Jurnal Teknokes
Homepage: teknokes.org; Vol. 19, No. 1, pp. 048-060, March 2026;
e-ISSN: 2407-8964
p-ISSN: 1907-7904

RESEARCH PAPER

OPEN ACCES

Development of Lactation Mobile Applications in Indonesia: A Systematic Literature Review

Rusmilawaty[1], Norlaila Sofia[1], Hapisah[1], Tri Tunggal[1]

[1] **Department of Midwifery, Poltekkes Kemenkes Banjarmasin, Banjarmasin, Indonesia**

ABSTRACT

Exclusive breastfeeding for six months is a critical public health intervention to reduce infant mortality in Indonesia. However, its implementation continues to face significant barriers, including low maternal health literacy, limited psychosocial support, and challenges in lactation management. Although digital health technologies have expanded rapidly, existing lactation applications in Indonesia remain fragmented and predominantly focus on one-way educational functions, without integrating maternal health data or clinical infant monitoring. This study aims to systematically analyze the characteristics and development trends of lactation mobile applications in Indonesia and to identify feature gaps, which will serve as the foundation for designing an integrated digital model. The main contribution of this study is the development of a conceptual framework for an integrated lactation technology model that combines breastfeeding education, family involvement, maternal factor documentation, and breast milk adequacy monitoring using infant physiological indicators, all within a single digital ecosystem. A Systematic Literature Review (SLR) was conducted following PRISMA guidelines. Literature searches were performed using Publish or Perish software on the Google Scholar database for studies published between 2017 and February 2026 using structured keywords. Five eligible studies were analyzed thematically and appraised using the Joanna Briggs Institute (JBI) Critical Appraisal Checklist. The review found that all identified applications were Android-based (100%, n=5). Four applications (80%) focused on maternal education and demonstrated improvements in knowledge and reduced anxiety; one (20%) emphasized family support through co-parenting; and one (20%) addressed lactation management via milk stock calculation features. No application integrates maternal history, early detection of lactation problems, and infant-based physiological monitoring within a unified platform. In conclusion, lactation application development in Indonesia remains fragmented and lacks a system-integrated approach. The proposed SiCubit conceptual model provides a decision-support framework for integrated breastfeeding monitoring and digital lactation support.

PAPER HISTORY

Received January 18, 2026
Revised January 30, 2026
Accepted February 27, 2026
Published March 19, 2026

KEYWORDS

Exclusive breastfeeding;
Lactation mobile application;
mHealth;
Digital health integration;
Decision-support system.

CONTACT:

rusmilawaty71@gmail.com
fia.bjm@gmail.com
hapisah476@gmail.com
trijurbid.bjm@gmail.com

I. INTRODUCTION

Breastfeeding is a critical intervention for improving infant health and survival while supporting optimal growth and development during early life. The World Health Organization (WHO) recommends exclusive breastfeeding for the first six months of life and continued breastfeeding until the age of two years or beyond [1], [2], [3]. Despite these recommendations, exclusive breastfeeding practices still face multiple challenges, including low maternal health literacy, limited family support, psychological barriers, and difficulties in lactation management [4], [5], [6], [7], [8], [9]. These conditions indicate that conventional education-based interventions alone are insufficient to ensure sustainable breastfeeding success.The rapid development of digital and mobile health (mHealth) technologies has encouraged the use of mobile applications as tools for health education and lactation support [10], [11], [12]. In Indonesia, several breastfeeding-related applications have been developed to provide information, technical guidance, and consultation services for mothers and families [13], [14], [15], [16]. Previous studies suggest that digital health applications can improve maternal knowledge and confidence in breastfeeding practices. However, the development of lactation applications in Indonesia has not yet been systematically mapped through a comprehensive literature review. Preliminary observations indicate that most existing applications primarily deliver one-way educational information and do not integrate maternal health history data or clinical indicators of infant feeding adequacy [17], [18]. In contrast, recent international digital health innovations increasingly incorporate breastfeeding-tracking systems, automated reminders, and data-driven monitoring features to enable personalized lactation support. The absence of similar integrative features in Indonesian

Corresponding author: Norlaila Sofia, fia.bjm@gmail.com, Department of Midwifery, Poltekkes Kemenkes Banjarmasin, Jl. Mistar Cokro Kusumo No. 1A Banjarbaru, Kalimantan Selatan, Indonesia (change this part according to yours).
DOI: https://doi.org/10.35882/jteknokes.v19i1.156

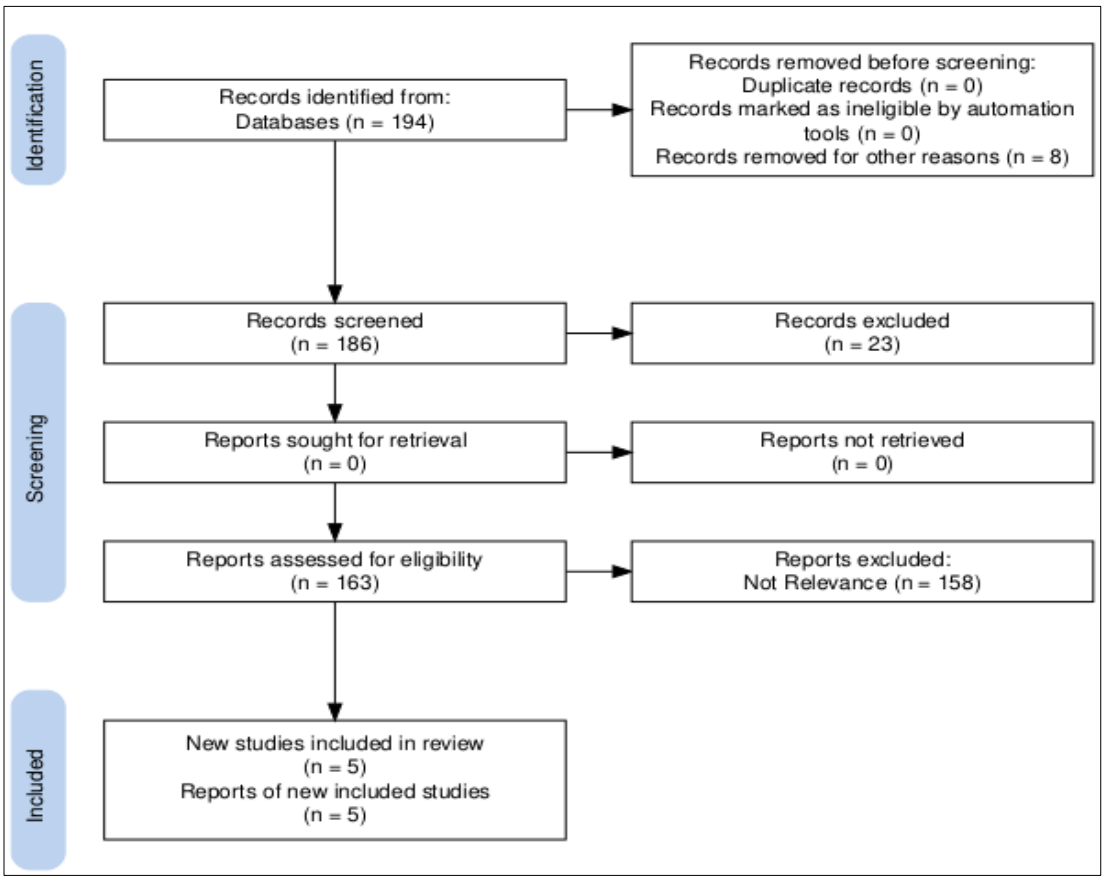

Fig. 1. PRISMA flow diagram illustrating the study selection process, including identification (n=194), screening, eligibility assessment, and final inclusion of five studies.

applications highlights an important technological gap in digital lactation support systems [19]. Breastfeeding success is influenced by multiple interacting factors, including maternal health conditions, pregnancy and childbirth history, family support, and adequate breast milk intake by infants [20], [21], [22], [23], [24]. Therefore, digital lactation applications that only provide educational content may not sufficiently support comprehensive breastfeeding monitoring and decision-making processes [25], [26]. The integration of maternal data, infant indicators, and family support within a single digital system is increasingly recognized as an important direction in the development of digital maternal health technologies. Based on these conditions, this study employs a Systematic Literature Review (SLR) approach to analyze the development of lactation-related digital applications in Indonesia and identify existing technological gaps. The synthesis of the reviewed literature is subsequently used as a conceptual basis for proposing an integrated digital lactation application model. The objective of this study is to map the characteristics of lactation mobile applications developed in Indonesia and to formulate an integrated conceptual framework that combines breastfeeding education, maternal factor documentation, family support, and breastfeeding adequacy monitoring within a single digital ecosystem.

