



The Influence Of Health Education Using Video On Knowledge About Menarche

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Article Information	ABSTRACT
Received : 19 December 2025 Revised : 02 April 2026 Accepted : 27 July 2026	Menarche is the first menstruation experienced by girls, usually at ages 11-14 years. Girls need special attention to address pre-pubertal issues, especially lack of knowledge about menarche. This lack of knowledge triggers negative responses when facing the first menstruation. The solution is health education using animated video media. This study aims to analyze differences in knowledge levels among fifth-grade female students who have not yet experienced menarche, before and after health education intervention on menarche. The sample consists of 30 respondents using purposive sampling technique. The study employs a quantitative method with a pre-experimental one-group pretest-posttest design. Data analysis uses paired t-test to compare pretest and posttest results. The results show a significant difference in knowledge before (pretest mean score 62.35) and after (posttest 86.47) education. Bivariate analysis with paired t-test yields a p-value of 0.001, indicating a significant effect of health education on children's knowledge about menarche. The study hopes audiovisual media becomes an option to improve girls' knowledge, so they better understand menarche and prevent health issues like urinary tract infections
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Introduction

Menarche is the first menstrual period, which is characterized by the discharge of blood from the female reproductive system. This occurs due to a regular and periodic cycle of bleeding from the uterus, along with the detachment of the uterine lining. Menarche is an important stage of a series of primary and secondary changes and indicates the maturity of the reproductive organs in women (Rangkuti, 2021). The age at which menarche occurs can vary between women. Generally, this age ranges from 11 to 14 years, with an average age of 11 years (Rahmi et al., 2019; Wahyunita and Abarua, 2021) (Islami, 2023).

According to information from the 2020 Basic Health Survey, 5.2% of children in 17 regions in Indonesia experience menarche before they turn 12 years old. The 2020 Indonesian Demographic and Health Survey shows that 89% of girls experience menarche between the ages of 12 and 15 years (Ministry of Health of the Republic of Indonesia, 2021). Research conducted by Aswathy, 2019 revealed that the age of menarche for girls in Pekanbaru is 11 years and 10 months. There is a tendency for menarche to be reduced, indicating that many girls at the primary school level are already experiencing it. The variation in menarche age is very noticeable, and there is uncertainty about when this will occur, so it is important to prepare for it (Nopia et al., 2020).

Preparation needed when facing menarche by having knowledge related to the first menstruation. One of the preparations that needs to be done is psychological preparation. This preparation can be achieved if girls have clear and accurate knowledge and information about how to deal with menarche (Wahyunita & Abarua, 2021). Menarche is characterized by rapid growth of the body, the appearance of secondary sex characteristics, as well as physical and emotional changes. The process of child growth and development is dynamic and sustainable. One of the early signs of menarche is breast development, which begins with a protrusion of the nipple accompanied by enlargement of the areola area (Rangkuti, 2021). An understanding of physical development, such as increased height and weight, breast growth, changes in fat distribution, and the appearance of acne, will help children psychologically in preparing for these physical changes (Proverawati, 2017). Each girl will show a diverse attitude and response when facing menarche.

Children who are unprepared for menarche will respond to their first menstrual experience with negative reactions. These reactions are often in the form of feelings, fear, sadness, anger, confusion, embarrassment, and worry due to a lack of children's knowledge which can make it

difficult for children to accept when menarche occurs (Febrianti et al., 2024). Good knowledge of menarche can help reduce problems due to ignorance when facing menarche (Nurmawati & Erawantini, 2019).

Menarche includes definitions, signs and symptoms, cycles, disorders, and personal hygiene treatments during menarche. Education about menarche should be received from elementary school, especially for children aged 11-14 years. However, the fact is that the knowledge that children have in finding sources of information about menarche is obtained from teachers (61%) and friends (29%), while only 10% get information from parents (Ministry of Health of the Republic of Indonesia, 2021). In contrast to the results of research (Fitrianingsih et al., 2020) which show that children who receive information from their families usually have superior understanding, because of the intensity of communication and parenting styles that help children understand the information, adequate knowledge will have a positive impact on children's preparation for menarche.

