Jurnal Jamu Kusuma
Vol. 6, No 1, June-July 2026, pp 1-11
ISSN: 2798-0332 (print)
ISSN: 2798-558 (online)

THE EFFECT OF VIDEO MEDIA EDUCATION ON STUDENTS KNOWLEDGE SCORES AT SMAN 1 JOGONALAN REGARDING TRADITIONAL MEDICINE IN HANDLING DYSMENORRHEA

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ABSTRACT

Dysmenorrhea is a common problem experienced by young women and can disrupt daily activities. Increasing knowledge about non-pharmacological management of dysmenorrhea can be achieved through educational animated videos. This study aims to determine the effect of educational video media on knowledge scores regarding the use of traditional herbal remedies for the management of dysmenorrhea at SMAN 1 Jogonalan. The respondents in this study are 68 female students in grade XI. This study used a pre-experimental one-group pretest–posttest design, with questionnaires distributed through Google Forms as the research instrument. Questionnaire validity testing was conducted using Pearson's Product-Moment correlation test, which showed that 16 out of 26 questionnaire items were valid, with significance values ranging from 0.000 to 0.045, with a reliability of 0.770 (reliable), and the video media had a validity of 0.869. Data analysis was carried out using the Wilcoxon test to assess differences in knowledge scores before and after the provision of educational video media. The results of this study show an average pre-test score of 10.97 and an average post-test score of 12.47, resulting in a 1.5-point increase. A significant difference in students' knowledge between the pretest and the posttest, with a Sig. (2-tailed) value of $0.001 \leq 0.05$, indicating that video media influence students' knowledge of using traditional herbal remedies to treat dysmenorrhea. Based on these results, it can be concluded that video media as an educational support tool helps increase students' knowledge of the use of traditional herbal remedies for treating dysmenorrhea.

Keywords : adolescent, dysmenorrhea, education, knowledge, video

INTRODUCTION

Dysmenorrhea (menstrual pain) is pain that occurs before or during menstruation and can last for 8–72 hours to 1–2 days (Djimbula et al., 2022). The prevalence of dysmenorrhea is relatively high. According to the latest data available from the World Health Organization (WHO), the incidence rate of dysmenorrhea reached 90% in 2020, with approximately 10–16% of women experiencing severe dysmenorrhea. In Indonesia, the prevalence of dysmenorrhea reached 64.25%, with the highest prevalence among adolescents aged 15–24 years. Based on severity, 49% experienced mild dysmenorrhea, 34% moderate, and 17% severe, which can lead to activity limitations and school absences (Kemenkes RI, 2021). Furthermore, the Central Java Provincial Health Office reported in 2023 that 56% of adolescent girls aged 10–19 years experienced dysmenorrhea.

The high prevalence of dysmenorrhea in adolescents negatively impacts learning activities, such as decreased concentration and motivation, and can even lead to absenteeism from school. This is supported by research (Fahmiah et al., 2022), which shows that almost

half of respondents choose to go home when experiencing dysmenorrhea (43.33%). The majority experience decreased concentration (53.33%), feel weak while studying (60%), and choose to remain silent in class (63.33%). This condition shows that dysmenorrhea not only impacts physical health but also the learning process of adolescents.

Dysmenorrhea can be managed through two approaches: pharmacological and nonpharmacological therapy. Pharmacological therapy involves administering analgesic drugs such as paracetamol, mefenamic acid, panadol, and ibuprofen (Hesti et al., 2023; Lubis et al., 2023). However, long-term use of NSAIDs can cause side effects such as digestive and kidney disorders. Therefore, complementary nonpharmacological therapies with minimal side effects are needed (Sari et al., 2023). One alternative is traditional medicine, which is known to reduce prostaglandin F2α levels and has similar effects to NSAIDs. Ginger, in particular, has been reported to exert anti-inflammatory effects by inhibiting cyclooxygenase (COX) and 5-lipoxygenase (5-LOX), thereby reducing prostaglandin and leukotriene synthesis, which may contribute to lower prostaglandin F2α levels and alleviate menstrual pain (Nazarpour & Simbar, 2024).