This study contributes to the literature in several ways: (1) providing a systematic mapping of digital lactation application development in Indonesia; (2) identifying technological feature gaps through thematic synthesis; (3) proposing an integrated conceptual model based on an input–process–output system architecture that supports breastfeeding monitoring and decision support; and (4) providing a theoretical foundation for future development of more comprehensive mHealth-based lactation support technologies. The remainder of this paper is organized as follows. The Materials and Methods section describes the systematic literature review procedure used in this study. The Results section presents the characteristics and synthesis of the reviewed studies. The Discussion section interprets the findings and discusses implications for the development of integrated digital lactation systems. Finally, the Conclusion section summarizes the main findings and outlines directions for future research and application development.

II. MATERIALS AND METHOD

This study employed a Systematic Literature Review (SLR) design following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines [27], [28], [29], [30], [31].

A. Dataset

The dataset consisted of scientific articles discussing the development or evaluation of digital applications related to lactation in Indonesia published between 2017 and February 2026. Articles included in the dataset met the

Corresponding author: Norlaila Sofia, fia.bjm@gmail.com, Department of Midwifery, Poltekkes Kemenkes Banjarmasin, Jl. Mistar Cokro Kusumo No. 1A Banjarbaru, Kalimantan Selatan, Indonesia (change this part according to yours).
DOI: https://doi.org/10.35882/jteknokes.v19i1.156

following inclusion criteria: (1) original research published in scientific journals; (2) studies focusing on the development or evaluation of digital applications related to breastfeeding or lactation; (3) research conducted in Indonesia; and (4) articles available in full text. Articles categorized as literature reviews, editorials, conference abstracts, and publications not directly related to digital lactation applications were excluded. The article selection process followed PRISMA stages, including identification, screening, eligibility assessment, and final inclusion. The article selection flow is illustrated in Fig. 1.

B. Data Collection

The literature search was conducted using Publish or Perish (PoP) software on February 12, 2026. The search was performed across Scopus, PubMed, and Google Scholar databases. However, no studies indexed in Scopus and PubMed met the inclusion criteria for lactation application development or evaluation in Indonesia. Therefore, the final identification process focused on the Google Scholar database to capture relevant national publications. The search strategy used structured keyword combinations related to mobile health and breastfeeding applications in Indonesia. The search formula used in Publish or Perish is presented as follows: ("mobile application" OR "mobile health" OR "mHealth" OR "web application") AND ("breastfeeding" OR "lactation" OR "ASI") AND Indonesia.

The keywords used in the search process are summarized in Table 1.

Table 1. Keyword Strategy Used in Literature Search

Category	Keywords
Technology	mobile application, mobile health, mHealth, web application
Health topic	breastfeeding, lactation, ASI
Location	Indonesia

The search process identified 194 articles from Google Scholar. All retrieved articles were screened based on titles and abstracts, followed by full-text evaluation to ensure compliance with the inclusion criteria.

C. Data Processing

The collected data were processed through several stages, including deduplication, screening based on inclusion and exclusion criteria, and extraction of key variables from each study. The extracted variables included publication year, research design, technology platform, target users, application features, and research outcomes. Methodological quality assessment was conducted using the Joanna Briggs Institute (JBI) Critical Appraisal Checklist, adjusted according to the design of each study, including checklists for quasi-experimental and descriptive/analytical studies [32], [33], [34], [35], [36]. Quality scores were calculated based on the proportion of “Yes” responses across the assessment items to identify potential risk of bias and the level of methodological validity. All studies meeting the inclusion criteria and quality assessment threshold were included in the final analysis.

D. Statistical Analysis

Data analysis was conducted descriptively, quantitatively, and thematically. The distribution of study characteristics and application features was calculated using frequencies and percentages. Quantitative analysis was used to determine the proportions of application development focus areas, including breastfeeding education, family support, and lactation management. Furthermore, narrative thematic analysis was applied to evaluate the integration of system features and to identify gaps in the development of digital lactation applications in Indonesia. The synthesis results served as the conceptual basis for developing the SiCubit integrated lactation application framework. To strengthen the quantitative aspect of the analysis, the proportion of application characteristics was calculated using the following formula(Eq.1):

$$P = (n / N) \times 100\% \quad (1)$$

where P represents the percentage, n represents the number of studies with specific characteristics, and N represents the total number of included studies (N = 5). This calculation was used to quantify the distribution of application features, development focus, and platform characteristics across the included studies.

III. RESULTS

A total of five articles met the inclusion criteria and were analyzed in this systematic literature review. All studies showed high methodological quality based on the Joanna Briggs Institute (JBI) Critical Appraisal Checklist, with scores ranging from 85% to 100% (Table 2). Four studies using a quasi-experimental design [37], [38], [39], [40], while one study used a research and development (R&D) approach [41]. All articles were published between 2017 and 2026, and all applications were developed on the Android platform (100%, n=5). Based on the main focus, four applications (80%) are oriented towards breastfeeding education and literacy [37], [38], [39], [40], while one app (20%) focuses on lactation management [41]. In terms of target users, the majority of applications are aimed at pregnant women or breastfeeding mothers (n=4), while one application specifically targets fathers as supporters of exclusive breastfeeding [38].The synthesis of results shows that Android-based educational apps consistently significantly increase mothers' knowledge of exclusive breastfeeding [37], [39], [40]. In addition to increasing knowledge, some studies have also reported an additional impact in the form of a reduction in breastfeeding mothers' anxiety [37], as well as increased husband's support for breastfeeding practices [38]. Lactation management application (SIMOMI) demonstrates the feasibility of a good system based on functionality tests and user acceptance [41]. Overall, the main findings show that Android-based lactation apps are effective as a digital health promotion medium in improving literacy, family support, and breastfeeding practice management.

A. Application Characteristics and Features

All applications provide multimedia content, including text and/or video (100%). The majority of applications focus on breastfeeding education and literacy (80%), while only

Corresponding author: Norlaila Sofia, fia.bjm@gmail.com, Department of Midwifery, Poltekkes Kemenkes Banjarmasin, Jl. Mistar Cokro Kusumo No. 1A Banjarbaru, Kalimantan Selatan, Indonesia (change this part according to yours).
DOI: https://doi.org/10.35882/jteknokes.v19i1.156

Table 2. Article Quality Assessment with JBI Critical Appraisal Checklist

Author, Year	Study Design	Application	Quality Score (%)	Quality Categories	Key Findings
Andini (2019)	R&D	SIMOMI	100	High	Developed using the Waterfall method with comprehensive user acceptance and black-box testing, focused on breast milk stock management.
Virgian & Setiawati (2023)	Quasi-Exp	Menyusui ASI-Q	90	High	Pre–posttest design showing increased maternal knowledge and reduced breastfeeding anxiety.
Handayani (2017)	Quasi-Exp	AYAH ASI	90	High	Targeted fathers to strengthen breastfeeding support; used a control group design.
Yorita et al (2026)	Quasi-Exp	KEKASIH	85	High	Antenatal education intervention improving maternal literacy regarding exclusive breastfeeding.
Elvina & Suryantara (2022)	Quasi-Exp	BUSUI CERDAS	100	High	Multimedia-based educational application demonstrating greater effectiveness than leaflet-based education.

Quality category criteria: High≥75%; Moderate 60–74%; Low<60%

one application (20%) includes lactation management features. Additional features such as breast milk stock calculators, psychological relaxation, father-specific education, and online consultations were only found on one app (20%) each (Table 3). However, no integration of maternal history, monitoring of breast milk adequacy based on infant physiological indicators, nor early detection systems of lactation problems was found in the applications studied.

Table 3. Characteristics and Features of Lactation Applications (n=5)

Category	Features	n	%
Technology Platform	Android	5	100
Main Focus	Breastfeeding Education & Literacy	4	80
	Lactation Management	1	20
Core Features	Multimedia Content (Video/Text)	5	100
	Breast Milk Stock Calculator	1	20
	Psychological Relaxation	1	20
	Father-focused Education	1	20
	Online Consultation	1	20

B. Lactation Education App for Mothers

Three studies (60%) reported that Android-based lactation education applications significantly improved mothers' knowledge of exclusive breastfeeding [37], [39], [40].The ASI-Q application demonstrated increased maternal knowledge after one month of use and was associated with reduced maternal anxiety [37]. The Busui Cerdas application produced higher knowledge improvements compared with leaflet-based education [40]. Meanwhile, the KEKASIH application improved pregnant women's literacy regarding exclusive breastfeeding, although its effectiveness was comparable to conventional educational methods [39]. These findings indicate that multimedia-based digital media provides a more interactive and flexible learning experience than print media and has the potential to increase maternal confidence in breastfeeding.

