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The Effect of Animated Video Education on the Level of Knowledge and Attitude in Efforts to Prevent Appendicitis in Adolescents

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ABSTRACT

Appendicitis or inflammation of the appendix is one of the emergency cases that many teenagers experience. Lack of knowledge and appropriate preventive attitudes are significant risk factors. The use of interesting educational media such as animated videos is believed to be able to increase adolescents' understanding of the importance of healthy living behaviors to prevent appendicitis. Research objectives To determine the effect of animated video education on the level of knowledge and attitudes in efforts to prevent appendicitis in adolescents at SMP Negeri 3 Meulaboh. Method This study used a quasi-experimental design with a one-group pretest-posttest and cross-sectional approach. The sample consisted of 277 students, who participated in animated video education on January 24, 25, and 31, 2025. Research results There is a significant influence between animated video education on increasing adolescents' knowledge and attitudes in efforts to prevent appendicitis with statistical test results p-value = 0.000 <α = 0.05). Conclusion: Education using animated video media is effective in increasing knowledge and forming positive attitudes in adolescents in preventing appendicitis.

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1. Introduction

Appendicitis is an inflammation of the vermiform appendix, commonly known as inflammation of the appendix. Appendicitis is one of the most common cases in abdominal surgery, causing acute abdominal pain and requiring immediate surgical intervention to prevent potentially dangerous complications such as gangrene, perforation, and even generalized peritonitis (Priscilla et al., 2017). Blockage will cause the lumen of the appendix to be obstructed, so that bacteria accumulate in the appendix and cause acute inflammation with perforation and abscess formation (Kheru et al., 2022).

Based on dataGlobal Burden of Disease (2021), there are approximately 214 cases of appendicitis per 100,000 people globally. Although this figure has decreased slightly from the previous year, the incidence remains high, especially among adolescents. Lack of knowledge about symptoms and prevention is a risk factor for delayed treatment, so early education is essential. In Indonesia, in 2019, the

prevalence of appendicitis was only 3,236 people. In 2020, it was 596,132 people (3.36%), this is an increase. The Indonesian Ministry of Health considers appendicitis a health priority issue at the local and national levels because it has a significant impact on public health (Ministry of Health, 2022) In Aceh, specifically at Meuraxa Regional Hospital in Banda Aceh, the incidence of appendicitis in men was 44.6% and in women 55.6%. The incidence of appendicitis in the under-11 age group was 4.1% and in the 11-20 age group was 23.2% (Sophia et al., 2024)

Teenagers are an age group that is quite vulnerable to various diseases due to changes in eating patterns, unhealthy lifestyles, and minimal knowledge and concern for health (Wulandari, Y., & Supriyadi, 2021) (Nurromsyah & Orita, 2023). Lack of understanding of the early symptoms of appendicitis causes delays in making the decision to seek medical help (Nasution et al., 2025)Therefore, intervention in the form of health education is very necessary to increase their awareness in taking preventive measures from an early age (Utami, R., & Pratiwi, 2020).

As technology advances, animated video-based educational media has become a strategic choice for effectively conveying health information. Animated videos can visualize complex medical concepts in a more understandable, engaging way, and are suited to the characteristics of the digital generation, particularly teenagers (Wijaya, Y., & Prasetyo, 2021). The study conducted byArifin, A., & Wahyuni (2020) showed that health education using animated video media significantly increased adolescents' knowledge and attitudes towards healthy living behavior. Similar results were also found byFitriani, (2022), which proves that educational video media can increase adolescent awareness in maintaining a healthy diet and recognizing early symptoms of diseases, including appendicitis. Therefore, research on the effect of animated video education on adolescents' knowledge and attitudes regarding appendicitis prevention is important to provide a scientific basis for developing more effective health promotion programs in educational settings and the community.

This gap indicates that there are not many scientific studies examining the impact of animated video education on increasing adolescents' knowledge and attitudes regarding appendicitis prevention.Therefore, this study was conducted to answer the question: Does animated video-based education affect adolescents' knowledge and attitudes regarding appendicitis prevention? The purpose of this study was to determine the effect of animated video education on improving adolescents' knowledge and attitudes regarding appendicitis prevention.

2. Methods

This study used a Quasi Experiment method with a One Group Pretest-Posttest design, which aims to measure changes in knowledge and attitudes before and after treatment (animated video). The existing groups were given a pretest, then given treatment, and finally given a posttest. By administering a Guttman scale knowledge questionnaire and Likert scale attitude, and showing a 5-minute 34-second animated video that provides information about the definition, causes, manifestations, management and prevention of Appendicitis. Compared to other learning methods such as PowerPoint presentations that are more easily boring, the use of animated video-based media can help students understand the prevention of Appendicitis better and more interesting. Pretest assessment of knowledge and attitudes about Appendicitis prevention was carried out by filling out a questionnaire. Then, a 5-minute 34-second animated video was shown that conveyed information about the definition, causes, manifestations, management and prevention of Appendicitis. After watching the video, a post-test assessment was carried out by distributing a new questionnaire to assess knowledge about Appendicitis prevention.