Despite this, adolescent girls still tend to choose pharmacological treatment over traditional therapies. Research by Anggriani et al. (2021) showed that most respondents chose conventional medicine, while the use of traditional therapies remained low. Similar findings were reported by Mulyani et al. (2025), who demonstrated the predominance of painkillers over non-pharmacological therapies. This reflects adolescents' limited knowledge of traditional medicine for treating dysmenorrhea (Dewi et al., 2022).

Knowledge level is one factor that influences a person's choice of treatment. The higher the level of knowledge, the better the individual's understanding of available treatment alternatives (Syarafina & Pradana, 2023). Health education is a crucial effort to increase adolescent knowledge, and one approach is using video media, which can convey information in an engaging, easy-to-understand manner. Research by Aryani et al. (2024) showed that education through video media was more effective than leaflets in increasing respondents' knowledge.

Previous research in Klaten Regency showed that most adolescents still had adequate to inadequate knowledge regarding dysmenorrhea management. Only 10% of respondents had good knowledge, while 62.5% had adequate knowledge and 27.5% had inadequate knowledge (Wardoyo & Setiyorini, 2021). A preliminary study involving interviews with nine female students at SMA Negeri 1 Jogonalan found that eight students experienced dysmenorrhea. Among them, three did not undertake any form of treatment, while five relied on medication to manage their symptoms, suggesting variations in dysmenorrhea management practices and indicating the need for appropriate health education. Therefore, this study aimed to examine differences in adolescent girls' knowledge regarding the use of traditional herbal remedies for dysmenorrhea management following educational interventions delivered through video media.

METHOD

This study uses a quantitative method with a pre-experimental design. The study was conducted at SMA Negeri 1 Jogonalan, Klaten Regency, from September 2025 to May 2026. The study population comprised 68 grade XI female students selected using cluster random sampling. The inclusion criteria were grade XI female students of SMA Negeri 1 Jogonalan who were willing to participate as respondents, while the exclusion criteria were female students who were absent during the study. The research instruments were educational video media and questionnaires distributed via Google Form. Questionnaire validity testing was conducted using Pearson's Product-Moment correlation test, and 16 out of 26 questionnaire items were declared valid with significance values ≤ 0.05 (Pandriadi et al., 2023). Reliability

testing showed that the instrument was reliable with a reliability value of < 0.60 (Hatiku et al., 2022). Media validity testing was conducted using Aiken's V. This study obtained ethical clearance approval on December 4, 2025, with ethical clearance number 2.503/XII/HREC/2025. Data analysis included univariate analysis to examine the mean and standard deviation of respondents' knowledge scores regarding the use of traditional herbal remedies for dysmenorrhea management before and after the intervention, and bivariate analysis to determine differences in knowledge before and after providing video-based education. The bivariate analysis used the Wilcoxon test because the normality test showed that the data were not normally distributed.

RESULTS AND DISCUSSION

This study was conducted on 68 eleventh-grade female students of SMAN 1 Jogonalan, Klaten Regency, in 2026. It examined students' knowledge of the use of traditional herbal remedies for dysmenorrhea. The distribution of the respondents' average pre-test knowledge scores is shown in Table 1.

Table 1. Distribution of average knowledge scores of pre-test and post-test respondents

Variabel	N	*Min*	*Max*	*Mean*	SD
Pretest	68	7	15	10,97	2,037

Table 1 shows that the average knowledge score distribution of 68 respondents before receiving video education showed a mean of 10.97 with a standard deviation of 2.037. Furthermore, the lowest score obtained by respondents during the pretest was 7, while the highest score was 15. This average value indicates that, before the education session, most respondents already had some knowledge of the use of traditional herbal remedies to treat dysmenorrhea, but this understanding could still be improved through health education. This is also evident from the analysis of questionnaire responses, which showed that several items were still answered incorrectly by respondents. This finding is supported by research by Edward et al. (2025), who reported that 62 respondents (66.7%) still answered questions incorrectly, indicating that respondents' understanding of the material remained suboptimal.

