

Original Article

Educational videos improve pregnant women's knowledge of pregnancy danger signs in the public health center

Andi Elfira¹, Rifzul Maulina²

¹Midwifery Coordinator, Kotabunan Public Health Center, Indonesia

²Department of Midwifery, Institut Teknologi Sains dan Kesehatan RS dr. Soepraoen, Indonesia

Abstract:

Pregnancy danger signs require early recognition because delayed care-seeking can increase maternal and fetal risk. Educational videos can deliver concise, repeated, and visually clear information during antenatal education. This study analyzed the effect of educational videos on pregnant women's knowledge of pregnancy danger signs in the working area of Kotabunan Public Health Center. This quantitative study used a pre-experimental one-group pretest-posttest design. The sample consisted of 66 pregnant women selected by purposive sampling. Respondents completed a structured knowledge questionnaire before and after receiving video-based education. Data were analyzed using descriptive statistics and the Wilcoxon signed-rank test. Most respondents were aged 26-35 years (53.0%), had senior high school education (65.2%), and were primigravida (36.4%). Before the intervention, 30 respondents (45.5%) had good knowledge, 26 (39.4%) had sufficient knowledge, and 10 (15.1%) had poor knowledge. After the intervention, 64 respondents (97.0%) had good knowledge and 2 (3.0%) had sufficient knowledge. The mean knowledge score increased from 71.82 ± 15.68 to 91.29 ± 5.71 . The Wilcoxon test showed a significant difference before and after education ($p < 0.001$). Educational videos significantly improved pregnant women's knowledge of pregnancy danger signs. Video-based education can be integrated into antenatal classes and community health promotion at primary health care facilities.

Keywords:

educational video, knowledge, pregnancy danger signs, pregnant women, public health center

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Corresponding Author:

Rifzul Maulina
rifzulmaulina@itsk-soepraoen.ac.id

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INTRODUCTION

Pregnancy is a physiological process, but it can become a high-risk condition when danger signs are not detected early. The World Health Organization reported that about 260,000 women died during and following pregnancy and childbirth in 2023, while the Indonesian Health Profile remains an important national reference for monitoring maternal health programs (World Health Organization, 2025; Ministry of Health of the Republic of Indonesia, 2024). These data show the need for stronger preventive action at the primary health care level.

Pregnancy danger signs include vaginal bleeding, severe headache, blurred vision, severe abdominal pain, fever, convulsions, swelling of the face or hands, reduced fetal movement, premature rupture of membranes, and persistent vomiting. Pregnant women who recognize these signs can seek care sooner and reduce referral delays. Previous studies report that knowledge of danger signs is related to pregnant women's practice when complications occur and to readiness for early detection (Maryuni & Anggraeni, 2021; Retnaningtyas et al., 2022).

Maternal knowledge does not only come from formal education. It also develops through antenatal care counseling, family support, digital media, and health promotion activities. Systematic evidence indicates that knowledge of danger signs is associated with antenatal care compliance. Digital and mobile-based information can also strengthen health messages when the content is accurate, clear, and easy to access (Kolantung et al., 2021; Dianti, 2021).

Educational videos are relevant for maternal health promotion because they combine audio, visual, text, and demonstration elements. A systematic review on digital patient education in maternal health reported that digital education can support maternal understanding and engagement. Audiovisual education has also been reported to improve pregnant women's knowledge in several health education contexts (Schnitman et al., 2022; Pratama, 2023).

Recent publications also support the value of structured education and health technology. Studies on pregnant women show that education through structured media can improve knowledge related to maternal health and nutrition, while other articles show the wider use of health technology and educational video media in clinical and community settings (Lestari et al., 2025; Novelia et al., 2021; Putra Adhitama et al., 2023). In the working area of Kotabunan Public Health Center, video-based education may help health workers consistently deliver information on pregnancy danger signs. This study aimed to determine the effect of educational videos on increasing pregnant women's knowledge of pregnancy danger signs.

METHOD

This study used a quantitative pre-experimental design with one-group pretest-posttest. The design measured pregnant women's knowledge before and after educational video intervention. The study was conducted in the working area of Kotabunan Public Health Center in October 2025.

The population consisted of pregnant women registered at Kotabunan Public Health Center. The sample included 66 pregnant women selected using purposive sampling. The inclusion criteria were pregnant women who attended the education session, agreed to participate, and completed both pretest and posttest questionnaires.

The intervention consisted of health education about pregnancy danger signs using an educational video. The video explained the definition of pregnancy danger signs, major warning symptoms, recommended actions, and the need to seek immediate health care when danger signs appear.

The research instrument was a structured questionnaire on knowledge of pregnancy danger signs. Respondents completed the questionnaire before and after watching the educational video.

The knowledge score was then classified into good, sufficient, and poor categories according to the researchers' scoring criteria.

Data analysis consisted of univariate and bivariate analysis. Univariate analysis described respondent characteristics and knowledge categories. Bivariate analysis used the Wilcoxon signed-rank test to compare knowledge scores before and after the intervention. A p-value lower than 0.05 was considered statistically significant.

RESULTS

This section presents respondent characteristics, knowledge categories before and after video-based education, and the pretest-posttest statistical test.

