

The effect of exclusive breastfeeding education using audio-visual media and e-booklets on pregnant women's knowledge and attitude toward providing exclusive breastfeeding

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ABSTRACT

Background: According to international child feeding guidelines, the rich nutrient content of breast milk makes it an ideal food for infants and young children. Breastfeeding education in community health centers is only given once during pregnancy in integrated antenatal care. Therefore, additional intervention is needed by mothers to increase their knowledge and attitude about breastfeeding.

Objectives: This study aims to identify the effect of exclusive breastfeeding education through audio-visual media and booklets on the knowledge and attitudes of pregnant women on their third trimester toward providing exclusive breastfeeding.

Methods: This study is a quantitative method with a quasi-experimental a non-equivalent control group design. The study included 60 third-trimester pregnant women for the intervention group and control group, who met the inclusion and exclusion criteria. The intervention involved providing booklets and audio-visual materials to the experimental group, while the control group was only given booklets. Mother's knowledge and attitude was measured using a questionnaire. The data were analyzed using a Paired t-test.

Results: This study indicated a significant difference in the knowledge and attitudes of respondents before and after education using audio-visual media and booklets in the control and experimental groups with a p-value $0.000 < 0.05$.

Conclusions: Exclusive breastfeeding education using audio-visual media and booklets had an effect on mothers' knowledge and attitudes towards exclusive breastfeeding. There is standardize education about breastfeeding at least two times in addition to integrated antenatal care visits to increase knowledge and attitude towards breastfeeding.

KEYWORD : exclusive breastfeeding; e-booklet; audiovisual; knowledge; attitude

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INTRODUCTION

According to international child feeding guidelines, the rich nutrient content of breast milk makes it an ideal food for infants and young children. These recommendations are specifically for the first six months of life and then that breastfeeding is continued until 2 years of age and beyond (1). Breastfeeding plays a crucial role in the survival and well-being of children. The antibodies in breastmilk that provide protection against numerous prevalent childhood illnesses, including diarrhea and respiratory infections(2-4). Research suggests that insufficient breastfeeding contributes to approximately 16% of annual child mortality rates(5).

The World Health Organization (WHO) reported that exclusive breastfeeding coverage for infants aged 0 to 6 months in developing countries is average of less than 40% (6). In 2022, the exclusive breastfeeding rate for infants under 6 months in Indonesia was 67.96% (7). This level of coverage remains below the national target of 80%(8).

The Provincial Health Office of Yogyakarta Special Region (DIY) in 2021 recorded that 80.18% of babies were exclusively breastfed. However, some regions in DIY fell short of the exclusive breastfeeding coverage target, including Yogyakarta City at 74.69%, Gunung Kidul at 76.21%, and Kulon Progo at 79.44%. Meanwhile, those that already met the target were Bantul and Sleman Regency with 80.76% and 86.19% (9). In 2022, the exclusive breastfeeding achievement in the

Bantul had met the target of 80.76%. The community health center with the highest percentage of exclusive breastfeeding was Imogiri II Community Health Center at 92%, while the lowest was Kretek Community Health Center at 65.7%(10).

Indonesian government standards about information and education counseling regarding early initiation of breastfeeding and exclusive breastfeeding are provided to mothers during integrated antenatal care at community health centers(11). In this case, breastfeeding education is only given once during pregnancy. In fact, during the integrated antenatal care education sessions there are nine other components of counseling material given to the mother, which makes the delivery of education less than optimal due to limited resources providing education and time for delivering education (12,13). Therefore, additional intervention is needed by mothers to increase their knowledge about breastfeeding.

Grasping the various levels and root factors influencing maternal knowledge and attitudes about breastfeeding is key to creating targeted interventions designed to enhance optimal breastfeeding practices(14). Extensive global research conducted to assess the prevalence and factors influencing exclusive breastfeeding (EBF) practices has revealed various sociodemographic and psychosocial elements, such as a mother's knowledge and attitude (15,17). The knowledge and attitude of women regarding breastfeeding significantly influence their

decision to breastfeed. Women lacking sufficient knowledge are less likely to engage in breastfeeding, as they do not comprehend its advantages and significance (18). Moreover, a favourable maternal attitude towards breastfeeding is a more significant indicator of both the initiation and duration of breastfeeding than sociodemographic factors (19, 20).

