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ANIMATED VIDEO–BASED EDUCATIONAL INTERVENTION IMPROVES HUSBANDS' KNOWLEDGE OF PREGNANCY CARE

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ABSTRACT

In Indonesia, 30–80% of pregnant women do not receive direct support from their husbands, partly due to limited knowledge. Animated videos may improve husbands' understanding of their role in prenatal care. This study aimed to determine the effect of animated video-based education on husbands' knowledge of prenatal care. A quantitative quasi-experimental study with a pre-test and post-test control group design was conducted from April to May 2025. Sixty-two husbands were selected using purposive sampling and divided into intervention (n=31) and control (n=31) groups. The intervention group received education on husbands' active role in prenatal care through animated videos for seven days. Knowledge was measured using a validated and reliable 20-item questionnaire. Data were analyzed using the Mann-Whitney test. Knowledge increased significantly in both groups (p=0.001). However, the increase was significantly greater in the intervention group than in the control group (40.16 vs. 13.48; p=0.001). Animated videos are effective for improving husbands' knowledge and may be recommended as a family health education medium during pregnancy.

Keywords: Health education, Knowledge, Prenatal care

INTRODUCTION

The International Federation of Gynecology and Obstetrics (FIGO) defines pregnancy as fertilization, the union of sperm and ovum, and subsequent implantation. A normal pregnancy lasts 37-40 weeks, or approximately 9 months. (Susanti & Ulpawati, 2022)During pregnancy, various physiological and psychological transformations occur, caused by increased levels of the hormones estrogen and progesterone. These changes involve several body systems, such as the reproductive system, breast system, skin, metabolic system, hematology system, cardiovascular system, respiratory system, urinary system, digestive system, and musculoskeletal system.(Kasmiati et al., 2023)These various transformations can lead to complaints in pregnant women, so the husband's active role is essential. Several studies have shown that approximately 30-80% of pregnant women report a lack of direct involvement from their husbands in providing emotional support and motivation.(Aulianda et al., 2022; Sonata et al., 2023; Suyanti et al., 2022).

A role is a responsibility, task, or function expected of a person in a particular situation or context, whether in social relationships, work, or even in the family environment. (Fahmi, 2023)A husband's role in supporting and improving the health of his pregnant wife can be expressed through his level of participation in maintaining and improving the health of his pregnant wife. A husband's active role can include providing attention and affection, activities such as inviting or accompanying his wife to medical check-ups, ensuring that her nutritional needs are met, providing education regarding the symptoms of complications, preparing for delivery and transportation costs, and participating in selecting a delivery location based on the capabilities and conditions of each region.(Murniati et al., 2022).

Globally, research shows that the active involvement of husbands during pregnancy can have a significant impact on the well-being of mothers and children.(Murniati et al., 2022). A

lack of husband support can increase the risk of depression in pregnant women, which can disrupt emotional stability and reduce attention to the health of the fetus. Furthermore, the lack of a husband's role often causes mothers to experience fatigue, severe mental stress, and difficulty making effective household decisions. As a result, the risk of negative mental health for the mother increases, and the family as a whole, especially the husband's role, is disrupted.(Kebede et al., 2022).

Husbands' involvement in supporting their wives during pregnancy and childbirth often declines due to various obstacles. These obstacles are more likely to occur if the husband has a low level of knowledge. (Limbong, 2021). Efforts to increase knowledge require an approach that is tailored to individual needs, with an emphasis on the clarity of information and the relevance of the material provided.(Sari et al., 2023). Increased knowledge can be provided through educational programs.(Ridwan et al., 2021)One way to provide knowledge about self-maturity is through education, so that someone who is not yet an adult will receive direction and guidance to avoid mistakes and erroneous actions, thus creating an independent and responsible individual.(Annaba & Soleh, 2022)Animated videos are one method used as a health education medium that has proven effective in increasing knowledge. Animated videos use moving images and sound, which tend to be popular with many people, making the information conveyed easier to understand. Animated videos help viewers retain information better because they combine visual and audio elements to align the message effectively. (Handayani et al., 2022). Delivering information visually through animated videos can increase information retention by up to 65% compared to text.(Febriani & Aunillah, 2024)This study aims to determine the impact of an animated video-based educational program on the role of husbands in knowledge about pregnancy care at the Bunda Fitri Rejoagung Healthy Home in Banyuwangi Regency in 2025.

