

## Audio Visual Media-Based Health Education Increases Knowledge of Menstrual Disorders in Adolescence

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### ABSTRACT

**Background:** students' knowledge about menstrual disorders is still inadequate so that it will have an impact on disrupting learning activities, difficulty concentrating, mood changes, anemia, etc. So it is necessary to increase knowledge about menstrual disorders with interesting health education by using audio-visual media.

**Purpose:** to determine the effect of health education with audio-visual media on knowledge of menstrual disorders in adolescents.

**Methods:** this study used a pre-experimental design with a one-group pretest-posttest design. The sampling technique used proportional random sampling technique as many as 41 respondents, the sample selection used the lottery technique. The research instrument used is a questionnaire. Data analysis used the Wilcoxon test.

**Results:** based on the results  $p$ -value = 0.000, it can be concluded that there is an effect of health education with audio-visual media on the level of knowledge about menstrual disorders in adolescent girls.

**Conclusion:** it is needed that teenagers can increase their knowledge about menstrual disorders through reading books, electronics, or other printed media so that they can handle menstrual disorders when they occur.

### Keywords

Audiovisual; health education; knowledge; menstrual disorder.

### BACKGROUND

Menstruation is the process of the release of the endometrium due to the absence of an implanted egg so that it changes and comes out in the form of menstrual blood. Menstruation is one of the signs of reproductive organ maturity in adolescents. ([Wagiyo & Putrono, 2016](#)). According to WHO (2014) adolescents are those aged 10 to 19 years. For the number of teenage girls in Indonesia in 2018 according to the age group 10-19 years, namely 22.010,000 people. Meanwhile, data on the number of adolescent girls in the city of Semarang aged 10-19 years is 113,425 people. ([BPS, 2018](#))

According to [Riskesdas \(2018\)](#), the percentage of irregular menstrual disorders in Indonesia is 13.7%. The results of [Novita's research \(2018\)](#) on adolescent girls at Al Azhar High School Surabaya show that the age of menarche ranges between the ages of 9-15 years, which mostly occurs at the age of 12 years (39.8%), 13 years (31.60%) and 14 years. years (13.30%) and it can be seen that 60.20% of respondents experienced menstrual disorders, namely PMS (Premenstrual Syndrome) and dysmenorrhea each by 30%, hypermenorrhea/menorrhagia 27.60%, polymenorrhea 20.40%, and oligomenorrhea

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8.20%. Then from the research of S. A. Putri & Fanani (2018) at SMA 52 Jakarta, it was found that 26% had polymenorrhea, 9% had oligomenorrhea, and 85% had dysmenorrhea. In general, the menstrual cycle will take place every 21-35 days. The duration of menstrual bleeding is about 3-7 days and is not painful. The amount of blood lost is about 30-50 cc. (Manuaba, 2008).

Menstrual cycles that occur in the first few cycles after puberty usually occur irregular menstrual cycles this is due to the preovulatory LH surge that is not large or strong enough at the time of ovulation, this condition is referred to as anovulatory (no ovulation) (Syarifuddin, 2013). The impact that arises from a lack of understanding about menstrual pattern disorders is not good because the amount of blood and excessive menstrual frequency will result in the incidence of anemia in adolescent girls, while menstrual pain can cause learning activities to be disrupted. From the research of [Utami, Surjani, & Mardyaningsih \(2015\)](#) it was found that 33 students (47.1%) had poor menstrual patterns, of which 25 students (35.7%) were anemic. According to SA Putri & Fanani's research (2018), out of 101 female students who had experienced menstrual pain, as many as 93 female students stated that learning activities were disrupted (92%), and of the 16 female students who did not experience dysmenorrhea during menstruation, as many as 10 female students stated that learning activities became disturbed (63%).

However, teenagers do not have accurate knowledge about it. From the results of 2017 Indonesian Demographic and Health Survey (IDHS) on Adolescent Reproductive Health, it shows that only 7.2% of female adolescents aged 15-19 years know where to provide reproductive health information and counseling services and adolescent knowledge about reproductive health is also not sufficient, which can be seen. with only 15.3% of adolescent girls aged 15-19 years who know the symptoms of PMS / Premenstrual Syndrome (Ministry of Health RI, 2013). According to [Rahmawati's research \(2018\)](#) that the knowledge of students in grades X and XI on menstrual disorders, it was found that most of the respondents who had sufficient knowledge were 27 respondents (50.9%), less knowledgeable 25 respondents (47.2%) and good knowledge there was only 1 respondent. (1.9%). So to increase the knowledge of adolescents can be done through efforts, one of which is health education.

