



**THE EFFECT OF TELELACTATION SERVICES ON BREASTFEEDING
OUTCOMES: SCOPING REVIEW**

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ABSTRACT

Breast milk is considered the best food for babies as it provides the most suitable source of nutrition and has a complete nutritional composition that supports their growth and development. Counseling is provided to support successful breastfeeding practices. With the advancement of technology in the 4.0 era, online media can be used for counseling purposes. Telehealth-based lactation counseling also known as telelactation, is provided to help improve breastfeeding practices. This study aimed to review the evidence base regarding the influence of telelactation services on breastfeeding outcomes. The method used is a scoping review using PRISMA, to identify articles published during the last 5 years (2019-2023). Data collection was obtained through the database sources Science Direct, ProQuest, Scopus, Cinahl, and PubMed. The keywords used in searching for articles are "breastfeeding women" AND "telelactation" AND "breastfeeding outcome". The articles found were 42 articles but only 5 articles matched. Telelactation services have a significant impact on exclusive breastfeeding rates. These services not only provide support for nursing mothers but also increase self-confidence, safety, and comfort levels, leading to higher satisfaction with breastfeeding services overall. Based on research findings, it is crucial to develop telelactation to increase the coverage and success of breastfeeding.

Keywords: Breast milk; telelactation; breastfeeding outcomes

ABSTRAK

Air Susu Ibu (ASI) merupakan makanan terbaik sebagai sumber nutrisi yang paling sesuai dan memiliki komposisi gizi yang paling lengkap untuk pertumbuhan dan perkembangan bayi. Pelaksanaan promosi kesehatan melalui konseling dilakukan untuk mendukung keberhasilan praktik menyusui. Saat ini di era 4.0, media online dapat dimanfaatkan untuk konseling. Layanan konseling laktasi yang berbasis telehealth atau disebut juga telelaktasi dilakukan untuk meningkatkan praktik menyusui. Tujuan dari penelitian ini adalah untuk meninjau basis bukti mengenai pengaruh layanan telelaktasi terhadap hasil menyusui. Metode yang digunakan adalah scoping review dengan menggunakan PRISMA, dalam melakukan identifikasi artikel yang terbit selama jangka waktu 5 tahun terakhir (2019-2023). Pengumpulan data didapatkan melalui sumber database Science Direct, ProQuest, Scopus, Cinahl dan PubMed. Kata kunci yang digunakan dalam pencarian artikel yaitu "breastfeeding women" AND "telelactation" AND "breastfeeding outcome". Artikel yang ditemukan sebanyak 42 artikel namun hanya 5 artikel yang sesuai. Pengaruh layanan telelaktasi yang utama adalah menyusui eksklusif. Sebagai tambahan, layanan telelaktasi juga memberikan berbagai manfaat sebagai dukungan untuk ibu menyusui, meningkatkan kepercayaan diri, memberikan keamanan serta kenyamanan dan meningkatkan kepuasan terhadap layanan menyusui. Berdasarkan hasil penelitian tersebut, maka telelaktasi perlu dikembangkan sebagai upaya untuk meningkatkan cakupan menyusui.

Kata kunci: ASI; telelaktasi; hasil menyusui

INTRODUCTION

Breast milk is essential for infants as it contains various substances necessary for their growth and development. It can also reduce morbidity and infant mortality rates (WHO, 2022). Exclusive breastfeeding is recommended for 6 months, followed by continued breastfeeding with appropriate complementary foods until the child reaches 2 years of age, according to Minister of Health No. 450/MENKES/SK/IV/2004 (Kementrian Kesehatan RI, 2021). According to data from the Nutrition Landscape Information System (NLIS) reported by the World Health Organization (WHO) in 2017, the rate of exclusive breastfeeding in Indonesia was 50.7%. Additionally, 76.5% of mothers continued breastfeeding beyond one year and the rate of Early Breastfeeding Initiation was 58.2% (WHO, 2018). According to the 2021 Ministry of Health Performance Report, exclusive breastfeeding coverage in Indonesia has reached 69.7%, exceeding the government's target of 45% (Kementrian Kesehatan RI, 2021). Although there has been an increase, this target is still below the WHO target of 70% (UNICEF & WHO, 2019).

The decision to exclusively breastfeed is greatly influenced by the role of health workers (Editia et al., 2022). Mothers are expected to seek and apply information, increase knowledge, and provide breast milk with the help of health workers (Nurkhayati et al., 2022). Breastfeeding information should have been provided to the mother during her pregnancy check-ups by the midwife or other health workers (Nuryati et al., 2022). Puskesmas should play an important role in supporting exclusive breastfeeding by actively providing counseling involving pregnant women, breastfeeding mothers, husbands and families about the importance of exclusive breastfeeding (Umar & Puspita, 2021).