Table 1. Respondent Characteristics (n = 66)

Characteristic	Frequency	Percentage (%)
Age		
17 years	2	3.0
18-25 years	24	36.4
26-35 years	35	53.0
36-45 years	5	7.6
Education		
Elementary school	1	1.5
Junior high school	9	13.6
Senior high school	43	65.2
Bachelor degree	13	19.7
Parity		
Primigravida	24	36.4
Secundigravida	19	28.8
Multigravida	17	25.8
Grand multigravida	6	9.1

Table 2. Knowledge Categories Before and After Educational Video Intervention (n = 66)

Knowledge Category	Pretest n (%)	Posttest n (%)
Good	30 (45.5)	64 (97.0)
Sufficient	26 (39.4)	2 (3.0)
Poor	10 (15.1)	0 (0.0)

Table 3. Wilcoxon Signed-Rank Test of Knowledge Scores

Variable	n	Mean	Standard Deviation	p value
Pretest knowledge score	66	71.82	15.680	< 0.001
Posttest knowledge score	66	91.29	5.705	

Table 1 shows that most respondents were 26-35 years old, had a senior high school education, and were primigravida. Table 2 revealed that after video-based education, the proportion

of respondents with good knowledge increased from 45.5% to 97.0%. No respondent remained in the poor knowledge category after the intervention. Table 3 shows that the mean knowledge score increased by 19.47 points after video-based education. The Wilcoxon signed-rank test showed a statistically significant difference between pretest and posttest knowledge scores ($p < 0.001$).

DISCUSSION

The study found that educational videos significantly improved pregnant women's knowledge of pregnancy danger signs. The mean score increased from 71.82 before education to 91.29 after education. The categorical result also showed a clear improvement, with almost all respondents reaching the good knowledge category after the intervention.

Most respondents were 26-35 years old. This age group falls within the common reproductive age range and may be better prepared to receive pregnancy-related information. Education level also mattered. Most respondents had a senior high school education, which may support the ability to read, understand, and discuss health messages. Previous research has reported that maternal education and husband support are associated with pregnant women's knowledge of pregnancy danger signs (Agustin et al., 2024).

The finding is consistent with previous studies on pregnancy danger signs. Knowledge helps pregnant women identify symptoms that need immediate medical attention. Better knowledge also supports antenatal care compliance and early action when complications occur (Maryuni & Anggraeni, 2021; Kolantung et al., 2021). This matters because delayed recognition and delayed referral can increase the risk of preventable maternal and fetal complications.

Video-based education has practical strengths for public health center services. It presents information through image, sound, text, and narration. This format can reduce misunderstanding and help respondents repeat key messages. Similar results have been reported in studies using warning booklets, maternal classes, audiovisual media, and animated health education (Ombi et al., 2021; Rahmawati et al., 2023; Suhartika & Mulyati, 2021; Munaaya Fitriyya & Irfani, 2021).

The results also align with recent journal evidence. Previously, research on education using booklet media among pregnant women found a significant increase in knowledge after structured education. Other studies also show that educational videos and animated video media can improve health-related knowledge and support health service education (Lestari et al., 2025; Listyawan et al., 2026; Kartikasari et al., 2026).

Digital patient education is useful because pregnant women can access repeated information outside the counseling session. This is relevant for public health centers serving large geographic areas or communities with limited time for face-to-face counseling. However, video should not replace direct consultation. It should complement antenatal care counseling, risk screening, and referral education by midwives or other health workers (Schnitman et al., 2022; Teweldemedhin et al., 2021).

The intervention can be integrated into antenatal classes, waiting-room education, WhatsApp groups for pregnant women, and home-based follow-up. The content should use simple language,

local terms, and clear action steps, such as when to visit the public health center and when to seek emergency referral. This approach is consistent with broader health education studies that show video media can improve knowledge when messages are clear, relevant, and repeated (Pratama, 2023; Zakiyah & Rosyid, 2023).

This study has limitations. It used a one-group pretest-posttest design without a control group. The study measured short-term knowledge change, not long-term retention, attitude, behavior, antenatal care attendance, referral behavior, or maternal outcomes. The sample also came from a single public health center, so generalizations should be made with caution. Future studies should use controlled designs, larger samples, follow-up measurements, and behavioral outcomes.

CONCLUSION

Educational videos significantly improved pregnant women's knowledge of pregnancy danger signs in the working area of Kotabunan Public Health Center. The mean knowledge score increased from 71.82 to 91.29, and the proportion of respondents with good knowledge increased from 45.5% to 97.0%. Public health centers should consider integrating video-based education into antenatal classes and routine maternal health promotion. Future research should evaluate long-term knowledge retention, attitudes, care-seeking behavior, and pregnancy outcomes.

Midwives can use educational videos as a standard counseling tool during antenatal care and pregnant women's classes. Public health centers can distribute the video via WhatsApp groups so pregnant women can replay it at home. The video should include clear danger signs, immediate action steps, referral information, and contact information for local public health centers.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

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AUTHOR CONTRIBUTIONS

Andi Elfira contributed to data collection and manuscript drafting. Rifzul Maulina contributed to study supervision, concept refinement, and manuscript revision. Both authors approved the final manuscript.

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