



The Effect of Video and Leaflet Media on Students' Knowledge of Anthelmintic Drug Use at SMP Y, Merangin Regency

Olivia Paramitha¹ Ruri Putri Mariska² Aisa Dinda Mitra³

Department of Pharmacy, Harapan Ibu School of Health Sciences, Jambi, Indonesia^{1,2,3}

Email: olipe0105@gmail.com¹ ruripu3mariska@gmail.com² aisadindamitra@gmail.com³

Abstract

Helminthiasis remains one of the most common health problems among school-aged children in Indonesia. Limited knowledge regarding the proper use of anthelmintic drugs may reduce the effectiveness of helminthiasis prevention and control. This study aimed to determine the effect of video and leaflet media on students' knowledge regarding the use of anthelmintic drugs and to compare the effectiveness of both educational media. A quasi-experimental study using a pretest-posttest two-group design was conducted among 60 seventh-grade students at SMP Y, Merangin Regency. Participants were divided into a video group (n=30) and a leaflet group (n=30) using total sampling. Knowledge was measured using a structured questionnaire before and after the educational intervention. Data were analyzed using the Wilcoxon Signed-Rank Test and Mann-Whitney Test. The mean knowledge score increased from 65.83 to 80.50 in the video group and from 72.00 to 88.17 in the leaflet group. The Wilcoxon test showed a significant increase in knowledge in both groups ($p < 0.001$), whereas the Mann-Whitney test demonstrated no significant difference in knowledge improvement between the two educational media ($p = 0.799$). Both video and leaflet media effectively improved students' knowledge regarding the use of anthelmintic drugs; however, no significant difference in effectiveness was observed between the two interventions.

Keywords: Anthelmintic Drugs, Knowledge, Leaflet, Students, Video



This work is licensed under a [Creative Commons Attribution-NonCommercial 4.0 International License](https://creativecommons.org/licenses/by-nc/4.0/).

INTRODUCTION

Helminthiasis remains one of the major public health problems commonly found in developing countries, including Indonesia (Agustina., 2022). Infections caused by Soil-Transmitted Helminths (STH) remain a concern because of their relatively high prevalence in various regions of Indonesia, with reported incidence ranging from 2.5% to 62%. The high incidence of helminthiasis is influenced by several factors, including inadequate environmental sanitation, tropical climatic conditions, and geographical characteristics that support the development of helminth eggs (Kurniawan et al., 2025). More than 60% of the Indonesian population is estimated to have experienced helminthiasis, with approximately 24% of cases occurring among children (Susilo & Haryatmi., 2024). School-aged children are vulnerable to STH infection because their daily activities increase the likelihood of contact with soil or environments contaminated with helminth eggs (Susilo & Haryatmi., 2024). Helminthiasis can cause impaired nutrient absorption, anemia, reduced immunity, and impaired growth in children (Sahariyani et al., 2024). In addition to physical effects, helminthiasis may also affect learning ability through reduced concentration and impaired cognitive development (Widhiyastuti et al., 2025). These conditions indicate that helminthiasis is not only a health problem but may also affect the quality of human resources in the future (Hartika et al., 2024). (Hartika et al., 2024).

One strategy for controlling helminthiasis is the periodic administration of anthelmintic drugs accompanied by the implementation of clean and healthy living behaviors (Permenkes RI., 2017). The World Health Organization (WHO) recommends periodic deworming for at-risk groups, particularly school-aged children living in endemic areas (World Health Organization.,



2017). Appropriate use of anthelmintic drugs requires consideration of the type of drug, dose, directions for use, frequency of administration, and target population to achieve optimal benefits (World Health Organization., 2025). Insufficient knowledge regarding anthelmintic drug use may lead to inappropriate drug use, potentially reducing the effectiveness of treatment and helminthiasis prevention (William., 2024). Improving knowledge is an important component in supporting rational drug use (Notoatmodjo., 2012). Health education can be used to improve public understanding of the benefits, directions for use, and importance of periodic deworming (Permenkes RI., 2017). Various media can be used in health education activities, including video and leaflet media. Video media can present information through a combination of visual and audio elements, thereby increasing attention and facilitating understanding of educational materials (Asmawati et al., 2021). A leaflet is a printed educational medium that presents information concisely and can be used repeatedly as a reminder by the target audience (Gilang et al., 2022).