The methods used to increase adolescent knowledge also vary with different and interesting learning media. According to the research of [Sahrani, Istiningtyas, & Teguh \(2016\)](#) that audio-visual media is more effective than flip chart media with an average increase in pretest and posttest results with flipchart media 16.7 while with audio-visual media 41.49. [Hardianti's research \(2016\)](#) that audio-visual media is more effective in increasing knowledge than using lecture and leaflet media with an average difference between pretest and posttest knowledge of the audio-visual group = 3.74 while lectures and leaflets = 2.40. Based on the results of a preliminary study conducted at SMA N 9 Semarang, the researchers conducted a preliminary study by giving questionnaires to 10 students and the results showed that 5 students had less knowledge, 3 students had sufficient knowledge and 2 students had good knowledge. Therefore, the authors are interested in knowing the effect of health education with audio-visual media on the level of knowledge of menstrual disorders in adolescent girls in class X IPA at SMA N 9 Semarang.

## METHODS

The research design used was a pre-experimental design with a one-group pretest-posttest design. The population in this study were teenage girls in class X IPA at SMA N Semarang with a total population of 136 young women with a total of 7 classes, namely X IPA 1, X IPA 2, X IPA 3, X IPA 4, X IPA 5, X IPA 6, X IPA 7. The sample size for this study was 41 respondents. The sampling technique used was proportional random sampling technique, then for the determination of the sample members was done by lottery (lottery technique). Inclusion criteria in this study include: all teenage girls in class X science at SMA N Semarang, do not experience visual and hearing impairments, have received biology courses, are willing to be research respondents. While the exclusion criteria were young women who did not attend a school or were sick at the time of sampling and were not willing to be respondents.

The research instrument used is a questionnaire. The intervention procedures included: collecting respondents according to the characteristics of the respondents, providing explanations through videos containing material on the meaning of menstruation, menstrual cycles, various menstrual disorders, causes and treatment of menstrual disorders for 6 minutes followed by filling out questionnaires about the effect of health education with audio media. visual assessment of the level of knowledge about menstrual disorders in adolescent girls in class X IPA at SMA N Semarang. In this study, analysis used the Wilcoxon test.

This research has passed the Ethics Test from the research ethics committee based on the Ethical Clearance letter No. 218/III/2019/The Bioethics Commission issued by the Medical/Health Research Bioethics Commission, Sultan Agung Islamic University, Semarang Faculty of Medicine.

## RESULTS

The respondents of this study were teenage girls in class X IPA at SMA N. The independent variable of this study was health education with audio-visual media, while the dependent variable was the level of knowledge about menstrual disorders. Univariate results describe the age and income of parents per month.

**Table 1.** Adolescence's characteristic based on age and income ( $n = 41$ )

Variabel	<i>f</i>	%	Mean	<i>SD</i>
Income				
≤ IDR 2,310,087.50	12	29,3		
>IDR 2,310,087.50	29	70,7		
Age			15,22	0,525

Based on table 1, explains that the average age of adolescent girls is 15.22 years, with a standard deviation of 0.525. It was found that the respondents with the highest level of parental income per month were those who were more than the minimum wage with a total of 29 people (70.7%). The categories of parental income per month in Semarang according to the decision of the Governor of Central Java (2018) are UMR = if 2,310,087.50 and > UMR = if >.

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**Table 2.** Description of knowledge about menstrual disorder among adolescence before and after intervention ( $n=41$ )

Variable	Mean	SD	95%CI
Pre-test	68.90	10.094	65.72 – 72.09
Post-test	85.37	11.905	81.61 – 89.12

Based on table 2, the mean knowledge about menstrual disorders before intervention was 68.90, median 70.00 (95% CI: 65.72 – 72.09) with a standard deviation of 10.094. Meanwhile, after the intervention was 85.37, the median was 90.00 (95% CI: 81.61 – 89.12) with a standard deviation of 11.905

**Table 3.** Difference of knowledge about the menstrual problem before and after intervention ( $n=41$ )

Variable	Mean Rank	Z	p-value
Pre-test	9.63	- 4.830	0.000
Post-test	20.66		

Based on Table 3, it was found that there were differences in knowledge of menstrual disorders in adolescent girls in class X IPA at SMA N 9 Semarang. with  $p$ -value = 0.000. ( $p < 0.05$ ).

## DISCUSSION

From the results of the study, it was shown that for the data on the characteristics of the respondents based on age, the average age of the respondents was 15.22 years. Meanwhile, the lowest respondent is 14 years old, the highest is 17 years old and the most is 15 years old. According to WHO (2014) adolescents are those aged 10 to 19 years. As a person ages, there will be changes both physically and mentally. In addition, the ability to capture, intellectual abilities and a person's mindset is also increasingly mature and developing (Sukmadinata, 2010). In this study, the data on the characteristics of respondents based on the level of parental income per month were obtained from 41 respondents who had the highest level of parental income per month which was more than the minimum wage as many as 29 people (70.7%). Parents' income per month is sufficient so that he will be able to provide the facilities he needs to acquire knowledge so that the opportunity to acquire knowledge will be even greater (Notoatmodjo, 2012). This is in line with Matus' research (2016) which shows that there is an influence of parents' income levels on student learning achievement with a significance value of 0.036.

