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The Importance of Exclusive Breastfeeding During the First Six Months and Digital Support Approaches for Its Continuation: A Current Review

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ABSTRACT

Giving your baby only breast milk for the first six months helps keep both you and your child healthy now and later on. This is a fundamental practice in terms of public health. The World Health Organization and UNICEF recommend that babies be fed only breast milk for the first six months after birth, and that breastfeeding be continued with appropriate complementary foods until the age of two and beyond. However, when data from around the world is examined, it is observed that achieving this goal is proving difficult. Breastfeeding behavior is influenced by many variables, such as individual factors, social environment, and the healthcare system. Recently, mobile health (mHealth) and telehealth applications have come to the fore. Mothers now have easier access to information and support, which increases their self-efficacy regarding breastfeeding. Research indicates that digital interventions can increase breastfeeding rates and mothers' self-confidence. However, some studies have also reported that telelactation does not provide a significant contribution in the general population. Nevertheless, the evidence we have regarding its long-term effects is still limited and somewhat scattered. In this review, we will evaluate the role of digital health approaches in maintaining exclusive breastfeeding for the first six months, in line with the current literature.

1. Introduction

Breast milk provides newborns with all the nutrients needed for healthy growth and development. It is more than food because it is a living fluid that changes over time and contains key substances such as immunoglobulin A, lactoferrin, and lysozyme [1,2]. As colostrum turns into mature milk, its composition adapts to meet the baby's needs. Long-chain polyunsaturated fatty acids are especially important for brain and eye development in babies [3]. Babies who are breastfed are less likely to develop stomach and respiratory infections in the short term. In the long term, they have a lower risk of chronic diseases such as obesity, type 2 diabetes, and high blood pressure [4,5]. Breastfeeding also helps mothers by supporting the uterus to return to its normal size, reducing the risk of postpartum bleeding, and lowering the chances of breast and ovarian cancer later in life [6,7].

Several factors can affect breastfeeding. A mother's knowledge, experience, confidence, support from family or healthcare professionals, and the values of her society all play a role [8,9]. Difficulties with breastfeeding in the first days after birth are often the main reason mothers stop early [8].

Digital health services and mobile apps have become much more common in recent years. These tools are designed to give mothers more information about breastfeeding, increase their confidence, and make it easier to get support. Telelactation and mobile health programs connect mothers with professional help and assist them in managing breastfeeding challenges [10,11,12]. However, there is still limited and unclear evidence about how much digital tools improve

breastfeeding rates over time [13,14]. More research is needed to understand how digital health apps affect breastfeeding, especially exclusive breastfeeding in the first six months, using current scientific evidence. The main purpose of this review is to evaluate the effectiveness of digital health interventions (mobile apps, SMS, telelactation, etc.) in sustaining exclusive breastfeeding behavior in the first six months, in light of current evidence, and to discuss the limitations of these interventions.

2. Methods

A narrative review design was employed to comprehensively evaluate the prominent themes within the current literature, as this approach provides the flexibility needed to combine diverse sources of information [15,16]. In this review, we synthesized evidence regarding factors affecting breastfeeding behavior, the application of digital health tools, and the limitations of mobile applications [17,18]. Because a strict systematic protocol was not followed, no standardized methodological quality assessment or risk-of-bias tools were applied to the selected studies.

A comprehensive literature search was conducted using the PubMed, Scopus, Web of Science, and Google Scholar databases. The search was executed using combinations of keywords including "exclusive breastfeeding," "mobile health," "mHealth," "digital health interventions," "telelactation," and "breastfeeding self-efficacy." To capture foundational knowledge alongside current evidence, no initial publication date restrictions were applied, and the database screening was updated to cover literature published up to January 2026.

The inclusion criteria comprised English-language peer-reviewed original research articles (specifically randomized controlled trials), systematic reviews, and meta-analyses that directly evaluated the impact of digital health interventions, such as mHealth, telelactation, and SMS support, on exclusive breastfeeding outcomes during the first six months postpartum [14,19,20,21]. Conversely, studies that did not target the 0–6 months breastfeeding period, conference abstracts, non-peer-reviewed gray literature, and articles written in languages other than English were excluded.

To minimize selection bias and ensure reliability, the titles, abstracts, and full texts of the retrieved records were independently screened by two reviewers (TA and MDB). The final selection of articles was determined through mutual consensus among the researchers, and the extracted data were thematically synthesized.

3. Results And Discussion

Digital health and internet-based interventions appear to be effective in increasing rates of exclusive breastfeeding during the first six months. A meta-analysis has shown that internet-based applications increase mothers' breastfeeding knowledge, attitudes, and self-confidence, thereby significantly increasing the rates of exclusive breastfeeding for 0-6 months both in the short term (6 weeks) and long term (3-6 months) [17].

A systematic review and meta-analysis conducted in low- and middle-income countries also points to similar results. Digital interventions, particularly between 1 and 6 months, have significantly extended the duration of exclusive breastfeeding [14]. Concurrently, a recent meta-analysis by Ayele et al. [22], confirmed that mobile health applications significantly improve maternal and child nutrition outcomes. Furthermore, prior evidence demonstrates that a strategic combination of diverse digital modalities, such as mobile applications, proactive phone calls, and one-way messaging, substantially enhances exclusive breastfeeding rates for the 0–6 month period. This study highlights that digital interventions not only provide information but also improve breastfeeding outcomes by offering behavioral support [13].

