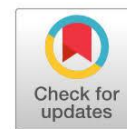


Effectiveness menstrual hygiene knowledge using booklet and leaflet media for adolescent girl (Studied in An-Nur Islamic Boarding School, Bantul)



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ABSTRACT

Menstrual hygiene management (MHM) is a problem for adolescent girl in low- and middle-income countries (LMICs). Poor MHM may increase a woman's susceptibility to reproductive tract infections (RTI), bacterial vaginosis (BV) infection, and urinary tract infection (UTI). Adolescent girl with better knowledge of menstrual hygiene and safe practices can reduce their vulnerability to RTI, BV and UTI. Health education is one of the right methods to provide information to adolescent girls. This study determine comprehension differences after getting menstrual hygiene education through booklets and leaflets for adolescent girl. This research was quasi experiment with pretest-posttest design with control group design. The data was taken on June 2019 in An-Nur Islamic Boarding School, Sewon, Bantul. The sample for each group was 35 girl students. The instruments used questionnaires. The data was analysed using paired t-test and independent t-test. The paired t-test result of the knowledge of both groups has significant enhancement knowledge in pretest-posttest scores for booklet group (Mean Difference = 14.09; p = 0.000) and for leaflet group (Mean Difference = 7.83; p = 0.000). Result of independent t-test showed that there was a significant difference in knowledge enhancement in adolescent girl's knowledge scores in the pre-test and post-test between the group of booklet media with the leaflet media (Mean Difference = 6.26; p = 0.000). The health education on menstrual hygiene through booklet media was more effective than leaflets in adolescent girls.

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INTRODUCTION

Menstrual hygiene is an important issue that effects healthy adolescent girl monthly. Most of the adolescent girl getting menarch at age 13 years old when attending school. (1) Adolescent girls who are menstruating for the first time generally have low knowledge so they do not know how to handle menstruation to avoid menstrual complications. They only get information about menstruation from the mother.(2)

Menstrual hygiene management (MHM) is a problem for adolescent girl in low- and middle-income countries (LMICs)(3). According to the WHO Regional Office for South-East Asia in 2018, individual or personal hygiene and sanitation are the third despite the



reproductive health is the eighth around ten risk factors causing morbidity/ death in adolescent. Poor MHM may increase a woman's susceptibility to reproductive tract infections (RTI), bacterial vaginosis (BV) infection, and urinary tract infection (UTI). Women in the reproductive age group are at risk for RTI when menstruating, pregnancy and childbirth.(4) Based on WHO data in 2010, the highest incidence of RTI in the world is in the teens (35% - 42%) and young adults (27% -33%), prevalence rates for candidiasis (25% -50%), bacterial vaginosis (20-40%) and trichomoniasis (5% -15%).(5) Among countries in Southeast Asia, Indonesian women are more at risk of experiencing ISR triggered by Indonesia's hot and humid climate.(6) Sari in Puspitaningrum (2019) states, the main causes of ISR include weak immunity (10%), hygiene behavior less when menstruation (30%), and the environment is not clean and the use of sanitary napkins during menstruation (50%).(6)

MHM practices vary worldwide and depend on the socioeconomic status, personal preference, local traditions and beliefs, and water and sanitation resources. (4) Women should be able to use clean pads, can be replaced as often as possible themselves in comfortable conditions with maintained privacy.(7) The Ministry of Health of the Republic of Indonesia has launched the Youth Care Health Services (*Pelayanan Kesehatan Peduli Remaja-PKPR*) program through the Public Health Center (PHC). It had an important role in counseling services and adolescent reproductive health guidance in public schools or religious-based schools such as Islamic boarding schools at least 2 times a year.(8) Islamic boarding schools must receive special attention because it requires students to live in a dormitory so that transmission of communicable diseases can increase because all facilities and activities are carried out together, such as eating, sleeping, washing, and sanitation activities.(1) In addition, the discussion on reproductive health is still classified as a very rare and sensitive theme among Islamic boarding schools.(6)

Health education is one of the right methods to provide information to adolescents. Young women with better knowledge of menstrual hygiene and safe practices can reduce their vulnerability to RTI and their consequences.(9) Previous research conducted by Irmayanti (2014) states that there is a significant knowledge difference between before and after health education. Knowledge before health education has a mean score of 10.89 and knowledge after health education increases to be 18.31, Wilcoxon test estimation p-value 0.000 (<0.05). (10) One of the efforts made to obtain information is through health education that is adjusted to the conditions in Islamic boarding schools which limit the use of electronic media by using print media.(10) Research conducted by Puspitaningrum (2018) at the Islamic boarding school in the Demak area shows there is an influence of knowledge on the attitudes of adolescent girl about menstrual hygiene. The average score of menstrual hygiene before the presentation of the booklet was 35.75 while the mean postmenopausal hygiene score after giving the booklet was 38.91.(6) Research by Ardiani (2018) shows there was an influence of video learning on knowledge of self-hygiene care during menstruation in adolescents girl. Statistical test results before and after video learning in teenagers using Paired T-Test results obtained 0.000.(11) Research by Meinarisa (2019) state that Menstrual Hygiene Education using lectures method, direct demonstration method using phantom, and giving booklet can be improved the attitude of adolescent girls and helps the adolescents to understand personal hygiene during menstruation ($p = 0.001$; 95% CI=223.38-234.17).(12) From several previous studies, no one has compared the use of booklet and leaflet media to provide health education about menstrual hygiene to adolescent girl in Islamic boarding schools. The research objective is to find out the differences in menstrual hygiene using booklets compared to leaflets.