The lack of knowledge about menarche in children makes them consider menarche as a sign of disease, which causes panic and feeling dirty at the time of menarche causing them to feel anxious, and not ready to face menarche (Sari et al., 2023). Lack of knowledge in menarche can lead to physical problems, such as lack of personal hygiene, which increases the risk of urinary tract infections (UTIs), menstrual cessation, and menstrual disorders. This is in line with the results of Rohmawati's (2023) study showing that 56.3% of children have less knowledge about menarche. This lack of knowledge is caused by physical and psychological immaturity in children, who are considered not mature enough in thinking, both in terms of the amount of information received and the ability to understand the information. This is supported by research by Nurmawati & Erawati (2019) found that most of the respondents 54.1% with the category of lack of knowledge when facing menarche due to lack of information sources from the closest people and feeling taboo to discuss menstruation so that the available information is limited. A good source of information can increase knowledge through health education, so that children feel calmer and ready to face menarche (Fitria & Mawardika, 2023). (Mukendah, 2023)

(Wulandari, 2024) Health education is an effort designed to help each individual and every population group improve their knowledge, attitudes, and skills to live the healthiest life possible. Health education for girls who are approaching their first menstruation is needed because of the many negative consequences caused by the lack of knowledge about menarche.

Knowledge is conveyed through two senses including hearing (audio) and sight (Khotima, 2021). Audiovisual effects are an additional element that is very important to increase students' attention to educational materials (Pitoy, 2021). Engaging stimuli make learning more easily absorbed through hearing and sight, allowing children to better apply what they learn from videos to their daily lives (Khotima, 2021).

Video is a communication tool used to convey information using various advertising techniques, including animation and other approaches. Videos have been shown to be effective in helping school children understand how to brush their teeth correctly (Elsa et al., 2023). A study by Nugroho et al. (2021) also showed that the delivery of knowledge through video is effective in improving children's understanding. Animated videos are not only engaging but also help with information retention and make participants feel satisfied and happy.

Based on a preliminary study that has been conducted at SD Negeri 36 Pekanbaru, Lima Puluh District, Riau Province, the results of interviews conducted with 10 students regarding the knowledge of menarche, it was found that 4 out of 10 children could answer the understanding of menarche, and when asked about menarche symptoms 3 out of 10 students could explain well, their understanding was only limited to menarche is the discharge of blood from the female genitals. Some schoolgirls still don't know what to do during menstruation, they feel scared and confused if they experience menarche.

The researcher also conducted interviews with the principal and biology teachers and obtained information that the school had never received direct health education about menarche and from the biology subject teachers that there was no information related to menarche either in the curriculum or biology lessons, grade V students only knew the physical anatomy of the reproductive system, and did not discuss menarche in detail in biology lessons. However, it is different with grade VI students who have discussed menstruation in biology lessons. Based on the background presented, the researcher is interested in conducting health education research on menarche using video in elementary school students.

Method

This study uses a quantitative approach with a simple pre-experimental design involving one group that took the pre-test and post-test, making it suitable for the initial study of health education interventions (Notoatmodjo, 2018). The research will be carried out at SD Negeri 36 Pekanbaru in 2024, with activities ranging from the submission of proposals in September to

the results seminar in January 2025. The research population is all students of class V as many as 66 students, with a sample of 33 students using a consecutive sampling technique to ensure the representativeness of each class, the inclusion criteria include students who attend and are willing to be respondents, while those who are not present are included in the inclusion criteria. Data is collected through a knowledge questionnaire about menarche that has been tested for validity and reliability through a data collection process including administrative preparation, questionnaire distribution, filling supervision, and data processing using statistical applications. Data analysis includes univariate analysis, normality test, and bivariate test with paired T test (Utami, 2024). The results of the analysis showed an increase in knowledge about menarche after providing education using video media, with a statistically significant difference ($p = 0.001 < 0.05$). Although valid and reliable instruments and precise analytical methods reinforce these findings, the limitations of the design without a control group and relatively small sample size need to be noted when generalizing results and interpreting cause-and-effect relationships.

Research Results

A univariate analysis of the characteristics of respondents in this study was conducted to provide an overview of the age of the female students in the sample. Based on the results of the respondents' age analysis, the data was normally distributed with a median value of 11 years, indicating that the age of most adolescents was around this figure. The youngest age was 10 years, while the oldest was 12 years, with a standard deviation of 0.845, which indicates that the age of the children who participated in this study did not vary.

Furthermore, the distribution analysis of the overview of the level of knowledge of students shows that there is a difference in the average score of children before and after health education is different. At the pre-test, the average children's knowledge was 62.35 with the highest score of 82 and the lowest score of 47 and during the post-test the average child's score was 86.47 with the highest score of 100 and the lowest score of 71. Thus, there was a statistically significant difference in average knowledge before and after health education in this study.

