Journal of Neonatal Surgery
ISSN(Online): 2226-0439
Vol. 14, Issue 32s (2025)
https://www.jneonatalsurg.com

OPEN ACCESS

Effectiveness Of Education Media On Breastfeeding Behavior Among Pregnant Women At Namrole And Leksula Health Centers In Buru Island, Indonesia

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Cite this paper as: Ujiyati Wance, Masni, Stang, Apik indarty moedjiono, Agus bintara birawida, (2025) Effectiveness Of Education Media On Breastfeeding Behavior Among Pregnant Women At Namrole And Leksula Health Centers In Buru Island, Indonesia. *Journal of Neonatal Surgery*, 14 (32s), 1917-1928.

ABSTRACT

Background: Breast milk offers optimal nutrition for infants, containing antibodies that safeguard against numerous diseases while meeting their energy requirements. Nevertheless, numerous mothers remain uninformed about the advantages of breastfeeding.

Objective: This study aims to determine the effectiveness of education media in promoting breastfeeding behavior in pregnant women.

Materials and Methods: experimental research using the quasi-experimental method with a non-equivalent control Group Design. Involving 36 pregnant women divided into two groups, the intervention group was given education (Leaflets and Maternal and Child Health Books) and the control group (Maternal and Child Health books). The sampling technique was Simple Random Sampling, with the sample criteria being third-trimester pregnant women. Leaflet feasibility test results were declared very feasible by two material experts and feasible by two media experts. Data were analyzed using Wilcoxon, Mann-Whitney, and Chi-Square tests.

Results: This study demonstrated significant differences in mothers' knowledge and attitudes before and after educational interventions using Leaflets and MCH Books in both the intervention group ($p=0.000$) and the control group ($p=0.000$). There was no statistically significant difference between the intervention and control groups ($p>0.05$). The intervention and control groups exhibited a statistically significant difference in breastfeeding practices ($p=0.030$).

Conclusion: The combination of education through leaflets and Maternal and Child Health (MCH) books is equally effective as MCH books alone in enhancing the knowledge and attitudes of pregnant women; however, it demonstrates greater efficacy in promoting breastfeeding practices.

Keywords: *Education, Leaflet, Behavior, Breast milk.*

1. INTRODUCTION

Breast milk Breast milk is the greatest nourishment for babies because it includes antibodies that protect them against many common childhood ailments. During the first months of life, breast milk provides all of the energy and nutrients the kid requires, and it continues to fulfill half or more of the child's nutritional needs in the second half of the first year and up to a third in the second. Exclusive breastfeeding means that the baby only gets breast milk. Except for oral rehydration solutions or drops/syrups of vitamins, minerals, or medicines, no other liquids or solid foods, including water, are administered [1]. Meanwhile, according to Law No. 33 of 2012, exclusive breastfeeding is breast milk provided to infants from birth for 6 months, without adding or replacing with other foods or liquids.

Breastfeeding has been shown to reduce neonatal infection rates and provide long-term health benefits such as the prevention of hypertension and diabetes, as well as an increase in intellect (IQ). In the journal [3]. Recent investigations conducted by [4]. Show that breastfeeding has benefits not just in the preterm population by lowering the risk of necrotizing enterocolitis and sepsis, but also in the long run by lowering obesity, increasing cardiovascular health, and lowering the risk of immune-mediated disorders.

The World Health Organization (WHO) advises that all babies should have rapid skin-to-skin contact with their mothers after birth and initiate nursing within one hour of delivery. All newborns should be exclusively breastfed for the initial 6 months of life and continue nursing for up to 2 years or longer, accompanied by timely, sufficient, safe, and suitable supplemental feeding commencing at 6 months.[5].

In 2017, there were 2.5 million neonatal deaths worldwide, representing 46% of all fatalities among children under five. The preponderance of newborn mortality worldwide is concentrated in low- and middle-income countries (LMICs), with the majority attributable to avoidable factors. Breastfeeding can enhance children's survival rates. It is estimated that 823,000 annual deaths occur in children under five, with 87% of these deaths occurring in newborns under six months of age. Despite the recognized advantages of breastfeeding, merely 42% of newborns globally commence nursing within the first hour, and only 37% of children under 6 months in low and middle-income countries (LMICs) are exclusively breastfed. By 2023, Indonesia will experience 34,226 baby deaths among those aged 0-59 months. The predominant number of fatalities transpired during the neonatal era (0-28 days), with 27,530 deaths (80.4%) occurring among newborns. During the post-neonatal era (29 days to 11 months), there were 4,915 deaths (14.4%), while the 12-59month age group recorded 1,781 deaths (5.2%) [7].

