
The Effect Of Educational Videos About Anemia On The Knowledge Of Pregnant Women In The Working Area Of Telaga Dewa Public Health Center, Bengkulu City

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Abstract

Anemia in pregnant women remains a significant health problem that can increase the risk of complications for both mother and fetus. Low levels of knowledge among pregnant women are one of the contributing factors to the occurrence of anemia. Therefore, effective educational media are needed, one of which is video-based education. This study aimed to determine the effect of an educational video about anemia on improving the knowledge of pregnant women at Telaga Dewa Public Health Center, Bengkulu City. This study used a pre-experimental design with a one-group pretest-posttest approach. A total of 107 pregnant women were selected using purposive sampling technique. Data were collected using a questionnaire to measure the level of knowledge before and after the intervention. Data analysis was conducted using normality test and paired t-test. The results showed that before the intervention, most respondents had a moderate level of knowledge with a mean score of 21.03. After receiving education through video, all respondents were categorized as having good knowledge with the mean score increasing to 26.79. The normality test indicated that the data were normally distributed ($p=0.178 > 0.05$). The paired t-test showed a significance value of 0.000 (<0.05) with a mean difference of -5.757, indicating a significant increase in knowledge after the intervention. In conclusion, educational videos about anemia are effective in improving the knowledge of pregnant women and can be used as an alternative method of delivering health education to prevent anemia during pregnancy.

Keywords: **Anemia, Knowledge, Pregnant Women, Video Education, Health Education.**

INTRODUCTION

Maternal Mortality Rate (MMR) in Indonesia is generally classified into direct causes (Direct Obstetric Death) and indirect causes (Indirect Obstetric Death). Data indicate that direct causes are dominated by hypertensive disorders at 33.07%, obstetric hemorrhage at 27.03%, and non-obstetric complications at 15.7%. However, behind the high rate of hemorrhage, there is a major risk factor that often becomes an indirect cause of maternal death, namely anemia during pregnancy (Kemenkes, 2020).

Anemia is a condition when the body lacks red blood cells or hemoglobin (Hb), causing impaired oxygen distribution to all body tissues. Hemoglobin (Hb) levels in pregnant women, based on the latest classification from the World Health Organization (WHO), which has also been adopted in the Indonesian midwifery care standards in 2025, diagnose anemia in pregnant women when hemoglobin levels are below 11.0 g/dL. Hemoglobin decreases during pregnancy due to the phenomenon of hemodilution or blood dilution, where the increase in plasma volume is not proportional to the increase in red blood cell mass.

Anemia among pregnant women in 2023 was around 35.5% worldwide, meaning that more than one-third of pregnant women face this risk. This condition not only affects maternal health but also influences fetal growth and development (WHO, 2023). For mothers, this condition can increase the risk of postpartum hemorrhage and excessive fatigue. Moreover, oxygen deficiency due to anemia can cause babies to experience respiratory distress at birth (Wang et al., 2025). For the fetus, maternal anemia can lead to low birth weight, premature birth, and growth and developmental disorders (Sitepu et al., 2021).

Considering these impacts, it is very important to prevent and manage anemia during pregnancy. Data from the Bengkulu Provincial Health Office in 2021 showed that 1,850 out of 22,082 pregnant

women were diagnosed with anemia through examinations. As an effort to reduce the prevalence of anemia, the Indonesian government has strengthened the standard of Antenatal Care (ANC) services to a minimum of six visits. This standard aims to ensure early detection of anemia and guarantee responsive interventions for every identified risk (Hafsah et al., 2024). However, the effectiveness of this program is still insufficient because field conditions show that the high prevalence of anemia often originates from the low level of knowledge among pregnant women.

Pregnant women's knowledge about anemia is influenced by various factors, one of which is health education provided by health workers. The use of educational video media is a strategic solution to bridge this communication gap, considering its audio-visual characteristics that are able to simplify complex medical materials into information that is easier for pregnant women to understand and remember.

Several studies have shown that video media can improve health knowledge and behavior. For example, research by (Putu et al., 2025) showed that mothers' knowledge about anemia during pregnancy increased after being given educational videos, leading to better prevention of anemia during pregnancy. This was also proven by the increase in questionnaire scores after the intervention. These findings are in line with previous studies regarding the effect of education on anemia prevention and management on the knowledge and attitudes of pregnant women at Haurpanggung Public Health Center (Sukmawati et al., 2021). In addition, advances in information technology currently greatly support the use of video media for health education.