Previous studies have shown that video media can improve health knowledge among target groups following an educational intervention (Nurlaelasari et al., 2023). Leaflet media has also been reported to be effective in improving health knowledge because the information can be reread by respondents after the educational activity has ended (Syaputri et al., 2025). However, findings regarding which educational medium is more effective remain varied because they are influenced by respondent characteristics, educational content, and methods of information delivery. In addition, studies specifically comparing the effectiveness of video and leaflet media for teaching anthelmintic drug use among junior high school students remain limited. Based on this background, this study was conducted to analyze the effect of video and leaflet media on students' knowledge of anthelmintic drug use and to compare the effectiveness of the two educational media. The findings are expected to provide considerations for schools and health professionals in selecting appropriate educational media to improve students' knowledge of anthelmintic drug use.

RESEARCH METHODS

Research Design

This quantitative study employed a quasi-experimental design using a pretest-posttest two-group approach. This design was used to assess changes in students' knowledge before and after the educational intervention and to compare the effectiveness of video and leaflet media in improving knowledge of anthelmintic drug use.

Study Period and Setting

The study was conducted in April 2026 at SMP Y, Merangin Regency.

Population and Sample

The study population consisted of all seventh-grade students at SMP Y, Merangin Regency, in the 2025/2026 academic year, totaling 60 students. Total sampling was used; therefore, the entire population was included as research respondents according to the predetermined criteria. Respondents were then divided into two groups: the video media group ($n = 30$) and the leaflet media group ($n = 30$). The inclusion criteria were seventh-grade students who were willing to participate in the study, attended the research activities, and completed both the pretest and posttest questionnaires. The exclusion criteria were respondents who did not participate in the entire research process or who completed the questionnaire incompletely.



Research Instrument

The research instrument was a questionnaire assessing knowledge of anthelmintic drug use, consisting of 20 true-or-false questions. Each correct answer was assigned a score of 1, while an incorrect answer was assigned a score of 0. The questionnaire was developed based on materials concerning anthelmintic drug use, including definitions, indications, drug types, dosage, directions for use, benefits, adverse effects, and measures for preventing helminthiasis. The questionnaire underwent expert validation before being used in the study. The educational media consisted of an educational video and a leaflet containing the same material on anthelmintic drug use. Both media underwent expert validation to ensure the appropriateness of the content, presentation, and language, and were therefore considered suitable for use as educational media.

Research Procedure

The study began with an explanation of the research objectives to the respondents and completion of informed consent. Subsequently, all respondents completed a pretest questionnaire to assess their baseline knowledge. The first group received education using video media, while the second group received education using leaflet media containing the same material. After the educational activity was completed, all respondents completed the same questionnaire as a posttest to assess changes in knowledge following the intervention.

Data Analysis

Data were analyzed using JASP software. Univariate analysis was performed to describe respondent characteristics and knowledge levels using frequency distributions, percentages, means, and standard deviations. Normality was assessed using the Shapiro–Wilk test. Because the data were not normally distributed, differences in knowledge scores before and after the intervention were analyzed using the Wilcoxon Signed-Rank Test, while differences in knowledge improvement between the video and leaflet groups were analyzed using the Mann–Whitney Test at a 95% significance level ($\alpha = 0.05$).

Ethical Clearance

This study received ethical approval from the Research Ethics Committee of Universitas Abdurrab, approval number 1041/KEP-UNIVRAB/III/2026, dated March 13, 2026, before the study was conducted. Permission was also obtained from the school. All respondents were informed about the study objectives, benefits, procedures, and their rights during the study. Consent to participate was obtained through informed consent in accordance with applicable procedures, and respondent identities were kept confidential. All data were used solely for research purposes.

RESULTS AND DISCUSSION

This study involved 60 seventh-grade students at SMP Y, Merangin Regency, who were divided into two groups: the video media group ($n = 30$) and the leaflet media group ($n = 30$).

