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THE EFFECTIVENESS OF AN ANIMATED EDUCATIONAL VIDEO ON EXCLUSIVE BREASTFEEDING KNOWLEDGE AMONG PREGNANT WOMEN AT THE SAPTA TARUNA COMMUNITY HEALTH CENTER, PEKANBARU

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ABSTRACT

Exclusive breastfeeding rates remain low in Indonesia, including at the Sapta Taruna Community Health Center in Pekanbaru, which reports one of the lowest coverage rates in the region. One of the contributing factors is pregnant women's limited knowledge regarding the importance of exclusive breastfeeding. Animated educational videos have the potential to deliver health information in an engaging, interactive, and easily understandable manner. This study aimed to evaluate the effectiveness of an animated educational video on improving pregnant women's knowledge of exclusive breastfeeding. A quasi-experimental study employing a one-group pretest-posttest design was conducted. The study included 49 pregnant women from the first to the third trimester, selected through purposive sampling. Data were collected using a structured questionnaire measuring knowledge of exclusive breastfeeding. Differences in knowledge scores before and after the intervention were analyzed using the Wilcoxon Signed-Rank Test. Before the intervention, most participants demonstrated insufficient knowledge of exclusive breastfeeding (59.2%). Following the educational intervention, the majority of participants achieved a good level of knowledge (83.7%). The Wilcoxon Signed-Rank Test showed a statistically significant improvement in participants' knowledge after the intervention ($p < 0.001$). Animated educational videos are effective in improving pregnant women's knowledge of exclusive breastfeeding at the Sapta Taruna Community Health Center, Pekanbaru. Future studies are recommended to incorporate a control group and compare various educational media, such as infographics, printed educational modules, and mobile health applications, to strengthen the evidence regarding the effectiveness of breastfeeding education.

Keywords : exclusive breastfeeding, pregnant women, knowledge, animated video

INTRODUCTION

Exclusive breastfeeding is defined as feeding an infant exclusively with breast milk from birth until six months of age, without providing any additional food or drink, including water. The only exceptions are prescribed medications, vitamin supplements, or mineral supplements administered in syrup or drop form for medical purposes. Exclusive breastfeeding plays a vital role in promoting infant health and ensuring optimal nutritional intake during the first six months of life. Breast milk contains all the essential nutrients required by infants, including proteins, fats, carbohydrates, vitamins, minerals, and immunological components that support growth, development, and immune function (Ministry of Health, 2024).

The World Health Organization (WHO) reported that the global prevalence of exclusive breastfeeding among infants under six months of age reached 48% in 2023. However, this figure remains below

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the WHO Global Nutrition Target of achieving a 70% exclusive breastfeeding rate by 2030 (WHO, 2024). According to WHO, infants who are not exclusively breastfed during the first months of life are six to ten times more likely to die than those who are exclusively breastfed. Despite ongoing global efforts, exclusive breastfeeding rates remain particularly low in West Africa, where the prevalence is only 37% (WHO, 2024).

In Indonesia, exclusive breastfeeding coverage was reported at 67.96% in 2022, compared with 69.7% in 2021, indicating a decline in coverage. These findings suggest that further efforts are needed to improve exclusive breastfeeding practices among Indonesian mothers (Ministry of Health of the Republic of Indonesia, 2023).

In Riau Province, exclusive breastfeeding coverage was reported at 49.7% in 2023 (Riau Provincial Health Office, 2023). According to the Central Statistics Agency (BPS), the proportion of infants under six months of age who received exclusive breastfeeding in Riau increased to 71.51% in 2024 (Central Statistics Agency, 2024). Despite this improvement, the coverage remains below the national target of 80%.

Data from the Pekanbaru City Health Office indicate that the Sapta Taruna Community Health Center has one of the lowest exclusive breastfeeding coverage rates among community health centers in Pekanbaru, with a coverage rate of only 0.1%. This figure is substantially lower than the national target of 80% for the Exclusive Breastfeeding Program (Riau Provincial Health Office, 2023).

One of the major factors contributing to the low rate of exclusive breastfeeding in Indonesia is pregnant women's limited knowledge of its importance and benefits. Providing health education during pregnancy is essential for improving maternal knowledge, which plays a crucial role in the successful practice of exclusive breastfeeding after childbirth. As a primary target group for maternal and child health interventions, pregnant women require effective educational strategies to support informed breastfeeding decisions. Animated educational videos have been shown to be an effective, engaging, and accessible medium for delivering health information, thereby enhancing pregnant women's understanding and preparedness for exclusive breastfeeding (Juniar et al., 2023).

Therefore, this study aimed to determine the effectiveness of health education delivered through animated educational videos in improving pregnant women's knowledge of exclusive breastfeeding.