This study aims to analyze the Effect of Animated Video Education on the Level of Knowledge and Attitudes in Efforts to Prevent Appendicitis in Adolescents. The location of this research is SMP Negeri 3 Meulaboh, Johan Pahlawan District, West Aceh Regency. The population in this study were students in grades VII-IX. The sampling technique used was probability sampling with proportional stratified random sampling technique where each heterogeneous population is divided into layers that are completely separate from each other, and samples can be taken randomly from each stratum using the Slovin formula. The number of students selected for the sample in this study was 227 people, for the period of

January 2025. Researchers collected data using questionnaires, and analyzed univariate data with frequency distribution while bivariate data used the Wilcoxon test.

3. Results and Discussion

RESULTS

Univariate Analysis

Pretest and Posttest Knowledge Level of Adolescents Given Appendicitis Animated Video Education

Table 1.
Frequency Distribution of Pretest and Posttest Knowledge Levels of Appendicitis Animated Video Education at SMP Negeri 3 Meulaboh

Category	*f*	%
Pretest Knowledge		
Good	0	0
Enough	49	17.7
Not enough	228	82.3
Posttest Knowledge		
Good	266	96.0
Enough	11	4.0
Not enough	0	0
Total	277	100

Based on Table 1, it shows that the majority of students' knowledge during the pretest was lacking, as many as 228 people (82.3%) and a minority had sufficient knowledge, as many as 49 people (17.7%). Meanwhile, the results of the posttest showed that the majority had good knowledge, as many as 266 people (96.0%) and a minority had sufficient knowledge, as many as 11 people (4.0%).

Pretest and Posttest Attitudes of Adolescents Given Appendicitis Animated Video Education

Table 2.
Frequency Distribution of Pretest and Posttest Attitudes to the Provision of Appendicitis Animated Video Education at SMP Negeri 3 Meulaboh

Category	*f*	%
Pretest Attitude		
Good	177	63.9
Enough	100	36.1
Not enough	0	0
Posttest Attitude		
Good	275	99.3
Enough	2	0.7
Not enough	0	0
Total	277	100

Based on table 2, it shows that the majority of students' attitudes during the pretest were good (177 people (63.9%) and a minority (100 people) were moderate. Meanwhile, the majority of students' attitudes during the posttest were good (275 people (99.3%) and a minority (2 people) were moderate.

Bivariate Analysis

Table 3.
The Effect of Appendicitis Animated Video Education on the Level of Knowledge of Adolescents at SMP Negeri 3 Meulaboh

Level of Knowledge	N	Mean	Std	Min	Max	Z	Asymp.Sig.(2-tailed)

Pre	277	2.82	3.82	2	3	-15.397a	0.000
Post	277	1.04	1.96	1	2		

The results of the study showed that the results of the influence test using Wilcoxon obtained a p-value (0.000) which means (0.000 <α (0.05) so that Ho is rejected. Researchers found a significant difference between before and after being given Appendicitis animated video education to adolescents with an average value of (2.82-1.04) indicating that there is a significant influence between Providing animated video education on adolescent knowledge in preventing Appendicitis in adolescents seen from the Z value of -15.397b.

Table 4.
The Effect of Appendicitis Animated Video Education on Attitudes of Adolescents at SMP Negeri 3 Meulaboh

Attitude	N	Mean	Std	Min	Max	Z	Asymp.Sig.(2-tailed)
Pre	277	1.36	4.81	1	2	-9.800a	0.000
Post	277	1.01	0.85	1	2		

The results of the study showed that the results of the influence test using Wilcoxon obtained a p-value (0.000) which means (0.000 <a (0.05) so that Ho is rejected. Researchers found a significant difference between before and after being given Appendicitis animated video education to adolescents with an average value of (1.36 -1.01) indicating that there is a significant influence between Providing animated video education on adolescent attitudes in preventing Appendicitis in adolescents seen from the Z value of -9.800a.

Discussions

The Effect of Animated Video Education on Knowledge in Efforts to Prevent Appendicitis in Adolescents at SMP Negeri 3 Meulaboh

The results of this study indicate that animated video education has an impact on knowledge in efforts to prevent appendicitis in adolescents at SMP Negeri 3 Meulaboh. This research is in line with research conducted bySugiyanto et al., (2024) said that the use of animated video media has proven to be very effective in increasing understanding of various knowledge and can influence behavior for healthy living because health education media, including education through animated videos, is able to strengthen knowledge or understanding through stimulation of the senses of sight and hearing simultaneously.

Lee et al, (2020) A study in South Korea showed that animated educational videos increased adolescents' understanding of chronic disease concepts by up to 40% compared to plain text. In the United States,Hoffman, L.M., & Wallace, (2019) reported that the use of animation in adolescent health education led to significant positive attitude changes due to its visual, simple, and emotionally relevant approach.