Table 1. Respondent Characteristics by Sex and Age

Characteristic	Number (n)	Percentage (%)
Sex		
Male	26	43.3
Female	34	56.7
Total	60	100
Age		

13 years	57	95.0
14 years	2	3.3
15 years	1	1.7
Total	60	100

Based on Table 1, most respondents were female, comprising 34 students (56.7%), while 26 respondents (43.3%) were male. In terms of age, the majority of respondents were 13 years old, totaling 57 students (95.0%), while 2 students (3.3%) were 14 years old and 1 student (1.7%) was 15 years old. Most respondents in this study were female. Sex is one factor that may influence health knowledge because females tend to have greater concern for health, actively seek information, and be more receptive to health education (Artama et al., 2022). Most respondents were 13 years old and therefore were predominantly in the early-adolescent age group. This finding is consistent with a study by (Fora et al., 2021), which showed that most respondents were in the 13–15-year age range. This similarity in characteristics indicates that early adolescents are a common target group for health education research in school settings. School-aged children are vulnerable to helminthiasis because clean and healthy living behaviors may not yet be optimal and exposure to environments potentially contaminated with helminth eggs remains high. Therefore, education regarding anthelmintic drug use in this age group is important as part of helminthiasis prevention efforts (Kementrian Kesehatan RI., 2017).

Table 2. Results of the Shapiro–Wilk Normality Test

Group	Measurement	Mean	SW P-value	Interpretation
Video	Pretest	13.43	0,190	Normal
	Posttest	16.00	0,013	Not normal
Leaflet	Pretest	14.37	<0,001	Not normal
	Posttest	17.83	0,001	Not normal

The Shapiro–Wilk normality test showed that the pretest data in the video group were normally distributed ($p=0.190$), whereas the video-group posttest data ($p=0.013$), leaflet-group pretest data ($p<0.001$), and leaflet-group posttest data ($p=0.001$) were not normally distributed. Therefore, differences in knowledge levels before and after the intervention were further analyzed using the Wilcoxon Signed-Rank Test.

Table 3. Mean Knowledge Scores Before and After Education

Descriptive Group	Pretest		
	Mean	SD	P-value S-W
Media Video	65.83	13.47	<.001
Media Leaflet	72.00	14.37	.302
Descriptive Group	Posttest		
	Mean	SD	P-value S-W
Media Video	65.83	13.47	<.001
Media Leaflet	72.00	14.37	.302

Most respondents experienced an increase in knowledge scores after the educational intervention. In the video media group, 27 respondents showed increased scores, 2 respondents had unchanged scores, and 1 respondent had a decreased score. In the leaflet media group, 28 respondents showed increased scores and 2 respondents had unchanged scores, with no respondents showing a decrease in scores.

Table 4. Distribution of Changes in Respondents' Knowledge Scores

Group	Increased	Unchanged	Decreased	Total
Media Video	27	2	1	30
Media Leaflet	28	2	0	30
Total	55	4	1	60

The Wilcoxon Signed-Rank Test showed that education using both video and leaflet media produced a statistically significant increase in knowledge ($p < 0.001$). These findings indicate that both educational media were effective in improving students' knowledge of anthelmintic drug use. The increase in knowledge in the video media group may be attributed to the ability of video media to convey information through a combination of images, text, and sound, making the material easier for students to understand. Delivering information through more than one sensory modality is known to increase attention, facilitate information processing, and improve retention of the material presented (Asma et al., 2025). Structured health education delivered through audiovisual media has also been shown to improve students' knowledge following an intervention (Syaputri et al., 2025). These findings support the results of the present study that video media can be effectively used to provide education on anthelmintic drug use. An increase in knowledge was also observed in the group receiving education through leaflet media. This finding is consistent with (Syaputri et al., 2025), who reported that leaflet media could improve respondents' knowledge following education. A study by (Astuti et al., 2024) also stated that leaflets are effective educational media because they can convey information in a simple, systematic, and easily understandable manner. In addition, leaflets have the advantage of being reread, allowing respondents to review the material provided and reinforce their understanding of health information. These findings further support the results of the present study that leaflet media can improve students' knowledge of anthelmintic drug use.