Rahmawati's research (2018) that the knowledge of class X and XI students on menstrual disorders found that most of the respondents who had sufficient knowledge were 27 respondents (50.9%), less knowledgeable 25 respondents (47.2%) and only 1 respondent had good knowledge (1.9%). According to Sukmadinata (2010) that the factors that influence knowledge are divided into internal factors (physical and spiritual) and external

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factors (education, exposure to mass media, age, and experience). The results of the study the average level of knowledge of respondents' menstrual disorders after being given health education with audio-visual media were 85.37, median 90.00 (95% CI: 81.61 - 89.12) with a standard deviation of 11.905. While the lowest pretest score is 50 and the highest score is 100.

This is following the research of [Harmawati, Sari, & Verini \(2018\)](#) that there is an effect of health education on the knowledge level of high school students with a p-value = 0.000, with mean of the level of knowledge of students before being given health education 8.44 and mean of the level of knowledge after being given health education is 11.89. Knowledge is the result of knowing and this happens after people sense a certain object. This sensing occurs through the five human senses, most of which human knowledge is obtained through the eyes and ears ([Notoatmodjo, 2012](#)).

Learning through audio-visual is the use of material that is absorbed through sight and hearing and does not entirely depend on understanding words or similar symbols. The higher a person's understanding and absorption of information, the easier it is to receive information, and in the end, the more knowledge he has ([Zainiyati, 2017](#)). [Miftakh & Samsi's \(2015\)](#) research shows that the use of audio-visual media can improve students' listening skills. [Saban's research \(2017\)](#) shows that video media is more effective than leaflet media on knowledge about anemia in SMA 2 Nangklik Sleman students (p-value = 0.000). The results of [Ernasari & Amboro's research \(2017\)](#) that there is an effect of using audio-visual learning media on the ability to analyze the history of class X science students. According to [Maulana \(2009\)](#) that the knowledge included in the cognitive domain has 6 levels, namely knowing, understanding, application, analysis, synthesis, and evaluation. With the increased ability to remember previously studied material, students will know and then understand what they see and hear so that students' knowledge of menstrual disorders increases.

Based on the results of the average there was an increase of 16.47 which means that statistically between before and after receiving health education the results were higher or better. The results of the analysis show that the mean rank of respondents for the pretest is 9.63 and the post-test is 20.66. Then based on the results of the Wilcoxon test in this study, the p-value = 0.000 was obtained. Because the p-value is 0.05, it can be concluded that there is an effect of health education with audio-visual media on the level of knowledge about menstrual disorders in adolescent girls in class X IPA at SMA N 9 Semarang. This is in line with the results of research by [Mawan, Indriwati, & Suhadi \(2017\)](#) showing PHBS counseling with video media, is effective in increasing knowledge, with a pre-test score of 61.33 and a post-test of 89.10. The advantages of video are that it can provide messages that can be received more evenly, overcomes the limitations of space and time, is more realistic, can be repeated and stopped as needed, gives a deep impression, which can affect attitudes, is very good for explaining a process ([Susilana & Riyana, 2009](#)).

According to the research of [Sahrani, Istiningtyas, & Teguh \(2016\)](#) that audio-visual media is more effective than flip chart media with an average increase in pretest and posttest results with flipchart media 16.7 while with audio-visual media 41.49. According to [Putri, Rezal, & Akifah's research \(2017\)](#) that audio-visual media is more effective for health promotion in increasing knowledge (p-value = 0.00), attitudes (p-value = 0.02), and actions (p-value = 0, 04) prevention of gastritis disease compared to leaflets. The

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limitations of this study are confounding variables that cannot be controlled by researchers, especially the knowledge that clients get from previous exposure to mass media and individual experiences that have been obtained so that the increase in knowledge that occurs is not solely the result of providing health education using audio-visual media and research videos. this is 6 minutes long due to time restrictions on the application used to create the video.

## CONCLUSION

Based on the research data, the value of p-value = 0.000, so it can be concluded that there is an effect of health education with audio-visual media on the level of knowledge about menstrual disorders in adolescent girls in class X IPA at SMA N 9 Semarang. The benefits of this research for the community, especially adolescent girls, can increase knowledge about menstrual disorders through reading books, electronic or other print media so that adolescents can handle menstrual disorders when they occur. While the benefits for educational institutions can provide learning activities using additional audio-visual media which have the benefit of making it easier to convey, attract, accelerate student absorption so that they can get optimal results on student knowledge.

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