Improving health promotion methods can increase breastfeeding rates by enhancing the quality and coverage of services, in line with the strategic targets of the 2020-2024 health development goals (Kementrian Kesehatan RI, 2021). One of the fundamental approaches to promoting good health is through advocating for measures that improve factors that contribute to overall well-being. This includes promoting health equity and fostering collaboration between different sectors. This approach aligns with the World Health Organization's (WHO) main goal of promoting health as a means of achieving sustainable development, as outlined in the Sustainable Development Goals (SDGs) (WHO, 2023).

Health promotion efforts can be implemented by strengthening governance, services, and innovation in health technology systems, which can be integrated into the development of health applications (Kemenkes, 2022). This approach aligns with contemporary mothers' perspectives on reassessing cultural norms surrounding breastfeeding. This shift is due to advancements in technology and the accessibility of health information. The digital age has made it possible for modern breastfeeding mothers to obtain resources online to aid in their breastfeeding journey. As a result, it is imperative to create effective, inclusive, and culturally sensitive programs and tactics that cater to the needs of modern mothers (Anggraeni et al., 2018).

Innovative and digitally-based health education media have been proven to be effective in promoting healthy behavior and improving overall health (Peyman et al., 2018). Telehealth is the provision of healthcare services in which information and communication technologies are used to exchange information (Joseph & Greene, 2022). Telehealth can address a range of problems that exist in today's health care system by enhancing performance, accessibility, utilisation, efficiency, lower costs and better access (Blandford et al., 2020). The mobile health apps provide useful information on how to breastfeed (Wang et al., 2018). Digital education can offer a wealth of information and is a viable option for maternal education (Schnitman et al., 2022). Various telehealth platforms enable healthcare providers to enhance prenatal, intrapartum, and postpartum care, especially in rural areas with limited access to quality healthcare (Bilal et al., 2022).

Online counseling services, also known as cyber counseling, are increasingly becoming essential for counselors as they provide the ability to offer services without being limited by distance or time. Several methods are available for conducting online counseling, including email, facebook,

asynchronous chat, relive application, video conference, cellphone, and website (Fadhilah et al., 2021). Telelactation services are a breastfeeding counseling service that can connect breastfeeding mothers with lactation counselors located remotely via audio-visual technology (Ferraz dos Santos et al., 2020). Telelactation aims to provide better support for pregnant women and their support network to ensure early initiation of breastfeeding within an hour after birth, exclusive breastfeeding for the first six months of life, and continuing breastfeeding until the age of two or more (Demirci et al., 2019; Uscher-Pines et al., 2020).

The telelactation service increases the competency of health professionals and provides postpartum mothers with a continuum of care for breastfeeding (Novita et al., 2021). The implementation of telelactation services has been observed to have a positive impact on breastfeeding outcomes. According to previous research, most telelactation users expressed satisfaction with the assistance they received. Telelactation is an innovative approach to providing professional breastfeeding support (Kapinos et al., 2019). Another study found that telelactation did not significantly increase breastfeeding rates, but remains a promising intervention to improve exclusive breastfeeding practices (Uscher-Pines et al., 2020). This article will focus on the impact of telelactation services on breastfeeding outcomes.

METHOD

The scoping review method involves a comprehensive search of literature related to a research topic, obtained from various sources and research methods. The process of preparing a scoping review, according to Arksey and O'Malley (2005), involves defining clear and objective research questions, identifying relevant articles, selecting related literature from the articles, extracting data, organizing, summarizing, and analyzing the data, and reporting the results (Arksey & O'Malley, 2005). The research question is "How does telelactation service impact breastfeeding outcomes?"

This paper was written using the PRISMA (Preferred Reporting Items for Systematic Review and Meta-Analysis) approach. Data was collected from five databases: Science Direct, ProQuest, Scopus, Cinahl, and PubMed. The search terms used were "breastfeeding women" AND "telelactation" AND "breastfeeding outcome". The search for articles is restricted to the last five years, which means only articles published between 2019 and 2023 will be considered. The selected articles are full-text, open-access, English-language articles that discuss the impact of telelactation implementation on breastfeeding outcomes.

