



THE EFFECT OF HEALTH EDUCATION THROUGH JENGA TOWER WITH DYSMENORRHEA CARD (JEDOR) ON ADOLESCENTS' KNOWLEDGE ABOUT PRIMARY DYSMENORRHEA

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Abstract

One of the characteristics of puberty in adolescent girls is menstruation. Menstruation is often accompanied by pain called dysmenorrhea. Dysmenorrhea is categorized into two types, namely primary and secondary dysmenorrhea. The incidence of dysmenorrhea in Indonesia is 64.25%. Dysmenorrhea that is not treated properly can interfere with daily activities, even making it difficult for young women to concentrate while studying, thus potentially reducing their learning achievement. This study aims to determine the effect of Jenga Tower With Dysmenorrhea Card (Jedor) on Adolescent Knowledge About Primary Dysmenorrhea at SMA Negeri 01 Bengkulu City. This type of research is a pre-experimental one group pretest and posttest design. The sample in this study were 36 female students of SMA Negeri 01 Bengkulu City. Sampling using Stratified Random Sampling technique. Data analysis in this study using Paired T-test. The results of the study showed that the average knowledge before being given jedor media was 6.44 and after being given jedor media was 11.58. Based on the Paired T-test test, the p value = 0.000 < 0.05, which shows that there is an effect after being given jedor media on the knowledge of adolescent girls about dysmenorrhea at SMA Negeri 01 Bengkulu City. This research suggestion, it is hoped that Jedor media can be a learning media to provide information about health and this media can be developed again.

Keywords : Dysmenorrhea, Jedor Media, Knowledge, Adolescents

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INTRODUCTION

Adolescence is a period of development from childhood to adulthood characterized by puberty. In some countries, puberty occurs earlier, but in general puberty is in the age range of 12-13 years. In this period, the social transition to adulthood will be delayed until biological maturity occurs (WHO, 2020). According to the WHO report in 2022, the worldwide adolescent population is 1.2 billion people, around 18% of the total global population. Meanwhile, Indonesia's population reaches 44.225 million people ranging from 10-19 years (Central Bureau of Statistics, 2023).

In this phase adolescents face various challenges related to education and health, a crucial transition phase from childhood to adulthood, presenting physical and psychological dynamics and changes (Pratomo et al., 2022). In this transition phase, one of the changes experienced by adolescent girls related to reproductive health is the onset of menstruation. Menstruation is a natural physiological process that occurs about once a month in women due to the release of endometrial tissue. Most women experience a certain level of discomfort and difficulty during menstruation (Richi Delistianti et al., 2019).

One of the discomforts experienced by adolescents during menstruation is pain during menstruation (dysmenorrhea). Data from the World Health Organization (WHO) in 2020, states that 90% of women experience dysmenorrhea in each menstrual cycle, with 10%-16% suffering from severe dysmenorrhea. The incidence of dysmenorrhea in the world is very high. In Europe, between 45% and 97% of women experience dysmenorrhea. The prevalence of primary dysmenorrhea in China is 41.7% (Hu et al., 2020). The incidence of dysmenorrhea in Indonesia is 64.25%, which comes from 54.89% primary dysmenorrhea and 9.36% secondary dysmenorrhea.

Based on the results of research by Nooh et, al (2016) Dysmenorrhea was reported in 188 students (66.0%). Of these, 81 (28.4%) rated their pain as mild, 69 (24.2%) as moderate, and 38 (13.3%) as severe. Premenstrual syndrome was mentioned by 160 girls (56.1%). Consultation with someone regarding their menstrual problems was reported by 36 students (12.6%).

Based on the results of research on the relationship between menstrual pain (dysmenorrhea) on learning activities, it is found that menstrual pain has an impact both in terms of physical aspects such as fatigue and lack of enthusiasm as well as in terms of psychological aspects such as difficulty concentrating due to the discomfort that arises. Dysmenorrhea has a negative impact on girls' physical and psychological well-being and hinders girls' ability to participate in school, work, and social events (Cherenack et al., 2023).

The impact caused by dysmenorrhea is accompanied by low knowledge of adolescents about dysmenorrhea. According to research by Mursudarinah et al., (2022)) the level of knowledge of adolescent girls about Dysmenorrhea in class X students at Batik 1 Surakarta Vocational High School, the results of a good level of knowledge were 19 people (28.8%), enough 32 people (48.5%), less 15 people (22.7%). According to research by Patnawati et al., (2023) respondents' knowledge about dysmenorrhea as many as 30 people (69.8%) had poor knowledge, 13 people (30.2%) had sufficient knowledge and no one had good knowledge.

Education and intervention efforts related to menstrual pain are needed to overcome the gap between the high incidence of dysmenorrhea and the low level of knowledge about dysmenorrhea. Solutions

are needed to improve knowledge about dysmenorrhea. Learning media can be a solution to increase knowledge that acts as a tool to convey information, with its benefits in facilitating understanding and mastery of learning materials. One form of effective learning media is through games and simulations (Sohibun & Ade, 2017).