To determine the relationship between smartphone use and adolescent learning concentration, this study used bivariate analysis with a paired T test. The results of the analysis showed that out of 33 respondents, the effectiveness of visual media to improve understanding, none of the respondents did not experience an increase in knowledge at all.

Table 1. Frequency Distribution of Children's Knowledge Level

Knowledge	<i>Red</i>	Beda Mean	Minimum Score - Maximum Score
<i>Pre-Test</i>	62.35	24.12	47-82
<i>Post Test</i>	86.47		71-100

The results of the paired T statistical test gave a value $p = 0.001$ which was smaller than 0.05. This shows that there is an influence of health education on children's knowledge about menarche in grade V students at SDN 36 Pekanbaru City. In other words, that health education using videos about menarche has a positive influence on increasing knowledge.

Discussion

Respondent Characteristics

The average age of respondents was 11 years. According to Piaget's theory of cognitive development at the concrete operational stage, children aged 10–12 years begin to show more rational thinking skills and are able to explore various objects or situations to solve problems. This age group tends to like technology so they are more accepting of modern technology-based educational media, such as animated videos that utilize attractive characters as an audiovisual approach (Fitria & Mawardika, 2023). These findings are consistent with the research of Rastogi et.al (2019) who stated that animated videos are more effective than PowerPoint presentations in improving dental and oral health knowledge because of the visual appeal of moving that increases interest in learning. In this study, the researcher used an animated video of about 7 minutes which presented material on the definition of menarche, the age range of menarche, menstrual cycle, self-care during menarche, symptoms experienced, and symptom management, conveyed through attractive images and colors (Fatmawati et al., 2021). Valid and reliable instruments and proper statistical analysis reinforce the finding that audiovisual media can improve students' knowledge because it combines visual and auditory stimuli to improve respondents' memory and understanding.

Comparison of knowledge before and after the intervention

Before the intervention, the students' knowledge was in the sufficient category, after providing education, the knowledge increased to the good category. This condition is in line with the results of Fitria & Mawardika (2023) research which reported the initial level of knowledge in the sufficient category. The variation in the level of pre-intervention knowledge in this study was influenced by the difference in the sources of information that participants had received before, because the more information sources an individual obtained, the wider their

knowledge (Darsini et al., 2019). The lack of understanding of menarche often causes anxiety in girls, so the role of parents, educators, and health workers is important to provide accurate information so that menarche is seen as a normal developmental process, not as a scary thing (Indarsita & Purba, 2019).

Previous relevant research shows a similar pattern conducted by Husnul Khotimah (2018) reported an increase in the average knowledge score after visual intervention, and in line with the results of research conducted by Hendriani et al. (2019) found a significant increase in scores after being given audiovisual education. These results support the findings of this study that audiovisual health education is effective in improving knowledge by reducing cognitive burden through simultaneous audio and visual presentation.

Knowledge before and after Health Education Using Video

This study showed that there was a change in the level of knowledge about menarche before being given an intervention (pre-test). Based on categorization, children's knowledge is in the sufficient category, and there is an increase to a good category after health education. This is in line with the research of Fitria & Mawardika (2023) which found that before health education on menarche preparation using video media, the average knowledge of SMP Negeri 2 Pabelan students was 15.07, indicating a sufficient level of knowledge. This condition is influenced by the information source factor, where the more information received, the wider the knowledge a person obtains (Darsini et al., 2019).

A lack of understanding of menarche often triggers anxiety or fear in girls of natural physical changes. Therefore, parents, educators, and health workers are obliged to provide appropriate information to form a positive outlook, making menarche a normal developmental process not something scary or burdensome. A similar thing can be seen in the research of Indarsita & Purba (2019), which states that menarche knowledge is mostly in the moderate or moderate category (54%), indicating a lack of comprehensive understanding due to limited sources of credible information or biological insights.

Knowledge arises from the process of perception of objects through the five senses, especially the dominant eyes and ears. The study of Khotimah et al. (2019) emphasized that audiovisual media activates vision absorbing 82% of information and hearing 11%, making it superior. This cognitive domain is crucial in shaping behavior, influenced by information sources (Darsini et al., 2019).