C. Family Support Apps

The Ayah ASI application demonstrated that digital education targeting fathers significantly improved husbands' knowledge and support for exclusive breastfeeding compared with the control group [38]. These findings indicate that paternal involvement is an important factor in breastfeeding success and that digital applications can serve as effective tools to strengthen family-based breastfeeding support.

D. Lactation Management and Consultation Applications

The SIMOMI application was developed using an R&D approach [41] and provides features including breast milk requirement calculators, lactation guidance articles, and online consultations. Functionality testing demonstrated that all system features operated properly and were positively received by users. Compared with educational applications, SIMOMI emphasizes operational support and breastfeeding planning, particularly for working mothers. The integration of lactation management and consultation within a single platform highlights the potential for continuous breastfeeding support beyond formal healthcare facilities. Although all identified applications provided multimedia educational content, none integrated maternal health history, breastfeeding adequacy monitoring using infant physiological indicators, or early-detection systems for lactation problems within a single digital platform. The absence of longitudinal monitoring features and integrated maternal data indicates a significant gap in the development of comprehensive digital lactation systems. This gap

Corresponding author: Norlaila Sofia, fia.bjm@gmail.com, Department of Midwifery, Poltekkes Kemenkes Banjarmasin, Jl. Mistar Cokro Kusumo No. 1A Banjarbaru, Kalimantan Selatan, Indonesia (change this part according to yours).
DOI: https://doi.org/10.35882/jteknokes.v19i1.156

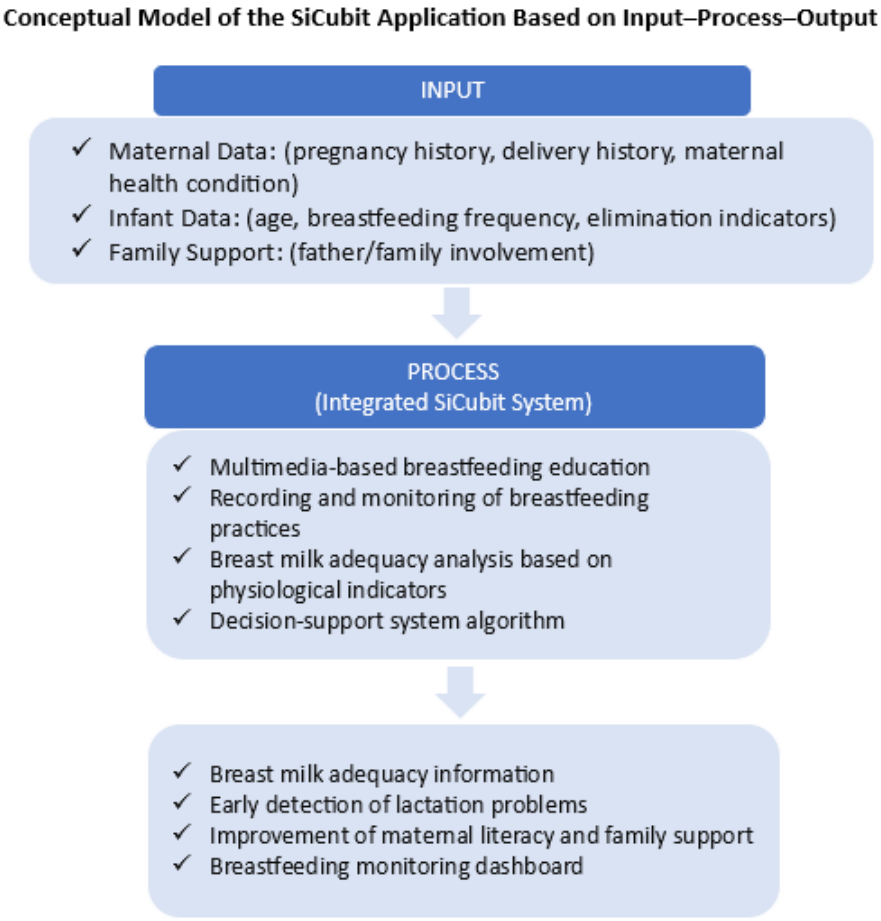

Fig. 2. Conceptual model of the SiCubit application showing the integration of maternal data, infant indicators, and family support within an input-process-output system.

highlights the need for more advanced digital health innovations that integrate data monitoring and decision-support mechanisms in lactation applications.

IV. DISCUSSION

A. Deep Interpretation of Findings

The findings of this study indicate that most lactation applications in Indonesia primarily focus on educational functions. However, these improvements are primarily cognitive and tend to be short-term in nature [37], [39]. These findings align with digital health promotion theories, indicating that mobile-based media can improve accessibility, interactivity, and information retention compared with conventional educational media [42], [43], [44], [45], [46], [47], [48]. The integration of multimedia components such as text, audio, and visual content can enhance understanding and influence attitudes toward breastfeeding practices [49], [50], [51], [52], [53], [54]. Nevertheless, improved literacy alone does not necessarily translate into sustained breastfeeding success. Lactation outcomes are influenced by a complex interaction of physiological, psychological, and social factors. Several applications also demonstrate psychological benefits, including reduced maternal anxiety and increased confidence in breastfeeding [55], [56], [57], [58], [59], [60], [61], [62]. From a physiological perspective, maternal psychological well-being is closely associated with the oxytocin reflex and breast milk production [63], [64], [65], [66], [67], [68]. Therefore, the presence of relaxation and emotional support features in digital breastfeeding applications has a strong biological rationale [69], [70], [71], [72]. However, these features are still additional and have not been integrated into clinical data-driven lactation monitoring systems.

The involvement of fathers through the Ayah ASI application further highlights that breastfeeding success is influenced by the broader family support system. Previous studies emphasize that social support plays an important role in sustaining exclusive breastfeeding practices [73], [74], [75], [76], [77]. Paternal involvement has been associated with longer breastfeeding duration and improved maternal emotional stability [78], [79], [80], [81], [82], [83], [84], [85], [86]. However, applications specifically designed to involve family members remain limited in number [87], [88], [89], [90], [91]. In addition to educational applications, SIMOMI represents a shift toward operational- and management-oriented digital tools. The application includes features such as breast milk requirement calculators and online consultation services, which are particularly relevant for working

Corresponding author: Norlaila Sofia, fia.bjm@gmail.com, Department of Midwifery, Poltekkes Kemenkes Banjarmasin, Jl. Mistar Cokro Kusumo No. 1A Banjarbaru, Kalimantan Selatan, Indonesia (change this part according to yours).
DOI: https://doi.org/10.35882/jteknokes.v19i1.156

mothers who require flexible lactation support [92], [93], [94], [95], [96], [97]. Despite these advancements, current applications still lack integration of maternal health history, infant physiological indicators, and algorithm-based analytical systems within a unified digital platform.

B. Comparison with Other Studies

Globally, the development of lactation applications is increasingly moving toward integrated decision-support systems that utilize user data and longitudinal monitoring. Several international studies report the use of breastfeeding tracking systems, automated reminders, and data-driven analytics to personalize lactation recommendations and improve breastfeeding outcomes [98], [99], [100], [101], [102].

Compared with these developments, lactation applications in Indonesia remain primarily focused on delivering static information and have not yet incorporated comprehensive monitoring systems integrating maternal and infant data. This gap highlights the need for more advanced digital health innovations that can support breastfeeding monitoring through integrated data systems.

Based on the synthesis of findings in this review, the proposed SiCubit conceptual model seeks to address these limitations by integrating maternal data, infant indicators, and family support mechanisms within a structured digital framework. The conceptual architecture of the model follows an input-process-output structure, in which maternal data (such as pregnancy history, delivery history, and maternal health conditions), infant indicators (including breastfeeding frequency and elimination patterns), and family support variables are collected as inputs to the system. These inputs are processed through analytical mechanisms designed to evaluate breastfeeding adequacy and identify potential lactation problems. The system then generates outputs, including breastfeeding adequacy monitoring, early-detection alerts, and digital decision-support recommendations for mothers and healthcare providers.

This comparison emphasizes that the next innovation needs to move from the educational stage to the stage of integrative systems based on inputs, processes and outputs as shown in Fig. 2.

C. Limitations

This study has several limitations. First, the number of studies meeting the inclusion criteria was relatively small (n=5), which limits the generalizability of the findings. Second, most studies used quasi-experimental designs with relatively short evaluation periods, preventing a comprehensive assessment of long-term clinical outcomes such as the duration of exclusive breastfeeding. Third, the literature search relied primarily on Google Scholar after no eligible studies were identified in Scopus and PubMed, which may have limited coverage of international or grey literature related to lactation applications.

