

Association Between Early Initiation of Breastfeeding and Exclusive Breastfeeding Success at Jailolo General Hospital

Resance Deba¹, Retno Dewi Prisusanti²

^{1,2} Bachelor of Midwifery Program, Faculty of Health Sciences, Institute of Science and Health Technology RS dr. Soepraoen, Malang, Indonesia

*Corresponding Author: retnodewi@itsk-soepraoen.ac.id

Abstract: Early Initiation of Breastfeeding (EIBF) is a recommended intervention to support successful exclusive breastfeeding. Immediate skin-to-skin contact between mothers and newborns can stimulate lactation, strengthen maternal–infant bonding, and facilitate breastfeeding. This study aimed to examine the relationship between EIBF and exclusive breastfeeding success among mothers delivering at Jailolo General Hospital. A quantitative observational analytic study with a cross-sectional design was conducted from January to March 2026. The study involved 60 mothers with infants aged 6–12 months selected through purposive sampling. Data on EIBF were obtained from medical records and respondent confirmation, while exclusive breastfeeding data were collected using a structured questionnaire. Data were analyzed using descriptive statistics and the Chi-square test with a 95% confidence level. The results showed that 70.0% of respondents experienced EIBF, while 65.0% successfully practiced exclusive breastfeeding. Bivariate analysis demonstrated a significant relationship between EIBF and exclusive breastfeeding success ($p = 0.001$), with mothers who experienced EIBF showing a higher proportion of successful exclusive breastfeeding. These findings indicate that EIBF is significantly associated with exclusive breastfeeding success. Strengthening EIBF implementation and breastfeeding counseling by healthcare professionals may support improved exclusive breastfeeding outcomes.

Keywords: Breastfeeding Mothers; Early Breastfeeding Initiation; Exclusive Breastfeeding; Hospital; Lactation.

1. INTRODUCTION

Breast milk (BM) is universally acknowledged as the optimal source of nutrition for infants because it provides a complete range of essential nutrients, immunoglobulins, enzymes, hormones, and numerous bioactive compounds that collectively promote healthy growth, neurodevelopment, and immune system maturation. The World Health Organization (WHO) and the United Nations Children's Fund (UNICEF) recommend that every newborn should initiate breastfeeding immediately after birth through Early Initiation of Breastfeeding (EIBF) and receive exclusive breastfeeding (EBF) for the first six months of life without the introduction of any additional food or liquids, except medications or vitamin supplements when medically indicated. These evidence-based practices represent fundamental strategies for improving maternal and child health by reducing neonatal and infant morbidity and mortality while enhancing long-term health outcomes for both mothers and infants (World Health Organization [WHO], 2023; United Nations Children's Fund [UNICEF], 2023).

The World Health Organization (WHO) and the United Nations Children's Fund (UNICEF) recommend that all newborns receive Early Initiation of Breastfeeding (EIBF) immediately after birth and continue with exclusive breastfeeding (EBF) for the first six months of life without the introduction of any additional food or fluids, except for medications or vitamin supplements when medically indicated. The implementation of these evidence-based interventions is recognized as a cornerstone of maternal and child health

Received: 24 March, 2025

Revised: 10 April, 2025

Accepted: 24 April, 2025

Published: 26 April, 2025

Curr. Ver.: 26 April, 2025



Copyright: © 2025 by the authors.

Submitted for possible open

access publication under the

terms and conditions of the

Creative Commons Attribution

(CC BY SA) license

([https://creativecommons.org/li](https://creativecommons.org/licenses/by-sa/4.0/)

[censes/by-sa/4.0/](https://creativecommons.org/licenses/by-sa/4.0/))

programs because they contribute substantially to reducing infant morbidity and mortality while promoting optimal maternal and neonatal health outcomes (World Health Organization [WHO], 2023; United Nations Children's Fund [UNICEF], 2023).

Despite the well-established benefits of EIBF and exclusive breastfeeding, their implementation remains below recommended targets in many countries, including Indonesia. Multiple barriers continue to hinder successful breastfeeding practices, including inadequate maternal knowledge, insufficient support from healthcare professionals, inconsistent implementation of EIBF during childbirth, maternal and neonatal clinical conditions following delivery, and prevailing sociocultural beliefs and practices. Consequently, many infants fail to receive the full health benefits associated with optimal breastfeeding during the earliest stages of life. These challenges underscore the continued need to strengthen EIBF implementation as a priority component of maternal and newborn healthcare services (WHO, 2023; Ministry of Health of the Republic of Indonesia, 2023).

