<i>deference</i>	<i>deference</i>	
	$\Delta \pm SD$	$\Delta \pm SD$	

The mean value of	0.96±2.70	1.63±3.16	0.473
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The difference between knowledge and practice of menstrual hygiene before and after health education

Table 4. The difference in knowledge and practice of menstrual hygiene of respondents after intervention

Participant characteristics (n = 134)	Rural group (n = 84)		p-value	Urban group (n = 110)		p-value	rural-urban
	<i>Mean ± SD</i>			<i>Mean ± SD</i>			
	Pre test	Post test	p-value pre-post rural	Pre test	Post test	p-value pre-post urban	

The mean value of knowledge about menstrual hygiene	26.35±2.49	28.15±2.08	0.000	27.51±3.14	29.14±2.12	0.000	0.006
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The mean value of early practice about menstrual hygiene	16.80±1.36	17.75±1.30	0.000	19.05±0,94	18.46±2.92	0.082	0.057
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The mean value of menstrual hygiene knowledge in both rural and urban groups increased after health education through booklet media but the improvement of the value in both groups was not significant. Meanwhile, there was a significant difference between the mean

knowledge after health education about menstrual hygiene given			
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The mean value of practice after health education about menstrual hygiene given	0.66±3.78	-	0.000
		0.96±2.70	

There was a significant improvement in knowledge values for rural and urban students after being provided health education about menstrual hygiene using booklets with the $p > 0.05$. The value of menstrual hygiene practice in the rural group increased whereas the urban group decreased slightly.

value of the rural group and the urban group regarding the menstrual hygiene practice after the intervention. The mean value of menstrual hygiene practice increased in the rural group and surprisingly decreased in the urban group.

DISCUSSION

Differences in knowledge and practice of menstrual hygiene at the boarding schools in rural and urban areas

Takre et al. (2011) stated that there were significant differences in the knowledge and practice of menstrual hygiene between women in rural areas and in urban areas. Only 36.96% of women were aware of menstrual hygiene before menarche. Mothers are indicated as the main source of menstrual information for students (Takre et al., 2011). More than three quarters of the girls in the study were not aware of the cause and the source of the bleeding (Takre et al., 2011). The majority of them had knowledge about the use of sanitary pads (Takre et al., 2011). The difference in knowledge and practice of menstruation in adolescents in urban and rural areas was also stated by the study of Paria *et al.*, (2014), which stated that menstrual hygiene practice was unsatisfactory in the rural area when compared to the urban area. Girls should be educated about the proper hygiene practice relating to menstruation as well as bringing them out of traditional beliefs, misconceptions and restrictions regarding menstruation (Paria et al., 2014). Only 37.52% of girls were aware of menstruation prior to the attainment of menarche (Paria et al., 2014). The difference in the awareness regarding menstruation in urban and rural areas was highly significant (Paria et al., 2014). In addition regarding the choice of using pads, the study of Van Eijk *et al.*, (2016) reported that the urban girls used the women pads more commonly than the rural girls.

Based on the results of this study, prior to the health education using the booklet, the knowledge and practice of menstrual hygiene amongst urban students is higher than amongst rural students. The mean values of both groups showed significant differences. The results of this study proved that differences between rural and urban areas also bring differences in knowledge and practice about menstrual hygiene in female students. For rural areas in terms of geography, it is quite difficult to achieve good menstrual hygiene and there are still

obstacles to accessing the public facilities that are available. In addition, the socio-economic condition is still lower and the culture of society still maintains the traditional and natural values whilst the urban areas are characterised by improved physical and social conditions. These characteristics include the existence of trading places such as markets, shops and supermarkets, the existence of centers of activities and recreation, the existence of sports, heterogeneous life and societal attributes that are individualistic (BPS, 2010).

The knowledge and practice of menstrual hygiene among female students at the boarding schools in urban areas is higher than in the rural area, which is quite different from Ali and Rizvi's study (2010) which stated that almost 50% of 1275 girls in an urban area of Karachi, Pakistan had a poor understanding of menstruation and only basic knowledge of menarche. These adolescent girls are also almost 50% likely not to take a bath during menstruation (Ali and Rizvi, 2010). This difference occurs because of the culture or lack of understanding of menstruation among adolescents (Ali and Rizvi, 2010).

The differences in the habits of practicing menstrual hygiene between adolescent girls in rural and urban areas was also presented by Paria *et al.*, (2014). The results of the study indicated that there was a significant difference in the awareness of menstruation between adolescents in rural and urban areas (Paria *et al.*, 2014). Only 36% of adolescent girls in urban areas and 54.88% of adolescent girls in rural areas used homemade sanitary pads and with repeated use (Paria *et al.*, 2014). The importance of external genital hygiene was practiced by 47.63% of girls in urban areas and 37.96% in rural areas (Paria *et al.*, 2014). The study of Paria et al. (2014) found higher levels of knowledge and practice of menstrual hygiene in urban areas compared with rural areas which is similar to the results of this study. This difference in knowledge and practice possibly occurs because the girls in rural areas bring traditional beliefs, misperceptions and prohibitions associated with menstruation.