D. Implication of the Study

The findings of this review provide important implications for the future development of digital health technologies in lactation support. Digital transformation in maternal health should move beyond information delivery to integrated systems that monitor breastfeeding adequacy using maternal and infant data.

The SiCubit conceptual model proposed in this study integrates maternal characteristics, infant physiological indicators, family support variables, and breastfeeding-monitoring features into a single digital ecosystem. Using an input–process–output architecture, the system can support early detection of lactation problems, strengthen family involvement, and facilitate continuous monitoring of breastfeeding adequacy.

From a practical perspective, developing integrated lactation applications may improve the sustainability of exclusive breastfeeding by providing mothers and healthcare providers with real-time decision-support tools. Academically, this study contributes a conceptual framework that may serve as a foundation for future research and development of mHealth-based lactation decision-support systems in Indonesia.

V. CONCLUSION

This study aimed to systematically analyze the characteristics and development trends of digital lactation applications in Indonesia and to identify feature gaps to inform the proposal of an integrated application model. The results of this systematic literature review identified five eligible studies. All applications were developed on the Android platform (100%, n=5). Most applications focus on breastfeeding education and literacy (80%), while only a small proportion provide lactation management functions (20%). Four studies used a quasi-experimental design and one study applied a research and development (R&D) approach, with high methodological quality (85%–100%). The findings indicate that educational applications can improve mothers' knowledge and, in some cases, reduce maternal anxiety and strengthen family support for breastfeeding.

However, none of the identified applications integrate maternal health history, breastfeeding adequacy monitoring using infant physiological indicators, and early detection systems for lactation problems into a single digital platform. This indicates that lactation application development in Indonesia remains fragmented and has not yet evolved toward a comprehensive, longitudinal database-based monitoring system.

Based on these findings, this study proposes the SiCubit (ASI Cukup Bayiku Hebat) conceptual model, which integrates breastfeeding education, family support, maternal factor documentation, and breastfeeding adequacy monitoring within an input–process–output digital framework. The proposed model represents a conceptual framework that requires further empirical validation through future research and development studies.

Future studies should focus on developing and evaluating the SiCubit system through usability testing, system validation, and implementation trials. Evaluation of measurable outcomes, such as improvements in breastfeeding monitoring, early identification of lactation problems, and potential increases in the duration and

Corresponding author: Norlaila Sofia, fia.bjm@gmail.com, Department of Midwifery, Poltekkes Kemenkes Banjarmasin, Jl. Mistar Cokro Kusumo No. 1A Banjarbaru, Kalimantan Selatan, Indonesia (change this part according to yours).
DOI: https://doi.org/10.35882/jteknokes.v19i1.156

sustainability of exclusive breastfeeding, will be important for assessing the effectiveness of this approach. The integration of such digital systems into maternal and child health services may also help strengthen breastfeeding support programs at the health system level.

REFERENCES

[1] M. Iliadou, K. Lykeridou, P. Prezerakos, and S. G. Tziaferi, "Short and long term health benefits of breastfeeding for infants and mothers: A review," *Epitheorese Klinikes Farmakologias kai Farmakokinetikes*, vol. 37, no. 1, pp. 29–34, 2019, [Online]. Available: https://www.scopus.com/inward/record.uri?eid=2-s2.0-85069171462&partnerID=40&md5=3011866eb36762a709b9d7f2f344f34b6

[2] N. Lucas and R. Doyle, "Breastfeeding and Anaesthesia," in *Quick Hits in Obstetric Anesthesia*, 2022, pp. 415–419. doi: 10.1007/978-3-030-72487-0_63.

[3] J. Y. Meek and L. Noble, "Policy Statement: Breastfeeding and the Use of Human Milk," *Pediatrics*, vol. 150, no. 1, 2022, doi: 10.1542/peds.2022-057988.

[4] M. W. Agyekum, S. N. A. Codjoe, F. A. A. Dake, and M. Abu, "Enablers and inhibitors of exclusive breastfeeding: perspectives from mothers and health workers in Accra, Ghana," *Int. Breastfeed. J.*, vol. 17, no. 1, 2022, doi: 10.1186/s13006-022-00462-z.

[5] F. Amekpor, C. Osei-Mensah, N. A. Adjieteh, E. N. Dok-Yen, and M. B. Salamu, "Exploring Psycho-Social Factors Influencing Exclusive Breastfeeding: Lived Experiences of First Time Mothers at Salaga Municipal Hospital, Savannah Region in Ghana," *International Journal of Public Health* , vol. 70, 2025, doi: 10.3389/ijph.2025.1607542.

[6] G. B. Bukasa, F. K. Kabasubabo, B. M. Bondo, D. A. B. Batuli, and P. Z. Akilimali, "Understanding the Interplay of Maternal Mental Health, Social Support, and Sociodemographic Factors in Promoting Exclusive Breastfeeding in Kinshasa," *Nutrients*, vol. 18, no. 1, 2025, doi: 10.3390/nu18010065.

[7] F. M. Duut, E. Annan, M. Ani-Amponsah, and E. Yeboah, "Breastfeeding Challenges among Career Mothers in A Low-Resource Setting: An Exploratory Study," *Journal of Advocacy, Research and Education*, vol. 12, no. 2, pp. 158–166, 2025, doi: 10.13187/jare.2025.2.158.

[8] N. M. Maponya and S. F. Matlala, "'They shouted at me to discontinue exclusive breastfeeding': narratives of mothers in Limpopo Province of South Africa as they grabble with exclusive breastfeeding," *Bangladesh Journal of Medical Science*, vol. 21, no. 4, pp. 813–819, 2022, doi: 10.3329/bjms.v21i4.60255.

[9] R. Sámano *et al.*, "Association of Pre- and Gestational Conditions and Barriers to Breastfeeding with Exclusive Breastfeeding Practices," *Nutrients* , vol. 17, no. 14, 2025, doi: 10.3390/nu17142309.

[10] N. Halimah *et al.*, "Evaluation of digital health technology acceptance for breastfeeding support among perinatal women in rural areas: A scoping review," *Nursing Practice Today*, vol. 13, no. 1, pp. 32–51, 2026, doi: 10.18502/npt.v13i1.20596.

[11] F. E. López Herrera, E. A. Torres Silva, and I. F. Luna Gómez, "Digital health interventions focused on breastfeeding," *Revista Cubana de Informacion en Ciencias de la Salud*, vol. 33, 2022, [Online]. Available: https://www.scopus.com/inward/record.uri?eid=2-s2.0-85143327251&partnerID=40&md5=2a7741bbe86e85468c7601764d709957

[12] N. Sofia and T. Zubaidah, "Impact of Mobile Health (mHealth) Use by Community Health Workers on the Utilization of Maternity Care in Rural Malawi: A Time Series Analysis," *Int. J. Womens Health*, vol. 17, pp. 245–257, 2025, doi: 10.2147/IJWH.S497100.

[13] W. Rahmawati *et al.*, "Readiness for Digital Antenatal Nutrition Education: Perspectives of Pregnant Women, Families and Healthcare Professionals," *Southeast Asian Journal of Tropical Medicine and Public Health*, vol. 55, pp. 38–60, 2024, [Online]. Available: https://www.scopus.com/inward/record.uri?eid=2-s2.0-105008006932&partnerID=40&md5=04dcbc82311c0e6648b5251b90e2996f

[14] N. K. S. Sutiari, N. P. A. H. Anom Harjana, K. N. P. Wulandari, and S. A. Solechah, "Development of nutritional status monitoring application PEMSAGI in detecting nutritional problems among toddlers in Bali, Indonesia," *Malays. J. Nutr.*, vol. 31, no. 3, pp. 505–516, 2025, doi: 10.31246/mjn-2025-0011.

[15] A. Syam, I. Dewi, and F. Firawati, "Usability Study of the Mommy-Be Application: Exploring the Experience of Breastfeeding Mothers in Eastern Indonesia," *Revista de Gestao Social e Ambiental*, vol. 18, no. 3, 2024, doi: 10.24857/rgsa.v18n3-089.

[16] A. Syam, I. Dewi, F. Firawati, D. Darwis, and I. Iskandar, "Exploring First-Time Mothers' Experiences with the Mommy-Be App: A Qualitative Study on Breastfeeding Support and Technology Acceptance," *SAGE Open Nurs.*, vol. 11, 2025, doi: 10.1177/23779608251337122.

