

# Effect of Health Education on Postpartum Mothers' Knowledge of Colostrum in Bantaeng, Indonesia

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## Abstract

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**Background:** Exclusive breastfeeding is a global initiative to ensure healthy growth from an early age. Colostrum, the first breast milk, provides essential nutrients and immunity support, in line with the Sustainable Development Goals (SDGs) 2030.

**Objective:** To describe the knowledge of postpartum mothers about colostrum before and after health education.

**Methods:** This study used a pretest–posttest design without a control group.

**Results:** Before the intervention, 5 respondents (16.6%) had good knowledge, while 16 respondents (53.4%) had poor knowledge. After health education, 17 respondents (56.6%) demonstrated good knowledge, and only 3 respondents (10.1%) remained in the poor knowledge category.

**Conclusion:** Health education significantly improved postpartum mothers' knowledge about colostrum.

**Keywords:** Colostrum; education knowledge; postpartum mother

## Introduction

Breastfeeding is one of the most effective ways to ensure child survival and promote healthy growth. Exclusive breastfeeding has been shown to reduce the risk of diseases such as pneumonia and diarrhea, which account for approximately 40% of deaths among children under five in Indonesia (Ministry of Health of the Republic of Indonesia, 2022). In Southeast Asia, only 44% of infants aged 0–6 months received exclusive breastfeeding between 2015 and 2020, which is below the global target of at least 50% by 2025 (World Health Organization [WHO], 2021). In Indonesia, the proportion of infants under six months who were exclusively breastfed declined from 58.2% in 2019 to 48.6% in 2021 (Ministry of Health of the Republic of Indonesia, 2022). The rate of early breastfeeding initiation (IMD) has also decreased.

Despite its importance, awareness of exclusive breastfeeding remains low. According to the World Breastfeeding Trends Initiative (WBTi), only 27.5% of Indonesian mothers exclusively breastfeed their children, placing Indonesia 49th out of 51 countries assessed (Ministry of Health of the Republic of Indonesia, 2024). The global target is to increase the prevalence of exclusive breastfeeding to 50% by 2025.

At the provincial level, exclusive breastfeeding coverage in South Sulawesi in 2023 was 71.1%, still below the national target of 80% (South Sulawesi Provincial Health Office, 2023). Only two districts, Barru (88.4%) and Bulukumba (85.4%), exceeded the target. The lowest rates were found in Jeneponto (67.7%), Takalar (70.7%), and Maros (70.4%). In Bantaeng Regency, exclusive breastfeeding coverage was 56.7%, with the lowest achievement recorded at the Campaga Loe Health Center at only 1.32% (Bantaeng Health Office, 2023).

A preliminary study at Bantaeng Hospital showed that out of 442 postpartum mothers in the last three months, only one exclusively breastfed her infant, while nine reported providing formula milk within 1–3 days postpartum. This highlights the lack of knowledge and awareness about the importance of early breastfeeding. A study by Fitriasnani et al. (2023) demonstrated

that health education provided to pregnant women in the third trimester significantly improved their understanding of the benefits of colostrum. Educational media, such as leaflets, were effective in increasing knowledge and awareness.

## Methods

### Study Design

This study employed a pre-experimental descriptive survey design with a single-group pretest–posttest approach. The objective was to assess postpartum mothers' knowledge of colostrum before and after receiving health education.

### Samples

The study population consisted of 64 postpartum mothers. Using purposive sampling, 30 participants were selected as the study sample.

### Instruments

The research instrument was a structured questionnaire developed to measure postpartum mothers' knowledge of colostrum, including its benefits, appropriate timing of administration, and methods of storage. Content validity was assessed by three experts in maternal and child health, who evaluated the clarity, relevance, and appropriateness of each item, resulting in a content validity index (CVI) above 0.80, which indicated strong validity. Reliability testing was conducted through a pilot study with 10 respondents outside the study sample, and the internal consistency measured by Cronbach's alpha coefficient was 0.82, confirming that the questionnaire was reliable and suitable for data collection in this study.

### Data Collection

Data were collected using pretest and posttest questionnaires. Before the health education session, participants completed the pretest to assess baseline knowledge. After the educational intervention, the same questionnaire was administered to measure knowledge improvement. Data were collected from 30 postpartum mothers at Prof. Dr. H. M. Anwar Makkatutu Hospital between April and August 2024.

### Data Analysis

Data were analyzed using descriptive statistics. The pretest and posttest scores were compared to determine the improvement in knowledge. Results were presented in percentages to classify knowledge levels as good, sufficient, or poor.