Based on the results of a systematic review of the health and social effects of menstrual hygiene management (Sumpter and Torondel, 2013), it was found that the effect of poor menstrual hygiene management in women with low incomes can not be clearly explained. However, this review shows that there is a better understanding and improvement of menstrual hygiene management in higher educated women. It also proves that even in the rural areas with lower socioeconomic conditions, the knowledge and practice of menstrual hygiene at both the boarding schools (in both areas) is already good because all the students are exposed to education, even though in the rural areas it is of a lower level than in the urban areas (Sumpter and Torondel, 2013).

The difference in knowledge and practice of menstrual hygiene of the boarding school students in rural areas compared with the urban boarding school may also be due to the fact that the characteristics of the two groups differed substantially, especially the class and age characteristics of the respondents. In the urban group, all of the respondents were class VIII while in rural areas they were more diverse consisting of class VII, VIII and IX. There were also age differences, which alters the class of the student. This age and class distinction creates a difference in the experience of menstruation. The longer a teenager experiences menstruation for, the more accustomed to practicing good menstrual hygiene they will be. Their knowledge will also increase with the opportunity to ask friends or people close to them for help or advice.

The effects of health education on menstrual hygiene with booklet media on the knowledge and practice of menstrual hygiene at the boarding schools in rural areas and urban areas

Health education is the application of education in the field of health which aims to influence individuals, groups, or communities so that they do what the educator hopes and aims for, which is developing knowledge, better attitudes and practices to maintain and

improve personal health (Notoatmodjo, 2012). One of the media that can be used in health education is a booklet. The media of a booklet was chosen because it can be used to increase knowledge so that the readers' cognitive understanding will improve. The booklets contain important points in the form of detailed writing as well as drawings.

After giving health education about menstrual hygiene using booklets, knowledge values in rural and urban groups showed an improvement, which was a statistically significant increase with $p > 0.05$. As the value of the practice of menstrual hygiene in the rural group increased, the urban group actually experienced a slight decrease. The early average score of the respondents' knowledge of both menstrual hygiene and practice showed high results, but the direct interaction between the researchers and the respondents indicated that the adolescents wanted a discussion to get proper information about menstruation and menstrual hygiene. Improved health education about menstruation and menstrual hygiene is strongly recommended for these boarding school students.

The need for a health education program about awareness and good practice of menstrual hygiene is also a necessity for high school girls in West Ethiopia (Upashe *et al.*, 2015). In this research, it has been shown that knowledge and practice of menstrual hygiene is low, as only a small proportion of respondents already had good levels of knowledge and proper practice of menstrual hygiene (Upashe *et al.*, 2015). The success of health education interventions using booklet media to improve students' knowledge and practice of menstrual hygiene is also similar to the effect of school-based menstrual health education interventions (Haque *et al.*, 2014). These interventions are also able to significantly increase the level of knowledge and beliefs of the students (Haque *et al.*, 2014). Significant improvements in these interventions also resulted in good menstrual hygiene practices of female students (Haque *et al.*, 2014). So it can be concluded that school-

based menstrual health education interventions can increase the knowledge and alter beliefs and practices surrounding menstrual hygiene (Haque *et al.*, 2014).

The difference where this research lies in comparison to other studies is in the type of intervention given. The difference in the mean value of knowledge of menstrual hygiene in both rural and urban groups after giving the health education intervention using a booklet was that the knowledge value increased in both groups but there was no significant difference between rural and urban groups. The difference is that the mean value of practice of menstrual hygiene in the rural group increased while in the urban group it actually decreased, so it statistically showed a significant difference between rural group and urban group.

The positive influence of giving health education on bathing and genital hygiene is also shown by the study of Fakhri *et al.* (2012), which suggested that health education has a significant effect. A total of 61.6% in the experimental group (from 689 respondents) experienced an increase in health status significantly related to menstrual health with value $p = 0.002$. Based on the literature review of Sumpter and Torondel (2013), it is concluded that menstrual management for women with low incomes is something new. The results are not clear regarding the effect of poor menstrual hygiene management on reproductive problems or specific infections (Sumpter and Torondel, 2013). However it is an important effort to improve understanding of management of menstrual hygiene for women (Sumpter and Torondel, 2013).

CONCLUSION

After giving the students health education via a booklet about menstrual hygiene, there was a significant increase in knowledge of menstrual hygiene at the boarding school students in both rural and urban areas. Whereas for the practice of menstrual hygiene, the boarding school students in the rural area experienced a significant improvement while the boarding school students in urban areas contrarily experienced a slight decrease.

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