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THE EFFECT OF VIDEO-BASED EDUCATION ON KNOWLEDGE, ATTITUDES, AND PREVENTIVE PRACTICES REGARDING HIGH-RISK PREGNANCY AMONG PREGNANT WOMEN

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ABSTRACT
High-risk pregnancy is a dangerous condition because it can lead to an increase in maternal and fetal mortality. Factors such as knowledge, education, environment, habitual behavior and socio-culture as well as the constrained delivery of health information are the causes of high-risk pregnancy. The general objective of this study was to explain the influence of video education on behavior in preventing high-risk pregnancies. Quasi Pre-Experimental with 33 pregnant women in the control group and 33 pregnant women with purposive sampling which was carried out in the Walikukun Health Center. This study covers the dependent variable, namely behavior (knowledge, attitudes, and actions) of high-risk pregnancy prevention and independent variables of education through videos. Statistical analysis of the study using Wilcoxon Signed Rank Test and Mann-Whitney U Test. The results of the study showed that there was effect of education through video on knowledge (p value= 0.000, attitude (p value = 0.000) and actions (p value 0.003) (p <0.05) on the prevention of high-risk pregnancy in pregnant women . in preventing high-risk pregnancies.

Keywords: action; attitude; educational video; high-risk pregnancy; knowledge; maternal mortality

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INTRODUCTION

High-risk pregnancy is a dangerous condition because it can increase maternal and fetal mortality rates (Wahyuni, Wuriningsih, Nursalam, & Arief, 2023). High-risk pregnancy encompasses various maternal health conditions, including hypertension, gestational diabetes mellitus, and postpartum depression. One of the major high-risk conditions is hypertension, which can lead to preeclampsia and severe eclampsia (Myneni et al., 2024). Preventing high-risk pregnancies requires appropriate management, as early detection allows timely interventions to be provided (Zakiyya, Rusmini, & Sartika, 2019).

According to the World Health Organization (WHO), pregnancy complications, which are characteristic of high-risk pregnancies, remain the leading cause of maternal mortality. Maternal mortality rates worldwide remain alarmingly high, with approximately 287,000 women dying during pregnancy and childbirth (WHO, 2024). In Indonesia, the Ministry of Health reported 4,482 maternal deaths in 2023. Maternal mortality figures fluctuated between 2021 and 2023 (Ministry of Health of the Republic of Indonesia, 2023). These figures remain far from the Sustainable Development Goals (SDGs) target of reducing the global maternal mortality ratio to 70 per 100,000 live births and Indonesia's target of 183 per 100,000 live births (Ministry of Health, 2023b; WHO, 2024). In East Java, maternal mortality increased in 2023 compared to the previous year, reaching 499 deaths (East Java Health Office, 2024). Ngawi Regency contributed eight maternal deaths in 2023. Maternal deaths occurred during pregnancy, childbirth, and the postpartum period. The Walikukun Community Health Center continues to report maternal mortality cases (Ngawi District Health Office, 2023).

WHO reports that approximately 75% of maternal deaths worldwide are caused by pregnancy complications and high-risk pregnancies. The highest morbidity among pregnant women is associated with hemorrhage, infection, preeclampsia, and complications related to previous pregnancies (WHO, 2024). The Indonesian Ministry of Health reported that high-risk pregnancies are largely associated with hypertension during pregnancy, affecting approximately 33% of pregnant women, while 48.9% experience anemia and 30% suffer from chronic energy deficiency (CED) (Ministry of Health of the Republic of Indonesia, 2023).

High-risk pregnancy affects both maternal and fetal health, increasing the likelihood of serious complications during pregnancy (Asrina, Sulymbona, & Anggraeni, 2023). Pregnant women's knowledge is influenced by factors such as age, education, economic status, and sociocultural background. Limited knowledge and negative attitudes toward high-risk pregnancy increase the likelihood of experiencing pregnancy-related complications compared to women with adequate knowledge (Simbolon, 2022). Insufficient knowledge may influence attitudes and behaviors because pregnant women are less exposed to information and health education regarding high-risk pregnancy.

Efforts to improve pregnant women's knowledge, attitudes, and preventive practices regarding high-risk pregnancy can be achieved through accessible and appropriate health education, enabling them to obtain and understand relevant information. Video-based educational interventions can stimulate both auditory and visual senses, facilitating the effective delivery and comprehension of health information among pregnant women (Hasim et al., 2023). Increased knowledge can foster positive attitudes and encourage pregnant women to engage in healthy behaviors during pregnancy (Fasimi et al., 2020). Therefore, delivering education through video-based media is expected to improve knowledge, attitudes, and preventive practices related to high-risk pregnancy among pregnant women. This study aimed to determine the effect of educational video on knowledge, attitudes, and preventive practices regarding high-risk pregnancy among pregnant women.

