



The Effect of Animation Video Education on Menstrual Hygiene Management Knowledge in Students at SMP Negeri 1 Gorontalo

Maryam Ali¹, Ridha Hafid², Dewi Suryaningsih Hiola³

¹Universitas Negeri Gorontalo, maryamali121003@gmail.com

¹Universitas Negeri Gorontalo, ridhahafid1@gmail.com

¹Universitas Negeri Gorontalo, dewisuryaningsih@ung.ac.id

Author Correspondence: ridhahafid1@gmail.com

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ABSTRACT

Menstrual hygiene management is the practice of maintaining personal hygiene during menstruation to prevent the risk of infection in adolescent girls. To optimize this knowledge, interesting and easy-to-understand health education such as the use of animated videos is needed. This study aims to determine the effect of animation video education on menstrual hygiene management knowledge in female students at SMP Negeri 1 Gorontalo. This study uses a quantitative approach with a pre-experimental one-group pre-test post-test design. The population in this study is all students of SMP Negeri 1 Gorontalo who have experienced menstruation as many as 470 students. The sampling technique used proportionate stratified random sampling with a sample of 47 respondents. The research instrument used a menstrual hygiene management knowledge questionnaire. The results showed that before being given education, most respondents had a sufficient level of knowledge as many as 27 respondents (57.4%), and a small number of respondents had a low level of knowledge as many as 2 respondents (4.3%). After being educated, all 47 respondents had a good knowledge level of 100%. The results of the study using the Wilcoxon signed rank test showed a p-value = 0.000 (<0.05), which indicates that there is an influence of animated video education on menstrual hygiene management knowledge in female students at SMP Negeri 1 Gorontalo. It is hoped that animation video education can be used as an alternative to health education in the school environment.

INTRODUCTION

According to *World Health Organization* (2018) defines adolescents as individuals aged 10 to 19 years, while in Indonesia there are several age restrictions for adolescents, including in accordance with the Regulation of the Minister of Health Number 25 (2014) which states that adolescents are individuals aged 10 to 18 years, and according to the National Population and Family Planning Agency (2015), the age of adolescents is between 10 to 24 years old and they are not married (Ayu *et al.*, 2020). This definition of adolescence is important to understand because it is the basis for seeing when a girl begins to experience biological changes characterized by menstruation.

Based on international epidemiological studies, age *menarche* Global is currently generally in the range of 12–13 years. Cross-site research in several sub-Saharan African countries reported median age *menarche* adolescents between 12 to 13 years old, with a proportion of adolescents who have experienced *menarche* differs between regions, influenced by environmental and socioeconomic factors. Another study in Sudan shows that the average age *menarche* in adolescent girls is about 13 years old (Utami *et al.*, 2024).

Data results Indonesian Health Survey (2023) Indonesia shows that the age of 9 – 10 years old who *menarche* is at 4.6%. Ages 11-12 years are 34.1% and adolescents aged 13-14 years are 27.2%. Meanwhile, those who experience *menarche* late at the age of 15 – 16 years by 5.4% and by 17 – 18 years by 0.3%. Meanwhile, in Gorontalo Province, the proportion of adolescents aged 9-10 years who experience menstruation for the first time is at 6.6%. In the age group of 11 – 12 years, 40.5% was recorded, followed by 13-14 years old (26.6%), while those who experienced *menarche* late at the age of 15 – 16 years by 5.6% and 17 – 18 by only 0.2%.

Although the understanding of the term menstrual is almost universal among female students, in-depth knowledge about menstruation and menstrual hygiene management is still lacking. The most common sources of information for everything related to menstruation are the mother and other family members, while the teacher is the least popular source and the conversations are not very in-depth. Inaccurate and incomplete sources of information can be influenced by myths and beliefs, which can lead to low knowledge about MKM among adolescents (Yuliana *et al.*, 2025).

