



The Effect of Animated Video Educational Media on Anemia Prevention Attitudes in Adolescent Females at SMPN 2 Mandastana, Barito Kuala

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Article Info

Article history:

Received Feb, 2026

Revised April, 2026

Accepted May, 2026

Keywords:

Education

Video

Attitudes

Anemia

Teenagers

ABSTRACT

Anemia continues to be a major health concern among adolescent girls because it can negatively influence educational achievement, physical well-being, and future reproductive health. Inadequate attitudes toward anemia prevention are recognized as one of the contributing factors to the occurrence of anemia in this population. Innovative educational approaches, including animated video media, have the potential to enhance adolescents' knowledge and encourage more favorable health-related attitudes. Therefore, this study was conducted to evaluate the impact of animated educational videos on anemia prevention attitudes among female students at SMPN 2 Mandastana, Barito Kuala Regency. A quantitative approach was applied using a pre-experimental one-group pretest-posttest design. The study involved 69 adolescent girls who were recruited through purposive and cluster sampling methods. Data were collected using a Likert-scale questionnaire that had previously met validity and reliability requirements. Statistical analysis was performed using the Wilcoxon Signed-Rank Test. The findings revealed that before the intervention, more than half of the participants (52.2%) exhibited unfavorable attitudes toward anemia prevention. Following the educational intervention delivered through animated videos, positive attitudes were observed in nearly all respondents (98.6%). Furthermore, the average attitude score increased substantially from 61.49 before the intervention to 85.26 after the intervention, with statistical analysis indicating a significant difference ($p = 0.001$; $p < 0.05$). These results demonstrate that animated educational videos are effective in improving attitudes toward anemia prevention among adolescent girls at SMPN 2 Mandastana, Barito Kuala Regency. Consequently, animated video media may serve as an attractive and effective health education strategy for fostering positive preventive attitudes toward anemia in adolescents.

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1. INTRODUCTION

Adolescence, which encompasses individuals aged 10–19 years, is a developmental stage characterized by substantial physical, psychological, and social changes that increase nutritional requirements and influence overall health status [1]. In adolescent girls, menstrual blood loss contributes to a greater demand for iron, placing them at a higher risk of iron deficiency and anemia. This condition can adversely affect cognitive function, concentration, physical performance, and academic achievement. Moreover, anemia may lead to long-term consequences for reproductive health, including an increased risk of pregnancy-related complications and unfavorable maternal and neonatal outcomes [2–4].

Anemia remains a significant public health concern worldwide. It is estimated that millions of adolescents are affected by anemia, making it a persistent global health challenge [5]. In Indonesia, anemia among adolescent girls

remains a major public health concern, with prevalence rates still relatively high and varying across different regions. In South Kalimantan Province, the prevalence has been reported at 17.81%, while Barito Kuala Regency is among the districts with rates exceeding the provincial average [6]. Reports from the Barito Kuala District Health Office indicate a rising trend in anemia cases among adolescent girls, particularly in the Mandastana area, where prevalence increased from 12% in 2023 to 24% in 2024. These findings emphasize the continuing need for effective and sustainable interventions to reduce anemia among adolescent girls.

Attitudes are recognized as an important factor influencing health-related behaviors in addition to knowledge. Previous studies have demonstrated that adolescents with unfavorable attitudes toward anemia prevention are more likely to experience anemia [7,8]. Therefore, educational strategies should be designed not only to improve knowledge but also to encourage positive attitudes toward preventive practices. Animated video media have emerged as a promising educational tool because they integrate visual and auditory components, making information easier to comprehend and more engaging for adolescent learners. Compared with conventional educational approaches, such as leaflets, posters, radio messages, and lectures, animated videos are generally more compatible with adolescents' learning preferences [9]. Several studies have reported that educational programs delivered through animated videos are effective in improving both knowledge and attitudes related to anemia prevention among adolescent girls [10,11]. However, evidence regarding changes in anemia-prevention attitudes among junior high school girls after receiving animation-based education, particularly in the Mandastana area, is still limited.

Based on these considerations, this study was undertaken to evaluate differences in attitudes toward anemia prevention among adolescent girls before and after receiving educational interventions through animated video media at SMPN 2 Mandastana, Barito Kuala Regency. The findings are expected to contribute evidence supporting the development of school-based health promotion programs that utilize educational media to enhance adolescents' awareness and preventive behaviors regarding anemia.

2. RESEARCH METHOD

This study applied a quantitative approach using a one-group pretest–posttest pre-experimental design. Participants were recruited through purposive and cluster sampling methods. The population females students 75 female students enrolled in grades 7, 8, and 9 at SMPN 2 Mandastana, from which 69 respondents selected based on the slovin ($\alpha = 0.05$). Prior to data collection, the questionnaire underwent validity and reliability testing to confirm its appropriateness for the study. Data collection was conducted at SMPN 2 Mandastana, Barito Kuala Regency, in December 2025 after obtaining official approval, ethical clearance, and informed consent from the participants. Descriptive (univariate) analysis was performed to summarize respondent characteristics and study variables using frequency and percentage distributions. Differences in attitudes toward anemia prevention before and after the intervention were examined using the Wilcoxon Signed-Rank Test as part of the inferential (bivariate) analysis.