Since women's knowledge and attitudes are changeable factors linked to breast-feeding outcomes, they represent critical individual-level variables that should be the focus for behavioral change initiatives (21). The primary reason for the lack of breastfeeding knowledge among mothers was the ineffective approach in delivering health education (22). Research shows that electronic media, like television and videos, offers clearer information compared to printed media such as newspapers or magazines (23, 24).

Additionally, there was increasing of knowledge level of respondents after being educated on breastfeeding through audio-visual media (25, 26). E-booklet provides the full information about breastfeeding. Combining health promotion media can increase information absorption because more senses are involved (27, 28). This study aims to identify the effect of exclusive breastfeeding education through audio-visual media and booklets on the knowledge and attitudes of pregnant women on their third trimester toward providing exclusive breastfeeding.

MATERIALS AND METHODS

This study is a quantitative approach with a quasi-experimental type of research with pre-test and post-test design. Sample was recruited from pregnant women who visited antenatal care at mater Sewon II and Kretek community health centers. The study included 30 third-trimester pregnant women from Sewon II Community Health Center as the intervention group and 30 from Kretek Community Health Center as the control group. The sample in this study was pregnant women in the third trimester with a gestational age of >28 weeks who met the inclusion and exclusion criteria. The inclusion criteria in this study were pregnant women who lived in the research area, willing to sign informed consent and able to communicate well. Pregnant women who had given birth before the research was carried out, excluded from this study.

Before the intervention program, respondents in the intervention and control groups carried out a pretest using a knowledge and attitude questionnaire. Respondents in the intervention group will be asked to watch the video and given an explanation regarding the contents of the booklet. The total educational time provided is 30 minutes. In the control group, education was only given using booklets with a total education time of 15 minutes. education in the intervention and control groups was only carried out once. After being given education, a posttest was carried out which was measured after 7 days of intervention.

The Audio-visual media contains motivation from cadres and health workers regarding giving exclusive breast milk adoption from Video Nurhayati (2022), and an e-booklet containing material about the definition of exclusive breast milk, the benefits of exclusive breast milk, the contents of breast milk, how to give breast milk, problems with breastfeeding mothers, signs of a baby not getting enough breast milk.

Booklet media was developed by researchers who have been tested by expert judgement. Mother's knowledge was measured using a question-naire consisting of 21 multiple choice question items and attitudes were measured using a Likert scale consisting of 19 question items. Both questionnaires have been tested for validity and reliability(29).

Data were analyzed by SPSS software version 25. The statistical analysis using paired T-test to determine the difference in average knowledge and attitudes in the experimental group and the control group.

RESULTS AND DISCUSSION

RESULTS

Characteristics of Respondents

Table 1 Shows that the results of respondents in both the experimental and control groups were aged 20-35 years, primigravida (first pregnancy), completed upper secondary education (High School/Vocational School/Equivalent), and unemployed mothers.

Table 1. Frequency distribution of respondent characteristics

Characteristics	Experiment Group		Control Group	
	<i>f</i>	%	<i>f</i>	%
Age				
20-35 Years Old	28	93.3	29	96.7
> 35 Years Old	2	6.7	1	3.3
Total	30	100	30	100
Parity				
Primigravida	23	76.7	24	80
Multigravida	7	23.3	6	20
Total	30	100	30	100
Education				
Junior High School	4	13.3	6	20
Senior High School	25	83.3	20	66.7
Higher Education	1	3.3	4	13.3
Total	30	100	30	100
Employment				
Employed	5	16.7	2	6.7
Unemployed	25	83.3	28	93.3
Total	30	100	30	100

Table 2 shows that the intervention group, the pre-test results showed 20 respondents with good knowledge, 27 with sufficient knowledge, and 5 with poor knowledge. After 7 days of re-education, the post-test results showed an improvement, with 26 respondents achieving good scores, 23 with sufficient scores, and 3 with poor scores.

