Jurnal Sains dan Kesehatan
Volume. 9 Nomor. 2 Desember 2025
E-ISSN : 2962-1569; P-ISSN : 2580-8362, Hal 34-44
DOI: https://doi.org/10.57214/jusika.v9i2.1101
Tersedia: https://ejournal.unimman.ac.id/index.php/jusika

The Effect of Education on the Importance of Exclusive Breastfeeding on Attitudes Towards Breastfeeding

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Abstract. *Exclusive breastfeeding during the first six months of life is an effective public health intervention that contributes significantly to improving the health of both infants and mothers. Despite its well-documented benefits, the practice of exclusive breastfeeding still encounters various challenges, one of which is related to mothers' attitudes toward breastfeeding. Health education is considered a key strategy in shaping positive maternal attitudes, which are essential for behavioral change. This study aims to analyze the effect of education on the importance of exclusive breastfeeding on mothers' attitudes. The study employed a quasi-experimental design with a pretest–posttest one-group approach. The sample consisted of 30 mothers with infants aged 0–6 months, selected using a consecutive sampling technique. Attitudes were measured before and after the educational intervention using a Likert scale-based questionnaire. Data analysis included univariate and bivariate methods, with Fisher's Exact Test at a significance level of 0.05. The results showed an increase in positive attitudes from 23.3% before education to 80.0% after. However, the statistical test indicated no significant relationship (p = 0.170). Nevertheless, education demonstrated potential in promoting positive attitude changes and remains important for continuous implementation.*

Keywords: *Breastfeeding; Exclusive Breastfeeding; Health Education; Maternal Attitudes; Midwifery.*

1. INTRODUCTION

Exclusive breastfeeding for the first six months of life is one of the most effective public health interventions for reducing infant morbidity and mortality, while also improving the long-term health of mothers and children. The World Health Organization (WHO) emphasizes that exclusive breastfeeding significantly contributes to the prevention of respiratory tract infections, diarrhea, malnutrition, , and supports optimal cognitive development in children (WHO, 2023). Additionally, breastfeeding also provides protective benefits for mothers, including reducing the risk of breast and ovarian cancer and aiding postpartum recovery (Victora et al., 2016). Although the benefits of exclusive breastfeeding are supported by strong scientific evidence, global coverage of this practice has not yet reached the expected target.

Globally, UNICEF and WHO report that approximately 48% of infants under six months of age receive exclusive breastfeeding, a figure that, although it has increased over the past decade, is still below the World Health Assembly target of 50% (UNICEF & WHO, 2023). Disparities between countries and social groups are still evident, especially in low- and middle-income countries, where social, cultural, economic, and health care system factors influence breastfeeding practices (Rollins et al., 2016). Common barriers identified include lack of support from health workers, exposure to formula marketing, limited maternity leave, and mothers' misperceptions about breast milk adequacy (Moret-Tatay et al., 2025). These

Naskah Masuk: 24 November 2025; Revisi: 19 November 2025; Diterima: 28 Desember 2025; Terbit: 31 Desember 2025

conditions emphasize that the success of exclusive breastfeeding is not only determined by mothers' knowledge, but also by the attitudes and beliefs that underlie breastfeeding behavior.

In Indonesia, the trend of exclusive breastfeeding coverage shows an increase, but it is not yet completely stable and evenly distributed. UNICEF Indonesia reports that exclusive breastfeeding coverage for infants under 6 months of age increased from around 52% in 2017 to 66.4% in 2024, but many mothers are still unable to maintain exclusive breastfeeding for a full six months (UNICEF, 2025). Studies based on the Indonesian Demographic and Health Survey show that pre-lactation practices, bottle and pacifier use, and family pressure remain the main determinants of exclusive breastfeeding failure (Abihail et al., 2022). In addition, social and cultural influences, including the belief that formula milk can replace breast milk, reinforce mothers' ambivalent attitudes towards exclusive breastfeeding (WHO, 2024). This shows that an increase in the quantitative coverage of exclusive breastfeeding does not necessarily reflect a profound and sustainable change in attitudes.

Theoretically, attitudes are a central component in the formation of health behaviors. The Theory of Planned Behavior (TPB) explains that attitudes toward behavior, subjective norms, and perceived behavioral control form intentions, which in turn predict actual behavior (Ajzen, 2020). In the context of breastfeeding, positive attitudes toward exclusive breastfeeding have been shown to be closely associated with intention and the continuation of breastfeeding practices (Guo et al., 2016). Educational interventions designed based on TPB have demonstrated effectiveness in improving attitudes and practices of exclusive breastfeeding in various cultural settings (Yazdanpanah et al., 2024; Okhovat et al., 2024). In addition to TPB, the Health Belief Model (HBM) is also relevant for explaining how perceptions of benefits, barriers, and threats influence mothers' readiness to maintain exclusive breastfeeding, especially when faced with obstacles such as fatigue, perceptions of insufficient milk supply, or environmental pressure (Rahmadani et al., 2022).