Early Initiation of Breastfeeding (EIBF) refers to the practice of placing the newborn on the mother's chest or abdomen immediately after birth, allowing uninterrupted skin-to-skin contact and enabling the infant to instinctively locate and attach to the breast within the first hour of life. This early mother–infant interaction stimulates the release of oxytocin and prolactin, hormones that facilitate milk production and ejection, enhance maternal–infant bonding, promote neonatal thermoregulation, and improve subsequent breastfeeding success. Accordingly, EIBF is widely recognized as a simple yet highly effective intervention that significantly increases the likelihood of achieving successful exclusive breastfeeding (Moore et al., 2016; WHO, 2023).

The success of exclusive breastfeeding is influenced by a complex interplay of individual, familial, and healthcare-related determinants. These include the implementation of EIBF, maternal educational attainment, breastfeeding knowledge, family support, assistance from healthcare providers, maternal employment status, and institutional breastfeeding policies within healthcare facilities. Among these factors, EIBF has consistently been identified as a key determinant that enhances maternal confidence in breastfeeding while increasing the likelihood of maintaining exclusive breastfeeding throughout the recommended first six months of life. These findings suggest that successful breastfeeding depends not only on biological mechanisms but also on the quality of maternity care and breastfeeding support provided from the time of childbirth onward (Victora et al., 2016; Rollins et al., 2016).

Numerous previous studies have consistently demonstrated that infants who undergo Early Initiation of Breastfeeding (EIBF) are significantly more likely to achieve exclusive breastfeeding (EBF) than those who do not receive this intervention. Evidence from various countries further indicates that EIBF is associated with longer breastfeeding duration, a lower

likelihood of early formula supplementation, and improved maintenance of exclusive breastfeeding throughout the first six months of life. Nevertheless, the strength of the association between EIBF and exclusive breastfeeding success varies across different settings, reflecting the influence of sociocultural characteristics, healthcare delivery systems, institutional policies, and local breastfeeding practices (Moore et al., 2016; Pérez-Escamilla et al., 2016).

In Indonesia, Early Initiation of Breastfeeding has been incorporated into national maternal and child health policies through regulations promoting exclusive breastfeeding and evidence-based newborn care. Despite these policy initiatives, implementation across healthcare facilities remains inconsistent. Practices such as unnecessary separation of mothers and newborns immediately after delivery, delayed initiation of breastfeeding, and the provision of infant formula without clear medical indications continue to hinder optimal breastfeeding outcomes. These challenges underscore the need for systematic evaluation of EIBF implementation across different healthcare settings, particularly regional hospitals whose organizational characteristics and service delivery models differ from those of tertiary referral institutions (Ministry of Health of the Republic of Indonesia, 2023; UNICEF, 2023).

Jailolo General Hospital is one of the principal healthcare institutions providing maternity and neonatal services in West Halmahera Regency. As a regional referral hospital, the quality of Early Initiation of Breastfeeding practices represents an important indicator of maternal and newborn healthcare services and may substantially influence the success of exclusive breastfeeding. However, empirical evidence regarding the relationship between EIBF implementation and exclusive breastfeeding outcomes at Jailolo General Hospital remains limited. The scarcity of locally generated data highlights the need for context-specific research capable of providing a comprehensive understanding of breastfeeding practices within this healthcare setting.

A review of the available literature reveals several important research gaps that justify the present investigation. First, most previous studies have been conducted in large urban hospitals, whereas evidence from regional healthcare facilities in Eastern Indonesia remains scarce. Second, earlier research has generally examined the prevalence or coverage of either Early Initiation of Breastfeeding or exclusive breastfeeding independently, with relatively few studies specifically investigating the relationship between these two variables within hospital settings. Third, there is limited empirical evidence describing the implementation of EIBF within the clinical context of Jailolo General Hospital. These gaps indicate the need for locally relevant research capable of generating evidence to support clinical decision-making and policy development at the healthcare facility level.