Lack of insight into menarche often triggers girls' anxiety about normal physical changes. Parents, teachers, and health workers must provide accurate information so that menarche is seen as a normal developmental phase, not a fear. This is in line with Indarsita & Purba (2019), which recorded that 54% of knowledge is at a moderate-moderate level, due to less credible sources or lack of biological understanding.

Menarche health education has been proven to change individual knowledge, as Husnul Khotima (2018) proves that health education with visual media to increase the attention and learning outcomes of early grade students in general with an increase in knowledge mean pretest 6.53 and posttest 10 with a difference of 3.47. Only focusing without touching reproductive health or combined audiovisual effects, This is not in line with the research conducted by Hendriani et al. (2019) with an increase in the average pretest score of 11.75 to a posttest of 13.81 with a difference of 2.06 through health education using audiovisual more effectively with good reception of material by children, through animated videos so that it can alleviate the cognitive burden captured with audio, auditory and visual vision in children. The provision of menarche health education has been proven to have an effect on increasing knowledge. A child's level of knowledge of menarche is influenced by a variety of pre-research sources of information, with variations reflecting the breadth of previous exposure.

The Influence of Health Education Using Videos on Knowledge of Menarche

Learning media is most effective when it allows children to enrich knowledge directly, encouraging active engagement and deep understanding. Children aged 10-12 respond to either magazines, radio, videos, or advertisements because of their mental nature of reading and exploring (Rahmawati & Susanti, 2024). Visual elements such as images, sounds, movements, and colors stimulate curiosity, creating fun learning without boredom (Rahma, 2019).

Health education aims to change views, knowledge, attitudes, or behaviors towards a healthy life through promotive, preventive, curative, and rehabilitative steps (Asniar et al., 2020). The Rangkuti study (2021) proves that such education increases menarche knowledge, prepares students to face it. Research by Sari et al. (2023) confirms the significant influence with the p-value of the T-test of $0.01 < 0.05$. Audiovisual media excels over images, such as the learning average of 87.68 versus 79.59 (Setiyawan, 2021), because it integrates sound and visuals to attract attention.

Video is effective for children thanks to the combination of images and sounds, in line with research conducted by Hendriani et al. (2019) which found Wilcoxon's p-value of $0.000 < 0.05$,

showing differences in pre-post-education audiovisual knowledge. This medium increases concentration via simultaneous senses of sight-hearing. Salihah et al. (2024) stated that audiovisual education clearly helps adolescents understand physical, emotional, menstrual care, and cycle changes. Elsa et al. (2023) added that videos clarify messages, increase attention and retention, and skills.

Video education has a positive effect on knowledge because it facilitates the reception and application of information on a daily basis (Nicolaou, 2019). Menarche education in this study uses a group method considering that the participants exceeded 15 children, while parents can adopt an individual approach via print, audiovisual, or online media (Asniar et al., 2020). The medium is optimal when it allows for direct exploration, triggering learning activities and deep understanding. Children aged 10-12 years are responsive to magazines, radio, videos, and advertisements thanks to their interest in reading and exploration (Rahmawati & Susanti, 2024), with elements of image-sound-movement-colour enhance and fun interaction (Rahma, 2019).

Audiovisual media has proven to be more effective than image media, as shown by a higher average learning outcome, which is 87.68, compared to the average score of learning outcomes in class V that uses image media of 79.59 (Setiyawan, 2021). This is in line with the video menarche intervention which can significantly increase knowledge, there is a change in children's knowledge before and after being given health education with a paired t-test p-value of $0.001 < 0.005$ (H_0 rejected, H_a accepted). The supporting factors of audiovisual media equipped with images, colors, movements, and sounds are able to attract the attention of children who seem cooperative in the research process, so that children can apply this knowledge in their daily lives.

Conclusion

This research is a pre-experimental research with a one group pretest-posttest design which was carried out at SD Negeri 36 Pekanbaru City, Rintis District. The study was conducted from December 2024 to January 2025 by involving 30 respondents from class V students who had not experienced menarche. The instrument used was in the form of a questionnaire consisting of 17 statements, video media that had been tested for content validity and the test used was a pair T test. This research has limitations in the implementation section but this research is still running smoothly. The results of this study found that the majority of children were at 11 years old. The average knowledge value for before being given treatment was 62.35 and the average

knowledge value after being given treatment was 86.47. Audiovisual media health education is effective in increasing knowledge about menarche in elementary school students with a paired t-test showing a p-value of 0.001 which means a p-value < 0.05. These results show a significant difference in health education before and after the provision of educational video media about menarche.

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