A recent survey indicated that approximately 35% of infants globally are exclusively breastfed during the initial 6 months. This remains beneath the WHO's advised rate of 50% [8]. In 2023, exclusive breastfeeding coverage in Indonesia attained 63.9%, surpassing the objective of 50% [7].

In 2023, 43% of the South Buru district's population was exclusively breastfeeding [9]. The Namrole Health Center's initial 2023 exclusive breastfeeding coverage rate was 26.1% of newborns, which was less than the Leksula Health Center's 32% rate. The national aim is still far off from the statistics. As a result, more care must be taken to ensure that all infants in the Namrole Health Center's operational area receive exclusive breastfeeding. Educating and educating moms on the value of exclusive breastfeeding from the beginning of pregnancy is one way to help achieve this goal.

The United Nations Children's Fund (UNICEF) states that institutional, regulatory, and individual variables all affect exclusive breastfeeding. Maternal traits including age, education, nursing knowledge, perceptions, intentions, and the mother-child bond are examples of influences at the individual level. This level of intervention includes lactation management, support, and counseling. Influential elements at the regulatory level include societal norms, the mother's job and occupation, health systems and services, and the role of community members (e.g., peers, leaders, family, and husbands). Regulation-level interventions include funding distribution, policy, monitoring, enforcement, and legislation. At the structural level, national policies and legislation, including local restrictions, media, advertising, and marketing frequently impact population-wide social aspects. Mass media and social mobilization are used to carry out structural level interventions [10].

Many factors influence the success of exclusive breastfeeding, especially maternal behavior [11]. Factors influencing the low level of exclusive breastfeeding include low knowledge about its importance. The mother's knowledge related to exclusive breastfeeding actually has to start when the mother is pregnant, so that the mother can prepare for exclusive breastfeeding properly [12].

The World Health Organization (WHO) and the United Nations Children's Fund (UNICEF) outline essential steps for successful breastfeeding, which include educating pregnant women about the advantages of breastfeeding and its management from pregnancy through the first two years of life. This involves assisting mothers in initiating breastfeeding within 60 minutes post-delivery, ensuring they comprehend proper breastfeeding techniques, and maintaining breastfeeding even during maternal separation for medical reasons. Additionally, it is recommended to provide no food or drink other than breast milk, promote joint care, and refrain from offering pacifiers to breastfed infants [9].

To ensure the effective implementation of exclusive breastfeeding, Government Regulation of the Republic of Indonesia number 33 of 2012 mandates that Health Workers and Health Service Facility organizers must provide information and education on exclusive breastfeeding to mothers and/or family members from the time of pregnancy examination until the conclusion of the exclusive breastfeeding period. Article 17 prohibits all health workers from supplying newborn formula and/or other baby goods that may impede the exclusive breastfeeding initiative, save in instances of medical necessity, maternal absence, or maternal-infant separation. All healthcare professionals are forbidden from accepting or endorsing formula milk or other infant goods that may impede the exclusive breastfeeding initiative [11].