Search results yielded 11 articles from Science Direct, 26 from ProQuest, 3 from PubMed, 1 from Scopus, and 1 from CINAHL. After the search, a total of 42 articles were obtained. After screening the literature, we found 4 duplicate articles. Out of the remaining 38 articles, 19 were not original research articles. Moreover, 1 article was not published between the years 2019 to 2023. Therefore, there are 18 unique articles left for further analysis. After thoroughly reading the articles, we excluded 13 of them as they didn't discuss the impact of telelactation services on breastfeeding outcomes. After evaluating several articles, we have selected 5 articles that meet our inclusion criteria. Details of the data extraction and identification process can be seen in Figure 1 (PRISMA diagram).

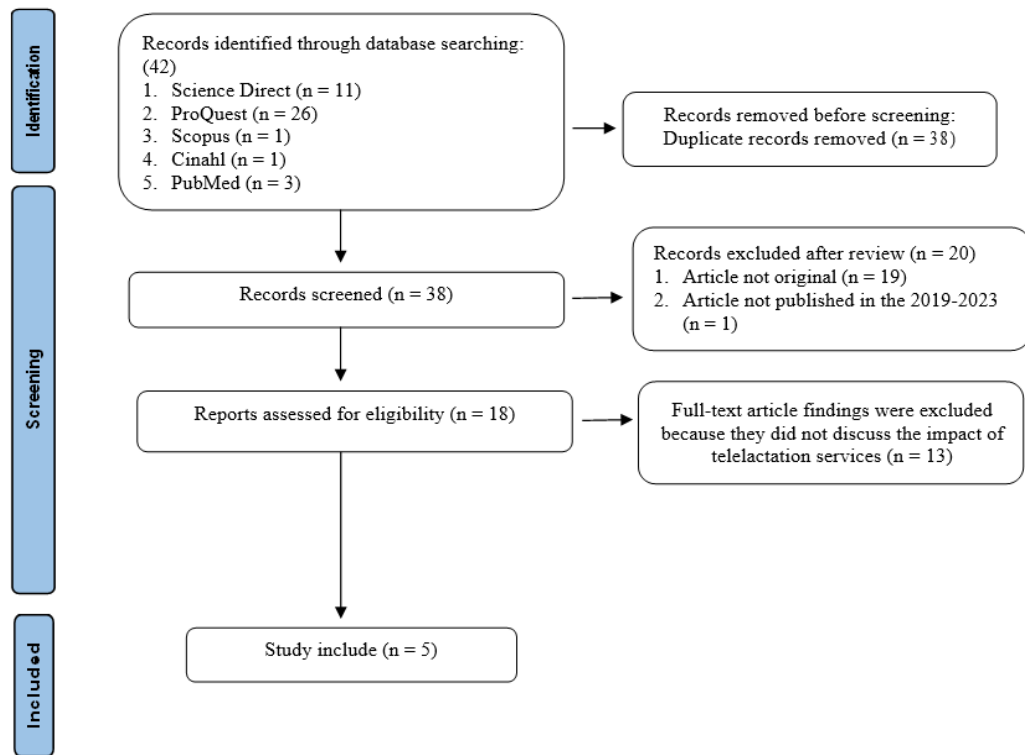


Figure 1. PRISMA Diagram

The characteristics of article the explained in Table 1 below:

No	Author Name (Year)	Article Title	Population and Research Sample	Research Location	Types of research	Findings	Conclusion
1	Kapinos, Kandice, et al (2019) (Kapinos et al., 2019)	The Use of and Experiences With Telelactation Among Rural Breastfeeding Mothers: Secondary Analysis of a Randomized Controlled Trial	Out of the 102 postpartum mothers who participated in the study, 63 received telelactation and 31 received usual care. 94 respondents completed the study.	Critical Access Hospital in North-Central Pennsylvania	Quantitative research with a Randomized Controlled Trial design.	Mothers who did not exclusively breastfeed were 16/31 (52%) in the telelactation group and 51/63 (81%) in the control group (p<0.001). Most telelactation users (43/47, 91%) reported satisfaction with the assistance they received.	Telelactation is an innovative method of offering breastfeeding support to postpartum mothers who are underserved.
2	Demirci, Jill, et al (2019) (Demirci et al., 2019)	Brief Communications Telelactation via Mobile App: Perspectives of Rural Mothers, Their Care Providers, and Lactation Consultants	17 mothers who received telelactation services, 7 breastfeeding counselors, 2 nurses, and 1 doctor participated in the study	Critical Access Hospital in North-Central Pennsylvania.	Qualitative research using semi-structured interview methods with stakeholders.	Telelactation is an efficient and convenient way to provide breastfeeding support services in rural areas where such services are lacking. It	Telelactation has become an acceptable model for providing breastfeeding support to rural women with limited access.