Table 2 Frequency of respondents' correct answers before and after video media education

No.	Questions	Pre-test Correct	Post-test Correct
		(%)	(%)
1.	Strong contractions of the uterine wall can increase prostaglandin levels, and cervical dilation during menstruation is a cause of dysmenorrhea.	97,05	100
2.	Menstrual pain, also known as primary dysmenorrhea, is a physiological (normal) condition that occurs during menstruation.	88,23	94,11
3.	Dysmenorrhea only affects physical conditions without psychological impacts.	60,29	64,7
4.	Menstrual pain (dysmenorrhea) is not influenced by a teenager's hormonal system.	72,05	76,47
5.	Primary dysmenorrhea is caused by structural abnormalities in the	66,17	67,64

	female reproductive organs.		
6.	Traditional herbal remedies have anti-inflammatory effects that can help reduce dysmenorrhea pain.	80,88	92,64
7.	Single herbal remedies are a type of traditional herbal remedy that uses two or more medicinal plants.	66,17	89,7
8.	Ginger is known as a spice that can help improve blood circulation during menstruation.	79,41	82,35
9.	Herbal drinks such as turmeric and tamarind are usually consumed before menstruation to prevent menstrual pain.	82,35	85,29
10.	The therapeutic effect of traditional remedies is only felt when consumed after menstruation has finished.	67,64	83,82
11.	The active ingredients in turmeric and tamarind work synergistically to increase uterine contractions during menstruation.	30,88	32,35
12.	Traditional remedies have no side effects, so they are safe for continuous use.	57,35	75
13.	Traditional remedies can be drunk during menstruation to help reduce pain.	91,17	91,17
14.	A decoction of ginger at a dose of 10 mg per 200 ml of water is considered safe for consumption.	69,11	100
15.	Curcuma javanica can reduce uterine contractions by increasing calcium ions in uterine cells.	26,47	94,11
16.	Traditional remedies can only be used if chemical medications do not provide results.	61,76	64,7

Based on Table 2, the percentage of incorrect answers decreased following the educational intervention. For question 15, the proportion of incorrect responses declined from 73.52% to 57.35%, representing a decrease of 16.17 percentage points. Similarly, for question 11, it decreased from 69.11% to 67.64%, a reduction of 1.47 percentage points. These findings indicate an improvement in participants' understanding after the intervention, although the increase was relatively modest for certain items. Nevertheless, question 11 (46 participants, 67.64%) and question 15 (39 participants, 57.35%) remained the items with the highest proportion of incorrect responses in the post-test. In contrast, question 1 had the highest number of correct responses, with all 68 participants (100%) answering correctly. Question 2 also demonstrated a high level of accuracy, with 64 participants (94.11%) providing correct answers.

The question most frequently answered incorrectly by female students was question number 15, with 50 students (73.52%). Question number 15 states that curcuma can reduce

uterine contractions by increasing calcium ions in uterine cells, whereas physiologically, increasing calcium ions (Ca^{2+}) in uterine smooth muscle cells actually plays a role in triggering muscle contractions (Kiswati, 2021). This was followed by question number 11, with 47 students (69.11%). This question states that the active ingredients in turmeric and tamarind work synergistically in increasing uterine contractions during menstruation. Research has shown that the curcuminoid content in turmeric has anti-inflammatory and analgesic effects that can help reduce menstrual pain by inhibiting the production of prostaglandins that play a role in uterine contractions (Widiatami et al., 2022).