[17] S. Saha and Z. S. Quazi, "Does Digitally Enabling Frontline Health Workers Improve Coverage and Quality of Maternal and Child Health Services? Findings From a Mixed Methods Evaluation of

Corresponding author: Norlaila Sofia, fia.bjm@gmail.com, Department of Midwifery, Poltekkes Kemenkes Banjarmasin, Jl. Mistar Cokro Kusumo No. 1A Banjarbaru, Kalimantan Selatan, Indonesia (change this part according to yours).
DOI: https://doi.org/10.35882/jteknokes.v19i1.156

TECHO+ in Gujarat," *Front. Public Health*, vol. 10, 2022, doi: 10.3389/fpubh.2022.856561.

[18] I. Schwab *et al.*, "The Neo-MILK Web App as a Health Technology to Support Mothers of Preterm and Sick Neonates During Lactation: Usability Study," *JMIR Pediatr. Parent.*, vol. 8, 2025, doi: 10.2196/69079.

[19] N. Usnawati and A. N. Hanifah, "Effectiveness of 'Breast Milk Mother' Mobile Applications to Increase Knowledge and Attitude about Breast Feeding, Time to Release Breast Milk, and Adequacy of Breast Milk for Infants," *Iran. J. Nurs. Midwifery Res.*, vol. 30, no. 2, pp. 226–231, 2025, doi: 10.4103/ijnmr.ijnmr_354_22.

[20] K. Džermeikaitė, J. Krištolaitytė, D. Malašauskienė, S. Arlauskaitė, A. Girdauskaitė, and R. Antanaitis, "The Impact of Heat Stress on Dairy Cattle: Effects on Milk Quality, Rumination Behaviour, and Reticulorumen pH Response Using Machine Learning Models," *Biosensors (Basel).*, vol. 15, no. 9, 2025, doi: 10.3390/bios15090608.

[21] K. Goyal, P. Kumar, and K. Verma, "XAI-empowered IoT multi-sensor system for real-time milk adulteration detection," *Food Control*, vol. 164, 2024, doi: 10.1016/j.foodcont.2024.110495.

[22] C. S. Manikandababu, P. Surya Prakash, V. Vaishnavi, and S. Siddharth, "Empowering Dairy Farmers IoT Milk Quality Monitoring Devices," in *Proceedings - 3rd International Conference on Advances in Computing, Communication and Applied Informatics, ACCAI 2024*, 2024. doi: 10.1109/ACCAI61061.2024.10602406.

[23] R. Mhapsekar, D. Kilbane, S. Davy, L. Abraham, M. Fenelon, and N. O'Shea, "A systematic review of the internet of things and artificial intelligence applications in milk quality monitoring and analysis," *Int. J. Dairy Technol.*, vol. 78, no. 3, 2025, doi: 10.1111/1471-0307.70049.

[24] D. Palakaluri and P. Maurya, "Design Of An IoT Based Model For Milk Quality Measurement Using Fringing Field Interdigital Capacitive Sensing and Dielectric Property Analysis," in *2025 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation, IATMSI 2025*, 2025. doi: 10.1109/IATMSI64286.2025.10985677.

[25] D. Bessey, "Scaling Smart: The Potential of Digital Strategies to Promote Breastfeeding in Low- and Middle-Income Countries," *Matern. Child Nutr.*, vol. 22, no. 1, 2026, doi: 10.1111/mcn.70147.

[26] J. Schindler-Ruwisch and K. E. Phillips, "Breastfeeding During a Pandemic: The Influence of COVID-19 on Lactation Services in the Northeastern United States," *Journal of Human Lactation*, vol. 37, no. 2, pp. 260–268, 2021, doi: 10.1177/08903344211003898.

[27] N. R. Haddaway, M. J. Page, C. C. Pritchard, and L. A. McGuinness, "PRISMA2020: An R package and Shiny app for producing PRISMA 2020-compliant flow diagrams, with interactivity for optimised digital transparency and Open Synthesis," *Campbell Systematic Reviews*, vol. 18, no. 2, 2022, doi: 10.1002/cl2.1230.

[28] E. A. Akl *et al.*, "Tailored PRISMA 2020 flow diagrams for living systematic reviews: A methodological survey and a proposal," *F1000Res.*, vol. 10, 2022, doi: 10.12688/f1000research.51723.3.

[29] M. J. Page *et al.*, "The PRISMA 2020 statement: An updated guideline for reporting systematic reviews," *J. Clin. Epidemiol.*, vol. 134, pp. 178–189, 2021, doi: 10.1016/j.jclinepi.2021.03.001.

[30] M. J. Page *et al.*, "The PRISMA 2020 statement: an updated guideline for reporting systematic reviews," *Revista Panamericana de Salud Publica/Pan American Journal of Public Health*, vol. 46, 2022, doi: 10.26633/RPSP.2022.112.

[31] L. A. Stewart *et al.*, "Preferred reporting items for a systematic review and meta-analysis of individual participant data: The PRISMA-IPD statement," *JAMA - Journal of the American Medical Association*, vol. 313, no. 16, pp. 1657–1665, 2015, doi: 10.1001/jama.2015.3656.

[32] Y. S. Chang, S. Beake, J. Kam, K. Y. W. Lok, and D. Bick, "Views and experiences of women, peer supporters and healthcare professionals on breastfeeding peer support: A systematic review of qualitative studies," *Midwifery*, vol. 108, 2022, doi: 10.1016/j.midw.2022.103299.

[33] N. Salins *et al.*, "Palliative and end-of-life care practices for critically ill patients and their families in a peri-intensive care setting: A protocol for an umbrella review," *Palliat. Support. Care*, vol. 22, no. 5, pp. 1418–1425, 2024, doi: 10.1017/S1478951524000130.

[34] J. C. De Gagne *et al.*, "The Use of Metaverse in Nursing Education An Umbrella Review," *Nurse Educ.*, vol. 48, no. 3, pp. E73–E78, 2023, doi: 10.1097/NNE.0000000000001327.

[35] J. Shriraam, G. Comeau, and M. Swirp, "Identification and Illustration of Means to a Critical Assessment of Music and Health Research Literature," *Healthcare (Switzerland)*, vol. 11, no. 6, 2023, doi: 10.3390/healthcare11060807.

[36] N. Sofia, N. A. Aprilea, and T. Zubaidah, "Child Growth and Development Monitoring in the Digital Era : A Systematic Review of Mobile and Digital Health Applications in Indonesia," vol. 19, no. 1, pp. 1–13, 2026.

[37] K. Virgian and D. Setiawati, "' Menyusui asi - q ' android application for relax and smooth breastfeeding," *Science Midwifery*, vol. 10, no. 6, pp. 4852–4860, 2023.

Corresponding author: Norlaila Sofia, fia.bjm@gmail.com, Department of Midwifery, Poltekkes Kemenkes Banjarmasin, Jl. Mistar Cokro Kusumo No. 1A Banjarbaru, Kalimantan Selatan, Indonesia (change this part according to yours).
DOI: https://doi.org/10.35882/jteknokes.v19i1.156

[38] F. H. B. O. W. K. Handayani, "Aplikasi Android 'Ayah Asi' Terhadap Peran Suami Dalam Pemberian Asi Eksklusif (Breastfeeding Father)," *JHE (Journal of Health Education)*, vol. 2, no. 1, pp. 60–65, 2017.

[39] E. Yorita, Rina, and Mariati, "Android-Based Kekasih Educational Strategy to Improve Pregnant Women's Literacy on Exclusive Breastfeeding," *BINAR (Banten International Conference on Health Advancement & Research)*, pp. 330–345, 2026, [Online]. Available: https://www.emerald.com/insight/content/doi/10.1108/F-11-2017-0106/full/html?fullSc=1&mbSc=1

[40] A. Elvina and B. Suryantara, "Efektivitas aplikasi berbasis android â€œBusui Cerdasâ€ untuk meningkatkan pengetahuan ibu menyusui tentang pemberian asi eksklusif," *Jurnal Kebidanan dan Keperawatan Aisyiyah*, vol. 18, no. 1, pp. 85–95, 2022, doi: 10.31101/jkk.1630.

[41] T. M. Andini, "SIMOMI : Online Guidance and Consultation Based Mobile Application as Independent Learning Media on Lactation," *Jurnal Perempuan dan Anak*, vol. 2, no. 2, p. 11, 2019, doi: 10.22219/jpa.v2i2.9662.

[42] L. H. Crosswell, "The doctor in my pocket: examining mobile approaches to personal wellbeing," *Perspect. Public Health*, vol. 140, no. 2, pp. 93–101, 2020, doi: 10.1177/1757913918823808.

[43] J. Malloy, S. R. Partridge, J. A. Kemper, A. Braakhuis, and R. Roy, "Co-design of digital health interventions with young people: A scoping review," *Digit. Health*, vol. 9, 2023, doi: 10.1177/20552076231219117.