METHODS

This study was conducted at Rumah Sehat Bunda Fitri, an Independent Midwife Practice Center (TPMB) in Banyuwangi, from April to May 2025, using a quantitative experimental method, namely a quasi-experiment accompanied by a non-equivalent pre-test and post-test approach with a control group design. The sample of this study was some husbands who met the inclusion criteria (husbands of pregnant women in the first and second trimesters who were at Rumah Sehat Bunda Fitri Banyuwangi, had smartphones and could access videos, and were willing to be respondents). In contrast, husbands with mental disorders, blind/mute impairments, and husbands who worked outside the city of Banyuwangi were not included in the study to ensure accurate data. Respondents who could not be contacted during the research process, stated that they withdrew from the study, and showed an inability to follow the research procedures were excluded from this study.

A sample is a portion of a population that reflects the population's size and characteristics. The sample used in this study consisted of a subset of husbands whose wives were pregnant at the Bunda Fitri Rejoagung Health Center in 2024. The sample size was determined using the following formula:

$$n1 = n2 = 2\left[\frac{(Z\alpha + Z\beta)S}{X1 - X2}\right]^2$$

n1=n2: the sample size for each group
Zα : A Type I error of 5% (α = 0.05), so Zα = 1.96
Zβ : Type 2 error of 10% (β = 0.1), so Zβ = 1.282
S : C = 12
X1-X2 = *effect size* = 11

In this study, a 95% confidence level for a two-tailed hypothesis ($Z\alpha = 1.96$) and an 80% test power ($Z_\beta = 1.282$) were selected; The combined standard deviation was obtained from a previous study by Tika Suhartika et al. (2021) titled "The Effect of the Animated Film 'Warning Signs' on the Knowledge and Attitudes of Husbands of Pregnant Women in Detecting Pregnancy Complications." Meanwhile, the effect size was determined based on the researchers' justification.

Consequently, a sample size of 25 was determined, with the following breakdown:

$$n1 = n2 = 2\left[\frac{(Z\alpha + Z\beta)S}{X1 - X2}\right]^2$$
$$= 2\left[\frac{(1{,}96 + 1{,}282)12}{11}\right]^2$$
$$= 2\left[\frac{38{,}904}{11}\right]^2$$
$$n1 = n2 = 25\ responden$$

To account for a potential shortage of respondents, a dropout rate of 20% of the number of respondents in each group is required, calculated using the following formula:

$$\mathrm{n}' = \frac{n}{(1 - f)}$$

n' : calculated sample size

f : estimated dropout rate

$$\mathrm{n}' = \frac{25}{(1 - 0{,}2)}$$
$$\mathrm{n}' = 31$$

Therefore, the sample size for each group is 31 respondents.

A sample size of 62 husbands, divided into two groups: 31 husbands in the intervention group and 31 husbands in the control group, was selected using a purposive sampling technique. Prior to the intervention, a pre-test was conducted to measure the husbands' knowledge level, consisting of 20 questions. Each question was weighted with a score of 5 points for a correct answer, and 0 points for an incorrect answer. Thus, if all questions were answered correctly, the maximum score was 100 points. After the pre-test, the intervention group received live education on prenatal care using animated videos.

