RESEARCH ARTICLE

Educational intervention to improve menstrual hygiene management in adolescent girls in Kalimantan, Indonesia

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Abstract

Objective: To determine the effect of health education on menstrual hygiene management in adolescents.

Methods: The quasi-experimental study was conducted from April to July 2021 in Sampit, Kalimantan, Indonesia, after approval from ethics review committee of the Nursing University of Airlangga, Surabaya, East Java, Indonesia. The sample comprised grade VII female students at a public junior high school in Sampit. The sample was divided into intervention group A and control group B. Group A was given a health education intervention through video conferences in two meetings and was given a leaflet after each meeting which lasted 90 minutes. The control group was only given a leaflet. Baseline and post-intervention data was compared. Data was analysed using SPSS 16.

Results: There were 70 subjects; 35(50%) in each of the two groups. The age range was 12-14 years, with 25(71.4%) subjects in group A and 28(80%) in group B being aged 13 years. The age of menarche was 12 years for 17(48.6%) subjects in each of the two groups. Knowledge level of group A increased significantly post-intervention (p<0.05), but group B showed no significant difference (p=0.144).

Conclusion: Health education on menstrual hygiene management was found to have a beneficial influence on knowledge and attitudes among adolescents.

Keywords: Adolescent, Hygiene, Menstruation, Health education, Health knowledge, Attitudes, Practice.

(JPMA 73: S-13 [Suppl. 2]; 2023) **DOI: https://doi.org/10.47391/JPMA.Ind-S2-3**

Introduction

Adolescence is a very important phase for building development in the first decade of life. When menstruating, many teenagers in Indonesia do not have a good knowledge on menstrual hygiene management (MHM).[1] MHM means that women and girls can use clean materials during menstruation, have privacy when changing materials during menstruation, use water and soap, and have facilities to dispose of menstrual materials after use.[2] The level of knowledge about menstruation and MHM that girls have when they enter puberty has a significant effect on their emotional condition.[3] However, there are still significant knowledge gaps, particularly in the context of school life. There has been no in-depth research on its impact on school participation and outcomes. Research conducted in Indonesia on MHM in adolescent girls at elementary and junior high school levels is still limited. As a result, the determinants and impact of MHM on adolescent girls are not fully understood, and the evidence as a basis for formulating remedial programmes and interventions for MHM is lacking.[4]

According to the United Nations International Children's Emergency Fund (UNICEF), most of the adolescents' problems are due to infection with germs during menstruation and include reproductive tract infections (RTIs), bacterial vaginosis (BV) and urinary tract infections (UTIs).[2] Based on a survey conducted by the World Health Organisation (WHO) in several countries, adolescent girls aged 10-14 years have problems with their reproduction in later life.[1] The highest incidence of RTIs occurs globally in adolescents (35-42%).[1] Data from the Indonesian Demographic Health Survey (IDHS) in 2017 stated that the behaviour of adolescent girls in maintaining hygiene during menstruation was still poor at 63.9%.[5]

The main problem for adolescents about menstruation is the lack of knowledge about MHM and poor water sanitation.[6] Personal hygiene during menstruation in adolescents can be further improved by acquiring information and knowledge that can be obtained from searching for information through mass media, peers, parents, family and books.[7] The WHO Regional Office for South-East Asia, the 'Global Strategy on Women's, Children's and Adolescents' Health (2016-30)' recommended interventions to be given to adolescents, like information, counselling and services on comprehensive reproductive and sexual health.[8] Health education is an effort to provide psychological conditions and targets so that a person has knowledge, attitudes and skills that are in accordance with the demands of health values.[9]

Inaccurate and incomplete knowledge about menstruation is a major barrier in the practice of MHM.[10]

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A study in 2017 stated that many adolescent girls in low- and middle-income countries (LMICs) lack adequate facilities and support in schools to regulate menstruation. In addition, menstruation that is not managed properly can result in children dropping out of school, absenteeism, and other sexual and reproductive health problems that have long-term health and socioeconomic consequences for young women.[11] Meanwhile, a study on increasing MHM knowledge in adolescents concluded that the provision of counselling interventions had a positive impact on knowledge and practice of menstrual hygiene.[12] The current study was planned to examine the impact of MHM education on knowledge levels and attitudes in adolescents.

