

Article

The Effectiveness of the Use of the Dysmenorrhea e-booklet on Increasing Knowledge of SMAN 28 Tangerang Students in the Covid-19 Era

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A B S T R A C T

Dysmenorrhea is a condition where pain occurs before, during and after menstruation. The most common cause of dysmenorrhea is hormonal factors. The incidence of dysmenorrhea worldwide is quite high, and Indonesian adolescents experiencing dysmenorrhea reach 43%-93%. The impact of dysmenorrhea on adolescents is the disruption of activities and a decrease in academic achievement due to lack of concentration and frequent absence of students from school. Lack of knowledge related to dysmenorrhea makes adolescents less precise in carrying out treatment; it can be seen from the number of adolescents who take anti-pain drugs to reduce dysmenorrhea pain which can cause side effects. Treatment of dysmenorrhea in addition to pharmacological can use non-pharmacological treatment. The purpose of this study was to see the effect of using dysmenorrhea e-booklets on increasing knowledge of SMAN 28 Tangerang students in the Covid-19 Pandemic Era.

This pre-experiment research using a questionnaire. The research design used a One Group Design Pretest-Posttest research design. The research sample was all 10th grade students of SMAN 28 Tangerang. Sampling technique was carried out using accidental sampling. The effectiveness of the dysmenorrhea e-booklet in increasing the knowledge of SMAN 28 Tangerang students was analyzed using the Wilcoxon test and obtained a significance value (sig) of 0.000 ($p < 0.05$). The p value < 0.05 indicated a significant difference between the score before being given the e-booklet and the score after given the e-booklet. Therefore, it can be concluded that the provision of dysmenorrhea e-booklets is effective in increasing respondents' knowledge about dysmenorrhea in the Covid-19 era.

I. INTRODUCTION

The Minister of Health of the Republic of Indonesia defines adolescents as unmarried residents aged 10-19 years. In the world, the prevalence of adolescents in 2020 according to WHO data was estimated at 1.2 billion people (WHO, 2020). Meanwhile in Indonesia, according to BPS data, the number of adolescents in 2020 was 46.8 million people (27.94%) with a male-to-female ratio of 1:1, with in Jakarta alone in the same year reaching 1.7 million with the same ratio (BPS, 2021). Adolescence is a transition where the most rapid development occurs during the course of human life. In addition, during adolescence there is also a process of maturation of the reproductive organs. Reproductive maturation in adolescent girls is marked by the occurrence of menstruation. The first menstruation is usually experienced by women around the age of 10 years, but it can be earlier or later (Juliana, Rompas, & Onibala, 2019).

Menstruation is one of the signs of a girl growing up, where the process of bleeding occurs due to the shedding of the inner lining of a woman's uterine wall (endometrium) which contains many blood vessels (kementrian kesehatan, 2018). The first menstruation experienced by a woman is called menarche. During the last 100 years the age of menarche has become younger; this is due to an increase in adolescent health and nutrition (Fitriiningtyas, Redjeki, & Kurniawan, 2017).

Menarche occurs in the age range of 11-12 years with the majority at the age of 12 years. At the age of menarche, adolescent girls are usually prone to menstrual problems or disorders such as menstrual pain and irregular menstrual cycles (Pratiwi, 2017).

Abdominal pain that occurs during menstruation is called dysmenorrhea. Dysmenorrhea occurs due to uterine muscle contractions because there is an increase in the hormone prostaglandin. Dysmenorrhea is common in almost all women during menstruation, or even before menstruation. In some women it is felt in the form of a faint pain, but there are also those who feel it is so strong that it interferes with activities despite having taken painkillers (Pebrianti & Muslim, 2018).

The incidence of dysmenorrhea in the world is 50%, while in Indonesia it is estimated at 55% at reproductive age (Proverawati & Misaroh, 2010). The prevalence of dysmenorrhea in Indonesian adolescents is around 43-93%, with 74-80% having mild dysmenorrhea. (Nurwana, Sabilu, & Fachlevy, 2017). Sarni (2019) concluded that 40-70% of the incidence of dysmenorrhea is the most common reason for a young woman to be absent from school. A research in America states that adolescents who experience dysmenorrhea experience a decrease in academic achievement, social and sports activities (Yati, 2019).