The high number of errors on these questions may be due to respondents' limited understanding of the mechanisms of herbal ingredients and to inaccuracies in their answers. This is consistent with research stating that adolescents' limited knowledge can be influenced by a lack of effective and engaging health education (Ismah et al., 2025). Therefore, appropriate educational interventions, such as video media, are needed to improve adolescents' knowledge (Arifin, 2022).

The limited knowledge of female students before receiving education may be influenced by several factors, including limited communication about reproductive health and exposure to inaccurate information, which can lead to misconceptions regarding dysmenorrhea management (Sandy et al., 2025). In addition, reproductive health education in schools generally focuses on the menstrual process and does not specifically discuss dysmenorrhea and its management, resulting in limited student understanding (Wardoyo & Setiyorini, 2021). Therefore, targeted health education is still needed to improve adolescents' understanding of appropriate dysmenorrhea management (Mutmainah & Hidayat, 2025).

The role of schools and health workers is important in improving adolescents' knowledge about dysmenorrhea. In addition, innovative educational approaches, such as demonstrations of traditional herbal remedies, may help improve adolescents' understanding and ability to manage dysmenorrhea independently (Pranoto et al., 2023).

Table 3 Distribution of average knowledge scores of respondents after education

Variabel	N	Min	Max	Mean	SD
Post-test	68	8	16	12,47	2,091

Table 3 shows that the average knowledge score distribution among 68 respondents after receiving video education had a mean of 12.47 and a standard deviation of 2.091. Furthermore, the lowest posttest score among respondents was 8, while the highest was 16. Compared with the average pretest score of 10.97, the average score increased by 1.5 points after education via video media.

This improvement indicates that education through video media can increase students understanding of the use of traditional herbal remedies for dysmenorrhea. Questionnaire analysis also showed an increase in the number of correct answers after respondents received video-based education. Similar findings were reported by Marliiany et al. (2023), which reported an increase in knowledge regarding dysmenorrhea after health education. The average knowledge score increased from 57.07 before the intervention to 87.99 after the intervention, indicating improved understanding among respondents. Noviyanti et al. (2022) also reported an increase in participants' average knowledge scores after educational video-based health education, with scores increasing by 2.56 points from 7.33 before the intervention to 9.89 after the intervention. These findings suggest that the use of video media in the educational process can improve participants' knowledge.

In addition to the increase in the average score, changes were also observed in the standard deviation values. The standard deviation increased from 2.037 in the pretest to 2.091 in the posttest, indicating greater variation in respondents' scores after the educational

intervention. This suggests that the distribution of posttest scores was more diverse compared to the pretest, meaning that not all students experienced the same level of knowledge improvement. Some respondents showed higher increases in scores than others. According to (Febriani, 2022), standard deviation reflects the spread of data from the average value, where a higher standard deviation indicates greater variation in the data distribution.

Table 4 Percentage of Increase in Respondents' Correct Answers

No.	Questions	Pre test (%)	Post test (%)	Increase percentage (%)
1.	Strong contractions of the uterine wall can increase prostaglandin levels, and cervical dilation during menstruation is a cause of dysmenorrhea.	97,05	100	2,95
2.	Menstrual pain, also known as primary dysmenorrhea, is a physiological (normal) condition that occurs during menstruation.	88,23	94,11	5,88
3.	Dysmenorrhea only affects physical conditions without psychological impacts.	60,29	64,7	4,41
4.	Menstrual pain (dysmenorrhea) is not influenced by a teenager's hormonal system.	72,05	76,47	4,42
5.	Primary dysmenorrhea is caused by structural abnormalities in the female reproductive organs.	66,17	67,64	1,47
6.	Traditional herbal remedies have anti-inflammatory effects that can help reduce dysmenorrhea pain.	80,88	92,64	11,76
7.	Single herbal remedies are a type of traditional herbal remedy that uses two or more medicinal plants.	66,17	89,7	23,53
8.	Ginger is known as a spice that can help improve blood circulation during menstruation.	79,41	82,35	2,94
9.	Herbal drinks such as turmeric and tamarind are usually consumed before menstruation to prevent menstrual pain.	82,35	85,29	2,94
10.	The therapeutic effect of traditional remedies is only felt when consumed after menstruation has finished.	67,64	83,82	16,18
11.	The active ingredients in turmeric and tamarind work synergistically to increase uterine contractions during menstruation.	30,88	32,35	1,47
12.	Traditional remedies have no side effects, so they are safe for continuous use.	57,35	75	17,65
13.	Traditional remedies can be drunk during menstruation to help reduce pain.	91,17	91,17	0
14.	A decoction of ginger at a dose of 10 mg per 200 ml of water is considered safe for consumption.	69,11	91,17	22,06
15.	Curcuma javanica can reduce uterine contractions by increasing calcium ions in uterine cells.	26,47	42,64	16,17
16.	Traditional remedies can only be used if chemical medications do not provide results.	61,76	77,94	16,18