[44] P. Manser, E. D. de Bruin, J.-J. Temprado, L. Bherer, and F. Herold, "Beyond 'just' fun: The role of exergames in advancing health promotion and disease prevention," *Neurosci. Biobehav. Rev.*, vol. 176, 2025, doi: 10.1016/j.neubiorev.2025.106260.

[45] N. B. Merl, F. Schramm, C. Wies, J. T. Winterstein, and T. J. Brinker, "Generative AI in social media health communication: systematic review and meta-analysis of user engagement with implications for cancer prevention," *Eur. J. Cancer*, vol. 232, 2026, doi: 10.1016/j.ejca.2025.116114.

[46] J. Oh and S. Nah, "Engagement at first sight: Persuasive potential of interactive health campaigns and target audience factors," in *Digital Advertising Evolution*, 2024, pp. 187–197. doi: 10.4324/9781003168485-16.

[47] F. Rahman, I. D. Addo, S. I. Ahamed, J.-J. Yang, and Q. Wang, "Privacy challenges and goals in mHealth systems," in *Advances in Computers*, vol. 102, 2016, pp. 47–62. doi: 10.1016/bs.adcom.2016.05.004.

[48] W. T. Riley, D. E. Rivera, A. A. Atienza, W. Nilsen, S. M. Allison, and R. Mermelstein, "Health behavior models in the age of mobile interventions: Are our theories up to the task?," *Transl. Behav. Med.*, vol. 1, no. 1, pp. 53–71, 2011, doi: 10.1007/s13142-011-0021-7.

[49] F. Adusei-Mensah, L. Muthelo, M. W. Ngwenya, M. H. Mphasha, and J. Kauhanen, "Digital health interventions for pregnant women and mothers with under 5-year-olds in low- and middle-income countries: a scoping review," *Global Health Journal*, vol. 9, no. 2, pp. 113–123, 2025, doi: 10.1016/j.glohj.2025.06.008.

[50] M.-H. Chuang and I. G. P. D. P. Pratama, "Exploring the Effectiveness of VTuber in Promotional Videos Through Eye-Tracking Experiments," in *Lecture Notes in Computer Science*, 2025, pp. 21–30. doi: 10.1007/978-3-031-93536-7_2.

[51] O. Hein, S. Gökçel, and F. Alt, "From Ears to Eyes: The Impact of Augmented Text Integration on Audio Guidance," in *Lecture Notes in Computer Science*, 2026, pp. 510–519. doi: 10.1007/978-3-032-04999-5_30.

[52] S. K. H. S. Javadi, L. Jamieson, A. Nouri, W. Sohn, and A. Rudman, "Exploring Digital Health Technologies for Enhancing Oral Health: A Scoping Review of Interventions for Older Adults," *Gerodontology*, 2025, doi: 10.1111/ger.70033.

[53] Y. Pinillos-Patiño *et al.*, "User preferences related to multimedia elements of a mobile application to prevent diabetes," *Healthc. Inform. Res.*, vol. 26, no. 4, pp. 295–302, 2020, doi: 10.4258/hir.2020.26.4.295.

[54] K. J. Wrona, K. Heckes, L. Aschentrup, and F. Fischer, "Community-based Disease Prevention and Health Promotion: Promoting Digital Health Literacy among People in Precarious Living Conditions," *Gesundheitswesen*, vol. 87, no. 2, pp. 131–135, 2024, doi: 10.1055/a-2283-4440.

[55] M. Akbarzadeh, N. Bahmani, M. Moatari, and S. PourAhmad, "The impact of the BASNEF educational programme on breastfeeding behaviour in Iran," *Br. J. Midwifery*, vol. 21, no. 4, pp. 276–284, 2013, doi: 10.12968/bjom.2013.21.4.276.

[56] S. Freeman, "Lactation Education as an Important Tool for Infant Nutrition and Maternal Health," *Texila International Journal of Public Health*, vol. 13, no. 1, 2025, doi: 10.21522/TIJPH.2013.13.01.Art001.

[57] K. Guo, X. Shang, and X. Deng, "The Effects of a Newborn Care Education Program on Mothers' Self-Confidence, Care Knowledge, and Breastfeeding Behavior: A Systematic Review and Meta-Analysis," *Public Health Nurs.*, vol. 42, no. 1, pp. 395–410, 2025, doi: 10.1111/phn.13484.

[58] Z. Heidari, M. Keshvari, and S. Kohan, "Clinical trial to comparison the effect of family- centered educational-supportive program on mothers' empowerment in breast-feeding," *Int. J. Pediatr.*, vol. 4, no. 3, pp. 1445–1451, 2016, doi: 10.22038/ijp.2016.6556.

Corresponding author: Norlaila Sofia, fia.bjm@gmail.com, Department of Midwifery, Poltekkes Kemenkes Banjarmasin, Jl. Mistar Cokro Kusumo No. 1A Banjarbaru, Kalimantan Selatan, Indonesia (change this part according to yours).
DOI: https://doi.org/10.35882/jteknokes.v19i1.156

[59] T. Kartilah and S. Februanti, "Emotional Freedom Techniques and Oxytocin Stimulation Massages that Effectively Reduce Anxiety and Increase Smooth Breast Milk Production of Nursing Mothers," *Malaysian Journal of Nursing*, vol. 16, no. 2, pp. 46–53, 2024, doi: 10.31674/mjn.2024.v16i02.005.

[60] G. Kerimoglu Yildiz, R. Turk Delibalta, and Z. Coktay, "Artificial intelligence-assisted chatbot: impact on breastfeeding outcomes and maternal anxiety," *BMC Pregnancy Childbirth*, vol. 25, no. 1, 2025, doi: 10.1186/s12884-025-07753-3.

[61] A. Maleki, E. Faghihzadeh, and S. Youseflu, "The Effect of Educational Intervention on Improvement of Breastfeeding Self-Efficacy: A Systematic Review and Meta-Analysis," *Obstet. Gynecol. Int.*, vol. 2021, 2021, doi: 10.1155/2021/5522229.

[62] D. Yalcın Ozsoylu, N. Ozen, and F. Terzioglu, "Determination of the Relationship Between Self-Efficacy and Anxiety Levels on Breastfeeding Success in the NICU," *Adv. Neonatal Care*, vol. 25, no. 5, pp. 480–486, 2025, doi: 10.1097/ANC.0000000000001297.

[63] C. Chen *et al.*, "Maternal psychological distress on delayed onset of lactation II: A meta-analysis," *Medicine*, vol. 105, no. 1, p. e42839, 2026, doi: 10.1097/MD.0000000000042839.

[64] E. Dağli and N. Çelik, "The effect of oxytocin massage and music on breast milk production and anxiety level of the mothers of premature infants who are in the neonatal intensive care unit: A self-controlled trial," *Health Care Women Int.*, vol. 43, no. 5, pp. 465–478, 2022, doi: 10.1080/07399332.2021.1947286.

[65] G. Leng and N. Sabatier, "Oxytocin," in *Encyclopedia of Stress*, 2007, pp. 54–61. doi: 10.1016/B978-012373947-6.00287-7.

[66] H. Miremberg *et al.*, "Smartphone-based counseling and support platform and the effect on postpartum lactation: a randomized controlled trial," *Am. J. Obstet. Gynecol. MFM*, vol. 4, no. 2, 2022, doi: 10.1016/j.ajogmf.2021.100543.

[67] E. M. Nagel *et al.*, "Maternal Psychological Distress and Lactation and Breastfeeding Outcomes: a Narrative Review," *Clin. Ther.*, vol. 44, no. 2, pp. 215–227, 2022, doi: 10.1016/j.clinthera.2021.11.007.

[68] S. Wulandari, M. Triharini, and S. D. Wahyuni, "The Effect of a Combination of Oxytocin Massage and Music Therapy on Breast Milk Production and Breastfeeding Self Efficacy in Primipara Post Partum Mothers," *Pediomaternal Nursing Journal*, vol. 6, no. 1, pp. 49–56, 2020, doi: 10.20473/pmnj.v6i1.19181.

[69] M. Lalwani, Z. Kurji, S. A. Rattani, Z. Shaheen, H. Maqbool, and S. Ariff, "Use of Social Media for Receiving Professional Support in Enhancing Mothers' Lactation Self-Efficacy," *Journal of Asian Midwives*, vol. 11, no. 1, pp. 39–72, 2024, [Online]. Available: https://www.scopus.com/inward/record.uri?eid=2-s2.0-85200795606&partnerID=40&md5=d169eb69fe7b2309a3e6dd316491f970

[70] R. A. Lawrence, "Breastfeeding Support Groups and Community Resources," in *Breastfeeding: A Guide for the Medical Profession*, 2022, pp. 710–718. doi: 10.1016/B978-0-323-68013-4.00025-0.