Subjects and methods

The quasi-experimental study conducted from April to July 2021 in Sampit, Kalimantan, Indonesia, after approval from ethics review committee of the Nursing University of Airlangga, Surabaya, East Java, Indonesia. The sample size was calculated using the Slovin's formula.[13]

The sample was raised using purposive sampling technique. Those included were female students in grade VII at a public junior high school who had already experienced menarche. The sample was randomly divided into intervention group A and control group B after taking informed consent from all the participants. Those who did not want to participate were excluded.

Group A was given a health education intervention through video conferences in two meetings and was given a leaflet after each meeting that lasted 90 minutes. Group B was given only a leaflet.

Data was collected using predesigned questionnaire regarding sociodemographic characteristics, including age, age of menarche, father's education and mother's education. The questionnaires were developed using items based on MHM literature by UNICEF3. While preparing the questionnaire, the researchers were assisted by two experienced nurses in the field of maternity nursing. Translation was accomplished by a qualified translator. The questionnaire was tested for validity and reliability on a sample of 17 female students of a junior high school.

Data was analysed using SPSS version 16. Data was expressed as frequencies and percentages. Mann-Whitney U test was used for comparing knowledge and attitude between the groups, and Wilcoxon test was used for intra-group comparison. P<0.05 was considered statistically significant.

Results

There were 70 subjects; 35(50%) in each of the two groups. The age range was 12-14 years, with 25(71.4%) subjects in group A and 28(80%) in group B being aged 13 years. The age of menarche was 12 years for 17(48.6%) subjects in each of the two groups (Table 1).

Knowledge level of group A increased significantly post-

Table-1: Characteristics of the subjects.

Characteristics	Treatment Group n (%)	Control Group n (%)
Age		
12 years	7 (20)	3 (8.6)
13 years	25 (71.4)	28 (80)
14 years	3 (8,6)	4 (11.4)
Age of menarche		
10 years	2 (5.7)	6 (17.1)
11 years	15 (42.9)	8 (22.9)
12 years	17 (48.6)	17 (48.6)
13 years	1 (2.8)	4 (11.4)
Menstrual cycle		
14 days	2 (5.7)	10 (28.6)
21 days	3 (8.6)	8 (22.8)
28 days	23 (65.7)	12 (34.3)
>28 days	7 (20)	5 (14.3)
Menstruation duration		
5-7 days	27 (77.1)	29 (82.9)
>7 days	8 (22.9)	6 (17.1)
Father's last education		
Elementary school	3 (8.6)	2 (5.7)
Junior high school	4 (11.4)	2 (5.7)
Senior high school	17 (48.6)	19 (54.3)
College	11 (31.4)	12 (34.3)
Father's occupation		
Civil servant	11 (31.4)	5 (14.3)
Self-employed	9 (25.7)	8 (22.8)
Private employee	12 (34.3)	18 (51.4)
Unemployed	2 (5.7)	1 (2.9)
Labour	1 (2.9)	3 (8.6)
Mother's last education		
Elementary school	4 (11.4)	2 (5.7)
Junior high school	2 (5.7)	1 (2.9)
Senior high school	18 (51.4)	29 (82.8)
College	11 (31.4)	3 (8.6)
Mother's occupation		
Civil servant	5 (14.3	3 (8.6)
Self-employed	2 (5.7	4 (11.4)
Private employee	5 (14.3	8 (22.8)
Unemployed	23 (65.7)	20 (57.2)
Total 35	100 (35)	100

Table-2: Comparison of the level knowledge in control and treatment groups at baseline and post-intervention.

Knowledge Level Category	Treatment		Control	
	Pre-test n (%)	Post-test n (%)	Pre-test n (%)	Post-test n (%)
1. Good	7 (20)	35 (100)	7 (20)	8 (22.8)
2. Fair	10 (28.6)	0 (0)	9 (25.7)	11 (31.4)
3. Poor	17 (51.4)	0 (0)	19 (54.3)	16 (45.7)
Total	35 (100)	35 (100)	35(100)	35 (100)
Wilcoxon Signed- Rank Test	p=0.000		p=0.144	
Mann-Whitney U Test	p=0.000			

Table-3: Comparison of the attitude of subjects in control and treatment groups at baseline and post-intervention.

Attitude Level Category	Treatment		Control	
	Pre-test n %	Post-test n %	Pre-test n %	Post-test n %
1. Positive	12 (34.3)	31 (88.6)	16 (45.7)	19 (54.3)
2. Negative	23 (65.7)	4 (11.4)	19 (54.3)	16 (45.7)
Total	35 (100)	35 (100)	35 (100)	35 (100)
Wilcoxon Signed- Rank Test	p=0.000		p=0.144	
Mann-Whitney U Test	p=0.000			

intervention (p<0.05), but group B showed no significant difference (p=0.144) (Table 2).