Table 5. Results of the Mann-Whitney Test for Knowledge Improvement Between the Video and Leaflet Groups

Group	Mean Rank	p-value	Interpretation
Video	29,00	0,799	No significant difference
Leaflet	32,00		

Based on these results, although the leaflet group had a slightly higher mean increase in scores than the video group, the difference was not statistically significant. This finding indicates that both video and leaflet media can be used as health education media to improve students' knowledge. The absence of a significant difference in effectiveness between video and leaflet media may be attributable to the fact that both groups received educational materials with the same content, resulting in relatively equivalent core information being received by respondents. In addition, the relatively homogeneous characteristics of respondents in terms of age and educational level may have contributed to similar knowledge gains in both groups. The characteristics of the target audience are among the factors that can influence successful reception of health information because the ability to understand information is influenced by cognitive development and individual experience (Notoatmodjo., 2012). The findings of this study are consistent with (Syaputri et al., 2025), which showed that both video and leaflet media were able to improve respondents' knowledge after health education, although there was no significant difference in effectiveness between the two media. Another study by (Astuti et al., 2024) also showed that leaflets are effective educational media because they can convey health messages simply and can be reused by respondents as an information source after education has been provided.



Video media has the advantage of attracting attention by combining visual and audio elements, making information easier for the target audience to understand (Asma et al., 2025). However, leaflet media also has the advantage that the information can be reread independently, allowing respondents to repeat the information (Astuti et al., 2024). Therefore, the two media support learning through different mechanisms, but both are capable of producing similar improvements in knowledge. Based on the findings of this study, the selection of educational media can be adapted to the available conditions and facilities. Video media may be selected when audiovisual supporting facilities are available, whereas leaflets can be used as a more practical alternative because they are easy for students to carry and reuse. Thus, both media can be utilized as health education strategies concerning anthelmintic drug use in school settings.

CONCLUSION

Based on the findings of this study, education using video and leaflet media was associated with increased students' knowledge of anthelmintic drug use at SMP Y, Merangin Regency. The video media increased the mean knowledge score from 65.83 to 80.50, whereas the leaflet media increased the mean knowledge score from 72.00 to 88.17. The Wilcoxon test showed that both media produced a significant increase in knowledge ($p < 0.001$). However, the Mann-Whitney test showed no significant difference in effectiveness between video and leaflet media in improving students' knowledge ($p = 0.799$). Thus, both video and leaflet media can be used as alternative health education media to improve students' knowledge of anthelmintic drug use.

Acknowledgments

The authors would like to thank the administration of SMP Y, Merangin Regency, for granting permission and assisting with the implementation of this study. The authors also thank all students who volunteered to participate as respondents and the academic supervisor who provided guidance and feedback throughout the research process and preparation of this article.

BIBLIOGRAPHY

- Agustina, N. (2022). Cacingan pada anak. Direktorat Jenderal Kesehatan Lanjutan, Kementerian Kesehatan Republik Indonesia.
- Asma. (2025). Efektivitas media leaflet dan video terhadap pengetahuan dan sikap pencegahan seks bebas. *Jurnal Kesehatan Tambusai*, 6(4), 18518–18524. <https://doi.org/10.31004/jkt.v6i4.52899>
- Asmawati, N., Nurcahyani, I. D., Yusuf, K., Wahyuni, F., & Mashitah, S. (2021). The influence of contributors uses video media against knowledge and attitudes about anaemia in teenage daughter SMPN 1 Turikale 2020. *Jurnal Gizi dan Kesehatan*, 13(2), 22–30. <https://doi.org/10.35473/jgk.v13i2.122>
- Astuti, F., Capritasari, R., Arifin, N. R., Azhima, A., Wicaksono, H., & Karabu, I. R. (2024). Peningkatan pengetahuan pencegahan cacingan anak pada ibu-ibu PKK. *Abdimas Mahakam Journal*, 8(1), 68–77. <https://doi.org/10.24903/jam.v8i01.2512>
- Fora, C. Y., Riwu, Y. R., & Sir, A. (2021). Hubungan pengetahuan, sikap dan peran orangtua terhadap praktik kesehatan reproduksi remaja pada pelajar SMP Negeri 16 Kupang. *Media Kesehatan Masyarakat*, 3(1), 12–18. <https://doi.org/10.35508/mkm.v3i1.3161>
- Kurniawan, H., Alifa, K., Nabila, H. H., & Pertiwi, A. N. (2025). Edukasi pencegahan cacingan di SDN 019 Sungai Kunjang, Samarinda, Kalimantan Timur. *Jurnal Pengabdian Masyarakat (ABDIRA)*, 5(4), 802–807. <https://doi.org/10.31004/abdira.v5i4.1132>