The significance of this study is further reinforced by the importance of improving exclusive breastfeeding coverage as a key indicator of maternal and child health program

performance. Demonstrating a significant association between Early Initiation of Breastfeeding and exclusive breastfeeding success would provide evidence to strengthen hospital policies promoting EIBF, enhance healthcare professionals' competencies in breastfeeding support and counseling, and contribute to achieving Indonesia's national exclusive breastfeeding targets. Furthermore, this study offers a novel contribution by providing empirical evidence from a regional referral hospital in West Halmahera Regency, an area where scientific publications addressing this topic remain relatively limited.

Based on these considerations, the present study aims to examine the association between Early Initiation of Breastfeeding (EIBF) and the success of exclusive breastfeeding among mothers delivering at Jailolo General Hospital. The findings are expected to provide valuable evidence for healthcare professionals, hospital administrators, and policymakers to improve breastfeeding services, strengthen the implementation of Early Initiation of Breastfeeding, and support the successful achievement of exclusive breastfeeding programs as part of broader efforts to enhance maternal and infant health outcomes in Indonesia.

2. LITERATURE REVIEW

(Early Initiation of Breastfeeding (EIBF) is recognized as a key evidence-based intervention in neonatal care, involving the placement of the newborn on the mother's chest immediately after birth for at least one hour or until the infant successfully initiates breastfeeding spontaneously. This uninterrupted skin-to-skin contact during the immediate postpartum period stimulates the secretion of prolactin and oxytocin, the primary hormones responsible for milk synthesis and milk ejection. In addition to facilitating successful breastfeeding initiation, EIBF contributes to neonatal thermoregulation, strengthens maternal–infant attachment, and reduces the risks of neonatal morbidity and mortality. Consequently, Early Initiation of Breastfeeding is widely regarded as a critical first step toward achieving successful exclusive breastfeeding and improving neonatal health outcomes (World Health Organization, 2023; Moore et al., 2016).

The successful establishment and continuation of exclusive breastfeeding (EBF) are influenced by a complex interaction of biological, psychological, social, and environmental factors. From a physiological perspective, effective lactation depends primarily on the coordinated action of the prolactin reflex, which stimulates breast milk production, and the oxytocin reflex, which facilitates milk ejection. Beyond these hormonal mechanisms, several additional determinants—including maternal knowledge, family support, professional guidance from healthcare providers, mode of delivery, and breastfeeding-supportive hospital policies—play essential roles in sustaining exclusive breastfeeding during the first six months of an infant's life. Therefore, successful breastfeeding should be viewed as the result of both maternal biological readiness and the availability of comprehensive, supportive healthcare services (Victora et al., 2016; Rollins et al., 2016).

A substantial body of evidence has demonstrated a positive association between the implementation of Early Initiation of Breastfeeding and the success of exclusive breastfeeding. A systematic review conducted by Moore et al. (2016) reported that immediate skin-to-skin contact following birth significantly increases the likelihood of early breastfeeding initiation, prolongs breastfeeding duration, and improves exclusive breastfeeding outcomes. These findings are further supported by Pérez-Escamilla et al. (2016), who concluded that implementation of the Baby-Friendly Hospital Initiative (BFHI), particularly the practice of Early Initiation of Breastfeeding, contributes substantially to higher exclusive breastfeeding rates across diverse healthcare settings worldwide. Collectively, these studies provide strong scientific evidence that EIBF represents a fundamental quality indicator of maternity care aimed at promoting optimal breastfeeding practices.

Although the relationship between Early Initiation of Breastfeeding and exclusive breastfeeding has been extensively documented, most existing studies have been conducted in tertiary hospitals or urban healthcare settings with service characteristics that differ considerably from those of regional healthcare facilities. Empirical evidence regarding the implementation of EIBF and exclusive breastfeeding outcomes in district hospitals, particularly in Eastern Indonesia, remains limited. Therefore, the present study was undertaken to provide context-specific evidence on the association between Early Initiation of Breastfeeding and exclusive breastfeeding success at Jailolo General Hospital. Guided by the physiological theory of lactation and supported by previous empirical findings, this study hypothesizes that the implementation of EIBF contributes significantly to the successful achievement of exclusive breastfeeding. The findings are expected to strengthen the evidence base for improving maternal and newborn healthcare services and to support the development of evidence-informed breastfeeding policies and clinical practices.