Abdominal pain due to dysmenorrhea can be reduced by non-pharmacological methods such as relaxation, compresses and several other ways. Martina (2020) in her research added that most young women who experience dysmenorrhea have less knowledge in dealing with it. One way to increase knowledge in the era of the covid-19 pandemic is through electronic media, one of which is e-booklets (Hanifah Salsabila, Irna Sari, Haibati Lathif, Puji Lestari, & Ayuning, 2020). The purpose of this study was to see the effectiveness of the use of dysmenorrhea e-booklets on increasing the knowledge of SMAN 28 Tangerang students in the Covid-19 Era.

II. METHODS

This was a pre-experimental research using a One Group Pretest-Posttest research design, which is a study to see the difference before and after being given treatment. This one group pretest-posttest design consisted of one predetermined group. In this design, the test was carried out

twice, namely before being given treatment it was called a pretest and after treatment it was called a posttest. In this treatment process students were given e-booklets in electronic form, and then participants were asked to read, and were given 7 days. On day 4, the researcher validated the students' e-booklet reading activities, and on the seventh day, a post-test questionnaire was conducted. The research was carried out by all 10th grade students of SMAN 28 Tangerang with a total of 103 students in July-November 2021.

III. RESULT

The research was carried out on all 10th grade students of SMAN 28 Tangerang at 103 students. Respondents age ranged from 14-16 years.

1. Univariate Analysis

The results of the study in the form of the characteristics of the respondents can be seen in the following table:

Table 3 Frequency Distribution of Respondents' Characteristics

Variabel	Mean	Median	Std Deviation	Variant	Range	Min	Max
Age	14.94	15	1.170	1.369	11	5	16
Menarche	12	12	1.048	1.098	5	10	15
Length of Menst.	7.02	7	1.929	3.722	12	3	15
Blood of Menst.	3.23	3	1.185	1.404	8	2	10

Based on table 3, the characteristics of the respondents based on the average age of the respondents were 14.94-15 years (78 people). The average age of respondents when they got their first menstruation (menarche) was 12 years, with the youngest age at menarche being 10 years and the oldest age at menarche being 15 years. Almost half of the respondents experienced menarche at the age of 12 years (39.8%). On average, respondents experienced menstruation for 7 days, the shortest was 3 days and the longest was 15 days. Half of the respondents experienced menstruation for 7 days (58.3%). The amount of menstrual blood on average was 3 sanitary tampons per day, with the minimum range being 2 and the highest being 10. Half of the respondents spent 3 sanitary tampons per day (51.5%), a small proportion of respondents spent 2 sanitary tampons per day (21.4%) and only 1% of respondents consume 6,8 and 10 sanitary tampons per day.

2. Bivariate Analysis

a. Knowledge of students about dysmenorrhea before and after being given e-booklet

Table 4 Distribution of students' knowledge about dysmenorrhea before and after being given an e-booklet

Category	Pre-intervention Knowledge		Post-intervention Knowledge	
	n	%	n	%
Bad	20	19.4	1	1
Sufficient	49	47.6	15	14.6

Good	34	33	87	84.4
Total	103	100	103	100

Based on Table 4, almost half of respondents' knowledge before being given an intervention (47.6%) was in the sufficient category with the percentage of correct values being 56-75%. As many as 20 respondents (19.4%) had less knowledge and the remaining 33% respondents had good knowledge before being given the e-booklet. After one week of being given the opportunity to access and read the e-booklet provided, the picture of respondents' knowledge was that most of the 84.4% of respondents had good knowledge. Around 14.6% of respondents had sufficient knowledge and 1% of respondents had less knowledge.

When viewed from the difference in the description of knowledge, the number of respondents who had less knowledge has decreased sharply and only 1 in 20 respondents remains. Likewise, the number of respondents who had sufficient knowledge in the category decreased by more than half, from 49 to 15 respondents.

