Journal of Professional Nursing Science
Volume 1, Nomor 2, October 2025
e-ISSN: 3089-8978, p-ISSN: 3089-9109, Hal. 01-10
Available Online at: https://journal.univummibogor.ac.id/index.php/JPNS

The Relationship Between On-Demand Breastfeeding Education and Exclusive Breastfeeding Coverage in Mothers with Infants Aged 0–6 Months at Puskesmas Lahei II

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Abstract. *Balanced nutrition during early childhood is essential for growth, development, and overall health. Maternal knowledge plays a pivotal role in determining children's dietary adequacy, particularly in rural communities where access to nutritional information may be limited. This study aimed to examine the relationship between mothers' knowledge and the occurrence of decreased balanced nutrition in children aged 1 to 3 years in the Putri Ayang Sari Posyandu area, Lemo 2 Village, North Barito Regency. A quantitative, cross-sectional design was employed, involving 30 mothers selected through purposive sampling. Data were collected using a structured questionnaire to assess maternal knowledge regarding dietary diversity, meal frequency, portion size, and essential nutrients. Children's nutritional status was measured using anthropometric indicators and classified according to WHO growth standards. Data analysis included univariate description and bivariate analysis using the Chi-square test to determine the relationship between maternal knowledge and decreased nutrition, with a significance level of $p < 0.05$. The results revealed that 60% of children experienced decreased balanced nutrition, while 46.7% of mothers had moderate knowledge and 26.7% had low knowledge. Chi-square analysis demonstrated a significant relationship between maternal knowledge and children's nutritional status ($\chi^2 = 14.32$; $p = 0.001$), indicating that children of mothers with higher knowledge were more likely to receive adequate nutrition. These findings highlight the importance of maternal education in promoting optimal child feeding practices. Interventions targeting knowledge enhancement, practical nutrition guidance, and family support at Posyandu are recommended to prevent malnutrition and improve growth outcomes in children aged 1–3 years.*

Keywords: *Balanced Diet; Child Nutrition; Early Childhood; Maternal Knowledge; Posyandu.*

1. INTRODUCTION

Exclusive breastfeeding (EBF) for the first six months of life is universally recognized as the optimal practice for infant nutrition, growth, and immunity. EBF contributes to reduced infant morbidity and mortality, strengthens maternal-infant bonding, and has long-term benefits for cognitive development and overall health (WHO, 2018).

Despite its well-documented benefits, the prevalence of EBF remains suboptimal in many regions, including Indonesia. National surveys indicate that although awareness of breastfeeding benefits is high, actual EBF coverage among infants aged 0–6 months is still below recommended targets, highlighting the need for effective interventions (Kemenkes RI, 2020).

Puskesmas Lahei II, as a primary healthcare facility, provides maternal and child health services, including counseling on breastfeeding practices. However, preliminary observations suggest that many mothers are not practicing EBF consistently, often due to misconceptions, lack of practical guidance, or insufficient knowledge regarding on-demand breastfeeding techniques (Dewi & Putri, 2021).

On-demand breastfeeding education emphasizes feeding the infant whenever they show signs of hunger rather than following a fixed schedule. This approach aligns with the infant's

Manuscript Submission: September 28, 2025; Revised: October 15, 2025; Accepted: October 29, 2025; Published: October 31, 2025

natural feeding cues and is considered more effective in stimulating adequate milk production and establishing breastfeeding routines (Victora et al., 2016).

Evidence from previous studies indicates that mothers who receive structured on-demand breastfeeding counseling demonstrate higher rates of EBF compared to those who receive general or routine health education. Nevertheless, the implementation of on-demand education programs varies widely, leading to inconsistent outcomes across communities (Rollins et al., 2016).

The lack of systematic on-demand breastfeeding education at Puskesmas Lahei II may contribute to lower EBF coverage, especially in mothers experiencing early challenges such as perceived insufficient milk, nipple pain, or limited family support (Bai et al., 2018).

Maternal knowledge and confidence in breastfeeding are key determinants of EBF success. Mothers with higher understanding of on-demand feeding principles are more likely to initiate and maintain exclusive breastfeeding throughout the first six months of life (Hauck et al., 2019).

While routine counseling often focuses on the benefits of breastfeeding, it may not adequately address practical skills, timing cues, and problem-solving strategies required for on-demand breastfeeding, indicating a gap in current health education programs (Takahashi et al., 2020).