Research Flow

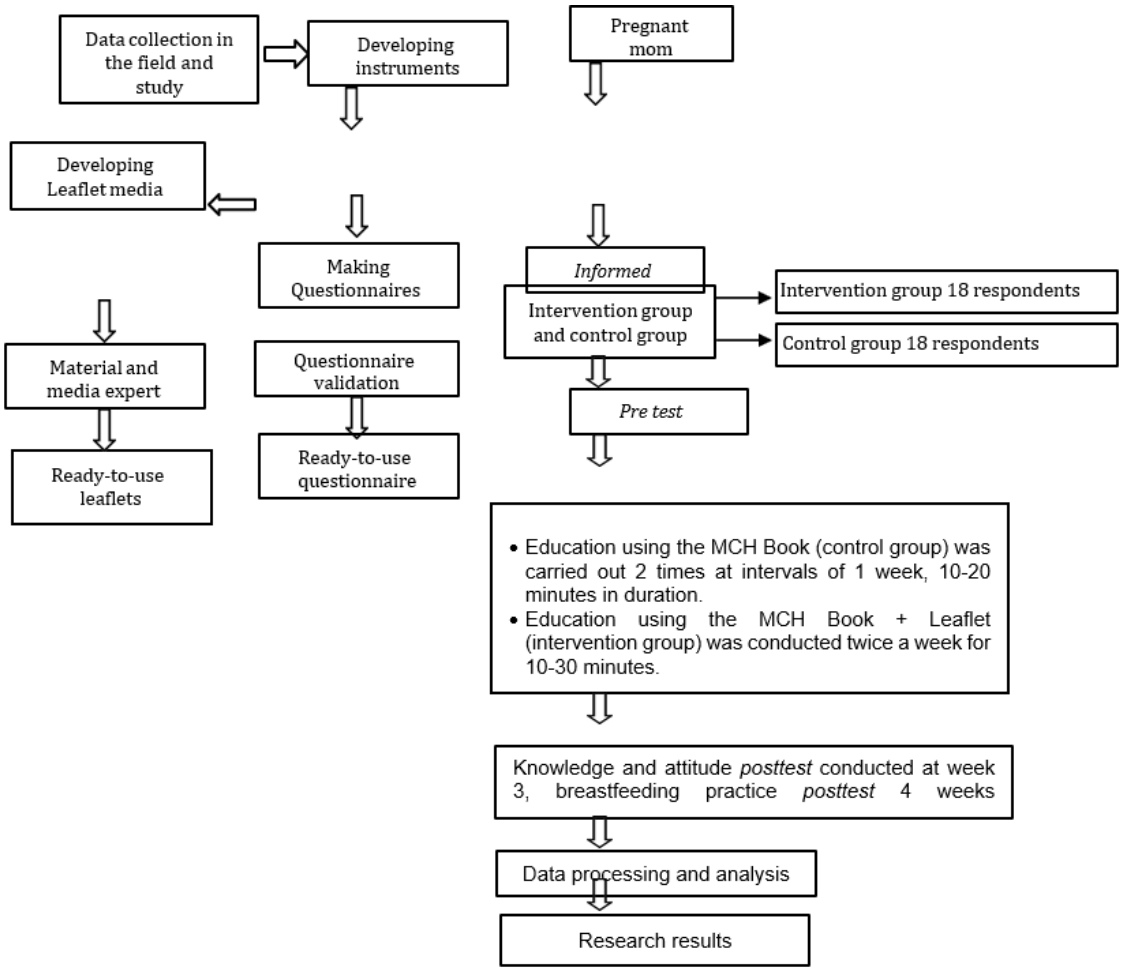

Figure 1: Research flow

2. MATERIALS AND METHODS

Research design

Research conducted experimentally utilizing the Quasi-Experimental approach with a Non-Equivalent Control Group Design. This study focused on third-trimester pregnant women within the working areas of the Namrole and Leksula health centers, located in the South Buru district of Maluku province, comprising a total of 40 respondents. Given the limited population, the sample size calculation utilized the Federer formula, resulting in a sample size of 36 respondents. This was divided into two intervention groups: one receiving education through Leaflets and MCH Books (n = 18), and the other serving as a control group receiving education solely through MCH Books (n = 18). Simple random sampling was employed to conduct the random sampling.

Intervention

Intervention group

The intervention group was provided with educational materials, including leaflets and Maternal and Child Health (MCH) books. The leaflet media has undergone feasibility testing, producing results that are significant to media experts and demonstrating high practicality according to material experts. The leaflet encompasses the definition of exclusive breastfeeding and Early Breastfeeding Initiation (IMD), types of breast milk, benefits of breast milk, proper breastfeeding techniques, hand expression of breast milk, storage methods for breast milk, indicators of adequate breast milk intake by the infant, strategies for working mothers to provide breast milk, and methods to enhance breast milk production. The MCH book is provided to pregnant women and includes health messages regarding the benefits of breast milk, the significance of exclusive breastfeeding, proper breastfeeding techniques, methods for storing breast milk, and instructions for expressing breast milk [14].