METHOD

This study was quantitative research using quasi experimental. This study used a pretest-posttest with control group design. The experimental group was given an adoption booklet made by researchers according to UNICEF and Ministry Health of Indonesia's standards

while the control group was given leaflets made by researchers according to UNICEF's standards. Tehnique sampling using simple random sampling. The inclusion criteria were early adolescents (12-13 years old girls), already menstruating, willing become research respondents. The total number of samples used in the experimental and control groups was 70 respondents with 35 respondents for leaflet and 35 respondents for booklets. This research was conducted in June 2019 at An-Nur Islamic Boarding School, Sewon, Bantul. The instrument was questionnaires that have been pass the validity and reliability test. Data analysis using paired t-test and independent t-test. This study was ethically approved by the Ethic Commission of the Poltekkes Kemenkes Yogyakarta.

RESULT

Characteristics of respondents in this study was included age, age of menarche, duration of menstruation, information source, mother's education, and facilities of WASH (Water, Hygiene, and Sanitation).

Table 1. Characteristics Respondent of Knowledge in the Booklet and Leaflet Experiment Group

Chacteristic	Booklet		Leaflet		p-value
	f	%	f	%	
Age					
12 years old	13	31.1	10	28.6	0.445
13 years old	22	62.9	25	71.4	
Menarch					
≤ 12 years old	24	68.6	23	65.7	0.799
> 12 years old	11	31.4	12	34.3	
Duration of Menstruation					
5-7 days	22	62.9	21	60.0	0.806
> 7 days	13	37.1	14	40.0	
Resource Information					
Have been exposed information	3	8.6	6	17.1	0.284
Never exposed	25	91.4	26	82.9	
Mother Education					
Basic	8	22.9	13	37.1	0.427
Middle	17	48.6	14	40.0	
High	10	28.6	8	22.9	
WASH Facilities (Water, Hygiene, and Sanitation)					
Adequate	28	80.0	23	65.7	0.179
Inadequate	7	20.0	12	34.3	

According to table 1, from the Chi-Square test results show the results of p-value > 0.05 so it can be concluded that all characteristics between the experimental group booklet and the leaflet control group are homogeneous. The data of two groups are normally distributed so the analysis of the increase in average knowledge in both groups was carried out using the Paired T-Test.

Table 2. Differences in Increasing Pretest and Posttest Knowledge in the Booklet and Leaflet Experiment Group

Groups	Knowledge Enhancement			p-value Pre-Post
	Mean Pretest	Mean Posttest	Mean Difference	
Booklet	84.91	99.00	14.09	0.000
Leaflet	86.26	94.09	7.83	0.000

Table 2 shows that in both groups there was an increase in knowledge. Test results Paired T-Test both in the experimental group booklet and leaflet control group had p-value of 0.000 (<0.05) so that it could be concluded that in both groups experienced a significant increase in knowledge.

Table 3. Differences in Increasing Pretest and Posttest Knowledge in the Booklet and Leaflet Experiment Group

Groups	Knowledge Enhancement		
	Mean	Mean Different	p-value
Booklet	14.09	6.26	0.000
Leaflet	7.83		

Table 3 shows that analysis of mean differences in the increase in knowledge in the two groups was used the Independent T-Test. Based on the results of the Independent Test T-Test showed differences in the average increase in knowledge of the booklet and leaflet groups, namely 6.26 with the results of 0.000 (p-value <0.05). It can be concluded that there are differences in the knowledge enhancement between the two groups. Health education on menstrual hygiene through booklet media was more effective than leaflets in adolescent girls

DISCUSSION

Characteristics respondent that affect knowledge about menstrual hygiene

The researcher gave a questionnaire regarding the general data of respondents to 70 young women who lived in An-Nur Islamic Boarding School. The general data in this study mention the name, age, age of menarche, duration of menstruation, information sources, maternal education, and WASH (Water, Hygiene and Compensation) facilities. Respondents were selected after meeting criteria and randomization. All respondents were second-degree girls or all second grade of *Madrasah Tsanawiyah* (MTs- equal with Junior High School) who ranged in age from 12-13 years.