			at the recruiting hospital.			boosts the confidence of mothers in breastfeeding. Telelactation has several advantages over in-person support. However, some barriers to telelactation include mothers' reluctance to telelactate with an unfamiliar breastfeeding counselor and technical issues such as limited WiFi.	
3	Uscher-Pines, Lori, et al (2020) (Uscher-Pines et al., 2020)	Feasibility and Effectiveness of Telelactation Among Rural Breastfeeding Women	There were two groups: the treatment group (telelactation) had 102 participants, and the control group (usual care) had 101 participants.	Critical Access Hospital in North-Central Pennsylvania.	Quantitative research with a Randomized Controlled Trial design.	In the study, 51% of participants in the treatment group who received telelactation support breastfed exclusively until 12 weeks, while 46% of participants in the control group who received usual care did the same. The results of the Intent to Treat model analysis found that there was no significant difference between the two groups (P=0.47, $\alpha=0.05$). However, in the Instrumental Variable model, 56% of the telelactation treatment group breastfed exclusively until 12 weeks compared to	There was a greater rate of breastfeeding by participants in the telelactation group, but no statistical differences were seen for all models. However, telelactation is still an appropriate way of exploring this issue. The effects of different telelactation models should be evaluated in additional research.

						45% of control participants, although the difference was still not statistically significant (P=0.48, $\alpha=0.05$).	
4	Bunik, Maya, et al (2020) (Bunik et al., 2022)	Mother's Milk Messaging™: trial evaluation of app and texting for breastfeeding support	A total of 346 people took part in the trial: 119 people were in the control group and 227 people were in the intervention group (n = 154 group 1 and n = 156 group 2).	Medical clinic in Colorado	Mixed method (quantitative with Randomized Controlled Trial design and qualitative)	Results of the quantitative study included significantly higher breastfeeding confidence and perceived social support in the intervention group than in the control group (p < 0.05). The results of the qualitative study are as follows. 1. Most participants liked the two-way text messaging through the MMM application. 2. Respondents rate the reliability of the information in the application form highly. 3. App operation will vary depending on each individual's breastfeeding experience. 4. Most mothers use this application after the birth of their baby.	1. Mothers find breastfeeding messaging, especially the SMS feature, convenient and reliable. 2. This app increases confidence when breastfeeding and receiving social support. Most mothers exclusively breastfeed, so it is difficult to demonstrate a difference with MMM use. 3. Mothers who have difficulty breastfeeding at first may need direct breastfeeding support.
5	AlHreashy,	Telemedicine	The total	16 regions in	Quantitative	8,894 (80%) of	Telemedicine

Fouzia Abdulaziz, et al (2023) (AlHreashy et al., 2023)	Breastfeeding Consultation: The Saudi Experience	number of respondents was 51.571.	Saudi Arabia	with cross-sectional design	participants reported being satisfied with telemedicine. Satisfaction was statistically significant in the telemedicine group (40,8%) compared to the face-to-face treatment group (38,1%), especially among patients who utilized telephone or telegram consultations (p = 0,032).	breastfeeding services have been implemented on a large scale and have high user satisfaction. Although breastfeeding counseling has been shown to lead to positive changes in breastfeeding indicators, telemedicine tools themselves need to be further developed regarding their role in breastfeeding indicators.
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Table 1. Characteristics of the Articles Researched

RESULTS AND DISCUSSION

Based on the specified keywords, 42 articles were identified. A total of 5 articles met the inclusion criteria. Five articles were identified by searching the online databases Science Direct, ProQuest, Scopus, Cinahl, and PubMed. This article was published during his 2019-2023 period. The analyzed articles included 2 quantitative articles using an RCT approach, 1 qualitative article, 1 quantitative article using a cross-sectional approach, and 1 mixed methods article. Article characteristics listed in Table 1 include population, sample, location, study type, results, and conclusions.

The next step was to analyze these papers to determine the impact of telelactation services on breastfeeding outcomes. The main effect of telelactation services is exclusive breastfeeding (Bunik et al., 2022; Kapinos et al., 2019; Uscher-Pines et al., 2020). Telelactation services can also increase breastfeeding confidence (Bunik et al., 2022; Demirci et al., 2019; Uscher-Pines et al., 2020) and provide support for breastfeeding mothers (AlHreashy et al., 2023; Kapinos et al., 2019). Moreover, telelactations give comfort and efficiency to the service which can also make breastfeeding a more satisfying experience (AlHreashy et al., 2023; Uscher-Pines et al., 2020).