The intervention involved assessing the pretest knowledge and attitudes of pregnant women regarding breastfeeding. This assessment included evaluating pretest scores with the assistance of local officers, specifically the on-duty midwife, to ensure the accuracy of the measurement outcomes. Education was sustained through the distribution of leaflets and MCH books during the initial two weeks. Researchers collaborated with midwives and community health workers to facilitate interactions with respondents in their homes. The education session lasted 10 to 30 minutes, after which a question-and-answer session was held with the respondent. The posttest was administered in the third week following the educational intervention, mirroring the pretest schedule; local officers assisted in evaluating the learning outcomes of the respondents. The posttest assessing breastfeeding practices was conducted one month after the respondents' childbirth.

Control group

The control group was provided with information through the Maternal and Child Health Book. This book, sourced from the health center, provides health information encompassing the benefits of breast milk, the significance of exclusive breastfeeding, proper breastfeeding techniques, methods for storing breast milk, and guidelines for expressing breast milk. The educational intervention corresponds to the intervention group; however, the control group receives 10-20 minutes less educational material, utilizing a leaflet.

Instrument

The questionnaire comprised demographic data (age, education, occupation, parity, breastfeeding history), as well as assessments of knowledge, attitudes, and practices. The validity assessment employed Pearson Correlation, while the reliability evaluation utilized Cronbach's Alpha.

Data collection

Primary data were collected directly from respondents' answers to the questionnaire administered during the pretest and posttest. The results of the data collection were processed and analyzed through statistical tests.

Statistical analysis

Analysis of univariate data to examine the frequency distribution of respondent characteristics. Bivariate analysis is employed to test hypotheses by examining the relationship between two variables. The data on knowledge, attitude, and practice exhibited a non-normal distribution. Consequently, the Wilcoxon test was employed to assess the impact of education on knowledge and attitude, utilizing an $\alpha = 0.05$ significance level. Additionally, the Mann-Whitney test was applied to evaluate the differences in knowledge and attitude between the intervention and control groups. The final analysis employed the Chi-Square test to assess the differences in breastfeeding practices between the intervention and control groups. The data analysis employed the IBM Statistical Product and Service Solution (SPSS) Program, version 26

3. RESULTS

This study was conducted at Namrole Health Center (intervention group) and Leksula Health Center (control group) from November 2024 to January 2025.

Univariate analysis

Table 3.5 Frequency Distribution of Respondents based on Characteristics of Age, Education, Occupation, Parity, Exclusive Breastfeeding History in intervention and control groups.

Characteristics	Group			
	Intervention		Control	
	n	%	n	%
Age (year)				
<20	1	5,6	0	0,0
20-35	14	77,8	15	83,3
>35	3	16,7	3	16,7
total	**18**	**100**	**18**	**100**
Education				
SD	2	11,1	1	5,6

HIGH SCHOOL	6	33,3	8	44,4
PT	10	55,6	9	50
Total	**18**	**100**	**18**	**100**
Jobs				
IRT	9	50	12	66,7
PNS/PPPK	5	27,8	4	22,2
Self-employed	1	5,6	0	0,0
Honorer	3	16,7	2	11,1
Total	**18**	**100**	**18**	**100**
Parity				
Nullipara	6	33,3	1	5,6
Primiparous	2	11,1	5	27,8
Multiparous	9	50	11	61,1
Grandemultipara	1	5,6	1	5,6
Total	**18**	**100**	**18**	**100**
Exclusive Breastfeeding history				
Exclusive Breastfeeding	2	11,1	1	5,6
Not Breastfeeding Exclusively	16	88,9	17	94,4
Total	**18**	**100**	**18**	**100**

Table 3.5 shows that the characteristics of respondents in the intervention group aged 20-35 years were the most, 14 respondents (77.8%), and the fewest respondents were aged <20 years, namely one respondent (5.6%). Likewise, in the control group, the most aged 20-35 years were 15 respondents (83.3%), and the least aged <20 years, namely zero respondents (0%).

Educational characteristics of respondents in the intervention group were mainly at the college level (PT) as many as 10 respondents (55.6%) and the least at the elementary school education level (SD) as many as two respondents (11.1%) as well as in the control group most at the college level as many as nine respondents (50%) and the least at the elementary school education level (SD) as many as one respondent (5.6%).