The Bengkulu City Health Office (Dinkes Kota, 2024) stated that there are three Public Health Centers with the highest number of pregnant women, namely Telaga Dewa Public Health Center with 600 pregnant women, Jembatan Kecil Public Health Center with 578 pregnant women, and Sawah Lebar Public Health Center with 464 pregnant women. Based on a survey conducted by the researcher, it was found that pregnant women with anemia at Jembatan Kecil Public Health Center were 53 people, Sawah Lebar Public Health Center were 50 people, and Telaga Dewa Public Health Center, Bengkulu City, had the highest number of pregnant women experiencing anemia, with approximately 57 people. Therefore, based on the data described above, the researcher was interested in conducting research at Telaga Dewa Public Health Center, Bengkulu City, with the title "The Effect of Educational Videos About Anemia on the Knowledge of Pregnant Women in the Working Area of Telaga Dewa Public Health Center, Bengkulu City, 2026."

The problem formulation of this study is whether there is an effect of educational videos about anemia on the knowledge of pregnant women in the working area of Telaga Dewa Public Health Center, Bengkulu City, in 2026.

The general objective of this study is to determine the effect of educational videos about anemia on increasing the knowledge of pregnant women in the working area of Telaga Dewa Public Health Center, Bengkulu City.

The specific objectives are to determine the frequency distribution of the knowledge level of pregnant women before being given educational videos about anemia in the working area of Telaga Dewa Public Health Center, Bengkulu City; to determine the frequency distribution of the knowledge level of pregnant women after being given educational videos about anemia in the same area; and to determine the effect of educational videos about anemia on pregnant women in the working area of Telaga Dewa Public Health Center, Bengkulu City.

This study is expected to provide benefits for the community, especially pregnant women, by increasing their knowledge about the importance of anemia education during pregnancy so that they can recognize symptoms early and obtain appropriate treatment to prevent further complications. For institutions, the results of this study can provide information and input regarding the effect of educational videos about anemia on the knowledge of pregnant women. For researchers, this study can increase knowledge and experience regarding the effect of educational videos on the knowledge of pregnant women. For practice fields, this study can be used as a reference and information source to maintain the quality of services, especially regarding educational knowledge about anemia.

RESEARCH METHODS

This study was a quantitative experimental study using a pre-experimental design with a one-group pretest-posttest approach. The population consisted of 600 pregnant women in the working area of Telaga Dewa Public Health Center, Bengkulu City (Dinkes, 2024). The sample included pregnant women in the first to third trimester who met the inclusion and exclusion criteria. The sampling technique used was non-probability sampling with purposive sampling. The sample size was determined using the Lemeshow formula with an additional 10% to anticipate dropouts, resulting in a total of 107 respondents.

The intervention was conducted by providing educational videos about anemia without a control group. Knowledge levels were measured twice using questionnaires before the intervention (pretest) and after the intervention (posttest). The educational video was developed through stages adapted from Sugiyono (2022), including identification of potential problems, data collection, product design, validation, revision, initial testing, product revision, and product usage testing. The video contained information about the definition, causes, signs and symptoms, impacts, prevention, and management of anemia during pregnancy.

The independent variable in this study was educational video media, while the dependent variable was the level of knowledge of pregnant women about anemia. Data were collected using a questionnaire developed by Arifiyani (2025), consisting of 30 true or false questions with a validity value of 0.798, indicating that the questionnaire was valid and reliable.

The research procedure included obtaining research permits, preparing questionnaires through Google Forms, delivering the pretest, providing the educational video intervention, and conducting the posttest. Data processing involved editing, coding, data entry, and cleaning. Data analysis consisted of univariate analysis to describe the distribution of knowledge levels before and after the intervention and bivariate analysis using the paired sample t-test because the data were normally distributed.

This study was conducted in the working area of Telaga Dewa Public Health Center, Bengkulu City, from January 1 to January 31, 2026. Ethical approval was obtained from the University of Jember with ethical clearance number 3658/UN25.8/KEIPK/DL/2026. The study applied ethical principles, including respect for persons, beneficence, justice, informed consent, anonymity, and confidentiality.

RESULTS AND DISCUSSION

General Description of the Research Location

This study was conducted at Telaga Dewa Public Health Center located in Selebar District, Bengkulu City. The working area covers approximately 27.74 km² with a population of 53,254 people and 12,323 households, including four villages: Pagar Dewa, Bumi Ayu, Sumur Dewa, and Sukarami. Telaga Dewa Public Health Center aims to create an independent and healthy community through optimal health services as part of achieving a healthy Indonesia.