3. METHODS

This study employed a quantitative analytical observational design using a cross-sectional approach. This design was selected to examine the association between Early Initiation of Breastfeeding (EIBF) as the independent variable and the success of exclusive breastfeeding (EBF) as the dependent variable, with both variables measured simultaneously during the study period. The cross-sectional design enables efficient assessment of relationships between variables without requiring longitudinal follow-up of participants.

The study was conducted at Jailolo General Hospital, West Halmahera Regency, Indonesia, between January and March 2026. The target population consisted of mothers who delivered at the hospital and had infants aged 6–12 months, allowing the assessment of exclusive breastfeeding practices during the recommended six-month period. Based on predefined inclusion and exclusion criteria, a total of 60 participants were recruited using purposive sampling. Eligible respondents were mothers with complete delivery records,

adequate communication abilities, and willingness to participate, as demonstrated by providing written informed consent prior to data collection.

Data were collected using a combination of structured questionnaires, observation checklists, and medical record reviews. The questionnaire was designed to obtain information regarding respondents' sociodemographic characteristics and exclusive breastfeeding history, whereas information on the implementation of Early Initiation of Breastfeeding was verified through hospital medical records and confirmed during participant interviews. Prior to data collection, all research instruments underwent psychometric evaluation. The validity assessment demonstrated that all questionnaire items met the required validity criteria (r calculated $> r$ table), while reliability testing yielded a Cronbach's alpha coefficient of 0.89, indicating excellent internal consistency and confirming the suitability of the instruments for research purposes.

Data analysis was performed in two sequential stages: univariate and bivariate analyses. Univariate analysis was conducted to summarize respondents' characteristics and the distribution of study variables using frequencies, percentages, means, and standard deviations, as appropriate. The association between Early Initiation of Breastfeeding and exclusive breastfeeding success was subsequently examined using the Chi-square (χ^2) test, since both variables were categorical in nature. When expected cell frequencies did not satisfy the assumptions of the Chi-square test, Fisher's Exact Test was applied as an alternative statistical procedure. All statistical analyses were conducted using a 95% confidence level, with statistical significance defined as $p < 0.05$. Analytical procedures followed established statistical methodologies described by Ghazali (2021) and Sugiyono (2022).

The conceptual framework of this study illustrates the relationship between the independent and dependent variables. The independent variable (X) was the implementation of Early Initiation of Breastfeeding (EIBF), categorized as implemented or not implemented, whereas the dependent variable (Y) was exclusive breastfeeding success, classified as successful or unsuccessful. The primary objective of the analysis was to determine whether a statistically significant association existed between the implementation of Early Initiation of Breastfeeding and successful exclusive breastfeeding among mothers who delivered at Jailolo General Hospital.

4. RESULTS AND DISCUSSION

Results

This study was conducted at Jailolo General Hospital, West Halmahera Regency, Indonesia, between January and March 2026. Prior to data collection, ethical approval was obtained from the institutional research ethics committee, and official permission to conduct the study was granted by the hospital administration. Eligible participants were subsequently

identified based on hospital delivery records and the age of their infants in accordance with the predefined inclusion criteria. Mothers who agreed to participate received a comprehensive explanation of the study objectives, procedures, potential benefits, and ethical considerations before providing written informed consent.

Data were collected using structured questionnaires, observation forms, and medical record reviews. Information regarding the implementation of Early Initiation of Breastfeeding (EIBF) was verified through hospital delivery records, while data on exclusive breastfeeding success were obtained through face-to-face interviews with mothers and cross-checked using the Maternal and Child Health (MCH) Handbook to improve data accuracy and reliability. Following data collection, all completed questionnaires underwent quality control procedures, including data editing to ensure completeness and consistency, coding of study variables, computerized data entry into statistical software, and data analysis according to the predefined study objectives and analytical plan.

Table 1. Distribusi Karakteristik Responden

Characteristics	Frekuensi (n)	Persentase (%)
Maternal Age (Years)		
<20	6	10,0
20–35	43	71,7
>35	11	18,3
Educational Attainment		
Primary/Junior Secondary Education	14	23,3
Senior Secondary Education	31	51,7
Higher Education	15	25,0
Employment Status		
Homemaker	40	66,7
Employed	20	33,3
Parity		
Primiparous	24	40,0
Multiparous	36	60,0

Source: Primary data processed by the researchers (2026).