A meta-analysis conducted by Fan et al. [23], demonstrated that SMS and text message-based programs significantly increased rates of exclusive breastfeeding from three months prepartum to six months postpartum. Similarly, randomized controlled trials also support this effect. Seyyedi and his team demonstrated in a 2021 RCT conducted in Iran that a smartphone-based intervention significantly increased both breastfeeding self-efficacy and exclusive breastfeeding rates [19]. Another example is Gebremariam and colleagues, who targeted both mothers and fathers in Ethiopia in 2023 with a theory-based mobile health app; as a result, they saw an increase in the rate of six-month exclusive breastfeeding [20]. Two new RCTs conducted in Turkey have found similar results. Aslantekin Özçoban and colleagues found that tele-education support in 2025, and Uzunçakmak and team found that social media-based support positively affected both breastfeeding self-efficacy and the duration of exclusive breastfeeding [18,21].

Additionally, there are studies that evaluate mHealth interventions within broader healthcare services. These studies have reported that mobile application, messaging, and phone-based strategies increased the rates of six-month exclusive breastfeeding [12,19]. Despite these promising findings, digital health solutions alone are not

enough. However, the effectiveness of digital interventions may vary across populations and contexts. For example, a large randomized controlled trial conducted by Uscher-Pines and colleagues in 2025, covering 39 states, found that video-based telecare services did not significantly contribute to breastfeeding rates in the general population (24). These findings indicate that the efficacy of digital health interventions is highly context-dependent and varies significantly across different demographics and healthcare sectors.

In addition, accessibility also remains a major concern. According to 2025 data from the Mobile Communications Systems Association, approximately 61 percent of women in Sub-Saharan Africa still lack internet access. Device prices are high, digital literacy is low, and social norms also limit access. Robert and his team [25], launched a peer counseling SMS program targeting low-income mothers in Washington, D.C.; participation remained at 18.5 percent, and the program failed to reach a significant portion of its target audience.

Another study [26], identified four main barriers to the widespread adoption of digital health technologies in rural areas: low digital literacy, poor internet connectivity, lack of integration into healthcare systems, and socio-cultural resistance. In a qualitative study in Indonesia, the two biggest difficulties mothers experienced when using breastfeeding applications were internet connection problems and platform incompatibility with devices [27].

Overall, ensuring inclusivity is critical when developing digital breastfeeding interventions. Apps should work smoothly on phones, use simple voice messages for people with low literacy, and be easy for communities to use. Bessey [28], explains that digital tools cannot take the place of personal support from healthcare workers, so they should only add to the help that is already there. Gavine and colleagues [29], found similar results in their Cochrane review: one-on-one breastfeeding support from healthcare professionals or peer counselors greatly reduces the risk of stopping breastfeeding, especially at six months, and is still the best option for complex cases. The overall impact, key examples, and limitations of these digital health tools are systematically summarized in Table 1. Although the vast majority of literature in this field reports positive outcomes, the possibility of publication bias regarding studies showing negative or limited effects should not be ignored. Furthermore, evidence on the cost-effectiveness of digital interventions is still insufficient. The low cost of an mHealth application alone is not sufficient for sustainable healthcare system integration.

Table 1. Impact on exclusive breastfeeding by digital ıntervention types

Intervention	Authors	Impact	Limitation
SMS / text message	Fan et al., 2024	Yes	Low participation
Mobile application	Seyyedi et al., 2021	Yes	Digital literacy barriers
Telelactation (video)	Uscher-Pines et al., 2025	No	Accessibility issues
Social media-based support	Uzunçakmak et al., 2025	Yes	Cultural adaptation required
mHealth targeting both parents	Gebremariam et al., 2023	Yes	More RCTs needed

4. Conclusion And Recommendations

Digital health tools can increase breastfeeding rates and help mothers feel more knowledgeable and confident. Tools like SMS reminders, mobile apps, and online training offer helpful information and support, making breastfeeding less challenging. Research from various countries highlights these benefits.

But not everyone benefits in the same way. In some areas, issues such as limited access, weak infrastructure, low digital skills, and cultural differences make digital tools less effective. Although these tools cannot fully take the place of support from healthcare workers, they are still valuable.

Looking ahead, it is important to design solutions that work on basic phones and are simple for everyone to use. Digital content should fit the language and culture of the people it serves. Including family members can also make these efforts stronger. When adding digital strategies to healthcare, we need to close access gaps and improve infrastructure and digital skills, especially in rural and low-income communities. Finally, high-quality randomized controlled trials are truly needed to see the long-term effects. In future studies, priority

should be given to randomized controlled trials that evaluate the effects of digital interventions not only in the first six months but also at 12 months and beyond.

Conflict of Interest

The authors declare no conflict of interest. Funding: This study received no financial support from any institution or organization.

Ethics Committee

The study was based exclusively on publicly available datasets and did not require ethical approval.

Author Contributions

Study Design, TA; Data Collection, *TA, MDB*; Statistical Analysis, *TA, MDB*; Data Interpretation, *TA, MDB*; Manuscript Preparation, *TA, MDB*; Literature Search *TA, MDB*. All authors have read and agreed to the published version of the manuscript.

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