Limited access and low hygiene behavior have an impact on neglecting health standards, such as rarely changing sanitary pads, neglecting personal hygiene, or using unhygienic facilities. This situation can increase the risk of infections in the reproductive organs, urinary tract infections, vaginal discharge, and skin irritation, and in the long term can contribute to the development of cervical cancer due to lack of hygiene of the reproductive organs (Betsu *et al.*, 2024).

A dressing change should not wait until the blood is full in the dressing or up to 6 hours or more, as the blood contains bacteria that can cause infections in the reproductive tract, urinary tract, and skin irritation. Myths about menstruation are still widely believed in society. Some myths are wrong, such as forbidding girls to wash their hair or cut their nails during menstruation, even though cleaning oneself during menstruation is important to prevent infections (Umniyati *et al.*, 2025).

Therefore, an understanding of Menstrual Hygiene Management (MKM) is needed as a strategy to maintain cleanliness and health during the menstrual period. Menstrual Hygiene Management (MKM) is a hygiene and health management strategy during the menstrual period to stay clean and healthy. When women menstruate, it is necessary to use a padlock to collect the blood that comes out of the vagina and this is related to menstrual hygiene (Parinussa & Lilipory, 2024).

To increase this understanding, educational efforts are needed. One of the education used in the world of health education is the use of animated videos as a means of conveying information. Animated video media is an audiovisual medium that combines moving animated images with accompanying sounds that correspond to the animated characters (Sigh *et al.*, 2024). According to research Lathifah *et al.*, (2025) at Tunas Harapan Junior High School Bogor and research Dwi Wahyuni *et al* (2023) at SMPN 05 Bengkulu City showed that interventions using animated video media were proven to help improve their knowledge and skills about menstrual hygiene during menstruation.

Based on initial observations in November 2025 at SMP Negeri 1 Gorontalo, the researcher chose SMP Negeri 1 Gorontalo as the location for the research because it was based on data Ministry of Education (2026), at SMP Negeri 1 Gorontalo is recorded as the school with the highest number of students in Gorontalo Province The relatively large number of female students shows that this school has an adequate and diverse population of young women, so it is considered representative to describe the condition of students' knowledge related to the topic being researched. On the other hand, there has been no similar study at SMP Negeri 1 Gorontalo that tests the effect of animation video-based education on menstrual hygiene management variables. Researchers conducted interviews with 20 female students showing that the level of knowledge about menstrual hygiene management is still relatively low, the majority of female students do not understand the definition of menstrual hygiene management comprehensively. Most female students report complaints of itching and vaginal discharge before and after menstruation, which can indicate suboptimal hygiene practices. Myths about menstruation such as the prohibition of shampooing and not changing sanitary napkins at night are still strong among female students.

Based on the background description above, the researcher is interested in conducting a study entitled "The Effect of Animation Video Education on Menstrual Hygiene Management Knowledge in Students at SMP Negeri 1 Gorontalo".

RESEARCH METHODS

This research has been carried out at SMP Negeri 1 Gorontalo on February 11-12, 2026. A type of quantitative research with a *pre-experimental one-group pre-test post-test design*. The sampling technique in this study used *proportional stratified random sampling* with a sample of 47 respondents. This research instrument uses a questionnaire on menstrual hygiene management.

RESEARCH RESULTS

Univariate Analysis

Table 1. Characteristics of Respondents by Age

Ye s	Age	Frequency (n)	Percentage (%)
1.	12 Years	3	6,4
2.	13 Years	21	44,7
3.	14 Years	17	36,2
4.	15 Years	6	12,8
Total		47	100

Source : Primary Data 2026

Based on the table above, the majority of respondents were 13 years old as 21 respondents (44.7%) and the minority were 12 years old as many as 3 respondents (6.4%).

Table 2. Characteristics of Respondents by Class

No	Classes	Frequency (n)	Percentage (%)
1.	Class VII	11	23,4
2.	Class VII	12	25,5
3.	Class IX	24	51,1
Total		47	100

Source : Primary Data 2026

Based on the table above, most of the respondents from class IX were 24 respondents (51.1%) and a small part from class VII was 11 respondents (23.4%).