As presented in Table 1, the majority of participants were 20–35 years of age (71.7%), had completed senior high school education (51.7%), were housewives (66.7%), and were multiparous (60.0%). These findings indicate that most participants were within the reproductive age group and had previous breastfeeding experience, suggesting a population with relatively established maternal and lactation experience.

Distribution of Early Initiation of Breastfeeding (EIBF) Practices and Exclusive Breastfeeding Outcomes

Table 2. Distribution of Early Initiation of Breastfeeding (EIBF) Practices and Exclusive Breastfeeding Outcomes.

Variabel	Frekuensi (n)	Persentase (%)
Implementation of Early Initiation of Breastfeeding (EIBF)		
Implemented	42	70,0
Not Implemented	18	30,0
Exclusive Breastfeeding Outcome		
Successfully Achieved	39	65,0
Not Successfully Achieved	21	35,0

Source: Primary data collected and analyzed by the researchers (2026).

As presented in Table 2, 42 participants (70.0%) underwent Early Initiation of Breastfeeding (EIBF), while 39 participants (65.0%) successfully maintained exclusive breastfeeding for the first six months of their infants' lives. These findings indicate that the majority of mothers included in the study practiced EIBF and were able to achieve the recommended duration of exclusive breastfeeding.

Table 3. Association Between Early Initiation of Breastfeeding (EIBF) and the Success of Exclusive Breastfeeding

Early Initiation of Breastfeeding IMD	Successful Exclusive Breastfeeding n (%)	Exclusive Breastfeeding Not Successfully Achieved n (%)	Total	p-value
Implemented	34 (81,0)	8 (19,0)	42	
Not Implemented	5 (27,8)	13 (72,2)	18	
Total	39	21	60	0,001

Source: Primary data processed by the researchers (2026).

Table 3, mothers who practiced Early Initiation of Breastfeeding (EIBF) demonstrated a substantially higher rate of successful exclusive breastfeeding (81.0%) than those who did not undergo EIBF (27.8%). The Chi-square analysis revealed a statistically significant association between EIBF implementation and the success of exclusive breastfeeding ($p = 0.001$, $p < 0.05$). These findings indicate that mothers who initiated breastfeeding immediately after birth were significantly more likely to exclusively breastfeed their infants during the first six months of life. Therefore, the study hypothesis proposing a significant relationship between Early Initiation of Breastfeeding (EIBF) and the successful practice of exclusive breastfeeding was supported.

Discussion

The findings of this study demonstrated a statistically significant association between Early Initiation of Breastfeeding (EIBF) and the successful practice of exclusive breastfeeding among mothers who delivered at Jailolo General Hospital. Mothers who initiated breastfeeding immediately after birth were substantially more likely to maintain exclusive breastfeeding than those who did not undergo EIBF. These results suggest that early mother–infant contact following delivery plays an important role in promoting sustained breastfeeding throughout the first six months of life.

From a physiological perspective, these findings are consistent with the established mechanisms of lactation. Immediate skin-to-skin contact between the mother and newborn stimulates the secretion of prolactin and oxytocin, two hormones that are essential for breast milk synthesis and milk ejection. Activation of these hormonal pathways facilitates early breastfeeding, enhances effective infant latch, and promotes successful lactation, thereby providing a biological explanation for the positive association between EIBF and exclusive breastfeeding observed in this study.

The present findings are also consistent with previous research demonstrating that EIBF increases the likelihood of successful breastfeeding initiation, prolongs breastfeeding

duration, and reduces the early introduction of infant formula during the neonatal period. The consistency of these findings across different settings reinforces the view that EIBF is a simple, low-cost intervention with substantial benefits for maternal and infant health. Consequently, this study adds further evidence supporting the integration of EIBF as a fundamental component of high-quality maternity care.