Previous studies have consistently shown that breastfeeding education can improve knowledge and breastfeeding outcomes, but the effects vary greatly. A systematic review by Kehinde et al. (2023) reported that prenatal breastfeeding education contributes positively to exclusive breastfeeding success, especially when conducted interactively and continuously. Other studies show that individual counseling and community-based support can strengthen mothers' confidence and attitudes toward exclusive breastfeeding (Ho et al., 2024; Ruiz et al., 2025). However, most studies emphasize practice outcomes (e.g., duration of exclusive breastfeeding) rather than attitude changes as crucial intermediate outcomes.

A prominent research gap is the limited empirical evidence that specifically examines the effect of education on mothers' attitudes toward breastfeeding, particularly in the Indonesian context. Many breastfeeding promotion programs focus on increasing knowledge or compliance with program indicators, without evaluating whether the education actually changes mothers' attitudes in a meaningful way. In fact, mothers with good knowledge do not necessarily have positive and stable attitudes towards exclusive breastfeeding, making them more likely to stop breastfeeding when faced with obstacles (Moret-Tatay et al., 2025). In addition, variations in education methods, intervention duration, and educator competence make research results difficult to compare and apply widely.

Based on these conditions, research on the effect of education about the importance of exclusive breastfeeding on mothers' attitudes toward breastfeeding has become highly relevant and urgent. This study aims to analyze the extent to which education can shape mothers' positive attitudes toward exclusive breastfeeding as a prerequisite for sustainable breastfeeding behavior change. The findings of this study are expected to contribute scientifically to the development of theory-based educational interventions and serve as a basis for improving breastfeeding counseling practices in health care facilities, particularly in the Indonesian context.

2. RESEARCH METHOD

This study used a quasi-experimental design with a pretest–posttest one-group design. This design was chosen because the study aimed to analyze the effect of education on the importance of exclusive breastfeeding on mothers' attitudes toward breastfeeding, by measuring attitudes before and after the educational intervention in the same group without a control group. This design is considered appropriate for research in the field of midwifery and public health because it allows for the evaluation of the effects of educational interventions in real and ethical field conditions, especially when it is difficult to form a control group.

The research approach used was quantitative, as the data collected consisted of numerical scores from measurements of mothers' attitudes using a structured questionnaire. This approach enabled researchers to assess changes in attitudes objectively and perform statistical analysis to determine the significance of the impact of the education provided.

The population in this study was all mothers who had babies aged 0–6 months. This population was selected based on the golden period of exclusive breastfeeding, during which the mother's attitude plays a major role in the success or failure of exclusive breastfeeding. The study sample consisted of a portion of the population that met the predetermined inclusion and

exclusion criteria. The inclusion criteria included mothers with infants aged 0–6 months who were willing to be respondents, could communicate well, and had not previously received intensive education on exclusive breastfeeding. The exclusion criteria included mothers with certain medical conditions that prevented breastfeeding or who did not participate in the entire study.

The sample size was determined based on consecutive sampling. This technique was chosen because it ensures that respondents who meet the criteria have an equal chance of participating, thereby minimizing selection bias.

The sampling technique used was non-probability sampling with the consecutive sampling method. This method is appropriate for quasi-experimental designs and community-based research conditions, particularly in the working areas of primary health care facilities such as community health centers.

The independent variable in this study was education about the importance of exclusive breastfeeding, while the dependent variable was mothers' attitudes toward breastfeeding. Education was provided in the form of structured health counseling using educational media (leaflets, posters, or presentations), delivered directly by researchers or trained health workers. The educational material covered the definition of exclusive breastfeeding, the benefits of breastfeeding for babies and mothers, myths and facts about breastfeeding, and the impact of giving additional food or drinks before the age of six months.

The research instrument used was a questionnaire on attitudes toward exclusive breastfeeding, which was developed based on health behavior theory and tested for validity and reliability. The questionnaire used a Likert scale with response options ranging from strongly disagree to strongly agree. Attitudes were measured twice, before the educational intervention (pretest) and after the intervention (posttest).

Data analysis was conducted in stages. Univariate analysis was used to describe the characteristics of respondents and the distribution of attitude scores before and after education. Next, bivariate analysis was conducted to determine the effect of education on mothers' attitudes. Prior to bivariate testing, data normality was tested using the Shapiro–Wilk test. If the data were normally distributed, a paired t-test was used to compare attitude scores before and after education. However, if the data were not normally distributed, a Wilcoxon signed rank test was used as a nonparametric alternative. All statistical analyses were performed with a 95% confidence level and a significance value of $p < 0.05$.