Table 5 shows an increase in the percentage of answers before and after education. For question 15, the percentage of incorrect answers before education was 73.52%, but after education, it decreased to 57.35%, representing a 16.17% increase. A similar pattern was also seen in question number 11, with the percentage of wrong answers before education at 69.11% and after education at 67.64%, an increase of 1.47% that was relatively small.

Based on Table 5, several questions showed an increase in the percentage of correct answers after education through video media. The largest increase was found in question 7 (23.53%), followed by question 14 (22.06%), indicating changes in respondents' understanding of the material presented. Improvements were also observed in questions that previously had low correct-answer rates. Question 15 increased from 26.47% in the pretest to 42.64% in the posttest, with a difference of 16.17%, while question 11 increased slightly from 30.88% to 32.35%, with a difference of 1.47%. Although both questions discussed the mechanism of action of herbal ingredients, the lower increase in question 11 may reflect differences in respondents' understanding of the direction of the effects presented. In addition, the use of more complex language or scientific terms without sufficient explanation may become a barrier to understanding the meaning of the questions (Solihin et al., 2025).

Furthermore, one item showed no change in the percentage of correct answers after the education session. Question 13, which stated that traditional herbal remedies can be consumed during menstruation to help reduce pain, remained at 91.17% in both the pretest and posttest. This finding may indicate that most respondents already had a good understanding of the material before the intervention. Previous studies have shown that changes in knowledge tend to be more apparent in material that respondents initially understood poorly. In contrast, improvements are usually minimal in material that was already well understood before the intervention (Kholifah & Utami, 2024).

The differences in score improvement may also be influenced by variations in respondents' level of understanding of the material presented through educational video media, resulting in differences in comprehension across each statement (Solihin et al., 2025). In addition, respondents' concentration levels during the posttest may have affected the accuracy of their answers. Since respondents had previously participated in the learning process and received the educational material, cognitive fatigue may have occurred, potentially reducing their attention to detail when reading and answering the questionnaire statements (Lindner et al., 2025)

Table 5 Results of the Wilcoxon Test for Pretest and Posttest

Knowledge	**N**	***Positive ranks***	***Ties***	***Negative ranks***	***Sig. 2 tailed***
Pretest-post-test	68	50	10	8	0,0001

Table 6 shows the results of the Wilcoxon test, which yielded a p-value of 0.0001 ($p \leq 0.05$), indicating a significant difference in the knowledge scores of female students at SMAN 1 Jogonalan before and after receiving education via video media. These results indicate that education through video media improved the knowledge of eleventh-grade female students at SMA Negeri 1 Jogonalan regarding the use of traditional herbal remedies for dysmenorrhea management. According to Buraini (2023), educational interventions help students absorb information more effectively, thereby increasing their knowledge in the related field.