Occupational Characteristics respondents in the intervention group were mainly housewives (IRT), as many as nine respondents (50%), and the least were self-employed, as few as 1 (5.6%). Likewise, in the control group, the most respondents' occupations were housewives (IRT), as many as 12 respondents (66.7%), and the least were self-employed, zero respondents (0%).

The characteristics of parity in the intervention group were mainly multiparous, with as many as 9 respondents (50%), and the least grand multiparous, one respondent (5.6%). Likewise, in the control group, the most multiparous respondents were 11 respondents (61.1%), and the least grand multiparous respondents were one (5.6%). Few in grande multiparous and nulliparous, each one a respondent (5.6%).

Based on exclusive breastfeeding history in the intervention group, most respondents did not provide exclusive breastfeeding, with as many as 16 respondents (88.9%). The least gave exclusive breastfeeding as many as two respondents (11.1%); in the control group, most respondents did not provide exclusive breastfeeding, as many as 17 (94.4%). The least gave exclusive breastfeeding as many as one respondent (5.6%). The reasons why respondents did not provide exclusive breastfeeding included the mother thinking that the milk that came out was small and did not meet the needs of her baby, the reason that the mother worked so that she did not have time to provide breast milk, and the absence of family support in supporting exclusive breastfeeding.

4. BIVARIATE ANALYSIS

1. Knowledge

Table 3.6 Comparison of Knowledge scores between intervention and control groups Before and After educational intervention

Variables	Pretest Mean Sd±	Posttest Mean Sd±	% Δ (delta)	p- value
intervention	13.8±3.4	18,2±1,6	31,8	0,000*
control	13.2±3.8	17.0±2.6	28,7	0,000*
p-value	0,810**	0,170**		

Source: Primary data 2025

*Wilcoxon test

**Mann-Whitney test

Table 3.6 indicates that the intervention group experienced an increase in knowledge scores, with the mean value rising from 13.8 to 18.2 post-intervention. The Wilcoxon statistical test indicates a p value of less than 0.05, signifying a difference in pretest and posttest knowledge scores within the intervention group. In the control group, knowledge scores also increased, as evidenced by the mean value rising from 13.2 to 17.0 following the intervention. The Wilcoxon statistical test yielded a p value of less than 0.05, indicating a significant difference between the pretest and posttest knowledge scores of the control group. The Mann-Whitney statistical test indicated a p-value greater than 0.05, suggesting no significant difference in pretest and posttest knowledge scores between the intervention and control groups. The intervention group demonstrated a greater increase in knowledge, with a rise of 31.8%, compared to the control group's increase of 28.7%.

2. Attitude

Table 3.7 Comparison of attitude scores between intervention and control groups before and after the intervention

Variables	***Pretest*Mean Sd±**	***Posttest* Mean Sd±**	**% Δ (delta)**	***p- value***
intervention	64±4,7	74,5± 7,0	16,0	0,000*
control	61±7,5	70.6±7.5	14,4	0,000*
p-value	0,588**	0,054**		_____

Source: Primary data 2025

*Wilcoxon test

**Mann-Whitney test

Table 3.7 indicates that in the intervention group, attitude scores increased, as evidenced by the mean value rising from 64.2

to 74.5 following the intervention. The Wilcoxon statistical test yielded a p value of <0.05, indicating a significant difference in the pretest and posttest attitude scores within the intervention group. Similarly, the control group exhibited an increase in attitude scores, as evidenced by the mean value rising from 61.7 to 70.6 following the intervention. The Wilcoxon statistical test yielded a p value of <0.05, indicating a significant difference between the pretest and posttest attitude scores of the control group. The Mann-Whitney statistical test indicated a p-value greater than 0.05, suggesting no significant difference in pretest and posttest attitude scores between the intervention and control groups. The intervention group exhibited a greater increase in attitude, with a rise of 16.0%, compared to the control group's increase of 14.4%.

3. Breastfeeding Practices

Table 3.8 Differences in breastfeeding practices one month postpartum between the intervention group and the control group

group	Breastfeeding practice				p-Value
	Breastfeeding		Not Breastfeeding		
	n	%	n	%	0,030***
Intervention	9	50	9	50	
Control	2	11,1	16	88,9	

Source: Primary data 2025

*** Chi-Square Test

Table 3.8 shows that the intervention group had more breastfeeding (50%) than the control group (11.1%). The group difference test using the Chi-Square statistical test obtained a p value of 0.030 <0.05, meaning there is a difference in the proportion of breastfeeding between the intervention group and the control group.