According to Table 1 respondents in the experimental group or in the control group most had the same age characteristics at the age of 13 years, where the age is included in middle adolescents. Age can affect knowledge because it reflects a person's maturity in receiving material. Increasing age will also develop the power of capture and mindset, so that the knowledge gained will be better. In this period, adolescents need health education to be absorbed, in this case the researcher provides adolescent education about menstrual health using media books and leaflets.(11)(13) Menarche is the first menstruation experienced by women which is the first sign of starting a new life as a teenager, normal menarche ranges from 12-13 years old. According to table 1, most of the experimental and control groups had a menarchic age of ≤ 12 years. This is in accordance with *Riset Kesehatan Dasar (Riskesdas)* in 2013 that the average teenager in Indonesia experiences the most menarches at the age of 12-13 years.(14) So that at the time of the menarch this

is the right time to get menstrual hygiene knowledge. The history of readiness to get menarch also affects the personal hygiene of adolescent girl during menstruation, careful preparation will reduce anxiety and reduce the incidence of RTI, BV infection, and UTI infections.(2)(4)(15)(16)

Long periods of menstruation if not supported by adequate menstrual hygiene, in the long term will affect women's reproductive health. The longer the menstrual period lasts, the greater the potential for reproductive organs to be easily infected because when not hygienic the bacteria will easily enter.(17)(18) During menstruation, the uterus will first undergo a proliferation phase. Estrogen will form thick mucous walls with many endometrial glands. If fertilization does not occur, the egg will die and steroid hormone production in the corpus luteum decreases, the gland regresses. Degeneration of the corpus luteum forms the albicus body, and this decrease in estrogen and progesterone levels causes the release of endometrial tissue, and interstitial hemorrhage. Most of the experimental and control groups had 5-7 days of menstruation.(19) Menstrual blood usually amounts to between 65-95 ml, consisting of endometrial and blood debris. This situation makes it easier for infectious bacteria to enter so that during menstruation it is necessary to have good and correct knowledge and practice of menstrual hygiene so that reproductive health is maintained.(4)(17) Most of the experimental and control groups were never exposed to information about reproductive health education, especially about menstrual hygiene. Though the source of information is one of the important factors that influence one's knowledge. Someone who is exposed to more information will increase his knowledge. According to Table 1 shows that the majority of the experimental and control groups had middle-class mother education or senior high school. All maternal education can influence adolescent knowledge. If young women do not have sufficient knowledge during the Menarch, this lack of knowledge can lead to errors in the practice of menstrual hygiene in the future and can have a negative impact on health.(13) When menstruation blood will come out continuously and facilitate the bacteria that causes infection to enter so that during menstruation need to get extra attention.(16)

WASH (Water, Hygiene and Sanitation) facilities are needed to support women in maintaining their reproductive health during menstruation. Most of the experimental and control groups had an assessment that the WASH (Water, Hygiene, and Sanitation) facilities contained in boarding schools were adequate.(20)(21) If this facility is inadequate, it will disrupt the practice of menstrual hygiene for women as a result it will harm reproductive health. Facilities of WASH (Water, Hygiene, and Sanitation), among others, such as: there is a women's bathroom must be separated from men, there is clean water that can flow, there is soap to wash hands, there is tissue or toilet towels, there is a trash can to throw used sanitary napkins.(22) Then according to the analysis and discussion above, it can be concluded that all characteristics between the booklet experimental group and leaflet control group are homogeneous (same).

Discussion of Increasing Menstrual Hygiene Knowledge in Booklet and Leaflet Groups

Based on the research data in table 2 shows the results of an increase namely the average value of knowledge in both groups. Instrumental factors in the form of health education media will influence knowledge in the learning process.(10)(18) The results of the analysis showed that the booklet group had a greater increase than the leaflet group, which was before treatment of 84.91 while the average value of knowledge after the treatment was 99.00. The event that the booklet group experienced a greater increase in knowledge was supported by the statement that the booklet as a media for health education had several advantages including being able to be used by everyone, easy to carry everywhere, practically used to study at any time, and not easily damaged and interesting because it was not only contains writing but also images.(12) Health education using booklets is classified into health education based on communication techniques indirectly because

instructors do not deal directly with respondents, but with booklet media brokers and are classified as health education based on their sense of sight.

The Paired T-Test Test results in table 2 show that knowledge about menstrual hygiene has increased with a p-value of 0,000 * (p-value <0.05) in both groups, so that there was a significant increase in the mean knowledge in both groups. This incident is in line with the study of *Moloud Fakhri (2012)* that the provision of health education can increase awareness in maintaining cleanliness during menstruation. (12) In line with research by Julie Hennegan and Paul Montgomery (2014) that health education interventions have been shown to have a positive impact on menstrual hygiene knowledge and practice. (12) This is also in accordance with *Notoatmodjo (2012)* that knowledge is influenced by age, education, exposure to information / mass media. Health education / counseling is one of the tools that can be used to convey health information so that it can increase knowledge which can eventually change behavior towards a positive direction. (23)

The Independent T-Test test in this study showed a difference in average knowledge in the booklet group and leaflet group which was 6.26, and had a p-value of 0.000 (p-value <0.05). That is, there is the influence of providing health education using booklet and leaflet media to increase menstrual hygiene knowledge. This is because the booklet has several advantages including those that can be used by everyone, easy to carry everywhere, practically used to study at any time, and not easily damaged and attractive because it does not only contain writing but also images. So, booklets can be used as a media for health education to improve better adolescent reproductive health knowledge. (11)(6) (23)

CONCLUSION

There was an effect of the provision of health education using booklet and leaflet media to increase menstrual hygiene knowledge. Health education using booklet and leaflet media both increases knowledge, but the booklet media increases their knowledge more than using leaflet media.

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