RESEARCH OBJECTIVE

1. General Objective
   To determine the effectiveness of an animated educational video on exclusive breastfeeding in improving pregnant women's knowledge at the Sapta Taruna Community Health Center, Pekanbaru.

2. Specific Objectives

a. To assess pregnant women's knowledge of exclusive breastfeeding before the educational intervention using an animated video.
b. To assess pregnant women's knowledge of exclusive breastfeeding after the educational intervention using an animated video.
c. To compare pregnant women's knowledge of exclusive breastfeeding before and after the educational intervention using an animated video.

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d. To determine the effectiveness of an animated educational video in improving pregnant women's knowledge of exclusive breastfeeding.

RESEARCH METHODS

This study employed a quantitative approach using a quasi-experimental design with a one-group pretest-posttest design. The study was conducted at the Sapta Taruna Community Health Center, Pekanbaru. Participants' knowledge of exclusive breastfeeding was measured before (pretest) and after (posttest) the educational intervention delivered through an animated educational video. The intervention consisted of health education on exclusive breastfeeding using an animated video. Changes in participants' knowledge before and after the intervention were evaluated by comparing the pretest and posttest scores.

RESULTS

A. Univariate Analysis

Distribution of Pregnant Women's Knowledge Levels Before (Pretest) and After (Posttest) the Educational Intervention Using an Animated Video. This analysis was conducted to describe the frequency distribution of pregnant women's knowledge regarding exclusive breastfeeding before (pretest) and after (posttest) receiving health education through an animated educational video. The findings of this study are presented as follows.

Table 4.1 Distribution of Pregnant Women's Knowledge of Exclusive Breastfeeding Before (Pretest) and After (Posttest) the Educational Intervention Using an Animated Educational Video

Knowledge Level	Pretest		Posttest	
	N	%	n	%
Poor	29	59.2	1	2.0
Fair	17	34.7	7	14.3
Good	3	6.1	41	83.7
Total	**49**	**100.0**	**49**	**100.0**

As shown in Table 2, before the intervention, the majority of respondents had a poor level of knowledge regarding exclusive breastfeeding, with 29 participants (59.2%). Following the educational intervention using an animated educational video, most respondents demonstrated a good level of knowledge, with 41 participants (83.7%). The proportion of respondents with poor knowledge decreased by 57.2 percentage points, while the proportion of respondents with good knowledge increased by **77.6**

Distribution of the Mean Knowledge Scores of Pregnant Women Regarding Exclusive Breastfeeding Before (Pretest) and After (Posttest) the Educational Intervention Using an Animated Educational Video

Table 4.2 Mean

No	Group	N	Min	Max	Mean	Standart Deviation (SD)
1	Pretest	49	20	90	49.59	18.367
2	Posttest	49	50	100	89.39	13.603

As shown in Table 3, the mean pretest knowledge score of pregnant women before receiving the educational intervention using an animated educational video was 49.59 (SD = 18.367), with scores ranging from 20 to 90. These findings indicate that, overall, pregnant women's knowledge of exclusive

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breastfeeding was relatively low prior to the intervention, as the mean score was below the predetermined threshold for the fair knowledge category (56%). The relatively large standard deviation suggests considerable

Following the educational intervention using an animated educational video, the respondents' mean knowledge score increased substantially to 89.39 (SD = 13.603), which was considerably higher than the pretest mean score of 49.59. The minimum score also increased from 20 to 50, while the maximum score reached 100. Furthermore, the decrease in the standard deviation from 18.367 to 13.603 indicates reduced variability in knowledge scores among the respondents, suggesting that participants' knowledge became more consistent after the intervention. Overall, the majority of respondents achieved high knowledge scores following the educational intervention.

B. Bivariate Analysis

Bivariate analysis was performed to test the research hypothesis regarding the effectiveness of an animated educational video in improving pregnant women's knowledge of exclusive breastfeeding. The Wilcoxon Signed-Rank Test was used to analyze the data because the pretest and posttest knowledge scores were paired observations and were assumed not to be normally distributed. This non-parametric test was employed to determine whether there was a statistically significant difference in pregnant women's knowledge before and after the educational intervention.

Table 4.3 Results of the Wilcoxon Signed-Ranks Test for Differences in Knowledge Among Pregnant Women Before and After the Intervention (n=49)

Comparison	Rank	n	Mean Rank	Sum Of Rank
Posttest	Negative Ranks	0	0.00	0.00
	Positif Ranks	46	23.50	1081.00
	Ties	3	-	-
	Total			

Based on Table 4 (Ranks), of the 49 respondents, 46 (93.9%) showed an increase in knowledge, as indicated by higher posttest scores than pretest scores (positive ranks). No respondents (0.0%) experienced a decrease in knowledge (negative ranks), while 3 respondents (6.1%) had identical pretest and posttest scores (ties). These findings indicate that the educational intervention using an animated educational video resulted in improved knowledge of exclusive breastfeeding among the majority of pregnant women.