Table 3. Characteristics of Respondents by Menarche Age

No	Menarche Age	Frequency (n)	Percentage (%)
1.	9 Years	4	8,5
2.	10 Years	10	21,3
3.	11 Years	20	42,6
4.	12 Years	12	25,5
5.	13 Years	1	2,1
Total		47	100

Source : Primary Data 2026

Based on the table above, most of the respondents experienced menarche at the age of 11 years, namely 20 respondents (42.6%), and a small proportion occurred at the age of 13 years, namely 1 respondent (2.1%).

Table 4. Characteristics of Respondents Based on Information Sources

No	Resources	Frequency (n)	Percentage (%)
1.	Guru	2	4,3
2.	Parents	33	70,2
3.	Friends	4	8,5
4.	Internet	8	17
Total		47	100

Source : Primary Data 2026

Based on the table above, most of the respondents had information sources from parents as many as 33 respondents (70.2%), and a small part from teachers as many as 2 respondents (4.3%).

Table 5. The level of knowledge of female students about menstrual hygiene management before being given animated video education

No	Knowledge Level	Frequency (n)	Percentage (%)
1.	Good	18	38,3
2.	Enough	27	57,4
3.	Less	2	4,3
Total		47	100

Source : Primary Data 2026

Based on the table above, most of the knowledge levels were in the sufficient category of 27 respondents (57.4%), and a small part were in the insufficient category of 2 respondents (4.3%).

Table 6. The level of knowledge of female students about menstrual hygiene management after being given animated video education

No	Knowledge Level	Frequency (n)	Percentage (%)
1.	Good	47	100
2.	Enough	0	0
3.	Less	0	0
Total		47	100

Source : Primary Data 2026

Based on the table above, 47 respondents (100%) were in the good category.

Bivariate Analysis

Table 7. Analysis of the Influence of Animated Video Education on Menstrual Hygiene Management Knowledge in Students at SMP Negeri 1 Gorontalo

MKM Knowledge	Knowledge Level						Mean	Std. Deviation	Water Statistics (p-value)
	Good		Enough		Less				
	n	%	n	%	n	%			
Pre-Test	18	38,3	27	57,4	2	4,3	74,70	8.772	0,000
Post-Test	7	100	0	0	0	0	93,62	5.059	

Source : Primary Data 2026

Based on the table above, it shows that in the difference test using *the Wilcoxon Signed Rank Test* the sig value was obtained. (2-tailed) = 0.000 thus the value of sig. (2-tailed) = $p < 0.05$, This means that there is an effect of animation video education on hygiene management knowledge in female students at SMP Negeri 1 Gorontalo.

DISCUSSION

Students' knowledge about menstrual hygiene management before being given animation video education at SMP Negeri 1 Gorontalo

Based on the results of the research on menstrual hygiene management knowledge before being given animated video education, it showed that in 47 respondents, 18 respondents were in the good category (38.3), 27 respondents (57.4%) were in the adequate category, and a small part were in the poor category as many as 2 respondents (4.3%). The results showed that respondents with the lack of knowledge category were 2 respondents (4.3%), which shows that respondents in the less category have a very limited understanding of menstrual hygiene management.

According to respondents in the less category, menstruation is still considered a normal thing without the need for special attention to hygiene, so the practices carried out tend to be inappropriate. Based on Unicef (2021), adequate knowledge about menstruation is essential for young women, as a lack of information and understanding can lead to unpreparedness as well as limitations in understanding how to maintain hygiene during menstruation.

This research is supported by the results of the research Qolbah (2024) shows that as many as 22% of respondents still have a lack of knowledge about menstrual hygiene management. This misunderstanding includes the practice of proper care of the reproductive organs and the correct management of sanitary pads, which has an impact on the onset of itching and discomfort during menstruation.