The research process began on Day 1 with an educational session—using an animated video—on the role of husbands in pregnancy care. The intervention lasted 60 minutes, and while the video was playing, the researcher explained key points. This was followed by a question-and-answer discussion with the intervention group; the control group received no intervention. Furthermore, from days 2 to 6, education continued by sending animated videos via a WhatsApp group so they could be accessed from their respective homes. Respondents were instructed to watch the videos once daily to avoid bias. The educational intervention was repeated on day 7 for both the intervention and control groups, focusing on the role of husbands as depicted in animated videos regarding knowledge of prenatal care. The intervention lasted 60 minutes, and during the video screening, the researcher explained key points. This was followed by a question-and-answer session. The control group took a posttest and was provided with a link to the video to watch at home.

Table 1. Education Content

Topic	Excerpt
The husband always accompanies his wife during every antenatal care.	 Peran Aktif Suami Kunci Pengalaman Kehamilan Yang Positif
Husbands should also be aware of the prenatal checkup schedule	 Peran Aktif Suami Kunci Pengalaman Kehamilan Yang Positif
Husband creates a comfortable atmosphere at home	 Peran Aktif Suami Kunci Pengalaman Kehamilan Yang Positif
A husband shows his wife he cares by engaging in activities they can do together	 Peran Aktif Suami Kunci Pengalaman Kehamilan Yang Positif

Table 1 above shows several excerpts from the educational video content. Each subsection of the explanation features a video that is easy for husbands to understand. A post-test was conducted on day 7 in both groups using the same questionnaire as the pre-test. Pre-test and post-test scores in the intervention group were analyzed using a paired t-test, while

comparisons of knowledge between the two groups were analyzed using the Mann-Whitney test. This research has gone through an ethical feasibility test and was declared feasible with number 135/01/KEPK-STIKESBWI/II/2024-2025.

RESULTS

Respondent characteristics are shown in the following results. Table 1 shows that the characteristics of respondents in the intervention group are almost half of the respondents' ages in the 21-29 years age range with the youngest age being 21 years and the oldest age being 46 years, while in the control group almost half of the respondents' ages are in the 30-39 years age range with the youngest age being 22 years and the oldest age being 44 years. Viewed from the level of education in the intervention group, the majority came from a high school education level of 16 respondents (51.6%), while in the control group, almost half of the respondents' education level was high school, with a total of 15 respondents (48.4%). Viewed by occupation, both groups show that almost half of the respondents are farmers, with 14 respondents in the intervention group (45.2%) and 15 respondents in the control group (48.4%). Viewed from the wife's gestational age, from both groups, it shows that the majority of the wife's gestational age is 14-26 weeks with a total of 22 respondents in each group (70.9%). Judging from the wives' parity in both groups, it shows that the majority of wives' parity is multigravida; in the intervention group, there were 21 respondents (67.7%) and in the control group, there were 24 respondents (77.4%).

Table 2. Frequency Distribution of Respondent Characteristics

Respondent Characteristics	Group	
	Intervention n=31 (%)	Control n=31 (%)
Husband's Age		
21-29 Years	14 (45.2)	12 (38.7)
30-39 Years	12 (38.7)	15 (48.4)
40-49 Years	5 (16.1)	4 (12.9)
Husband's Education Level		
Elementary-Middle School	14 (45.2)	14 (45.2)
Senior High School	16 (51.6)	15 (48.4)
Higher Education	1 (3.2)	2 (6.5)
Husband's Job		
Self-employed	8 (25.8)	7 (22.6)
Employee	2 (6.5)	4 (12.9)
Laborer	7 (22.6)	4 (12.9)
Farmer	14 (45.2)	15 (48.4)
Teacher	-	1 (3.2)
Wife's Pregnancy Age		
1-13 Weeks	9 (29.0)	9 (29.0)
14-26 Weeks	22 (70.9)	22 (70.9)
Wife's Parity		
Primigravida	10 (32.2)	7 (22.6)
Multigravida	21 (67.7)	24 (77.4)

Table 3. The Effect of an Animated Video-Based Educational Program on the Role of Husbands on Knowledge of Pregnancy Care