- Notoatmodjo, S. (2012). Promosi kesehatan dan perilaku kesehatan. Rineka Cipta.
- Nurlaelasari, D., Herawati, I., & Ermanto, B. (2023). Perbedaan efektifitas edukasi media leaflet dan audiovisual terhadap pengetahuan perawatan luka operasi pada ibu nifas post sectio caesarea. *Jurnal Ilmiah Keperawatan (Scientific Journal of Nursing)*, 9(3), 62–73. <https://doi.org/10.33023/jikep.v9i3.1591>
- Pratiwi, G. D., Lucy, V., & Paramitha. (2022). Efektifitas penggunaan media leaflet dalam peningkatan pengetahuan dan sikap terhadap pencegahan tuberkulosis. *Jurnal Ilmiah Keperawatan (Scientific Journal of Nursing)*, 8(3), 8–13. <https://doi.org/10.33023/jikep.v8i3.1153>
- Sahariyani, M., Sari, R. K., & Tasyahuri, S. A. (2024). Pengetahuan kecacingan menggunakan media video pada siswa sekolah dasar. *Jurnal Kedokteran Universitas Palangka Raya*, 12(2). <https://doi.org/10.37304/jkupr.v12i2.14163>
- Siagian, H. S. (2024). Penyuluhan tentang penyakit cacingan pada siswa sekolah dasar di SD Negeri 101737 Kecamatan Sunggal. [Data jurnal tidak cukup terverifikasi untuk dilengkapi tanpa risiko salah sumber].
- Susanto, I. K., William, W., & Agatha, N. (2024). Kajian farmakoterapi albendazole dan mebendazole untuk infeksi Soil Transmitted Helminths pada anak-anak. *Jurnal MedScientiae*, 3(2), 143–148. <https://doi.org/10.36452/JMedScientiae.v3i2.3109>
- Syaputri, K. H., Muthia, O. S., Riduan, A., & Muslimawati, K. (2024). Peningkatan pengetahuan dalam upaya pencegahan penyakit cacingan pada anak di Posyandu Balita Kartika. *Jurnal Pelayanan dan Pengabdian Kesehatan untuk Masyarakat*, 2(2), 78–84. <https://doi.org/10.52643/jppkm.v2i2.5247>
- Tokan, P. K., & Artama, S. (2022). Efektifitas pendidikan kesehatan demam berdarah dengue terhadap pengetahuan, sikap dan keterampilan jumantik sekolah di Sekolah Dasar Inpres Watujara Kabupaten Ende. *Sulolipu: Media Komunikasi Sivitas Akademika dan Masyarakat*, 22(2), 350–360. <https://doi.org/10.32382/sulolipu.v22i2.2921>
- Widhiyastuti, E., Trikusumaadi, S. K., & Kumoro, A. (2025). Edukasi penerapan pola hidup sehat untuk mencegah kecacingan dan pemanfaatan biji pepaya sebagai solusi alami mengatasi kecacingan. *Aksara Abdimas: Jurnal Pengabdian Masyarakat*, 3(1), 14–24. <https://doi.org/10.64499/jaka.v3i1.191>
- World Health Organization. (2017). Guideline: Preventive chemotherapy to control soil-transmitted helminth infections in at-risk population groups. World Health Organization.
- World Health Organization. (2025). The selection and use of essential medicines, 2025: WHO model list of essential medicines, 24th list. World Health Organization. <https://doi.org/10.2471/B09474>