Table 6 Effectiveness of E-Booklet on knowledge about dysmenorrhea

		n	Mean rank	Sum of ranks	Z-value	Asymp.sig
Knowledge Post-Pre	Negative	5	61.30	306.50	-7.643	0.000
	Positive	95	49.93	4743.50		
	The same	3				
Total		103				

Based on the results of the analysis with the Wilcoxon test, there were 5 respondents who had decreased scores from pre to posttest. A total of 95 respondents experienced an increase in score and the remaining 3 respondents got the same score during pre and posttests.

The effectiveness of the e-booklet on knowledge can be seen from the asymp.sig value obtained, which is (0.000). Basis of decision-making is by comparing the value of asymp.sig with 0.05. By looking at the test results of this study, the value of $0.000 < 0.05$, the conclusion was that H_a was accepted. This means that there was a difference between respondents' knowledge scores before and after being given e-booklets, so that in conclusion e-booklets have effectiveness in increasing respondents' knowledge in the Covid-19 pandemic era.

IV. DISCUSSION

This study found that the use of e-booklets was effective in increasing students' knowledge of SMAN 28 Tangerang about dysmenorrhea. Based on table 6, the results show that after being given the dysmenorrhea e-booklet, there was an increase in the number of respondents with a good level of knowledge from (33%) to (84.4%), a decrease in the number of respondents with sufficient knowledge level from (47.6%) to (14.6%) and a significant decrease in less knowledge from (19.4%) to (1%). With the Wilcoxon test, it was obtained the significance value (sig) by 0.000 ($p < 0.05$). P value < 0.05 indicated that there was a significant difference between the scores before being given the dysmenorrhea e-booklet and the scores after being given the dysmenorrhea e-booklet, which means that the use of the

dysmenorrhea e-booklet was effective in increasing respondents' knowledge about dysmenorrhea. The use of e-booklets to increase knowledge can also be seen from research conducted by Setiawan, H., & Wardhani, H. A. K. (2018) with the results that e-booklets are feasible and can be used as learning media. The results of the trials conducted showed that overall e-booklet media could increase student interest in learning. This can be seen from the category of test results where the respondent group strongly agrees that e-booklet media can increase interest and learning outcomes. The more interesting the existing materials and media, the higher the interest in learning for students (Setiawan & Wardhani, 2018).

The effectiveness of e-booklets was also carried out at Kapuas University where trials were conducted to see students' interest in learning using e-booklets as media. The trials were conducted in a relaxed atmosphere and did not burden the students. Media was given to students and students used smartphone facilities in accessing e-booklet media. The results of these trials indicated that overall e-booklet media can increase student interest and learning outcomes. This is also related to student/student learning interest in the material being taught (Setiawan & Wardhani, 2018).

The effectiveness of e-booklets in increasing knowledge was also carried out by Viola, R., & Fernandes, R. (2021) in researching the Effectiveness of e-Booklet Learning Media in Online Learning to Improve Student Learning Outcomes in Sociology Subjects (Viola, Rahma, 2021). This study found that there was an increase in student learning outcomes after participating in learning using e-booklet with an average score of 75 as the results of the pretest score while the posttest score showed an average score of 95.83. This shows the results that the pretest and posttest scores had increased, with the results of the t-test value of $\text{sig} < 0.05$. This means that student learning outcomes seen from the results of the pretest and posttest had increased after using the e-booklet learning media. Based on this research, e-booklets are proven to be effective in improving student learning outcomes, because the learning process using e-booklets is no longer centered on the teacher. The teacher functions as a facilitator and students become active in learning activities.

CONCLUSION

The level of knowledge of students about dysmenorrhea after being given the e-booklet (posttest) is as follows: 1 respondent (1%) with less knowledge, 15 respondents with sufficient knowledge (14.6%) and 87 respondents (84.4%) with good knowledge. The difference in students' knowledge about dysmenorrhea before and after giving the e-booklet was that there were 5 respondents (4.8%) who experienced a decrease in scores from pre to posttest while a total of 95 respondents (92.2%) experienced an increase in score and the remaining 3 respondents (3%) got the same score during pre and posttests. The e-booklet is effective in increasing the knowledge of SMAN 28 Tangerang students about dysmenorrhea in the covid-19 pandemic era with a value of $\text{sig} (0.00)$.

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