METHOD

This study employed a quantitative research design using a quasi-experimental approach with a control group pre-test and post-test design. A total of 66 pregnant women with low-risk pregnancies participated in the study, consisting of 33 respondents in the intervention group and 33 respondents in the control group. The participants were recruited from the working area of the Walikukun Community Health Center, Ngawi Regency, Indonesia. The intervention group received video-based education on the prevention of high-risk pregnancy. The educational video, with a duration of 10 minutes, was delivered over a two-week period. Prior to the intervention, participants in the intervention group completed a pre-test assessment, followed by a post-test assessment after the intervention was completed. Data were collected using a structured questionnaire measuring three behavioral domains: knowledge, attitudes, and preventive practices related to high-risk pregnancy.

As this study involved human participants, ethical approval was obtained from the Health Research Ethics Committee of the Faculty of Nursing, Airlangga University, with Ethical Clearance Certificate Number 3646-KEPK. Descriptive statistics were used to summarize demographic characteristics. The Wilcoxon Signed-Rank Test was employed to assess changes in knowledge, attitudes, and practices before and after the intervention within each group. Differences in behavioral outcomes (knowledge, attitudes, and practices) between the intervention and control groups were analyzed using the Mann–Whitney U Test.

RESULT

Based on table 1 shows that in the treatment group aged 21-30 years as many as 21 (63.6%), and 31-35 years 12 (36.4%) while in the control group aged 21-30 years as many as 27 (81.8%) and 31-35 years 6 (18.2%) respondents. Based on the educational history of respondents dominated by high

school education as many as 21 respondents (63.6%) while in the control group high school as many as 27 respondents (81.8%).

Table 1.
Respondent characteristics

Respondent Characteristics	Criteria	Treatment Group (Σ=33)		Control Group (Σ =33)	
		f	%	f	%
Age	21-30 years old	21	63.6	27	81.8
	31-35 years old	12	36.4	6	18.2
Educational background	Elementary School	2	6.1	-	-
	Junior High School	8	24.2	3	9.1
	Senior High School	21	63.6	27	81.8
	College	2	6.1	3	9.1
Work	Government employees	1	3	1	3
	Housewife	32	97	32	97
Gestational Age	Trimester I (1-13 weeks)	5	15.2	6	18.2
	Trimester II (14-26 weeks)	13	39.4	14	42.4
	Trimester III (27-32 weeks)	15	45.4	13	39.4
Pregnancy Status	First pregnancy	10	30.3	11	33.4
	Second pregnancy	14	42.4	14	32.4
	Third pregnancy	9	27.3	8	24.2

The treatment group that had a gestational age in the first trimester (1-13 weeks) was 5 (15.2%), the second trimester (14-26 weeks) was 13 (39.4%), and the third trimester (27-40 weeks) was 15 (45.4%), while in the control group respondents with the first trimester were 6 (18.2%), the second trimester was 14 (42.4%), and the third trimester was 13 (39.4%). Based on pregnancy status data, 14 (42.4%) of the treatment group were pregnant for the second time, while in the control group, 11 (33.4%) were pregnant for the first time.

Table 2.
Differences in knowledge before and after intervention

Knowledge	Treatment Group (Σ=33)				Control Group (Σ=33)			
	Pre-test		*Post-test*		*Pre-test*		*Post-test*	
	f	%	f	%	f	%	f	%
Not enough	2	6.1	-	-	2	6.1	3	9.1
Enough	16	48.5	-	-	18	54.5	16	48.5
Good	15	45.5	33	100.0	13	39.4	14	42.4
Mean	2.39		3.00		2.33		2.33	
Standard Deviation	0.609		0,000		0.595		0.645	

Table 2 shows a significant difference in the level of knowledge after being given the intervention with an average of 3.00 (p=0.000) in the treatment group, while the control group did not experience any change in knowledge with an average of 0.645 (p=0.000).

Table 3.
Differences in attitudes after intervention

Attitude	Treatment Group (Σ=33)				Control Group (Σ=33)			
	Pre-test		*Post-test*		*Pre-test*		*Post-test*	
	f	%	f	%	f	%	f	%
Negative	12	36.4	-	-	11	33.3	13	39.4
Positive	21	63.6	33	100	22	66.7	20	60.6
Mean	1.64		2.00		1.67		1.61	
Standard Deviation	0.489		0,000		0.479		0.496	

Table 3 shows that there was a significant difference in the provision of educational video intervention in the treatment group with an average of 2.00, while in the control group there was no difference with an average of 0.496 (p=0.000).

Table 4 shows a significant change in action after being given an educational video intervention in the treatment group with an average of 0.479, while in the control group the average was 0.452 (p=0.003).