[71] J. L. Martinez-Brockman *et al.*, "Evaluation and adaptation of a two-way text messaging intervention in the WIC breastfeeding peer counseling program: A qualitative analysis," *PLoS One*, vol. 20, no. 1 January, 2025, doi: 10.1371/journal.pone.0313779.

[72] N. Suhairom *et al.*, "Needs assessment for scarletcare: A framework of social capital development for effective breastfeeding peer support networking program," *Man India*, vol. 97, no. 19, pp. 75–89, 2017, [Online]. Available: https://www.scopus.com/inward/record.uri?eid=2-s2.0-85032480516&partnerID=40&md5=7358c4afc022af102108ad5fe6d9bd8a

[73] J. Cisco, "Who Supports Breastfeeding Mothers? : An Investigation of Kin Investment in the United States," ., vol. 28, no. 2, pp. 231–253, 2017, doi: 10.1007/s12110-017-9286-y.

[74] E. H. Emmott, A. E. Page, and S. Myers, "Typologies of postnatal support and breastfeeding at two months in the UK," *Soc. Sci. Med.*, vol. 246, 2020, doi: 10.1016/j.socscimed.2020.112791.

[75] C. O. Haley, T. T. Gross, C. R. Story, C. G. McElderry, and K. W. Stone, "Social Media Usage as a Form of Breastfeeding Support Among Black Mothers: A Scoping Review of the Literature," *J. Midwifery Womens Health*, vol. 68, no. 4, pp. 442–448, 2023, doi: 10.1111/jmwh.13503.

[76] S. Kohan, Z. Heidari, and M. Keshvari, "Iranian women's experiences of breastfeeding support: A qualitative study," *Int. J. Pediatr.*, vol. 4, no. 10, pp. 3587–3600, 2016, doi: 10.22038/ijp.2016.7435.

[77] H. Morse and A. Brown, "The benefits, challenges and impacts of accessing social media group support for breastfeeding: A systematic review," *Matern. Child Nutr.*, 2022, doi: 10.1111/mcn.13399.

[78] M. H. Jacobsen, A. K. Gadeberg, H. K. Rossau, I. M. S. Nilsson, and S. F. Villadsen, "Understanding fathers' responses to breastfeeding as a 'shared parental task': a realist evaluation of a Danish breastfeeding support intervention," *Archives of Public Health*, vol. 83, no. 1, 2025, doi: 10.1186/s13690-025-01790-2.

[79] P. Krikitrat, N. Sansiriphun, J. Deeluea, S. Sonted, W. Chaiwipassatorn, and D. Bressington, "Factors Affecting Thai Fathers' Self-Efficacy to Support

Corresponding author: Norlaila Sofia, fia.bjm@gmail.com, Department of Midwifery, Poltekkes Kemenkes Banjarmasin, Jl. Mistar Cokro Kusumo No. 1A Banjarbaru, Kalimantan Selatan, Indonesia (change this part according to yours).
DOI: https://doi.org/10.35882/jteknokes.v19i1.156

Exclusive Breastfeeding," *Nurs. Rep.*, vol. 13, no. 4, pp. 1511–1523, 2023, doi: 10.3390/nursrep13040127.

[80] H. W. Phua, N. A. A. A. Razak, and N. H. Mohd Shukri, "Associations of father's breastfeeding attitude and support with the duration of exclusive breastfeeding among first-time mothers," *Malaysian Journal of Medicine and Health Sciences*, vol. 16, pp. 84–89, 2020, [Online]. Available: https://www.scopus.com/inward/record.uri?eid=2-s2.0-85091858409&partnerID=40&md5=0eb734b0d8d1ddac4a100e35c19548b8

[81] L. A. Rempel, J. K. Rempel, and K. C. J. Moore, "Relationships between types of father breastfeeding support and breastfeeding outcomes," *Matern. Child Nutr.*, vol. 13, no. 3, 2017, doi: 10.1111/mcn.12337.

[82] H. K. Sezer, M. A. Ceran, M. Demirsoz, and S. Kucukoglu, "Development and psychometric evaluation of the paternal support scale of breastfeeding," *J. Pediatr. Nurs.*, vol. 75, pp. 149–157, 2024, doi: 10.1016/j.pedn.2023.12.004.

[83] M. Su and Y.-Q. Ouyang, "Father's role in breastfeeding promotion: Lessons from a quasi-experimental trial in China," *Breastfeeding Medicine*, vol. 11, no. 3, pp. 144–149, 2016, doi: 10.1089/bfm.2015.0144.

[84] J. Tohotoa, B. Maycock, Y. Hauck, P. Howat, S. Burns, and C. Binns, "Supporting mothers to breastfeed: The development and process evaluation of a father inclusive perinatal education support program in Perth, Western Australia," *Health Promot. Int.*, vol. 26, no. 3, pp. 351–361, 2011, doi: 10.1093/heapro/daq077.

[85] J. Tohotoa, B. Maycock, Y. L. Hauck, P. Howat, S. Burns, and C. W. Binns, "Dads make a difference: An exploratory study of paternal support for breastfeeding in Perth, Western Australia," *Int. Breastfeed. J.*, vol. 4, 2009, doi: 10.1186/1746-4358-4-15.

[86] A. Velmurugan, P. Rajendran, M. Garg, and M. Mani, "Father's Perspective on Breast Feeding: A Cross-Sectional Questionnaire Based Study," *Journal of Neonatology*, vol. 36, no. 4, pp. 275–279, 2022, doi: 10.1177/09732179221130670.

[87] A. N. Agustina, A. Pratiwi, and P. Mahardika, "Exploring Indonesian fathers' educational needs in newborn care: A qualitative study," *Belitung Nurs. J.*, vol. 12, no. 1, pp. 106–112, 2026, doi: 10.33546/bnj.4235.

[88] A. W. Astuti, H. F. Kurniawati, and H. F. Kurniawati, "A qualitative study on the breastfeeding experiences of young mothers," *Nurse Media Journal of Nursing*, vol. 11, no. 1, pp. 35–49, 2021, doi: 10.14710/NMJN.V11I1.33539.

[89] R. W. Basrowi *et al.*, "Digital Insights into Workplace Breastfeeding in Indonesia: A Google Trends Analysis of Barriers and Opportunities," *Nutrients* , vol. 17, no. 21, 2025, doi: 10.3390/nu17213433.

[90] R. Rahmayanti, R. Oktafia, and F. Wahyuni, "Education Package Based On Family Centered Maternity Care To Increase Self Efficacy And Knowledge Of Breastfeeding Mothers in The Covid Pandemic," *Medical Journal of Malaysia*, vol. 78, no. 4, pp. 530–533, 2023, [Online]. Available: https://www.scopus.com/inward/record.uri?eid=2-s2.0-85165884110&partnerID=40&md5=7d657cf1b9fe17f9c542ae6c19e32294

[91] A. Y. M. Siregar, P. Pitriyan, D. Walters, M. Brown, L. T. H. Phan, and R. Mathisen, "The financing need for expanded maternity protection in Indonesia," *Int. Breastfeed. J.*, vol. 14, no. 1, 2019, doi: 10.1186/s13006-019-0221-1.

[92] A. Sm, F. Cm, S. Sm, and W. An, "BREAST-FEEDING KNOWLEDGE, PRACTICE AND BARRIERS AMONG WORKING AND NON-WORKING MOTHERS: A COMPARATIVE STUDY," *Egypt. J. Occup. Med.*, vol. 49, no. 3, pp. 71–85, 2025, doi: 10.21608/ejom.2025.372651.1367.

[93] E. Eliufoo, S. Mgeyekwa, V. Majengo, T. Yusheng, and L. Yamin, "Exclusive breastfeeding experience among healthcare working mothers in central Tanzania: A qualitative study," *Nursing Practice Today*, vol. 11, no. 3, pp. 259–271, 2024, doi: 10.18502/npt.v11i3.16173.

[94] A. Blackmore *et al.*, "The Effectiveness of Virtual Lactation Support: A Systematic Review and Meta-Analysis," *Journal of Human Lactation*, vol. 38, no. 3, pp. 452–465, 2022, doi: 10.1177/08903344221099914.

[95] Y. Alnasser *et al.*, "Impact of attitude and knowledge on intention to breastfeed: Can mHealth based education influence decision to breastfeed exclusively?," *Annals of Medicine and Surgery*, vol. 35, pp. 6–12, 2018, doi: 10.1016/j.amsu.2018.09.007.