This research is in line with the study byMaulida & Fitria, (2023) stated that health education using animated video media is effective in improving adolescents' knowledge and attitudes about healthy lifestyles. The results of this study showed a significant increase in knowledge scores after the audiovisual-based educational intervention. Furthermore,Hidayati & Rachmawati, (2021)In his literature review, he also concluded that audiovisual media is more effective than conventional lectures because it is able to reach visual-auditory learning styles and provides long-term memory reinforcement. Research bySari et al., (2022) also supports this finding, where students who were given education through animated videos showed a 35% increase in knowledge compared to the control group.

SMP Negeri 3 Meulaboh is located in an urban area with a community that still upholds traditional values but is beginning to adapt to technology. The majority of students come from lower-middle-class families with limited access to health information. Lack of dialogue at home contributes to students' low knowledge about preventing diseases like appendicitis. However, high interest in visual media makes animated videos an appropriate educational approach to improve adolescents' understanding and attitudes about appendicitis prevention.

This significant increase in knowledge is influenced by the characteristics of animated video educational media, which is able to capture the attention of adolescents, present information visually and audibly, and simplify medical concepts to make them easier to understand. Furthermore, animated media is considered more interactive and suited to the learning styles of the younger generation, who tend to prefer technology-based and visual learning. Researchers also believe that repetition of information through moving images and narration supports optimal information absorption compared to traditional lecture methods.

The Effect of Appendicitis Educational Videos on Attitudes in Appendicitis Prevention Efforts in Adolescents at SMP Negeri 3 Meulaboh

The results of this study indicate that animated video education has an effect on attitudes towards appendicitis prevention efforts in adolescents at SMP Negeri 3 Meulaboh. This research aligns with several previous studies that have shown that educational video media is effective in improving adolescents' attitudes towards disease prevention efforts, including appendicitis. Research byLestari, (2021) demonstrated that animated video educational media significantly improved students' positive attitudes toward appendicitis prevention. In their research, conducted at a junior high school, students who previously had little interest in appendicitis symptoms and prevention experienced significant improvements after receiving an educational video intervention. These findings indicate that delivering information in an engaging and visual manner can increase awareness and encourage behavioral change.

Hoffman, L.M., & Wallace, (2019) A study in the United States also found that an animation-based educational approach effectively promoted positive attitude change due to its simple and emotional visualization. This comparison strengthens the research's scientific standing on a global scale and demonstrates that animated videos as a medium for adolescent health education are not only effective locally but also relevant internationally. Similar results were also obtained from other studies.Arifin & Wahyuni, (2020) stated that health education using video media has a positive impact on healthy lifestyle behaviors in adolescents. In their study, the use of video was shown to increase students' understanding and awareness of handwashing, food safety, and other healthy activities related to disease prevention, including appendicitis.

Meanwhile,Fitriani, (2022) In his research, he found that video-based education is very effective in increasing adolescent awareness of the importance of maintaining food hygiene, environmental hygiene, and healthy eating patterns as part of efforts to prevent digestive tract diseases. He emphasized that adolescents tend to prefer visual media compared to print media, because it is considered more interesting and easier to remember. Strong support for the results of the research conducted by researchers, that animated video media can improve adolescent attitudes in efforts to prevent appendicitis effectively and efficiently, especially in the current digital era that provides easy access to health information through electronic devices such as smartphones.

Based on the researcher's assumption, appendicitis education through animated videos is considered very helpful for adolescents in understanding the importance of appendicitis prevention because the information delivered through this visual medium is clearer, concise, and not boring. In today's digital era, easy access to educational videos via smartphones allows adolescents to review the material independently at home, thereby strengthening their memory of the information they have received. However, after the educational intervention, the researcher found that some students still had low knowledge and attitudes towards appendicitis prevention, so a post-test was conducted to assess changes in attitudes after the education was provided. The results showed that the use of animated videos that involve the senses of sight and hearing proved more effective in increasing information absorption. Thus, the increase in students' knowledge and attitudes towards appendicitis is influenced by the effectiveness of educational media that makes it easier for them to understand and recall the material, resulting in changes in attitudes for the better.

4. Conclusion

The use of animated videos as an educational medium has been proven effective in increasing

adolescents' knowledge and attitudes towards preventing appendicitis, based on the results of statistical tests which showed significant differences before and after the intervention (p = 0.000 <a(0.05)). This media is considered interesting, communicative, and easy to understand by students, so it is very suitable for use in health promotion activities among adolescents. Based on these findings, animated videos are recommended as an innovative and effective health education method, particularly in the context of school health education. Using this medium can not only increase student awareness but also encourage positive attitudes and healthy lifestyle behaviors that support the ongoing prevention of appendicitis. The practical implications of this research address various stakeholders, including teachers, school health workers, and local health departments. It is recommended that this animated video media be integrated into adolescent health education programs, including physical education and health classes, School Health Unit (UKS) activities, and outreach programs facilitated by relevant agencies. Regular outreach activities and screenings of educational animated videos should also be implemented in schools, particularly at SMP Negeri 3 Meulaboh, as a way to implement the findings of this research. It is hoped that after conducting outreach and education through animated media, students will improve their understanding and demonstrate positive attitudes towards appendicitis prevention, as well as be able to consistently implement a healthy lifestyle.

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