Nevertheless, a proportion of mothers who experienced EIBF did not successfully maintain exclusive breastfeeding for six months. This observation indicates that exclusive breastfeeding is influenced by multiple interacting factors beyond the implementation of EIBF alone. Maternal educational attainment, family support, employment status, breastfeeding knowledge, maternal and neonatal health conditions, and the availability of postpartum lactation counseling may all affect breastfeeding outcomes. Conversely, several mothers who did not experience EIBF were still able to exclusively breastfeed their infants, likely because of strong family support, personal motivation, and continued breastfeeding assistance.

From a theoretical perspective, the findings strengthen the concept that EIBF represents a key determinant of breastfeeding success. They further support the understanding that exclusive breastfeeding outcomes result from the interaction of physiological mechanisms, psychological readiness, and supportive healthcare services. Therefore, the implementation of EIBF should be regarded as an important quality indicator of maternity care across healthcare facilities.

The practical implications of this study emphasize the need for healthcare professionals—including obstetricians, midwives, and nurses—to consistently adhere to standard EIBF protocols during both uncomplicated deliveries and clinical situations where early skin-to-skin contact remains feasible. Furthermore, comprehensive education regarding the benefits of EIBF should be incorporated into routine antenatal care to ensure that expectant mothers are adequately prepared to initiate breastfeeding immediately after childbirth.

These findings also provide valuable evidence for the management of Jailolo General Hospital in developing strategies to improve maternal and neonatal healthcare services. Strengthening the implementation of the Baby-Friendly Hospital Initiative (BFHI), enhancing healthcare professionals' competencies in breastfeeding support, and optimizing postpartum lactation counseling may contribute to increasing exclusive breastfeeding coverage throughout West Halmahera Regency.

Despite the statistically significant association identified in this study, the findings should be interpreted with caution. The cross-sectional design allows the identification of associations but does not establish causal relationships between EIBF and exclusive breastfeeding success. Future research employing prospective cohort or longitudinal study

designs, with larger and more diverse study populations, is recommended to provide stronger evidence regarding the causal effect of Early Initiation of Breastfeeding on exclusive breastfeeding outcomes.

The findings of this study demonstrated a statistically significant association between Early Initiation of Breastfeeding (EIBF) and the successful practice of exclusive breastfeeding among mothers who delivered at Jailolo General Hospital. Mothers who initiated breastfeeding immediately after birth were more likely to maintain exclusive breastfeeding for the first six months of their infants' lives than those who did not experience EIBF. These findings suggest that immediate postnatal mother–infant contact is a critical factor supporting the initiation and continuation of breastfeeding. The researchers propose that EIBF provides mothers with a positive first breastfeeding experience, thereby enhancing maternal confidence and commitment to sustaining exclusive breastfeeding. (World Health Organization [WHO], 2023; Victora et al., 2016).

From a physiological perspective, these findings are consistent with established lactation theory, which explains that immediate skin-to-skin contact stimulates the secretion of prolactin and oxytocin. Prolactin is primarily responsible for milk synthesis, whereas oxytocin facilitates the milk ejection (let-down) reflex, enabling effective breast milk transfer to the infant. Early skin-to-skin contact also promotes correct infant latch and more efficient breastfeeding. The researchers further suggest that successful implementation of EIBF depends not only on maternal physiological responses but also on the preparedness and competence of healthcare professionals in facilitating breastfeeding immediately after childbirth. (Moore et al., 2016; Ballard & Morrow, 2013).

The present findings also support the Breastfeeding Success Model, which proposes that successful breastfeeding results from the interaction of biological, psychological, behavioral, and environmental factors. EIBF serves as the initial step in strengthening the emotional bond between mother and infant through immediate postnatal contact. This early bonding enhances maternal self-confidence, reduces postpartum anxiety, and encourages sustained breastfeeding practices. Based on these findings, the researchers consider EIBF to be a simple yet highly effective intervention capable of substantially improving exclusive breastfeeding outcomes. (Rollins et al., 2016; WHO, 2023).

The results are consistent with previous evidence. Moore et al. (2016) reported that immediate skin-to-skin contact after birth significantly improves breastfeeding success and prolongs breastfeeding duration. Likewise, Pérez-Escamilla et al. (2016) demonstrated that hospitals implementing the principles of the Baby-Friendly Hospital Initiative (BFHI), including routine EIBF, achieve higher rates of exclusive breastfeeding than institutions with less comprehensive implementation. The consistency of these findings reinforces the

importance of EIBF as an evidence-based component of quality maternal and newborn healthcare.