5. DISCUSSION

This study aimed to determine the effect of information through leaflet media on improving knowledge, attitudes, and breastfeeding practices.

1. Knowledge

Knowledge refers to the state of being aware of or informed about a particular subject or fact. Knowledge can be defined as the outcome of human cognition regarding a specific object or the collective actions undertaken to comprehend it [15]. Enhancing maternal knowledge necessitates the provision of educational information. This information necessitates the use of educational media, including print materials like leaflets, to effectively disseminate information.

One approach to comprehending educational messages and their influence on behavior change is the application of appropriate methodologies, as noted in [16]. Leaflets serve as an effective medium for health promotion, enhancing the acceptance of messages. Leaflets are folded sheets of paper that convey information through text, images, or a combination of both. Leaflets serve as media or visual aids that enhance learning outcomes in comparison to learning without any media support. Leaflets offer the advantage of low cost and do not necessitate electricity for their use. Therefore, it is appropriate for application in regions that remain limited by network and electricity access. Prior research indicates a rise in knowledge following an educational intervention utilizing leaflets, which includes:

Research [3] examined the impact of breastfeeding education delivered through leaflet media on the knowledge and attitudes of pregnant women. The findings indicated that exclusive breastfeeding education via leaflet media significantly influenced the knowledge of pregnant women, as did education through non-leaflet media. The impact of exclusive breastfeeding education delivered through leaflet media on the attitudes of pregnant women, as well as the influence of exclusive breastfeeding education using non-leaflet media on the attitudes of pregnant women, is evident.

A separate study [17] demonstrated the impact of exclusive breastfeeding education through leaflet media on the knowledge changes among mothers of toddlers. The control group exhibited results from the Wilcoxon non-parametric statistical test analysis of pretest and posttest knowledge scores, yielding a p-value of 0.002, indicating the rejection of Ho. The use of brochure media for exclusive breastfeeding education significantly influences changes in the knowledge of mothers with toddlers.

The study's results [18] indicated significant differences in knowledge levels before and after the provision of health

education across various media, including electronic media, brochures, leaflet media, and no media at all. Additional research by [19] indicated that leaflet and video media influenced the knowledge, attitudes, and behaviors of infant caregivers regarding exclusive breastfeeding and ASIP.

Research [20] indicates that counseling utilizing leaflet media significantly impacts husbands' knowledge and support regarding family planning programs related to Unmet Need. The research findings [21] indicated a significant impact of breastfeeding education through leaflets on the knowledge and appropriate breastfeeding practices among postpartum mothers. Research in India by [22] indicated that the intervention group utilizing booklet media significantly enhanced the knowledge of primiparous pregnant women about breastfeeding.

The findings indicated that health education influenced mothers' understanding of exclusive breastfeeding via leaflet media and lectures. Based on the Mann-Whitney statistical test, a p value greater than 0.05 was obtained, leading to the rejection of H_1 and the acceptance of H_0. The findings indicate that there is no significant difference in the impact of health education on knowledge regarding exclusive breastfeeding among pregnant women in the Sowi Health Center area, Manokwari Regency, in 2023, between those who received education via leaflets and those who attended lectures.

Research from [24] indicated no significant differences in pregnant women's knowledge regarding exclusive breastfeeding between groups provided with booklets and those given leaflets, with a p value exceeding α 0.05. This indicates that booklets and leaflets are equivalent forms of print media utilized in education, demonstrating similar efficacy in enhancing knowledge.

Research from [25] demonstrated that both leaflet and booklet media significantly enhanced mothers' knowledge and attitudes regarding exclusive breastfeeding. There was no significant difference between the group receiving the leaflet and the group receiving the booklet, as indicated by a p-value greater than 0.05.

The findings indicate that knowledge scores improved following educational interventions that utilized leaflets and Maternal and Child Health (MCH) books within the intervention group. The control group exhibited an increase in knowledge scores following educational interventions that utilized MCH books. Nevertheless, a comparison between the two groups revealed no significant difference. This finding is supported by the education level of the respondents, which does not exhibit a significant difference between the two groups.