After analyzing the timing of the educational sessions, researchers found it to be inappropriate due to the short break period and the presentation's lack of engagement and clarity (18).

Table 2. Distribution of respondents' knowledge score on exclusive breastfeeding before and after intervention

Knowledge	Experiment Group				Control Group			
	Pre-test		Post-test		Pre-test		Post-test	
	f	%	f	%	f	%	f	
Good	6	20	11	36.7	6	20	3	
Sufficient	20	66.7	19	63.3	18	60	23	
Poor	4	13.3			6	20	4	
Total	30	100	30	100	30	100	30	

Table 3. Distribution of respondents' attitude scores towards exclusive breastfeeding before and after intervention

Attitudes	Experimental Group				Control Group			
	Pre-test		Post-test		Pre-test		Post-test	
	f	%	f	%	f	%	f	%
Supportive	10	33.3	28	93.3	8	26.7	16	53.3
Non-supportive	20	66.7	2	6.7	22	73.3	14	46.7
Total	30	100	30	100	30	100	30	100

According to **Table 3**, the frequency distribution of respondents' attitudes towards exclusive breastfeeding before the intervention (*pre-test*) indicates that the majority of respondents had a non-supportive attitude, with a percentage of 66.7% in the experimental group and 73.3% in the control group. After the intervention (*post-test*), most

respondents exhibited supportive attitudes, with 93.3% in the experimental group and 53.3% in the control group. In conclusion, there was an increase in attitude scores in both groups from non-supportive to supportive following the intervention.

Table 4 shows that the knowledge level in the experimental group had a pre-test

Table 4. Correlation of the distribution of the effect of educational interventions on exclusive breastfeeding using audiovisual and booklet media on the knowledge and attitudes of pregnant women on exclusive breastfeeding

Variable		f	Mean	Mean Difference	SD	Paired T-test
Knowledge in the Experimental Group	Pre-test	30	63.92	-8.25	8.914	0
	Post-test	30	72.17			
Attitudes in Experimental Group	Pre-test	30	36.63	-12.7	6.763	0
	Post-test	30	49.33			
Knowledge in Control Group	Pre-test	30	55.83	-19.04	13.647	0
	Post-test	30	74.87			
Attitudes in Control Group	Pre-test	30	35.57	-2,5	3.73	0.001
	Post-test	30	38.07			

mean score of 63.92 and a post-test mean score of 72.17, with a mean difference of -8.25 and a standard deviation of 8.914. The significance value for the pre-test and post-test knowledge scores in the experimental group was 0.000 (<0.05), indicating statistical significance. Regarding the attitude variable in the experimental group, the pretest mean score was 36.63 and the post-test mean score was 49.33, with a mean difference of -12.7 and a standard deviation of 6.763. The significance value for the pre-test and post-test attitude scores in the experimental group was also 0.000, confirming the significance at a 0.05 level.

In addition, the control group demonstrated a pre-test mean score of 55.83 and a post-test mean score of 74.87, resulting in a mean difference of -19.04 with a standard deviation of 13.647 (Table 4). The significance level for the pre-test and post-test knowledge scores in the control group was 0.000, indicating statistical significance as it is less than 0.05. In terms of attitudes, the control group had a pre-test mean score of 35.57 and a post-test mean score of 38.07, with a mean difference of -2.5 and a standard deviation of 3.730. The significance level for the pre-test and post-test attitude scores in

the control group was 0.001, also indicating significance as it is below 0.05.

Table 5 Shows that the analysis of the effect of providing education on exclusive breastfeeding through a combination of media (audio-visual and booklet) in the experimental group, compared to using only a booklet in the control group, showed a mean difference of -29.23323, with a standard deviation of 98571 for the knowledge variable. In terms of attitude, the experimental group (using a combination of media) and the control group (using only a booklet) presented a mean difference of -28.24333 and a standard deviation of 98571. Both the knowledge and attitude variables produced a p-value of 0.000 which is below the significance threshold of 0.05.