The study involved 107 pregnant women who met the inclusion criteria. Data collection began with a pre-test questionnaire to measure the level of knowledge regarding anemia during pregnancy. Respondents then received an intervention in the form of educational videos about anemia, followed by a post-test questionnaire to assess changes in their knowledge.

Univariate Analysis

Univariate analysis was conducted to describe the frequency distribution of pregnant women's knowledge levels before and after receiving educational videos about anemia.

Table 1. Frequency Distribution of Pregnant Women’s Knowledge (Pre-test and Post-test)

Pengetahuan Ibu Hamil	PRE					POST				
	F	%	Min	Max	Mean	F	%	Min	Max	Mean
Baik	9	8,4	18	26	21,03	107	100	25	29	1,353
Sedang	98	91,6	-	-	-	-	-	-	-	-
Kurang	-	-	-	-	-	-	-	-	-	-
Total	107	100	18	26	21,03	107	100	26	29	1,353

Source: Processed data, 2026

Based on Table 1, before receiving educational videos (pre-test), most respondents (91.6%) had a moderate level of knowledge with a mean score of 21.03 and a standard deviation of 1.599, indicating relatively low data variation. After receiving educational videos (post-test), all respondents (100%) were categorized as having good knowledge, with the mean score increasing to 26.79 and a standard deviation of 1.353, indicating a relatively small data distribution.

According to Arikunto (2012), percentage categories are interpreted as follows: 0% = none of the respondents; 1–25% = a small proportion of respondents; 26–49% = almost half of respondents; 50% = half of respondents; 51–75% = most respondents; 76–99% = almost all respondents; and 100% = all respondents.

Normality Test

The normality test was conducted to determine whether the research data were normally distributed as a requirement for selecting the appropriate statistical test. Since the paired t-test can only be applied to normally distributed data, this test was performed on the pre-test and post-test knowledge scores of pregnant women.

Table 2. Kolmogorov-Smirnov Normality Test

N	Mean	Std Dev	Test Statistik	Sig
107	0.0000	0,910	0,074	0,178 ^e

Source: Processed data, 2026

Based on Table 2, the Kolmogorov-Smirnov test showed a significance value of 0.178 (>0.05), indicating that the data were normally distributed. Therefore, further analysis could be performed using a parametric test, namely the paired t-test.

Bivariate Analysis

Bivariate analysis was conducted to determine the effect of educational videos about anemia on the knowledge of pregnant women.

Table 3. The Effect of Educational Videos About Anemia on Pregnant Women’s Knowledge (Paired T-Test)

	Paired Differences					
	Mean	Std. Dev	Std. Error Mean	95% Confidence Interval of the Difference		Sig. (2-tailed)
				Lower	Upper	
Pretest Posttest	-5,757	1,089	0,105	-5,966	-5,548	106 0,000

Source: Processed data, 2026

Based on Table 3, the paired t-test showed a mean difference of -5.757, indicating an increase in knowledge after the intervention. The increase between pre-test and post-test scores was 5.757 points, with a significance value of 0.000 (<0.05), indicating that educational videos had a significant effect on increasing the knowledge of pregnant women about anemia.

Table 4. Correlation Value of the Effect of Educational Videos About Anemia on Pregnant Women’s Knowledge

Paired Samples Correlations			
	N	Correlation	Sig
Pretest & Posttest	107	0,740	0,000

Source: Processed data, 2026

Based on Table 4, the paired samples correlation showed a correlation coefficient (r) of 0.740 with a significance value of 0.000 (<0.05), indicating a strong and significant relationship between pre-test and post-test scores. The positive correlation indicates a direct relationship, where respondents with higher pre-test scores tended to have higher post-test scores. However, this correlation test was used only to determine the relationship between the two measurements and not to measure the improvement after the intervention.

Discussion

Knowledge of Pregnant Women About Anemia Before Receiving Educational Videos

The results showed that most respondents had a moderate level of knowledge (91.6%) with a mean score of 21.03 before receiving educational videos. This indicates that pregnant women’s knowledge about anemia was not optimal, likely due to limited effective and continuous health information. According to Rahma Susilawati et al. (2023), knowledge is obtained through the human sensory process, especially sight and hearing, and is influenced by the intensity and quality of information received. Based on the stages of knowledge proposed by Notoatmodjo (2023), respondents with moderate knowledge were generally at the knowing and understanding stages but had not fully reached the ability to apply and analyze information. This classification is in accordance with Swarjana (2022), who stated that moderate knowledge is within the range of 60–79% correct answers. Limited education, experience, and access to health information may contribute to inadequate understanding of anemia prevention (Nurjanah, 2023). Therefore, effective health education is needed to improve pregnant women’s understanding of anemia prevention and management.