1. Exclusive breastfeeding

The main effect of telelactation services is exclusive breastfeeding. Intervention group telelactation had a higher number of mothers exclusively breastfeeding their infants compared to the control group. In the case of mothers who lack confidence or experienced early problems when they started, telelactation services may prove useful (Kapinos et al., 2019). Another study has shown that for both groups that receive text messages and apps, as well as those who have received Facebook's telelactation services, the average exclusive

breastfeeding rate is high (Bunik et al., 2022).

The main findings from another study were that telelactation had a positive effect on exclusive breastfeeding 12 weeks after the start of pregnancy. However, the results of this study show that this difference is not statistically significant. Nevertheless, telelactation has a positive effect on the outcome of breastfeeding. In comparison with control groups, the percentage of women breastfeeding was 3 to 5 points higher in the telelactation group. In addition, the percentage of women exclusively breastfeeding at week 12 in the telelactation group increased by 5 to 11 points compared to control groups (Uscher-Pines et al., 2020).

2. Providing support to breastfeeding mothers

Telelactation is an innovation for providing professional breastfeeding support. Although previous research has focused on rural populations, these services may also increase convenience and reduce costs for in-person breastfeeding support in urban settings (Kapinos et al., 2019). The use of virtual lactation consultations offers an opportunity for the development of technological solutions in maternal health services. Both face-to-face and virtual services are needed to ensure equitable distribution of services in support of breastfeeding (AlHreashy et al., 2023).

3. Increase self-confidence

Telelactation services are suitable for mothers who lack confidence in the skills gained from previous breastfeeding experience as well as those who experience initial difficulties during initiation (Uscher-Pines et al., 2020). Women in the intervention group reported significantly higher self-confidence in breastfeeding after participating in one of the “mothers milk messaging” telelactation services ($p < 0,05$) (Bunik et al., 2022). The fact that telelactation provides necessary services to rural areas in which there are no breastfeeding support centers is another example of the research results supporting this conclusion and increases mother's trust in breastfeeding (Demirci et al., 2019; Uscher-Pines et al., 2020).

4. Provide a comfortable and efficient service

The results of the research on women's experience in using telelactation services are consistent with these findings, indicating a sense of comfort and efficiency. Telelactation offers a simple way of accessing when there are obstacles such as lack of access (Demirci et al., 2019). By improving performance, availability, utilization, efficiency, cost reduction, and accessibility, telemedicine can address a wide range of healthcare issues. Good cooperation between healthcare organizations, governments, and medical technology is needed to realize the benefits of telehealth in the long term. It is essential to ensure data security, and solutions that are user-friendly and enable users to make choices in a way suited to their needs (Blandford et al., 2020).

5. Improve satisfaction with breastfeeding services

Telelactation services have a high level of satisfaction among patients. Satisfaction with telelactation was reported by 80% of participants with a statistical difference found in those who preferred telelactation compared to face-to-face ($p = 0.032$). The high telelactation satisfaction score is attributable to the comfort, ease of use, expertise, and friendly nature of breastfeeding assistance providers as well as easier access (AlHreashy et al., 2023). However, a lower level of satisfaction was found in other studies conducted with the telelactation intervention group. Participants who continued to breastfeed during the 12 weeks of the assessment were asked to rate how satisfied they were with the experience of breastfeeding their baby over the past three months, very unsatisfied, somewhat

unsatisfied, not satisfied, somewhat satisfied, and very satisfied. A total of 73% of participants in the telelactation group in the ITT analysis were satisfied with their breastfeeding experience compared with 78% of control participants (5% difference, $p=0.41$), and 63% of telelactation participants in the IV analysis were satisfied compared with 78% of control participants, the difference was 11%, $p=0.41$. It may be due to the challenges and barriers associated with breastfeeding (Uscher-Pines et al., 2020).

LIMITATION OF THE STUDY

The research on telelactation is still lacking, which leads to a lesser in-depth analysis. All studies are unique in their methods and study designs. This may make it hard to compare the results of a single study with that of another. Furthermore, new research may be carried out after this study has been completed which leads to more recent findings. Therefore, there is a possibility that the latest articles have not been analyzed.

CONCLUSION AND SUGGESTION

The impact of telelactation services on breastfeeding outcomes has been demonstrated. Telelactation services have a significant impact on exclusive breastfeeding rates. These services not only provide support for nursing mothers but also increase self-confidence, safety, and comfort levels, leading to higher satisfaction with breastfeeding services overall. Based on research findings, it is crucial to develop and implement telelactation services to increase the coverage and success of breastfeeding. Telelactation services need to be well-designed and supported to reduce gaps in breastfeeding rates and maternal and child health outcomes. Current interventions could be improved by making it easier to use the telelactation services, ensuring their security, continuity of service, and online access to information on breastfeeding.

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