[96] A. Patel, P. Kuhite, A. Puranik, S. S. Khan, J. Borkar, and L. Dhande, "Effectiveness of weekly cell phone counselling calls and daily text messages to improve breastfeeding indicators," *BMC Pediatr.*, vol. 18, no. 1, 2018, doi: 10.1186/s12887-018-1308-3.

[97] L. C. Daniels, X. G. Mbhenyane, and L. M. Du Plessis, "A qualitative study on breastfeeding experiences of employed mothers in manufacturing, retail and public sectors at designated workplaces in Worcester, South Africa," *SAJCH South African Journal of Child Health*, vol. 18, no. 3, pp. 139–143, 2024, doi: 10.7196/SAJCH.2024.v18i3.1809.

[98] R. Rasenack, C. Schneider, E. Jahnz, J. Schulte-Mönting, H. Prömpeler, and M. Kunze, "Factors

Corresponding author: Norlaila Sofia, fia.bjm@gmail.com, Department of Midwifery, Poltekkes Kemenkes Banjarmasin, Jl. Mistar Cokro Kusumo No. 1A Banjarbaru, Kalimantan Selatan, Indonesia (change this part according to yours).
DOI: https://doi.org/10.35882/jteknokes.v19i1.156

associated with the duration of breastfeeding in the freiburg birth collective, Germany (FreiStill)," *Geburtshilfe Frauenheilkd.*, vol. 72, no. 1, pp. 64–69, 2012, doi: 10.1055/s-0031-1280470.

[99] E. L. Ford, M. A. Underwood, and J. B. German, "Helping Mom Help Baby: Nutrition-Based Support for the Mother-Infant Dyad During Lactation," *Front. Nutr.*, vol. 7, 2020, doi: 10.3389/fnut.2020.00054.

[100] K. Berndt *et al.*, "A quality improvement intervention to improve medium-term breastfeeding in moderate- and late-preterm infants," *International Breastfeeding Journal* , vol. 20, no. 1, 2025, doi: 10.1186/s13006-025-00751-3.

[101] A. Krawczyk, A. Czerwińska-Osipiak, A. W. Szablewska, and W. Rozmarynowska, "Psychosocial Factors Influencing Breastmilk Production in Mothers After Preterm Birth: The Role of Social Support in Early Lactation Success—A Cross-Sectional Study," *Nutrients* , vol. 16, no. 22, 2024, doi: 10.3390/nu16223883.

[102] D. Thulier and J. Mercer, "Variables associated with breastfeeding duration," *JOGNN - Journal of Obstetric, Gynecologic, and Neonatal Nursing*, vol. 38, no. 3, pp. 259–268, 2009, doi: 10.1111/j.1552-6909.2009.01021.x.
g indicators," *BMC Pediatr.*, vol. 18, no. 1, 2018, doi: 10.1186/s12887-018-1308-3.

[97] L. C. Daniels, X. G. Mbhenyane, and L. M. Du Plessis, "A qualitative study on breastfeeding experiences of employed mothers in manufacturing, retail and public sectors at designated workplaces in Worcester, South Africa," *SAJCH South African Journal of Child Health*, vol. 18, no. 3, pp. 139–143, 2024, doi: 10.7196/SAJCH.2024.v18i3.1809.

[98] R. Rasenack, C. Schneider, E. Jahnz, J. Schulte-Mönting, H. Prömpeler, and M. Kunze, "Factors associated with the duration of breastfeeding in the freiburg birth collective, Germany (FreiStill)," *Geburtshilfe Frauenheilkd.*, vol. 72, no. 1, pp. 64–69, 2012, doi: 10.1055/s-0031-1280470.

[99] E. L. Ford, M. A. Underwood, and J. B. German, "Helping Mom Help Baby: Nutrition-Based Support for the Mother-Infant Dyad During Lactation," *Front. Nutr.*, vol. 7, 2020, doi: 10.3389/fnut.2020.00054.

[100] K. Berndt *et al.*, "A quality improvement intervention to improve medium-term breastfeeding in moderate- and late-preterm infants," *International Breastfeeding Journal* , vol. 20, no. 1, 2025, doi: 10.1186/s13006-025-00751-3.

[101] A. Krawczyk, A. Czerwińska-Osipiak, A. W. Szablewska, and W. Rozmarynowska, "Psychosocial Factors Influencing Breastmilk Production in Mothers After Preterm Birth: The Role of Social Support in Early Lactation Success—A Cross-Sectional Study," *Nutrients* , vol. 16, no. 22, 2024, doi: 10.3390/nu16223883.

[102] D. Thulier and J. Mercer, "Variables associated with breastfeeding duration," *JOGNN - Journal of Obstetric, Gynecologic, and Neonatal Nursing*, vol. 38, no. 3, pp. 259–268, 2009, doi: 10.1111/j.1552-6909.2009.01021.x.

AUTHOR BIOGRAPHY

Rusmilawaty, S.KM., M.PH. is a senior lecturer in the Department of Midwifery at Poltekkes Kemenkes Banjarmasin, Indonesia. She obtained her Diploma in Nursing in 1994, her Bachelor's degree in Public Health in 2005, and her Master of Public Health (MPH) from Universitas Gadjah Mada in 2011. She has been actively involved in teaching, research, and community service since 1997. Her academic responsibilities include teaching courses in clinical midwifery skills, neonatal and child health care, public health, health promotion, and evidence-based midwifery practice. Her research interests focus on maternal and child health, breastfeeding practices, digital health innovation, and community-based health interventions. She has participated in and led several research projects on breastfeeding support systems, child growth monitoring, and mHealth application development. She has published scientific articles in national and international journals and actively contributes to academic seminars and professional development activities in midwifery.

Norlaila Sofia, S.SiT., M.Keb. is a Lecturer and Researcher in the Department of Midwifery at the Health Polytechnic of the Ministry of Health in Banjarmasin. She earned her Bachelor of Applied Science (S.SiT.) in Midwifery from STIKES Ngudi Waluyo and her Master's degree (M.Keb.) in Midwifery from Universitas Padjadjaran, one of Indonesia's leading public universities. She has been an integral part of the Department of Midwifery since 2010, dedicating her career to midwifery education, maternal and child health research, and community service. Her current research interests include maternal and child health, stunting prevention, monitoring of child growth and development, and the development of innovative health education media for families and community health workers. She is an active member of the Indonesian Midwives Association (IBI).

Hapisah, S.Si.T., M.PH. is a Lecturer and Researcher in the Department of Midwifery at Poltekkes Kemenkes Banjarmasin, Indonesia. She completed her Diploma IV in Midwifery Education in 2000 and earned her Master of Public Health (MPH), with a focus on Maternal and Child Health and Reproductive Health from

Corresponding author: Norlaila Sofia, fia.bjm@gmail.com, Department of Midwifery, Poltekkes Kemenkes Banjarmasin, Jl. Mistar Cokro Kusumo No. 1A Banjarbaru, Kalimantan Selatan, Indonesia (change this part according to yours).
DOI: https://doi.org/10.35882/jteknokes.v19i1.156

e-ISSN: 2407-8964
p-ISSN: 1907-7904

Universitas Gadjah Mada in 2009. She has been actively involved in academic and research activities since 2010.

Her teaching areas include antenatal care, postpartum and newborn care, reproductive health, family planning services, and maternal and neonatal emergency care. Her research interests focus on maternal and child health, reproductive health, breastfeeding practices, and community-based health interventions. She has participated in several research projects related to maternal health services and has published scientific articles in national and international journals. She is also actively involved in community service programs aimed at improving maternal and child health outcomes.

Hj. Tri Tunggal, S.Pd., S.S.T., M.Sc. is a senior Lecturer and Researcher in the Department of Midwifery at Poltekkes Kemenkes Banjarmasin, Indonesia. She obtained her Bachelor's degree in Education from STKIP PGRI Banjarmasin, her Diploma IV in Midwifery Education from Universitas Padjadjaran, and her Master of Science in Clinical Medicine from Universitas Gadjah Mada. She has extensive experience in teaching, research, and community service in midwifery. Her teaching areas include neonatal and child health care, adolescent reproductive health, pre-marital and pre-conception care, communication in midwifery practice, and continuity of care (MCoC). Her research interests focus on maternal and neonatal health, reproductive health, and health education. She has been involved in various research and community service projects and has published scientific articles in national journals. She is also an active member of the Indonesian Midwives Association (IBI).

Corresponding author: Norlaila Sofia, fia.bjm@gmail.com, Department of Midwifery, Poltekkes Kemenkes Banjarmasin, Jl. Mistar Cokro Kusumo No. 1A Banjarbaru, Kalimantan Selatan, Indonesia (change this part according to yours)**.**
DOI: https://doi.org/10.35882/jteknokes.v19i1.156