Increasing knowledge about dysmenorrhea through educational games Jenga Tower can be a solution to overcome this problem, especially in SMA Negeri Kota Bengkulu which has the largest number of female students. Data from the Bengkulu City National Education Office (2024) showed that the highest number of students in Bengkulu City State Senior High School is SMAN 1 Bengkulu City with 1,193 students (0.09%) and SMAN 2 Bengkulu City with 1,180 students (0.08%).

Based on the results of the description, the researcher wants to know the effect of using jedor media on the knowledge of adolescent girls about dysmenorrhea at SMA Negeri 1 Bengkulu City.

MATERIALS AND METHODS

This research was declared ethically feasible based on ethical clearance No.KEPK.BKL/544/06/2024 issued by the Health Research Ethics Committee of Bengkulu Health Polytechnic on June 24, 2024. The design used in this study was pre-experimental designs using One Group Pretest Posttest design. The population in this study were all adolescent girls of SMA Negeri 1 Bengkulu City. Sampling in this study using Stratified Random Sampling technique. In this study, the sample was high school students of SMA Negeri 01 Bengkulu City, totaling 36 people. Univariate analysis was conducted to see the distribution of respondent characteristics (age, age of menarche and source of information), mean value, Min value, Max value and standard deviation of the knowledge of adolescent girls before and after the intervention. Bivariate analysis was conducted to see the effect of using Jedor media on adolescents' knowledge about dysmenorrhea. To test this hypothesis, a normality test was performed first using the Shapiro-Wilk statistical test (Notoadmojo, 2018). From the results of the normality test, it was found that the data had a normal distribution, because of this, this study used the Paired T-test. This test shows the significance of p value ≤ 0.005 .

RESULTS AND DISCUSSION

Based on the results of Table 1, it was found that the frequency distribution of respondent characteristics based on the age of the respondents was partly (52.8%) in the late adolescence stage, based on the age of menarche respondents (91.7%) of female students had menarche at the age of over 12 years, and almost some (44.4%) adolescents did not get a source of information about dysmenorrhea.

Table 1: Distribution of Characteristics of adolescent girls

Variabels	Frequency (n=36)	Persent (100%)
Age of Respondent		
middle adolescence	17	47.2
late adolescence	19	52.8
Age of Menarche		
Early Menarche (<12 Year)	3	8.3
Menarche Normal (>12 Year)	33	91.7
Source of Information		
Media	6	16.7
Parents	12	33.3
Health Workers	0	0
Friends	0	0
Teacher	2	5.6
No Information	16	44.4
Total	36	100

Based on the results of table 2, it is found that the mean value of knowledge before 6.44 and the mean value after being given Jedor media is 11.58. standard deviation before intervention 1.443 and standard deviation after intervention 1.500.

Table 2: Mean knowledge of adolescent girls of SMAN 01 Bengkulu City before and after being given JEDOR media.

Variabels	N	Max	Min	Mean	Median	SD
Knowledge						
Before	36	10	4	6.44	6	1.443
After	36	15	8	11.58	11	1.500

Based on the results of table 4, it is found that the effect of using Jedor media obtained a p value = $0.000 \leq 0.05$ using a confidence level of 95%, which means that there is an effect of using Jedor media on the knowledge of adolescent girls about dysmenorrhea.

Table 4: The effect of Jedor media on adolescent girls' knowledge about dysmenorrhea

Variabels	N	Descriptive Statistics	Paired T-Test		
		M(std.D)	t	df	Sig. (2-tailed)
Knowledge					
Before	36	6.44 (1.443)	-28.806	35	.000
After	36	11.58 (1.500)			

DISCUSSION

The results of the frequency distribution of the characteristics of adolescent girls totaling 36 people showed that the age of most respondents (52.8%) was in the late adolescence stage. The results of this study support the opinion of Mona Angelia et al., (2018) where the incidence of primary dysmenorrhea is highest in the age range of 15-20 years. This age range is an important period in the development of adolescent girls, where the body undergoes many significant hormonal changes,

including increased prostaglandin levels which can cause stronger uterine contractions and more intense menstrual pain. Based on age of menarche the results of the study were obtained based on the age of menarche respondents (91.7%) of female students had menarche at the age of over 12 years. This is reinforced by Yulita et al., (2022) that menarche usually occurs in the age range of 10-16 years. According to Wati, L (2017) the normal age of a woman experiencing menarche is at the age of 12 or 13 years. . According to Lacroix et al., (2023) the normal age of a woman experiencing menarche at the age of 12 or 13 years.