Individuals with advanced education generally possess the capacity for independent comprehension of information, thus the choice of educational media has minimal impact on the outcomes. The control group exhibited a higher number of mothers who had given birth. Prior experiences, including pregnancy and previous education, equip respondents with foundational knowledge, resulting in a comparable impact of educational media across both groups. The intervention group (leaflet and MCH Book) and the control group (MCH Book) demonstrated comparable effectiveness in enhancing the knowledge of pregnant women. This finding aligns with the results of prior studies. Education is essential for providing information to pregnant women, particularly concerning breastfeeding.

According to [16], factors that influence knowledge include education. In general, the higher a person's education, the easier it is for them to receive information from others and the mass media, resulting in a greater amount of knowledge. Conversely, a person with a low level of education will hinder the development of their attitude towards receiving information and values. This aligns with the research by [37], which found that a mother's education level influences her ability to receive information. Additionally, experience also plays a role in shaping an individual's knowledge. Experience is an event that a person has experienced while interacting with their environment. Experience is a way to obtain knowledge. Research by [38], shows that there is a 4.6 times greater risk of contracting sexually transmitted diseases among adolescents with low levels of knowledge

2. Attitude

Attitudes represent predispositions to react to environmental stimuli, influencing or directing an individual's behavior. Attitude is defined as a mental state and a cognitive disposition ready to react to an object, shaped by experience. It influences practice or action attitude, either directly or indirectly, serving as a form of evaluation or emotional response [16]. Interventions in the form of counseling can affect the improvement of a person's attitude towards something [26]. Health education is needed to improve respondents' positive attitudes regarding breastfeeding.

Attitude formation is influenced by several factors, including personal experience, genetic and physiological aspects, cultural context, significant others, mass media, educational and religious institutions, and emotional influences. Attitude Change, Attitude can change according to psychological conditions and depending on the circumstances that influence it, so that attitudes are not just formed [15]. Previous research has shown that education can improve the attitude of respondents, including:

The research [3] examined the impact of breastfeeding education delivered through leaflet media on the knowledge and attitudes of pregnant women. The findings indicated that exclusive breastfeeding education utilizing leaflet media positively influenced the knowledge of pregnant women, as did education provided through non-leaflet media. The impact of exclusive breastfeeding education through leaflet media on the attitudes of pregnant women, as well as the effect of exclusive

breastfeeding education via non-leaflet media on the attitudes of pregnant women, is evident.

Study [27]. The experimental group exhibited an increase in average attitude score following a health education lecture utilizing comic media, rising from 53.20 ± 4.511 to 62.24 ± 5.192. The average attitude score in the experimental group exhibited a significant difference before and after treatment ($p = 0.000$). Research conducted by Sukardi et al. (2020) demonstrated that following health education, students exhibited changes in their attitudes towards health behavior, with a significance value of $\rho = 0.000$. The posttest indicated an increase in attitude change, rising from 38.9% to 44.2% following the provision of health education.

Refer to the research indicated in reference [12]. The study demonstrated an impact of utilizing flip sheet media and educational control cards on the knowledge and attitudes of breastfeeding mothers regarding exclusive breastfeeding. The intervention resulted in a differential effect of knowledge between the turning sheet group and the educational control group. The intervention did not yield any difference in the effect of attitude between the turning sheet group and the educational control card. Additional research aligns with this study. A study conducted by Firmansyah et al. (2023) indicated that p-values greater than 0.05 suggest acceptance of the null hypothesis (H0), implying no significant difference in attitude scores regarding exclusive breastfeeding and expressed breast milk between the leaflet and video groups.

The results of this study align with previous research, indicating that the intervention group exhibited an increase in attitude scores following educational interventions utilizing leaflets and Maternal and Child Health (MCH) books. Additionally, the control group also demonstrated an increase in attitude scores after receiving educational interventions with MCH books. Nonetheless, a comparison between the two groups revealed no significant difference.

This finding is supported by the respondents' educational attainment, as both the intervention and control groups comprised individuals with a high level of education, specifically college degrees, and on average, the respondents had previously given birth. Individuals with a higher level of education are more likely to accept information compared to those with a lower level of education. This information serves as a resource for mothers in the daily care of their infants.