DISCUSSION

This study aimed to identify the effect of exclusive breastfeeding education through audio-visual media and booklets on the knowledge and attitudes of pregnant women on their third trimester toward providing exclusive breastfeeding. our analysis indicated that both audio-visual media and the booklet had a significant impact on the knowledge and attitudes of pregnant women

Table 5. The impact of educational interventions on exclusive breastfeeding using audiovisual and booklet media on mothers' knowledge and attitudes toward exclusive breastfeeding.

Variable	Group	Mean	SD	P-Value
Knowledge	Experimental	-29.23323	98571	0
	Control			
Attitude	Experimental	-28.24333	98571	
	Control			

concerning exclusive breastfeeding in intervention and control group. The guidelines for ante-natal care aim to offer advice, education, reassurance, and support to expectant mothers. They focus on addressing and managing minor pregnancy issues, increasing parenting confidence and getting ready for lactation (30). Health education for pregnant women should promote positive behaviors and be tailored to their specific needs. In various scenarios, conveying information through psychomotor skills, such as demonstrations or videos on prenatal health care, are ideal options(31).

The audio-visual learning approach through video is frequently recommended as one of the most effective methods. This is due to the fact that the content or educational materials presented in a video appear more authentic and lifelike (32). Such an environment provides learners with a more tangible experience. The video learning method demands that learners actively engage their visual and auditory senses(33, 34).

E-booklet offers a greater degree of interactivity compared to traditional brochures or printed materials. It has the capability to feature video tutorials, infographics, animations, or direct links to extra resources, providing readers with a deeper understanding of breastfeeding techniques, managing lactation issues, and dietary advice for maintaining optimal breast milk quality(35). In addition, the e-booklet can incorporate quizzes or brief knowledge assessments to help mothers gauge their

understanding of exclusive breastfeeding (36). The broader availability, the e-booklet can also connect with mothers in isolated regions who might have limited access to healthcare services or educational workshops on exclusive breastfeeding. They can obtain or download the e-booklet online and access the same high-quality information available to all mothers. In this regard, the e-booklet not only enhances understanding but also bridges the information divide among various community groups(37).

In addition to expanding knowledge, the e-booklet can also influence mothers' attitudes and practices surrounding exclusive breastfeeding (38). Clear information paired with engaging visuals encourages mothers to adhere to exclusive breastfeeding and understand the importance of following WHO recommendations, which promote exclusive breastfeeding for the first six months. Mothers also feel more equipped to address challenges such as concerns about milk supply, breastfeeding issues, or a lack of supportive environments (30). These results are consistent with the research conducted by Nur et al. (2019), which found a statistically significant enhancement in increasing knowledge and attitude scores (39). The two learning techniques, both audio visual and e-book let had significance toward to improvement of knowledge and attitude. This study in line with the research by Phradan et. al., (2018) on the impact of learning through demonstration and observing videos on the knowledge and proficiency of

nursing students in India (40). The findings indicated that both instructional methods significantly enhanced the scores of knowledge and skill. Nevertheless, the method of learning through video observation proved to be more effective than the demonstration method (41). Apart from knowledge to increase exclusive breastfeeding, there is motivation from the mother, family parenting patterns and the success of early initiation of breastfeeding(42)(43)(44).

Limitations of the study is the sample size was not too large and the intervention was only carried out once. It is hoped that future researchers can use a larger number of samples and a longer research duration to see the effect of audiovisual and e-booklet education on breastfeeding practices.

CONCLUSION AND RECOMMENDATION

There was a noted increase in knowledge and attitudes among third-trimester pregnant women about exclusive breastfeeding in both the experimental and control groups. Additionally, the provision of education through audiovisual and booklet media had a significant effect on the knowledge and attitudes of pregnant women toward exclusive breastfeeding.

There is standardize education about breastfeeding is not only during integrated antenatal care visits, there is at least two education sessions during the prenatal period when the mother makes Antenatal care visits at the health center so that the mother can increase her knowledge and attitude towards

breastfeeding. Moreover, during the postnatal period she can extend the duration of giving breast milk to her baby.

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