In the category of sufficient knowledge with a frequency of 27 respondents (57.4%), indicating that in the results of the research the respondents in the category of sufficient knowledge already have an initial understanding of menstrual hygiene management, but are still at the stage of general and in-depth knowledge. According to some respondents in the sufficient category, most of the information obtained comes from parents, but because the discussion about menstruation is still considered taboo, the information provided is sometimes incomplete or even inaccurate.

According to the theory Augustine (2025) Parents are the main source of information for young women in understanding menstrual hygiene, information provided correctly and openly will help children have good knowledge and be able to apply menstrual hygiene practices appropriately while inappropriate or limited information can cause children's understanding to be not optimal.

This research is also supported by the results of the research Azzahra (2024) which shows that most of the respondents are in the category of lack of knowledge, namely as many as 68 respondents (51.5%). The results of the study explained that the low knowledge of adolescent girls is influenced by the limited information obtained where the dominant source of information comes from parents.

In the category of good knowledge, as many as 18 respondents (38.3%) showed that some respondents had a better level of understanding related to menstrual hygiene management. Respondents in this category generally have good knowledge of the hygiene of the reproductive organs during menstruation. This is influenced by the age factor; The more mature a person is, the more mature their thinking, experience, and ability to absorb information will be.

According to the theory put forward by Notoatmodjo, a person's level of knowledge is influenced by various factors including education, experience, age, and access to information (Amalia et al., 2024). This research is also supported by the results of the research Sandy (2025) shows that age, experience, and access to information are significantly related to the understanding of adolescent reproductive health. More mature adolescents have better thinking skills and are more active in seeking information through digital media, schools, and parents.

Students' knowledge about menstrual hygiene management after being given animation video education at SMP Negeri 1 Gorontalo

Based on the results of the research on menstrual hygiene management knowledge after being given animated video education, it showed that out of 47 respondents, all respondents were in the category of good knowledge as many as 47 respondents (100%). It can be seen from this data that there has been an increase in the number of knowledge that is in the good category. Where before being given animation video education, respondents with good knowledge were only 18 respondents. However, after being given animation video education, there were 47 respondents with the category of good knowledge.

According to the results of the researcher's analysis, this increase reflects a positive change in the understanding of adolescent girls on the importance of maintaining reproductive health where the use of animated video media has proven to be effective in equipping female students to recognize and understand menstrual hygiene management more appropriately and independently.

The increase in knowledge in this study is inseparable from planned and systematic health education interventions. This health education is not just about providing information, but a learning process that aims to shape attitudes, influence the way of thinking, and encourage behavioral changes towards a healthy life (Ark *et al.*, 2023). Health education trains individuals to understand the importance of health, recognize risks, and take preventative measures. This intervention is especially important for adolescents who are experiencing rapid cognitive development, so that they can absorb information more easily, especially if it is delivered through engaging media such as animated videos (Sigh *et al.*, 2025).

Theoretically, these results are in line with the theory Darsini (2022) which states that knowledge is obtained through the five senses, especially sight and hearing. The use of animated videos in this study optimizes both senses simultaneously, thereby increasing the absorption and retention of students' knowledge.

Respondent characteristics also played a role in the success of this intervention. Respondents in this study were school-age adolescents who were in the optimal phase of cognitive development to receive new information. According to Sukri (2025), adolescents have a high curiosity and are more responsive to information conveyed through technology-based media. This is supported by research Susanti (2024) which states that animation video media is more in line with today's adolescent learning styles because they are visual, dynamic, and interesting, so that they can increase learning motivation and strengthen memory.

Thus, it can be concluded that education using animated videos is an effective method in increasing adolescent women's knowledge about menstrual hygiene management.

The effect of animation video education on menstrual hygiene management knowledge in female students

Based on the results of the study, it was shown that before being given animated video education, the level of knowledge of female students about menstrual hygiene management still varied, where respondents in the good knowledge category were 18 respondents (38.3%), the sufficient category was 27 respondents (57.4%), and the poor category was 2 respondents (4.3%). After being given an intervention in the form of animated video education, there was a significant increase, where all respondents experienced an increase to the category of good knowledge as many as 47 respondents (100%).