Although most mothers who experienced EIBF successfully maintained exclusive breastfeeding, several participants were unable to continue exclusive breastfeeding for the recommended six months. This observation indicates that EIBF alone is insufficient to determine breastfeeding success. Maternal educational attainment, employment status, family support, access to lactation counseling, maternal and infant health conditions, and workplace breastfeeding policies also contribute substantially to breastfeeding outcomes. The researchers therefore argue that successful exclusive breastfeeding requires a comprehensive continuum of care, with EIBF complemented by ongoing breastfeeding support and counseling after hospital discharge. (Dennis, 2002; Rollins et al., 2016).

The novelty of this study lies in its setting at Jailolo General Hospital, a referral hospital in West Halmahera Regency, where empirical evidence regarding EIBF implementation remains limited. Most previous investigations have been conducted in teaching hospitals or urban healthcare facilities, whereas studies from Eastern Indonesia are comparatively scarce. Consequently, this study provides valuable context-specific evidence reflecting real-world EIBF practices in a regional referral hospital and offers insights that may inform maternal and neonatal healthcare policies tailored to local community needs. (Ministry of Health of the Republic of Indonesia, 2023; UNICEF, 2023).

From a theoretical standpoint, these findings strengthen the concept that EIBF is a major determinant of successful exclusive breastfeeding. The study further supports evidence that breastfeeding stimulation during the first hour of life produces sustained physiological benefits throughout the lactation period. In addition, the findings contribute to the growing body of literature emphasizing the importance of integrating intrapartum care, breastfeeding education, and hospital-based policies to improve national exclusive breastfeeding coverage. (Victora et al., 2016; Moore et al., 2016).

From a practical perspective, these findings underscore the importance of improving healthcare providers' adherence to standardized EIBF protocols as part of high-quality maternity services. Midwives, nurses, and physicians should provide comprehensive antenatal education regarding the benefits of EIBF and ensure that all eligible mothers are offered uninterrupted skin-to-skin contact with their newborns immediately after birth. The researchers further suggest that strengthening the implementation of the Baby-Friendly Hospital Initiative (BFHI), accompanied by regular monitoring and quality assurance of EIBF practices, has the potential to increase exclusive breastfeeding rates while contributing to reductions in infant morbidity and mortality in Indonesia. (WHO, 2023; Pérez-Escamilla et al., 2016).

The text you provided is internally inconsistent. The Conclusion and Recommendations discuss the effect of walnut consumption on breast milk production, whereas the Acknowledgments and References relate primarily to Early Initiation of Breastfeeding (EIBF). Below is an academic English paraphrase that preserves the content exactly as written (i.e., the conclusion remains about walnut consumption). If this manuscript is actually about EIBF, the conclusion should be revised to match the study topic.

5. CONCLUSIONS AND SUGGESTIONS

The findings of this study demonstrated that walnut consumption had a statistically significant positive effect on breast milk production among lactating mothers. These results suggest that walnuts, as a locally available functional food, may support the lactation process by helping to meet the increased nutritional requirements of mothers during breastfeeding. Accordingly, the study objective of evaluating the effect of walnut consumption on breast milk production was successfully achieved, and the research hypothesis proposing a positive association between walnut intake and enhanced milk production was supported by the statistical findings. Nevertheless, these results should be interpreted with caution because they were obtained from a specific study population and under particular research conditions. Therefore, broader generalization requires confirmation through studies involving larger and more diverse populations. Based on these findings, walnuts may be considered a promising local functional food that can be incorporated into nutritional education programs for breastfeeding mothers to support successful exclusive breastfeeding. Healthcare professionals, particularly midwives, nurses, and nutritionists, are encouraged to promote adequate maternal nutrition during lactation by recommending nutrient-rich local food sources as part of comprehensive maternal and child healthcare services..

Future studies are therefore recommended to adopt randomized controlled trial designs with larger sample sizes, include multiple healthcare facilities, and extend the duration of the intervention to generate more robust evidence. Subsequent investigations should also determine the optimal dosage of walnut consumption, evaluate changes in breast milk nutrient composition, and examine the long-term effects of maternal walnut intake on infant growth and the maintenance of exclusive breastfeeding. Such research would further strengthen the scientific evidence supporting walnuts as a locally available functional food for improving maternal and child health.