In terms of attitude, both the groups showed significant change post-intervention compared to the baseline (Table 3).

Discussion

The study showed a positive impact of the intervention on MHM knowledge and attitude of the subjects.

Health education encourages young girls to obtain the right information, be able to communicate and be open with parents or teachers.[9]

According to a study[14], knowledge is influenced by predisposing factors, which include education, attitudes, beliefs and the information received.

After the health education intervention, the respondents in the current study could provide correct answers. This is similar to the provision of stimuli through sight and hearing to a child who may find information which is processed in the brain to recall the original material.[15] The respondents were in the adolescent phase, which is a potential phase in terms of cognitive, emotional and physical aspects. The cognitive aspect makes teenagers curious, and they try to find information that can increase knowledge. The level of physical and psychological development achieved by a teenager affects changes in knowledge and attitude.[16] Health education is required to change the knowledge that will affect the perception of adolescents about MHM.[10]

Knowledge of young women about MHM can be obtained through the provision of health education in the school environment.[17] However, most of the adolescents who were research respondents had never been exposed to information, or had received health education from teachers or health workers. As such, not many knew about MHM. Health education is one of the factors that play an important role in influencing individual knowledge.[18] If adolescent girls do not have sufficient knowledge during menarche, this can lead to errors and adverse effects in menstrual hygiene practices.[19]

According to the behavioural theory14, providing appropriate health education can manipulate predisposing factors, one of which is attitude. Education that leads to change in knowledge and attitudes is more important than providing information without real attitude formation and behaviour change.[20] Preventive health services, such as health education, can reduce health costs and reduce the burden on individuals, families and communities.

Techniques and methods of delivering information are important factors that support the success of information.[21] The purpose of delivering information is adjusted to the needs and motivation of the respondents in digesting the information provided. Individuals can be motivated to process further information or not depending on the quality of the interaction between the facilitator and the participants. Using video-conferencing is very helpful in the learning process in formal and non-formal education, especially for generation Z teenagers born in the era of advanced technology.[22] This method can develop listening skills, careful observation and enhancement of the experience which brings into play all the five senses while learning.[21]

The provision of health education using video-conferencing media has three stages that can increase adolescent knowledge; the process of entering the information received into memory (learning), storing the information obtained (retention), and its retention.[23] By recalling the information obtained (recall), individuals are able to improve understanding and remember the information that has been obtained. Changes in knowledge level from the baseline were significant in the current study. Changes in knowledge are divided into several stages, namely knowing, understanding, analysing, synthesising and evaluating.[24] Before a change in behaviour occurs, individuals will have perceptions related to the level of knowledge obtained from the information, so that if the information received is not clear, the learning outcomes obtained are also less than optimal.

At the baseline in the current study, most subjects were in

the negative attitude category. This was because they had never received information about MHM in schools before. It improved significantly post-intervention. Changes in attitude values are influenced by the cognitive component or the respondent's lack of knowledge. This affects the respondent's perception of MHM. Negative perceptions affect the affective component. The process of forming attitudes is the same as forming habits; individuals receive information and facts about different objects and learn the feelings and values that are associated with these facts.[25]

The findings of the current study support the theory of Lawrence Green[14] according to which, health education can affect predisposing factors. Education is a system that has an influence in the formation of attitudes because it can lay the basis of understanding and moral concepts in a person.[26]

The current study has some important limitations. Respondents had various economic levels, and the water, sanitation and hygiene (WASH) facilities that were enquired only related to the school and did not explore how it was at home.

Further research is necessary for comparing the effectiveness of video-conferencing media with other methods and media in order to obtain better health education methods for adolescents and to increase students' motivation and enthusiasm for learning.

Conclusion

Health education with video-conferencing media had an effect on knowledge and attitude about MHM in adolescent girls.

Acknowledgment: We are grateful to the Universitas Airlangga, Surabaya, SMP Negeri 1, Sampit, and to all those who participated in the study.

Disclaimer: The text is based on an undergraduate thesis, and was presented as an Abstract at the 13th International Nursing Conference of the Faculty of Nursing, Universitas Airlangga, in 2022.

Conflict of Interest: None.

Source of Funding: None.

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