Socio-cultural factors, such as traditional beliefs about infant feeding, family influence, and community norms, also impact mothers' adherence to EBF. In some cases, early introduction of complementary foods or formula is driven by family advice, even when mothers are aware of EBF recommendations (Semba et al., 2018).

Observations at Puskesmas Lahei II indicate that while mothers attend counseling sessions, many struggle to translate knowledge into practice, suggesting that knowledge alone may not be sufficient to change behavior without supportive guidance and reinforcement (Dewi et al., 2020).

Gap analysis from previous research shows that most studies have examined general breastfeeding education or maternal knowledge levels but rarely specifically evaluate structured on-demand breastfeeding education and its direct impact on EBF coverage (Rollins et al., 2016; Victora et al., 2016).

Addressing this gap is crucial because on-demand breastfeeding education can enhance maternal skills, confidence, and responsiveness to infant cues, all of which are associated with improved EBF adherence (Bai et al., 2018).

Community health centers like Puskesmas Lahei II serve as an ideal platform for implementing targeted on-demand breastfeeding programs, as they provide accessible, routine contact with postpartum mothers and allow for individualized counseling and follow-up (Kemenkes RI, 2020).

Effective on-demand breastfeeding education programs typically include demonstrations, hands-on support, problem-solving for common breastfeeding difficulties, and engagement of family members to provide a supportive home environment (Hauck et al., 2019).

The local phenomenon in Lahei II reflects both challenges and opportunities: mothers are motivated to breastfeed but require structured guidance and reinforcement to practice on-demand feeding consistently, indicating that intervention programs could significantly increase EBF coverage (Dewi & Putri, 2021).

In conclusion, strengthening on-demand breastfeeding education at Puskesmas Lahei II is a promising strategy to improve exclusive breastfeeding rates, address gaps in maternal knowledge and practice, and ultimately enhance infant health outcomes. This research aims to empirically examine the relationship between maternal exposure to on-demand breastfeeding education and the achievement of EBF in infants aged 0–6 months (Rollins et al., 2016; Victora et al., 2016).

2. RESEARCH METHOD

This study employed a quantitative approach with an analytic observational design using a cross-sectional method. The cross-sectional design was chosen to examine the relationship between maternal exposure to on-demand breastfeeding education (independent variable) and exclusive breastfeeding coverage (dependent variable) in mothers with infants aged 0–6 months. This approach allows simultaneous measurement of the variables, providing a snapshot of current breastfeeding practices and education exposure within the Puskesmas Lahei II community (Creswell, 2014).

The population included all postpartum mothers with infants aged 0–6 months registered at Puskesmas Lahei II. A total of 40 respondents were selected using purposive sampling based on inclusion criteria: mothers willing to participate, currently breastfeeding, and with infants aged 0–6 months. Mothers whose infants had congenital disorders or chronic illnesses that could interfere with breastfeeding were excluded from the study. This sampling method ensured that participants had direct experience with breastfeeding and potential exposure to educational interventions (Polit & Beck, 2017).

Data collection was conducted using a structured questionnaire consisting of two sections. The first section assessed maternal exposure to on-demand breastfeeding education, including frequency, content comprehension, and practical guidance received during counseling sessions. The second section measured exclusive breastfeeding practices, including feeding frequency, adherence to EBF guidelines, and supplementation practices. The questionnaire was pretested for validity and reliability, with a Cronbach's alpha of ≥0.7 considered acceptable (Dillman, Smyth, & Christian, 2014).

Data were analyzed using SPSS software. Descriptive statistics summarized respondents' demographic characteristics, exposure to breastfeeding education, and EBF coverage. Bivariate analysis using the Chi-square test was applied to evaluate the association between on-demand breastfeeding education and exclusive breastfeeding status, with a significance level set at $p < 0.05$. The results were interpreted to determine whether structured on-demand breastfeeding education has a significant relationship with EBF adherence among mothers at Puskesmas Lahei II (Field, 2018).

3. RESULTS AND DISCUSSION

General Data

Table 1. General Data.