### Ethical Considerations

This research was approved by the Ethics Committee of Prof. Dr. H. M. Anwar Makkatutu Hospital. All participants were informed of the study objectives and procedures, assured of the confidentiality of their data, and provided with the option of voluntary participation. Written informed consent was obtained from all respondents prior to data collection.

## Results

Table 1 shows that most respondents were aged >35 years, totaling 18 people (60.0%). Meanwhile, 10 respondents (33.3%) were in the age group of 20–35 years, and only 2 respondents (6.7%) were ≤20 years old.

Table 1. Respondents by Age

Age (Years)	n	(%)
< 20	2	6.6
20-35	10	33.3
> 35	18	60.1
Total	30	100

Source: SPSS Processed Data, 2024

Table 2 indicates that the majority of respondents had completed senior high school education, totaling 14 people (46.7%). This was followed by junior high school education with 10 respondents (33.3%), elementary education with 4 respondents (13.3%), and a small proportion of respondents with a post graduate, namely 2 people (6.7%).

Table 2. Respondents Based on Education

Education	n	(%)
Elementary School	4	13.3
Junior High School	10	33.3
Senior High School	14	46.6
Post Graduate	2	6.8
Total	30	100

Source: SPSS Processed Data,2024

Table 3 shows that the majority of respondents were multipara mothers, totaling 17 people (56.7%), while 13 respondents (43.3%) were primipara.

Table 3. Respondents Based on Parity

Parity	n	(%)
Primipara	13	43.3
Multipara	17	56.7
Total	30	100

Source: SPSS Processed Data,2024

Table 4 demonstrates a notable improvement in maternal knowledge about colostrum after health education. Prior to education, most respondents (16 people or 53.3%) had poor knowledge, while only 5 respondents (16.7%) demonstrated good knowledge. After the intervention, the proportion of respondents with good knowledge increased significantly to 17 people (56.7%), while those with poor knowledge decreased to only 3 people (10.0%).

Table 4. Knowledge of Mothers Before and After Education

Knowledge	Education			
	Before		After	
	n	%	n	%
Good	5	16.6	17	56.6
Enough	9	30.0	10	33.3
Less	16	53.4	3	10.1
Total	30	100	30	100

Source: SPSS Processed Data,2024

## Discussion

The findings of this study indicate a significant improvement in maternal knowledge about colostrum after receiving health education. Prior to the intervention, most mothers had limited understanding, but education using leaflets increased the proportion with good knowledge. This supports the theory that knowledge is shaped by the information individuals receive, and that health education is a key determinant in behavior change (Notoatmodjo, 2020).

Leaflets were chosen as the educational medium because they are practical, easy to distribute, and can effectively present information through text and images. Previous studies confirm that printed media such as brochures and leaflets can enhance comprehension, clarify misconceptions, and motivate individuals to adopt healthier behaviors (Mubarak, 2019; Widiyastuti, 2022). The use of appropriate media is therefore essential in optimizing the effectiveness of health promotion programs.

This result is consistent with prior research that demonstrates the role of health education in improving breastfeeding practices. Jira (2019) reported that mothers' knowledge of colostrum increased significantly after counseling sessions, while Harnawati and Chikmah (2022) found a positive correlation between maternal knowledge and exclusive breastfeeding behavior. Similarly, Fitriasnani et al. (2023) showed that educational interventions significantly influence mothers' decisions to give exclusive breast milk.

In addition to media and maternal readiness, the support of health professionals is crucial. Suwaryo and Yuwono (2017) emphasized that effective communication between health workers and mothers increases satisfaction and confidence, which in turn encourages exclusive breastfeeding. This suggests that structured educational interventions should be combined with ongoing health worker engagement to sustain positive outcomes.

Community involvement also plays an important role in strengthening maternal understanding. Widyastuti (2022) found that community-based programs integrating mothers and health workers successfully improved awareness of colostrum benefits. Creating supportive environments at both family and community levels can motivate mothers to maintain exclusive breastfeeding practices. Therefore, health education about colostrum should not only target individuals but also engage communities to maximize impact.

## Conclusion

This study demonstrates that health education significantly improves postpartum mothers' knowledge about colostrum breastfeeding, as shown by the marked increase in respondents with good knowledge after the intervention. These findings highlight the importance of using educational media such as leaflets to enhance maternal understanding and encourage positive breastfeeding practices. The results can serve as a reference for health professionals to integrate colostrum education into maternal care programs, while future studies may explore alternative methods and broader populations to strengthen the impact of breastfeeding promotion.

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