The findings of this study are consistent with those of Rachmawati et al. (2025), who reported a Wilcoxon test result with a p-value of 0.000, indicating that video media improved students' knowledge about dysmenorrhea. Aryani et al. (2024) also found that education

through video increased knowledge (p-value = 0.0001), whereas leaflets showed no improvement (p-value = 0.063). However, these findings differ from Gunawan et al. (2025), who reported no significant increase in knowledge after video-based education (p-value = 0.052; p > 0.05). These differences may be influenced by factors such as delivery duration, media quality, and respondents' prior knowledge. Video media, as an audio-visual medium, can present information in a more engaging and understandable way by involving both sight and hearing simultaneously (Pratiwi, 2023).

Based on Table 4.5, which presents the results of the Wilcoxon rank test, 50 out of 68 respondents were included in the positive ranks category, indicating that their post-test knowledge scores were higher than their pre-test scores after receiving education through video media. This finding shows that most respondents experienced an increase in knowledge after the intervention using audio-visual media.

In contrast, 8 participants were included in the negative ranks category, indicating a decrease in post-test scores compared to pre-test scores. This decline may have been influenced by several factors, such as lack of focus during the post-test, fatigue after the educational session, or limited understanding of some of the material presented. Differences in cognitive abilities and comprehension skills among the participants may also have affected the questionnaire results (Septyana & Astuti, 2022).

Meanwhile, 10 female students were included in the ties category, meaning that there was no change between pre-test and post-test scores. This finding indicates that some participants experienced neither improvement nor decline in knowledge after receiving video-based education. This may have been caused by limited attention during the educational process or by completing the questionnaire hastily, resulting in an incomplete understanding of the material (Septyana & Astuti, 2022).

Overall, most participants were classified in the positive ranks category, indicating that more students experienced an increase rather than a decrease in knowledge scores after receiving education through video media. Therefore, the Wilcoxon ranks analysis supports the existence of differences in knowledge scores before and after the intervention. This improvement in knowledge occurred following educational sessions aimed at enhancing students' understanding of the use of traditional herbal remedies for dysmenorrhea management. One factor that may have contributed to this increase was the use of video media. As an audiovisual medium, video enables information to be delivered in a more engaging and comprehensible manner by simultaneously involving the senses of sight and hearing (Pratiwi, 2023). In this study, the use of animation and everyday language may have helped female students better absorb and process the information provided.

Furthermore, video media has the advantage of presenting information through a combination of moving images, sound, and systematic explanations, making the material easier to understand and remember. Messages delivered simultaneously through visual and auditory channels can help students recall information more effectively. This is consistent with multimedia learning theory, which states that learners can achieve a deeper understanding through a combination of words and images than through words alone (Mayer, 2024).

Providing health education through video media can help female students obtain clear and easy-to-understand information regarding the use of traditional herbal remedies for dysmenorrhea management. The use of engaging and accessible videos is expected to enhance their understanding and broaden their knowledge about the appropriate use of traditional herbal remedies. Furthermore, students are expected to become more proactive in seeking accurate reproductive health information, thereby reducing misunderstandings regarding the use of traditional herbal remedies for menstrual pain management.

CONCLUSION

Research conducted on eleventh-grade female students at SMA Negeri 1 Jogonalan, Klaten Regency, showed a difference in knowledge of traditional herbal remedies for treating dysmenorrhea after receiving education via video media. This was indicated by an increase in the average score from 10.97 in the pretest to 12.47 in the posttest, with a mean increase of 1.5 points, and by a significant difference in the Wilcoxon test ($p = 0.0001$; $p \leq 0.05$). Most respondents experienced an increase in their scores, though the increase was not uniform across all items. This difference in improvement was influenced by the level of understanding of the material, cognitive abilities, and the condition of the respondents when they participated in and completed the evaluation. Overall, video media as an audio-visual educational tool can help improve students' understanding.

ACKNOWLEDGMENTS

The authors would like to express their gratitude to SMA Negeri 1 Jogonalan for granting permission and supporting the implementation of this research. The authors also thank all respondents who participated in this study and all parties who contributed to the completion of this research.

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