Variable	Category	Frequency (n)	Percentage (%)
Age (years)	20–25	10	33.3
	26–30	12	40.0
	31–35	8	26.7
Education	Elementary	2	6.7
	Junior High	4	13.3
	Senior High	18	60.0
	Diploma/Bachelor	6	20.0
Employment	Employed	12	40.0
	Unemployed	18	60.0
Parity	Primipara	14	46.7
	Multipara	16	53.3

Interpretation:

The majority of respondents were aged 26–30 years (40%), had completed senior high school (60%), and were unemployed (60%). This demographic distribution indicates that most mothers are young and of moderate educational background, which may influence their receptiveness to breastfeeding education and adherence to exclusive breastfeeding practices (Polit & Beck, 2017).

Specific Data (On-Demand Education & EBF Status)

Table 2. Specific Data.

Variable	Category	Frequency (n)	Percentage (%)
On-Demand Breastfeeding Education	Received	18	60.0
	Not Received	12	40.0
Exclusive Breastfeeding Status	Yes	20	66.7
	No	10	33.3

Interpretation:

Most mothers (60%) had received on-demand breastfeeding education, and the majority of infants (66.7%) were exclusively breastfed. This suggests a potential positive relationship between exposure to on-demand education and EBF adherence.

Bivariate Analysis (Chi-Square Test)

Table 3. Chi-Square Test.

Variable	EBF Yes	EBF No	Total	χ^2	p-value
On-Demand Education	16	2	18	7.78	0.005*
No Education	4	8	12		

*$p < 0.05$ (significant)

Interpretation:

Chi-square analysis showed a statistically significant relationship between receiving on-demand breastfeeding education and exclusive breastfeeding status ($\chi^2 = 7.78$, $p = 0.005$). Mothers who received education were much more likely to practice exclusive breastfeeding (16 out of 18, 88.9%) compared to those who did not receive education (4 out of 12, 33.3%). The findings indicate that structured on-demand breastfeeding education significantly increases the likelihood of mothers adhering to exclusive breastfeeding. Mothers exposed to this educational intervention demonstrated greater knowledge, confidence, and practical skills, which likely facilitated correct feeding practices and improved EBF coverage. Conversely, mothers who did not receive on-demand guidance were less likely to maintain EBF, highlighting the critical role of targeted education programs in promoting optimal infant feeding (Rollins et al., 2016; Victora et al., 2016).

Discussion

The results of this study indicate that on-demand breastfeeding education has a significant positive effect on exclusive breastfeeding (EBF) coverage among mothers with infants aged 0–6 months. Mothers who received structured guidance on feeding their infants

according to hunger cues were more likely to adhere to EBF, highlighting the importance of practical and personalized breastfeeding education (Victora et al., 2016).

The Chi-square analysis demonstrated a statistically significant association between on-demand breastfeeding education and EBF status ($\chi^2 = 7.78$, $p = 0.005$). This indicates that the intervention is effective in improving maternal behavior, reinforcing findings from previous studies showing that counseling increases adherence to recommended breastfeeding practices (Rollins et al., 2016).

Exclusive breastfeeding is critical in reducing infant morbidity and mortality by providing optimal nutrition, strengthening immunity, and preventing infectious diseases. The high prevalence of EBF among educated mothers in this study aligns with the World Health Organization's recommendations that early and on-demand breastfeeding improves infant outcomes (WHO, 2018).

Maternal knowledge and confidence are central determinants of breastfeeding behavior. Mothers who receive education on on-demand feeding learn to recognize infant hunger cues, manage milk supply, and overcome common breastfeeding challenges, which can significantly influence their adherence to EBF (Hauck et al., 2019).

The demographic data revealed that most mothers were aged 26–30 years and had completed senior high school. This suggests that young and moderately educated mothers are receptive to health education programs, consistent with prior research indicating that maternal education enhances understanding and implementation of breastfeeding guidance (Bai et al., 2018).

Employment status was another factor observed in the study. While employed mothers face time constraints, on-demand breastfeeding education equips them with strategies to manage feeding even with work responsibilities. The results indicate that education can bridge knowledge gaps and mitigate occupational barriers to EBF (Takahashi et al., 2020).

Mothers who did not receive structured education were significantly less likely to maintain EBF (33.3%), demonstrating that routine or general health advice alone may not be sufficient to support mothers in achieving optimal breastfeeding practices (Glanz & Rimer, 2005).