This study is in line with Novia in Apriyanti, et al (2018) that the age of menarche is one of the factors for dysmenorrhea, it is known that the incidence of dysmenorrhea as much as 88% occurs in women with menarche age < 12 years compared to > 12 years as much as 65.2%. The same thing with Zalni, et al (2017) early menarche can pose a risk of various diseases in adulthood such as cancer, cardiovascular disease and dysmenorrhea. In contrast to Anurogo (2011) that usually primary dysmenorrhea occurs in adolescence, which is about 2-3 years after menarche. This is thought to be due to menarche < 12 years, heredity, stress and the food they consume.

This study also found that almost half (44.4%) of adolescents did not get a source of information about dysmenorrhea and almost half (33.3%) of adolescents got a source of information about dysmenorrhea from parents. These results indicate that there is a significant information gap among adolescents regarding dysmenorrhea. Based on previous studies, one of the main reasons why many adolescents do not get adequate information about dysmenorrhea is the lack of comprehensive reproductive health education in schools. Educational curricula often do not put enough emphasis on reproductive health issues, including menstruation and dysmenorrhea (Hoover, 2019). In addition, the taboo and social stigma still attached to the topic of menstruation causes adolescents to feel embarrassed or reluctant to seek information from more formal sources such as teachers or health professionals (Gupta, 2020).

At the individual level, young women lack knowledge about menstruation. Socially, young women experience stigma around menstruation, lack of opportunities to discuss menstruation, and experience limitations around mobility and other activities during menstruation (McCammon et al., 2020). On the other side, the fact that most adolescents get information from parents can be explained by the culture of communication in the family. In many cases, parents, especially mothers, are the first and main source of information about reproductive health for their children (Jones, 2017). This is supported by research showing that adolescents are more likely to feel comfortable and trusting to discuss personal and sensitive issues with parents than with other parties (Williams, 2019). Their health depends on

their learning about basic menstrual hygiene. They have a significant risk of developing diseases due to their lack of education in this area (Vagha et al., 2023).

The results of the analysis of the average knowledge before being given Jedor media at SMA Negeri 01 Bengkulu City were 6.44. The question items that were answered incorrectly during the pretest were about primary dysmenorrhea occurring in aged women, primary dysmenorrhea will disappear after age and childbirth, about secondary dysmenorrhea, about dysmenorrhea reaching maximum age, about the causes of differences in pain intensity, about dysmenorrhea abdominal cramps lasting how many days, about primary dysmenorrhea reaching its peak in time, and about the factors that cause dysmenorrhea. This is in line with the research of Dwivedi et al., (2020) Repeated sessions are needed to create momentum and enthusiasm for learning new things.

The results of the analysis showed that the use of Jengga Tower media in education about primary dysmenorrhea among adolescent girls at SMA Negeri 01 Bengkulu City significantly improved their knowledge. The average knowledge before the Jengga Tower media was 6.44, while after the intervention it increased to 11.58, with an average difference of 5.13. This increase is evidenced by the results of the Paired T-test which shows a p value = 0.000 ($p < 0.05$), indicating that there is a significant effect before and after being given the Jengga Tower media.

The effectiveness of Jengga Tower media can be explained through several learning theories and supported by recent research. First, it creates an interactive and engaging learning environment, which increases student engagement. This is in line with the theory proposed by Jean Piaget and Lev Vygotsky, which states that the most effective learning occurs when students are actively involved in the learning process. In line with this, research by Johnson et al., (2014)) found that interactive learning methods can improve understanding and retention of information in students compared to conventional methods.

Secondly, by presenting the material in a relevant and easy-to-understand context, this media helps students connect new information with existing knowledge. This supports the contextual learning theory by Jean Lave and Etienne Wenger, which states that knowledge is more easily understood and applied when learned in a relevant context. Smith et al.'s (2019) research shows that contextual learning can improve students' critical and problem-solving skills. Third, the use of visual and kinesthetic elements in this media is effective for students with various learning styles, based on Howard Gardner's learning style theory. According to Gardner (2015), individuals have different learning preferences, and media that combine these elements can meet the various learning needs of students.

Finally, fun and interactive media can increase students' motivation to learn, according to Edward Deci and Richard Ryan's theory of learning motivation. According to this theory, intrinsic motivation increases when individuals feel competent and have control over their learning process.

Research by Ryan & Deci, (2017) shows that learning methods that increase students' intrinsic motivation can improve overall learning outcomes. Thus, the use of Jenga Tower media is proven to not only significantly increase knowledge but also make the learning process more interesting and effective.

CONCLUSION

More than half of the respondents were late adolescence, namely (52.8%), respondents who experienced normal menarche, namely 91.7%, and almost half of the students did not get information about dysmenorrhea from anyone, namely 44.4%. The average knowledge of adolescents about dysmenorrhea before being given jedor media is 6.44. The average knowledge of adolescents about dysmenorrhea after being given jedor media is 11.58. There is an effect of using jedor media on the knowledge of adolescent girls about dysmenorrhea.

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