Knowledge of Pregnant Women About Anemia After Receiving Educational Videos

After receiving audiovisual educational videos, all respondents (100%) achieved a good level of knowledge with an increased mean score of 26.79. This improvement indicates that educational videos provide clear, interesting, and easy-to-understand information. According to Syaiful et al. (2020), audiovisual media involve both visual and auditory senses, making information easier to understand and remember. Educational videos can systematically explain the definition, causes, signs and symptoms, impacts, prevention, and management of anemia during pregnancy. Increased knowledge is essential because anemia can lead to maternal fatigue, pregnancy complications, premature birth, and low birth weight; therefore, understanding nutrition, iron intake, and adherence to iron supplementation is important (Kemenkes RI, 2020; Saifuddin, 2020). These findings are consistent with Elfrida (2024) and Fauziah (2023), who reported that educational videos effectively improve pregnant women’s knowledge. However, Sari (2022) and Rahmawati (2021) found that video effectiveness may vary depending on education level, motivation, attention, and ability to understand visual information. In this study, the systematically designed educational video effectively improved pregnant women’s knowledge.

Normality Test

The normality test showed a significance value of 0.178 (>0.05), indicating that the data were normally distributed. This suggests that the knowledge scores before and after the intervention had a balanced distribution and fulfilled the assumptions for parametric statistical analysis. The normality test is necessary to determine whether parametric tests such as the paired t-test can be used. Since the data met the normality criteria, the paired t-test was considered appropriate for further analysis.

The Effect of Educational Videos on Pregnant Women's Knowledge

The paired t-test showed a significance value of 0.000 (<0.05) with a mean difference of -5.757, indicating a significant increase of 5.757 points in knowledge scores after the intervention. These findings demonstrate that educational videos have a strong effect on improving pregnant women's knowledge about anemia. According to Gunawan (2021), health education aims to improve knowledge, shape attitudes, and encourage healthier behaviors. Educational videos are effective because they deliver information systematically and involve both visual and auditory senses, making messages easier to understand and remember (Damayanti, 2021). Increased knowledge regarding anemia is important because this condition can cause fatigue, postpartum complications, premature birth, and low birth weight (Arisami & Wahyuni, 2023; Sitepu et al., 2021). The findings are supported by Fauziah (2023) and Elfrida (2024), who reported that educational videos improve understanding and memory of health information.

The correlation test showed an r value of 0.740 with a significance value of 0.000 (<0.05), indicating a strong and significant relationship between pre-test and post-test scores. This suggests that changes in knowledge after the intervention followed a consistent pattern, where respondents with better initial knowledge tended to achieve higher knowledge after receiving educational videos.

CONCLUSIONS

Based on the results of this study regarding the effect of educational videos about anemia on improving the knowledge of pregnant women in the working area of Telaga Dewa Public Health Center, Bengkulu City, it can be concluded that the use of educational video media is effective in increasing pregnant women's knowledge. Before the intervention, most respondents (91.6%) had a moderate level of knowledge. After receiving educational videos, all respondents showed improvement and reached a good level of knowledge, indicating a positive change in their understanding of anemia during pregnancy.

The results of the paired t-test showed a significant effect of educational videos on increasing pregnant women's knowledge, with a significance value of 0.000 and a mean increase of 5.757 points after the intervention. This indicates that educational videos are an effective method for delivering health education to pregnant women.

Based on these findings, pregnant women are expected to be more active in seeking and applying health information related to anemia, including recognizing early symptoms, maintaining proper nutrition, and regularly consuming iron supplements to prevent complications during pregnancy. Institutions are expected to use the findings of this study as a reference for developing knowledge, particularly in maternal and child health, and to encourage the use of educational videos as an innovative learning method.

Future researchers are encouraged to develop this study by including other variables, such as attitudes and behaviors of pregnant women, using various educational methods, and expanding the sample size and research locations to obtain broader findings. Health workers are also expected to utilize educational videos as a continuous educational tool to improve the quality of health services and enhance pregnant women's knowledge, which may lead to better health behaviors.

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