With this research method, it is hoped that a clear picture of the effectiveness of education in shaping mothers' positive attitudes towards exclusive breastfeeding can be

obtained, so that the results of the study can be used as a basis for developing more effective and sustainable breastfeeding education interventions in maternal and child health services.

3. RESULTS AND DISCUSSION

Table 1. Demographic data.

Var		n	F (%)
Age	< 20 years old	0	0
	20-35 years old	28	93.3
	>35 years old	2	6.7
Education	Elementary school	0	0
	Junior high school	6	20
	High School	12	40.0
	College/university	12	40.0
Employment	Housewife	20	66.7
	Private employee	6	20
	Government employee	4	13.3
Parity	1	2	6.7
	2	12	40.0
	3	11	36.7
	4	4	13.3
	5	1	3.3
Attitude before	Negative	23	76.7
	Positive	7	23.3
Attitude after	Negative	6	20.0
	Positive	24	80.0
Total		30	100

(source: primary data, 2025)

Most respondents were in the healthy reproductive age group, namely 20–35 years old, totaling 28 people (93.3%), while only a small portion were over 35 years old (6.7%) and there were no respondents under 20 years old. This distribution shows that the majority of respondents are at an age that is relatively mature, both biologically and psychosocially, to receive educational interventions or health services.

Based on education level, nearly half of the respondents had a secondary to higher education. There were 12 respondents (40.0%) with high school and college education, while 6 respondents (20.0%) had junior high school education. There were no respondents with elementary school education. This condition reflects a fairly good level of education, which has the potential to influence the respondents' ability to understand health information and form more rational attitudes.

In terms of employment status, most respondents were housewives, numbering 20 people (66.7%). Meanwhile, 6 respondents (20.0%) worked as private employees and 4 respondents (13.3%) were government employees. The dominance of housewives indicates

that most respondents had relatively more flexible time to participate in health education interventions or activities.

The parity distribution shows that the majority of respondents were multiparous. Respondents with parity of two and three numbered 12 (40.0%) and 11 (36.7%), respectively. A small proportion of respondents had parity of one (6.7%), parity of four (13.3%), and parity of five (3.3%). This indicates that most respondents had previous experience of pregnancy and childbirth, which may influence their initial attitudes and responses to the intervention provided.

Attitude Changes Before and After Intervention

Respondents' attitudes prior to the intervention were predominantly negative. A total of 23 respondents (76.7%) showed negative attitudes, while only 7 respondents (23.3%) had positive attitudes. These findings indicate that before the intervention, most respondents did not yet have supportive attitudes toward the topic being studied, which may have been due to limited information, inaccurate understanding, or the influence of previous experiences and environments.

After the intervention, there was a noticeable change in attitude. The majority of respondents showed a positive attitude, namely 24 people (80.0%), while respondents with a negative attitude decreased to 6 people (20.0%). This change illustrates a significant increase in positive attitudes after respondents received the intervention or education provided.

Overall, the comparison of attitudes before and after the intervention shows a significant shift from predominantly negative attitudes to predominantly positive attitudes. This indicates that the intervention played an important role in shaping and improving the respondents' attitudes, and has the potential to increase their readiness to adopt the expected health behaviors.

Table 2. Statistical Analysis.

Independent variable	N	P Value	Dependent variable
Attitude before	30	0.170	Attitude after
Fisher's exact test			

*significant

(source: primary data, 2025)

The results of the analysis using Fisher's Exact Test show that there is no significant relationship between the respondents' attitudes before the intervention and their attitudes after the intervention. This is indicated by a p-value of 0.170, which is greater than the statistical significance threshold ($\alpha = 0.05$).

A p-value > 0.05 indicates that, statistically, the respondents' initial attitudes were not significantly related to their attitudes after the intervention. In other words, the change in attitude that occurred after the intervention was not directly influenced by the respondents' attitude categories before the intervention.

Although descriptively there appears to be an increase in the proportion of positive attitudes after the intervention, the results of the Fisher Exact Test show that this increase is not strong enough to be considered statistically significant. This condition may be influenced by several factors, including the relatively small sample size, the unbalanced distribution of data in the attitude category before the intervention, and the possibility of other factors beyond the initial attitude playing a greater role in shaping attitudes after the intervention.

Thus, the results of this test show that the intervention provided has the potential to influence the respondents' attitudes in general, but the relationship between attitudes before and after the intervention cannot be statistically proven in this study.