Perception can be defined as a person's view of something after acquiring knowledge either directly or indirectly. According to [12] factors that influence the formation of attitudes include personal experience, other people, culture, mass media, educational institutions, religious institutions, and emotional factors. Experience can influence a person's knowledge and attitudes; without any experience at all, a person is likely to have limited knowledge and negative attitudes. Education provided to pregnant women using the MCH book and leaflets can help them adopt wise attitudes toward health and quality of life. Information obtained from education can improve pregnant women's attitudes toward breastfeeding. This can be seen from the increased attitude scores of respondents after education was conducted.

3. Breastfeeding practice

According to [28]. Said that behavior is a response to the actions or actions of an organism that can be observed and even learned which is distinguished in passive and active forms, the passive form is a response that occurs within humans and is not directly visible to others in the form of knowledge, attitudes and perceptions while the active form is in the form of actions that can be observed directly. Providing information and education is necessary to improve breastfeeding practices. Supporting research includes:

Research conducted in Turkey by showed that breastfeeding education provided at home on the third postpartum day effectively increased breastfeeding duration and knowledge in postpartum mothers. Research from [36] showed that the intervention group had more mothers who practiced exclusive breastfeeding for 1 month. The intervention group also had a higher level of knowledge.

Research conducted in Pakistan by showed that mothers who initiated breastfeeding immediately after delivery (84% and 96%) and practiced exclusive breastfeeding were statistically higher in the group of mothers who received counseling than in the group of mothers who did not receive counseling (68% and 16%). It can be concluded that antenatal counseling motivates mothers to initiate breastfeeding immediately after birth and practice exclusive breastfeeding for the first six months.

Research conducted in India by [22] on the effectiveness of educational interventions on breastfeeding among primigravida pregnant women. A longitudinal study showed that educational interventions in primigravida pregnant women were effective in improving knowledge, attitudes, and breastfeeding practices. Knowledge increased to more than 80% after the intervention, positive attitudes reached 92.9%, and exclusive breastfeeding practices were recorded at 82.9% one week after delivery. Complementary feeding also showed an increasing trend at each follow-up visit.

A study in Hong Kong on Antenatal Education to Improve Exclusive Breastfeeding, a Randomized Controlled Trial, found that the exclusive breastfeeding rate in the intervention group was 37.8% at 6 weeks postpartum, compared to 36.4% in the standard care group. The findings of [33] indicated that individual and group breastfeeding education were compared, revealing that antenatal education alone can significantly influence breastfeeding rates for up to 3 months postpartum.

The results of this study showed that the intervention group (leaflet and MCH book) did more breastfeeding 1 month after

delivery (50%) than the control group (11.1%). The difference test between the two groups found a significant difference. The reason supporting this finding is that during the study, researchers observed high enthusiasm from the intervention group, who actively asked questions about breastfeeding, especially how to increase milk production, helping to overcome the common belief that breast milk is scarce. This intervention had a positive impact on increasing the knowledge and readiness of breastfeeding mothers after childbirth.

This finding aligns with research [34] that there is support and self-motivation for realizing exclusive breastfeeding for infants. This finding is also based on the theoretical concept [10] about the key factors that influence breastfeeding behavior, including the intention and motivation of mothers in providing breast milk.

This study found that knowledge and attitudes experienced a significant increase, and breastfeeding practices were higher in the intervention group than the control group, but not all mothers practiced breastfeeding. This means that not always do good knowledge and attitudes align with practice. Research by [35] supports this idea, saying that knowledge and attitudes have nothing to do with exclusive breastfeeding behavior.

6. CONCLUSION

The analysis indicates that educational interventions utilizing leaflets and MCH books, as well as those employing only MCH books, demonstrate comparable effectiveness in enhancing the knowledge and attitudes of pregnant women. In breastfeeding practices, education that incorporates both leaflets and MCH books has demonstrated greater effectiveness compared to education that relies solely on MCH books.

7. ACKNOWLEDGMENTS

The authors express gratitude to all respondents who participated in this study and to the supervisors for their consistent guidance throughout the research process.

8. ETHICAL APPROVAL

The Health Research Ethics Commission (KEPK) of Hasanuddin University has given ethical approval with number 31087/UN4.14. I/TP.01.02/2024.

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