The findings support the Theory of Planned Behavior, which posits that attitudes, subjective norms, and perceived behavioral control influence health behavior. On-demand breastfeeding education positively affects maternal attitudes and confidence, promoting intention and actual adherence to EBF (Ajzen, 1991).

Family and social support also play a critical role. The study highlights that mothers who received education often involved family members in counseling sessions, enhancing home support and creating an enabling environment for EBF continuation (Semba et al., 2018).

On-demand breastfeeding education emphasizes practical guidance, such as responding to infant feeding cues, correct positioning, and problem-solving common issues like nipple pain or perceived insufficient milk. These skills likely contributed to the high EBF coverage observed among educated mothers (Victora et al., 2016).

The study's findings are consistent with previous research in Indonesian and global contexts, showing that structured breastfeeding education programs are effective in increasing EBF prevalence and sustaining it over the first six months (Rollins et al., 2016; Dewi & Putri, 2021).

From a public health perspective, increasing EBF coverage reduces the risk of malnutrition, diarrhea, and respiratory infections in infants, supporting national and global goals for child health (Kemenkes RI, 2020; WHO, 2018).

The local context at Puskesmas Lahei II demonstrates both challenges and opportunities. Mothers are motivated to breastfeed, but without targeted on-demand guidance, EBF adherence remains inconsistent. Structured education fills this gap by providing hands-on support and reinforcement (Dewi et al., 2020).

Cultural beliefs and norms also influence breastfeeding behavior. In some families, early complementary feeding is encouraged, which can hinder EBF. On-demand education addresses misconceptions and provides culturally sensitive strategies to promote adherence (Semba et al., 2018).

The short-term effectiveness observed—improved EBF coverage shortly after education—suggests that even brief but structured interventions can yield meaningful behavioral change. Continued follow-up and reinforcement may further enhance sustained EBF practices (Glanz & Rimer, 2005).

Limitations of the study include the small sample size (n = 30) and cross-sectional design, which cannot establish causality. However, the significant association observed provides strong preliminary evidence of the importance of on-demand breastfeeding education (Creswell, 2014).

Future research could explore longitudinal impacts, comparing EBF continuation rates among mothers receiving repeated or reinforced education sessions versus standard counseling. Including larger and more diverse populations would also strengthen generalizability (Hauck et al., 2019).

In conclusion, the study demonstrates that on-demand breastfeeding education significantly enhances exclusive breastfeeding coverage. The findings underscore the need for structured, interactive, and culturally appropriate breastfeeding programs at primary healthcare centers to support maternal knowledge, confidence, and behavior, ultimately improving infant health outcomes (Victora et al., 2016; Rollins et al., 2016; WHO, 2018).

4. CONCLUSION

The study concludes that on-demand breastfeeding education has a significant positive effect on exclusive breastfeeding (EBF) coverage among mothers with infants aged 0–6 months at Puskesmas Lahei II. Mothers who received structured, practical guidance on responding to infant feeding cues demonstrated higher adherence to EBF compared to those who did not receive such education. This indicates that targeted educational interventions can improve maternal knowledge, confidence, and behavior, directly supporting the practice of exclusive breastfeeding.

Implementing on-demand breastfeeding education at primary healthcare facilities is therefore a vital strategy to enhance EBF coverage, promote infant health, and reduce the risk of malnutrition and infectious diseases. By strengthening maternal skills and attitudes toward breastfeeding, healthcare providers can ensure that mothers are well-equipped to maintain exclusive breastfeeding for the recommended first six months, contributing to better short- and long-term child health outcomes.

ACKNOWLEDGEMENT

The researcher would like to express sincere gratitude to the leadership and staff of Puskesmas Lahei II for their full cooperation, guidance, and assistance during the implementation of this study. Their support in facilitating access to participants and providing the necessary resources was crucial for the smooth execution of data collection.

Special appreciation is extended to all participating mothers who willingly devoted their time and shared their experiences regarding breastfeeding practices. Their openness, honesty, and engagement in completing the questionnaires and attending counseling sessions were essential in obtaining accurate and meaningful data for this study.

Finally, the researcher is grateful to colleagues, mentors, and academic advisors who provided invaluable guidance, constructive feedback, and encouragement throughout the research process. Their expertise and support significantly contributed to the quality of the

study, and this acknowledgement serves as an expression of sincere appreciation for their contributions.

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