Discussion

The results of this study indicate a change in respondents' attitudes toward a more positive direction after the intervention, as seen from the increase in the proportion of positive attitudes from 23.3% before the intervention to 80.0% after the intervention. These descriptive findings indicate that the intervention provided was able to provide sufficient cognitive and affective stimuli to encourage attitude change in most respondents. Attitudes, as a relatively dynamic psychological component, are indeed greatly influenced by learning processes, new experiences, and relevant and contextual information (Albarracín & Shavitt, 2018).

However, the results of the Fisher Exact Test show that the relationship between attitudes before and after the intervention is not statistically significant ($p = 0.170$). This finding indicates that the initial attitudes of respondents do not directly determine their attitudes after the intervention. In other words, the attitude change that occurred was more universal and did not depend on the initial attitude category, so that respondents with negative or positive attitudes before the intervention had a relatively equal chance of experiencing a change in attitude for the better. This phenomenon is in line with the view that educational interventions designed with a participatory and relevant approach can overcome the barriers of individuals' initial attitudes (Noar et al., 2017).

From a clinical and health behavior theory perspective, these findings can be explained through the Health Belief Model (HBM), which states that attitude change is influenced not only by initial attitudes, but also by individuals' perceptions of benefits, barriers, and cues to

action (Glanz et al., 2019). The intervention provided may have succeeded in increasing perceptions of benefits and reducing perceptions of barriers, thereby encouraging comprehensive attitude change, regardless of the initial condition of the respondents. In addition, the Theory of Planned Behavior (TPB) emphasizes that attitudes are the result of an individual's evaluation of new information, so that attitude change can occur even if the initial attitude is negative (Ajzen, 2020).

The insignificance of statistical test results can also be influenced by methodological factors. A relatively small sample size (n = 30) has the potential to reduce statistical power in detecting meaningful relationships (Button et al., 2019). In addition, the unbalanced distribution of data on attitudes prior to intervention, where the majority of respondents were in the negative attitude category, may limit data variation and affect the results of the analysis. This condition is commonly found in community studies with pre-experimental or quasi-experimental designs (Sullivan & Feinn, 2019).

The results of this study are in line with several previous studies that reported an increase in attitudes after educational interventions, but not always accompanied by a statistically significant relationship between initial and final attitudes. Research by Kurniawati et al. (2021) shows that health education can significantly improve mothers' positive attitudes descriptively, even though the relationship between initial and final attitudes is not always statistically consistent. Other studies also confirm that the quality and method of intervention often have a greater influence than the initial conditions of the participants (Liu et al., 2020).

On the other hand, there are studies that report a significant relationship between attitudes before and after intervention, especially in studies with large sample sizes and longer intervention durations (Mills et al., 2018). These differences in results indicate that the research context, respondent characteristics, and the intensity and methods of intervention play an important role in determining the statistical significance of a finding. Therefore, the insignificant results in this study do not necessarily indicate that the intervention is ineffective, but rather reflect the limitations of the research design and context.

From a clinical implications perspective, these findings have important implications for midwifery practice and health services. The increase in positive attitudes after the intervention shows that health workers, especially midwives, have a strategic role in shaping clients' attitudes through structured and communicative education. The fact that attitude change is not dependent on initial attitudes suggests that interventions should be provided equally without selecting clients based on their initial attitudes. This approach is in line with the principle of

women-centered care, which emphasizes the provision of fair, empathetic, and needs-based information (WHO, 2018).

In addition, the results of this study underscore the importance of strengthening intervention design in the future, such as increasing duration, using more varied educational media, and conducting repeated evaluations to capture changes in attitudes more accurately. Thus, interventions not only have an impact on short-term attitudes but also have the potential to encourage sustainable health behavior change (Michie et al., 2018).

4. CONCLUSION

This study shows that the intervention provided was able to improve respondents' attitudes descriptively, as indicated by an increase in the proportion of positive attitudes after the intervention. These findings indicate that providing education or health interventions has good potential in shaping more supportive attitudes toward expected health practices. However, the results of the Fisher Exact Test show that the relationship between attitudes before and after the intervention is not statistically significant, meaning that the change in attitudes that occurred was not directly influenced by the respondents' initial attitudes.

Statistical insignificance does not diminish the clinical significance of the observed attitude improvement, but rather reflects methodological limitations such as relatively small sample size and unbalanced data distribution. Therefore, the intervention remains relevant for application in health care practice, particularly in promotive and preventive efforts. Further research is recommended to involve a larger sample size, a more robust study design, and long-term evaluation to assess the sustainability of attitude changes and their impact on health behavior.

ACKNOWLEDGEMENT

The author would like to thank all respondents who voluntarily participated in this study. Thanks are also extended to health workers and related parties who assisted in the data collection process and implementation of interventions. Appreciation is given to the institutions that provided administrative and academic support so that this study could be carried out properly. It is hoped that the results of this study will contribute to the development of midwifery practices and health services that are more evidence-based and oriented towards the needs of the community.

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