Husband's Knowledge	Group		*p Value*
	Intervention (n=31)	Control (n=31)	
Pre-Test			
Mean (SD)	58.39 (7,999)	53.55 (6,732)	0.002[a]
Median	60	55	
Min-Max	35-65	30-65	
Post Test			
Mean (SD)	98.55 (2,644)	67.03 (4,834)	< 0.001[a]
Median	100	65	
Min-Max	90-100	60-75	
Mean Difference	40.16	13.48	< 0.001[a]
Difference in Normality Test	< 0.001[c]	0.006[c]	
p Value	< 0.001[b]	< 0.001[b]	

a) Mann Withney b) Wilcoxon c) Shapiro Wilk

The results of the study showed that in the intervention group, husbands' knowledge education about pregnancy through animated videos had a significant effect on their knowledge of pregnancy care, with a p value of 0.001 (p <0.05). The results of data analysis in the control group showed a significant difference in husbands' knowledge scores between before and after treatment, with a p value of 0.001 (p <0.05). However, the difference in husbands' knowledge improvement in the intervention group was significantly greater than in the control group, namely 40.16 > 13.48, with a p value of 0.001 (p <0.05).

DISCUSSION

This study shows that there is an effect of an educational program about the role of husbands based on animated videos affects knowledge about pregnancy care in the intervention group (p < 0.05; p = 0.001). There is a significant difference between the two groups (p < 0.05; p = 0.001). The difference in the increase in knowledge level scores in the intervention group is higher than in the control group, with a percentage of 40% in the intervention group and 13% in the control group. The results of this study are in line with research conducted by Suhartika and Mulyati, which stated that there is a significant difference between the increase in knowledge and attitudes of the intervention group and the control group; in the intervention group, there was an increase in scores of 13.9, while in the control group there was an increase in scores of 4.3. This suggests that watching animated videos is better than not watching them. This difference proves that animated video-based education can improve husbands' knowledge about pregnancy care.(Suhartika & Mulyati, 2021).

This study is also in line with the results of Diyah and Dyah's research which also showed that animated videos are more effective in delivering health education, in the group given animated videos there was an increase in scores of 2.87 while in the group given leaflet media there was an increase in scores of only 2.6; then a Paired Simple Test analysis was carried out and the results obtained were p value 0.000 (<0.05) there was a significant difference between the animated video group and the leaflet media group, this stated that animated video media was more effective in delivering health education(Diyah & Dyah, 2021).

Research with similar results was also conducted by Ichwan et al, which showed that there was an increase in husbands' support during pregnancy after receiving education with

audiovisual media, with an increase in score of 4.94 with a p-value of 0.001; the increase in score further proves that animated video media is more effective in delivering health education and is easier for the public to understand.(Ichwan et al., 2024)This increase in knowledge can be explained by the visual and interactive nature of animated video media, which can simplify complex concepts and make the message easier for the audience to understand.(Chifdillah & Hazanah, 2021)Animated video-based education is more effective in conveying pregnancy care information than conventional methods such as lectures or leaflets. Audiovisual media is 50% effective, while visual media is only 20%. (Prakoso & Marni, 2024).

Educational media in the form of audiovisual videos and animations are highly effective in health education and increasing health knowledge because they are engaging and artistic, easy to understand, effective, and informative. By engaging the five senses, individuals can absorb knowledge more optimally during the learning process. The increase in husbands' knowledge about prenatal care after being educated with animated videos indicates that they have reached the initial knowledge level, which is characterized by the ability to remember and understand the material presented.(Aisah et al., 2021; Armstrong et al., 2011)This study has several limitations. The online video follow-up process on days 2-6 was potentially overlooked by respondents, resulting in them not seeing the animated video. Another limitation was the respondents' lack of responsiveness when the researcher followed up via the WhatsApp group, requiring the researcher to conduct personal chats with each respondent.

CONCLUSION

Education about the role of husbands using animated media has proven effective in increasing husbands' knowledge about prenatal care. These findings suggest that visual-based educational approaches, such as animated videos, can be an effective strategy in increasing family knowledge about pregnancy. Therefore, this media can be implemented more widely in educational programs for husbands in various regions.

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