3. RESULTS AND DISCUSSION

3.1 RESULTS

3.1.1. Univariate Analysis

Referring to the study involving 69 respondents the results are presented as follows:

Table 1. Distribution of Respondent Characteristics

Characteristics	Frequency	Percentage (%)
Age		
12 years	16	23.2
13 years	17	24.6
14 years	36	52.2
Body Mass Index (BMI)		
Underweight	4	5.8
Normal Weight	23	33.3
Overweight	40	58.0
Obese	2	2.9
Pretest Attitude		
Positive	33	47.8
Negative	36	52.2
Posttest Attitude		
Positive	68	98.6
Negative	1	1.4

Based on the findings from 69 adolescent girl respondents at SMPN 2 Mandastana, Barito Kuala, the majority of respondents were 14 years old, accounting for 36 individuals (52.2%). Based on Body Mass Index (BMI), most respondents were classified as overweight, comprising 40 individuals (58.0%). The majority of respondents experienced menarche at the age of ≥ 12 years, totaling 36 individuals (52.2%). Regarding iron supplementation, most respondents had consumed Iron Supplement Tablets (IST), with 48 individuals (69.6%) reporting previous consumption. Most respondents had no history of disease, accounting for 60 individuals (87.0%). The most common eating frequency was three meals per day, reported by 40 respondents (58.0%). Before receiving the animated educational video intervention, the majority of respondents demonstrated negative attitudes toward anemia prevention, accounting for 36 individuals (52.2%). After receiving the animated educational video education, almost all respondents demonstrated positive attitudes toward anemia prevention, accounting for 68 individuals (98.6%).

3.1.2. Bivariate Analysis

According to Table 2, the majority of respondents demonstrated positive attitudes toward anemia prevention after receiving the animated educational video intervention, accounting for 68 individuals (98.6%).

Table 2. Pretest and Posttest Attitude Scores

Attitude	N	Min	Max	Mean	Std. Deviation	<i>p-value</i>
<i>Pre-test</i>	69	36	89	61.49	17.429	0.001
<i>Post-test</i>	69	47	100	85.26	9.588	

According to Table 2, nearly all participants demonstrated favorable attitudes toward anemia prevention after receiving health education through animated videos, with 68 respondents (98.6%) categorized as having positive attitudes. The analysis was conducted using the non-parametric Wilcoxon Signed-Rank Test. The findings showed that the average attitude score before the animated video intervention was 61.49, with scores ranging from 36 to 89. After the intervention, the mean score increased to 85.26, with a range of 47 to 100. The Wilcoxon test produced a *p*-value of 0.001 ($p < 0.05$), indicating that H_0 was rejected and H_1 was accepted. These results suggest that animated educational videos significantly improved attitudes toward anemia prevention among adolescent girls at SMPN 2 Mandastana, Barito Kuala.

3.2 Discussion

The study findings indicated that most respondents were 14 years old and had already experienced menarche. Despite this, their understanding of nutritional needs and anemia prevention remained limited, placing them at greater risk of nutritional deficiencies during adolescence and menstruation. Furthermore, most participants had a low Body Mass Index (BMI), which may reflect inadequate dietary intake, poor nutritional balance, and insufficient nutrient consumption. Although the majority reported eating three meals daily, the nutritional quality and variety of foods consumed may not have been sufficient to meet iron requirements, thereby reducing the effectiveness of anemia prevention efforts.

The results also showed that many respondents had previously taken Iron Supplement Tablets (IST). However, some participants did not consume them consistently due to limited knowledge regarding their benefits, concerns about possible side effects, and poor adherence to supplementation recommendations. In addition, most respondents reported no history of illness, suggesting that anemia risk among this group was more strongly associated with nutritional factors and health-related behaviors rather than infectious diseases. These findings emphasize the importance of health education in strengthening adolescents' knowledge and attitudes regarding anemia prevention. Prior to the animated video intervention, negative attitudes toward anemia prevention were predominant among respondents. This may indicate insufficient awareness and preventive practices related to anemia. Individual attitudes are shaped by multiple factors, including knowledge, personal experiences, social influences, environmental conditions, and access to information sources [12]. Adolescents with limited positive attitudes are generally at greater risk of engaging in unhealthy behaviors [13]. Therefore, animated video media were selected as an educational strategy because they are engaging, interactive, and well suited to adolescent learning preferences.

Following the intervention, nearly all respondents demonstrated positive attitudes toward anemia prevention. Animated video media are considered effective because they combine visual and audio elements, enabling information to be delivered more clearly, understood more easily, and retained longer by adolescents [14,15]. The observed improvement in attitudes suggests that educational content delivered through animated videos can enhance adolescents' understanding of healthy dietary practices, regular consumption of Iron Supplement Tablets (IST), and other preventive

behaviors that support anemia prevention. The Wilcoxon Signed-Rank Test yielded a p-value of 0.001 ($p < 0.05$), confirming that animated educational videos had a statistically significant effect on attitudes toward anemia prevention among adolescent girls at SMPN 2 Mandastana, Barito Kuala. The mean attitude score increased from 61.49 before the intervention to 85.26 afterward. These findings are consistent with previous studies showing that audiovisual health education is more effective than conventional educational approaches in improving knowledge and attitudes [16,17]. Consequently, animated educational videos may serve as an effective health promotion strategy within school settings to enhance awareness and foster positive attitudes toward anemia prevention among adolescent girls.

CONCLUSION

The findings of this study indicate that animated educational videos had a significant effect on anemia prevention attitudes among adolescent girls at SMPN 2 Mandastana, Barito Kuala. The results of the Wilcoxon Signed-Rank Test yielded a p-value of 0.001 ($\alpha = 0.05$), indicating that H_a was accepted and H_0 was rejected. In addition, the mean attitude score increased from 61.49 pretest to 85.26 posttest. These findings indicate that the provision of animated educational video media was effective in improving positive attitudes among adolescent girls toward anemia prevention.

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