DISCUSSION

1. Respondent Characteristics and Baseline Knowledge Level

This study involved 49 pregnant women at the Sapta Taruna Community Health Center in Pekanbaru. The majority of respondents were in the productive age group (20–35 years), totaling 28 individuals (77.5%), and 29 respondents (59.2%) had completed high school. Prior to the intervention, the pregnant women’s knowledge level regarding exclusive breastfeeding was relatively low, with the majority of respondents (29 individuals, 59.2%) falling into the “insufficient” knowledge category. The average knowledge score on the

P-ISSN 2087-7239
E-ISSN 2807-1069

pretest was 49.59% (lowest score 20%, highest 90%), indicating considerable variation in knowledge (standard deviation 18.367). This finding is consistent with the low rate of exclusive breastfeeding at the community health center (0.1%), indicating that a lack of knowledge is a significant predisposing factor.

2. Improvement in Knowledge Following the Animated Educational Video Intervention

Following the educational intervention using an animated educational video, pregnant women's knowledge of exclusive breastfeeding improved substantially. The majority of respondents (41 participants, 83.7%) achieved a good level of knowledge, whereas only one participant (2.0%) remained in the poor knowledge category. Furthermore, the mean knowledge score increased from 49.59 before the intervention to 89.39 after the intervention, with scores ranging from 50 to 100**.** The reduction in the standard deviation from 18.367 to 13.603 indicates that respondents' knowledge became more consistent following the intervention.

These findings are consistent with previous studies (Nurmalia, 2022; Sari, 2021), which reported that animated educational videos are effective in enhancing health knowledge by presenting information through engaging visual and audio elements that facilitate learning and improve information retention.

3. Effectiveness of the Animated Educational Video (Wilcoxon Signed-Rank Test)

The results of the Wilcoxon Signed-Rank Test showed that, among the 49 respondents, 46 participants demonstrated an increase in knowledge (positive ranks), while no respondents exhibited a decrease in knowledge (negative ranks). Three respondents had identical pretest and posttest scores (ties). The statistical analysis yielded a Z value of −5.930 with a p-value < 0.001**,** indicating a statistically significant difference between pregnant women's knowledge before and after the educational intervention.

These findings support the study hypothesis that an animated educational video is effective in improving pregnant women's knowledge of exclusive breastfeeding. The effectiveness of this educational medium may be attributed to its ability to simultaneously engage visual and auditory senses, thereby facilitating information processing, comprehension, and retention compared with conventional verbal health education (Ginting et al., 2022; Asyari & Hasnah, 2023).

The present findings are consistent with those of previous studies (Nurhalisa & Rizqi, 2025; Hastuti et al.; Fazira et al.), which also reported that animated educational videos are effective in improving health knowledge. Increased maternal knowledge is expected to contribute to more informed breastfeeding practices and may support the successful implementation of exclusive breastfeeding.

CONCLUSION

1. Before the educational intervention using an animated educational video, the majority of pregnant women demonstrated a poor level of knowledge regarding exclusive

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breastfeeding (29 respondents, 59.2%). Following the intervention, most respondents achieved a good level of knowledge (41 respondents, 83.7%).

2. The mean knowledge score regarding exclusive breastfeeding increased from 49.59 before the intervention to 89.39 after the educational intervention using an animated educational video, indicating a substantial improvement in participants' knowledge.
3. The Wilcoxon Signed-Rank Test demonstrated a statistically significant improvement in pregnant women's knowledge of exclusive breastfeeding following the educational intervention using an animated educational video ($Z = -5.930$, $p < 0.001$). These findings indicate that animated educational videos are effective in improving pregnant women's knowledge of exclusive breastfeeding.

RECOMMENDATIONS

1. **For the Sapta Taruna Community Health Center**

   The Sapta Taruna Community Health Center is encouraged to consider incorporating animated educational videos into routine health education programs, particularly those related to exclusive breastfeeding, as this study demonstrated that such media are effective in improving pregnant women's knowledge.

2. **For the Institut Kesehatan Payung Negeri Pekanbaru**

   The findings of this study are expected to serve as a reference for the development of curricula related to digital health promotion and educational media. In addition, the institution is encouraged to promote the use of innovative educational media among students in community engagement and health promotion activities.

3. **For Future Researchers**
   Future researchers are encouraged to develop more interactive educational media or compare the effectiveness of animated educational videos with other educational approaches, such as infographics, printed educational modules, mobile health applications, or other digital learning platforms. Furthermore, future studies should incorporate a control group and recruit larger, more diverse samples to strengthen the scientific validity and generalizability of the findings.

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