This is strengthened by the results of a statistical test using *the Wilcoxon Signed Rank Test* which shows a significance value (sig. 2-tailed) = 0.000 or $p < 0.05$, so that H_a is accepted. This means that there is an effect of animated video education on increasing knowledge of menstrual hygiene management in female students at SMP Negeri 1 Gorontalo.

Prior to the intervention, 27 students (57.4%) were in the category of sufficient knowledge, indicating that their basic understanding of menstrual hygiene management was not fully appropriate. After being given animation video education, all students in this category managed to improve to the good category. This increase is driven by the presentation of material that is systematic and easy to understand, thereby optimizing the learning effectiveness of female students.

Meanwhile, the category of knowledge lacked initially as many as 2 respondents (4.3%), reflecting the presence of female students with very limited understanding. After education, this group also increased to the good category. This proves that simple and attractive animation video visualizations can reach students with low levels of understanding to increase their interest in learning and capture.

In the category of knowledge well before education, there were 18 respondents (38.3%) who showed qualified initial understanding. After the intervention, the number jumped to 47 respondents (100%). Animation video education is proven to not only strengthen the knowledge base that students already have, but also to improve it through a more complete and structured explanation.

The factors that affect the results of the research before being given animation video education are the majority of students' knowledge in the category of sufficient and insufficient due to limited information, lack of interesting media, and the influence of community myths. As a result, they did not fully understand how to maintain the cleanliness of the reproductive organs and the frequency of changing sanitary pads. However, after being given animated video education, respondents were able to absorb information more clearly and in a structured way.

According to Edgar Dale's theory in Cone of Experience explains that it will be easier for a person to understand information presented visually and concretely than through only verbal explanations. This theory illustrates that a more real learning experience involving visual media will improve individual understanding compared to abstract learning (Rochmata et al., 2024). Animated videos provide a more real learning experience through illustrations and simulations, thus helping students understand the concept of menstrual hygiene management more clearly.

The effectiveness of animated videos is supported by the proximity of adolescents to digital technology. This interactive and interesting media is able to create a fun learning atmosphere, thereby increasing students' attention, motivation, and concentration. As a result, the material becomes easier to understand, remember, and can be re-studied independently to strengthen understanding (Anjani et al., 2024).

The clarity of the material in animated videos is the key to the success of education. Research results Agustina & Marlina (2023) stating that the material is systematic, simple language, and relevant illustrations make it easier for adolescents to absorb information while changing taboo perceptions about menstruation to be more positive. The findings of this study are also supported by Telaumbanua (2024) Proving that audiovisual media is effective in increasing knowledge and is able to increase information retention by more than 50% compared to the lecture method.

Based on the description of the research results, supporting theories, and consistent research, it can be concluded that education through animated videos has a significant influence on increasing knowledge about menstrual hygiene management among female students at SMP Negeri 1 Gorontalo.

CONCLUSION

Based on these findings, it was obtained before the education of students' knowledge about menstrual hygiene management was not optimal, namely the categories of lack (4.3%), adequate (57.4%), and good (38.3%). However, after the intervention using animated videos, the knowledge of all female students increased to good (100%). The results of *the Wilcoxon Signed Rank Test* obtained a $p\text{-value} = 0.000$ ($p < 0.05$), which proves that there is a significant influence between knowledge before and after education.

ADVICE

The results of this research are expected to be a consideration for health institutions and SMP Negeri 1 Gorontalo in integrating menstrual hygiene management education based on animated videos into school programs or UKS. For respondents, this research is expected to be able to encourage the application of clean and healthy living behaviors in daily life. Meanwhile, for future researchers, this study can be a reference to develop similar research using control groups, larger samples, and evaluation of long-term behavioral changes.

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