Table 4.
Differences in actions after intervention

Action	Treatment Group (Σ=33)				Control Group (Σ=33)			
	Pre-test		*Post-test*		*Pre-test*		*Post-test*	
	f	%	f	%	f	%	f	%
Enough	26	78.8	12	36.4	22	66.7	24	72.7
Good	7	21.2	21	63.6	11	33.3	9	27.3
Mean	2.21		2.64		2.33		2.27	
Standard Deviation	0.415		0.489		0.479		0.452	

DISCUSSION

The findings of this study demonstrated that video-based education significantly improved pregnant women's knowledge regarding the prevention of high-risk pregnancy. These findings are consistent with previous studies reporting that educational videos effectively enhance pregnant women's knowledge of high-risk pregnancies. Prior to the intervention, many participants had inadequate knowledge, which may have been influenced by factors such as educational level, age, and previous pregnancy experience (Widuri, Margono, & Retnaningsih, 2021; Romauli & Setyaningsuci, 2022; Faizin et al., 2023; Kusnianto & Fata, 2023). Knowledge regarding high-risk pregnancy includes understanding its definition, risk factors, pregnancy-related diseases, and preventive measures that can be implemented at home. The provision of video-based educational interventions stimulates both visual and auditory senses, enabling respondents to receive, process, and retain information more effectively (Faizin et al., 2023; Hasim et al., 2023).

These findings are in line with previous studies on the effectiveness of video-based health promotion among pregnant women, which reported significant improvements in knowledge regarding high-risk pregnancy following video education (Hasim et al., 2023; Sarabi et al., 2024). Educational videos can be delivered in various formats, including two-dimensional (2D) and three-dimensional (3D) animations, dramatizations, public service announcements, and presentation-based explanatory videos (Faizin et al., 2023). Before the intervention, most respondents in both the intervention and control groups demonstrated a moderate level of knowledge, primarily because they had never received information regarding high-risk pregnancy. Following the intervention, respondents experienced an increase in knowledge through the process of acquiring information (knowledge), understanding it (comprehension), and reinforcing it through question-and-answer sessions. This process enabled participants to apply, analyze, synthesize, and evaluate information related to high-risk pregnancy prevention (Notoatmodjo, 2012; Budiman & Riyanto, 2019; Kurniasih, 2022).

The study also revealed a significant effect of video-based education on attitudes toward the prevention of high-risk pregnancy. Participants' attitudes became more positive after receiving the educational intervention. Attitude is defined as an individual's internal response or reaction toward a stimulus or object (Notoatmodjo, 2012). Changes in attitude are influenced by cognitive components, particularly knowledge. Limited knowledge may affect an individual's perceptions regarding high-risk pregnancy, while negative perceptions can influence affective responses. The process of attitude formation is similar to habit formation, in which individuals learn information and facts about a particular object while simultaneously developing feelings and values associated with those facts (Hitatami et al., 2019). Through video-based education containing information on high-risk pregnancy prevention, respondents were encouraged to observe, listen to explanations, and view illustrations related to pregnancy risks and prevention strategies. The improvement from negative to positive attitudes may be explained by several behavioral processes. Before adopting a new behavior, individuals generally undergo a series of stages of behavioral change (Notoatmodjo, 2012). These findings support Lawrence Green's theory, which suggests that health education influences predisposing factors, including attitudes, thereby contributing to behavioral change (Green et al., 1980). The post-test results indicated a significant increase in positive attitudes among

respondents who received video-based education. Nevertheless, other factors may also contribute to attitude improvement, including enabling and reinforcing factors such as social support and environmental influences. Inadequate understanding or misinterpretation of information may affect respondents' attitudes and responses during assessment (Pratiwi, 2021). Furthermore, this study demonstrated that video-based education significantly improved preventive practices related to high-risk pregnancy. The analysis showed significant differences in preventive practices before and after the intervention. These findings are consistent with previous studies reporting that pregnant women who received video-based educational interventions were more likely to adopt preventive behaviors aimed at reducing the risk of pregnancy complications (Hasriani & Nurjanna, 2021; Reda et al., 2024).

Practice or behavior refers to an individual's response after receiving and understanding a stimulus, followed by the implementation of the acquired knowledge in daily life (Notoatmodjo, 2012; Ramadini & Nidia, 2024). Behavioral change can be assessed through three domains: the cognitive domain, reflected in increased knowledge; the affective domain, reflected in improved attitudes; and the psychomotor domain, reflected in preventive practices (Swarjana, 2022; Sirat, 2023). The findings of this study support Lawrence Green's PRECEDE–PROCEED model, which emphasizes the role of reinforcing factors, including environmental conditions, healthcare providers, and health services, in shaping health-related behaviors (Green et al., 1980). Video-based education serves as an enabling factor that enhances pregnant women's knowledge regarding the prevention of high-risk pregnancy. In addition, supportive environments, including family involvement, healthcare services, and healthcare professionals, play an important role in strengthening positive behavioral changes among pregnant women (Jumadi, 2022; Hermawati et al., 2024; Reza et al., 2024).

CONCLUSION

This study concludes that significant differences exist in knowledge, attitudes, and preventive practices before and after the implementation of a video-based educational intervention on high-risk pregnancy prevention. Significant improvements were observed in both knowledge and attitudes among pregnant women following the intervention. Preventive practices also showed meaningful improvement after exposure to the educational videos. Therefore, the study confirms that video-based education is effective in enhancing preventive behaviors related to high-risk pregnancy among pregnant women.

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