ACKNOWLEDGMENTS

The authors sincerely express their gratitude to everyone who contributed to the successful completion of this study and the preparation of this manuscript. Special appreciation is extended to the management and staff of Jailolo General Hospital for granting permission to conduct the research, providing the necessary facilities, and supporting the data

collection process. The authors also thank all healthcare professionals, particularly the physicians, midwives, and nurses, whose cooperation and assistance were invaluable throughout the study. The authors are especially grateful to all mothers who voluntarily participated in this research. Their willingness to provide accurate and comprehensive information made this study possible. Appreciation is also extended to all individuals who offered moral, administrative, and technical support throughout each stage of the research process.

References

- Ballard, O., & Morrow, A. L. (2013). Human milk composition: Nutrients and bioactive factors. *Pediatric Clinics of North America*, 60(1), 49–74. <https://doi.org/10.1016/j.pcl.2012.10.002>
- Dennis, C. L. (2002). Breastfeeding initiation and duration: A 1990–2000 literature review. *Journal of Obstetric, Gynecologic & Neonatal Nursing*, 31(1), 12–32. <https://doi.org/10.1111/j.1552-6909.2002.tb00019.x>
- Ghozali, I. (2021). *Multivariate analysis using IBM SPSS 26* (10th ed.). Diponegoro University Publishing Agency.
- Ministry of Health of the Republic of Indonesia. (2023). *Indonesia health profile 2023*. Ministry of Health of the Republic of Indonesia.
- Moore, E. R., Bergman, N., Anderson, G. C., & Medley, N. (2016). Early skin-to-skin contact for mothers and their healthy newborn infants. *Cochrane Database of Systematic Reviews*, 11, CD003519. <https://doi.org/10.1002/14651858.CD003519.pub4>
- Pérez-Escamilla, R., Martinez, J. L., & Segura-Pérez, S. (2016). Impact of the Baby-Friendly Hospital Initiative on breastfeeding and child health outcomes: A systematic review. *Maternal & Child Nutrition*, 12(3), 402–417. <https://doi.org/10.1111/mcn.12294>
- Prisusanti, R. D. (2022). *Quantitative, qualitative, and mixed methods research methodology*. CV Media Sains Indonesia.
- Prisusanti, R. D., Handayani, F., & Kanan, M. (2023). Mentoring healthcare professionals to improve the quality of maternal and child health services in healthcare facilities. *Journal of Community Service*, 5(2), 115–123.
- Prisusanti, R. D., Kanan, M., Badawi, B., Elis, A., Syahrir, M., Yusuf, N. N., & Purnama, Y. (2022). *Clinical skills in midwifery practice*. Yayasan Penerbit Muhammad Zaini.
- Rollins, N. C., Bhandari, N., Hajeebhoy, N., Horton, S., Lutter, C. K., Martines, J. C., Piwoz, E. G., Richter, L. M., & Victora, C. G. (2016). Why invest, and what will it take to improve breastfeeding practices? *The Lancet*, 387(10017), 491–504. [https://doi.org/10.1016/S0140-6736\(15\)01044-2](https://doi.org/10.1016/S0140-6736(15)01044-2)
- Sugiyono. (2022). *Quantitative, qualitative, and R&D research methods* (2nd ed.). Alfabeta.
- United Nations Children's Fund. (2023). *Breastfeeding: A mother's gift, for every child*. UNICEF.
- Victora, C. G., Bahl, R., Barros, A. J. D., França, G. V. A., Horton, S., Krasevec, J., Murch, S., Sankar, M. J., Walker, N., & Rollins, N. C. (2016). Breastfeeding in the 21st century: Epidemiology, mechanisms, and lifelong effects. *The Lancet*, 387(10017), 475–490. [https://doi.org/10.1016/S0140-6736\(15\)01024-7](https://doi.org/10.1016/S0140-6736(15)01024-7)
- World Health Organization. (2023). *Infant and young child feeding*. World Health Organization.
- World Health Organization, & United Nations Children's Fund. (2018). *Implementation guidance: Protecting, promoting and supporting breastfeeding in facilities providing maternity and newborn services—The revised Baby-Friendly Hospital Initiative*. World Health Organization.