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Use of social media for receiving professional support in enhancing mothers' lactation self-efficacy

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Use of Social Media for Receiving Professional Support in Enhancing Mothers' Lactation Self-Efficacy

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ABSTRACT

Background

Insufficient support for breastfeeding and limited exclusive breastfeeding rates emphasize the need for high-impact approaches to enhance maternal confidence in lactation. Social media has emerged as a promising platform for professional support and information dissemination in this context. This review aims to examine the role of social media in providing professional lactation support to mothers in enhancing their lactation self-efficacy

Method

Employing PRISMA guidelines, the review sought relevant literature on professional assistance in enhancing breastfeeding self-efficacy. Major databases, including PubMed, CINAHL, Google Scholar, and Science Direct, were meticulously queried using targeted keywords. Every selected article underwent screening for English language and full-text accessibility.

Results

The search yielded 15,746 hits, and after a meticulous screening process, 33 studies were included for synthesis. The synthesized literature revealed a dearth of studies investigating mothers' viewpoints on utilizing social media for professional support to enhance breastfeeding self-efficacy, particularly within the context of Karachi, Pakistan. Despite this gap, the selected studies highlighted the potential of social media, to positively influence breastfeeding practices, provide emotional support, and deliver valuable information to mothers.

Conclusion

The findings show a lack of specific studies conducted in Pakistan, which highlights the importance of conducting research that is customized to understand how mothers perceive the use of social media for professional breastfeeding support. The results emphasize the untapped opportunities presented by online platforms in promoting mothers' confidence in breastfeeding and suggest the need for focused interventions that influence these digital channels to improve both maternal breastfeeding confidence and infant health.

Keywords: Social Media; Breast Feeding; Lactation' Mother's Lactation; Self Efficacy

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Introduction

According to the World Health Organization (WHO), breastfeeding is one of the best strategies to ensure a child's health and survival and breast milk is the best nutrition for infants. The health and development of infants and young children depend heavily on breastfeeding(1). WHO suggests breastfeeding exclusively for the first six months of life, then continuing it while introducing complementary foods until the child is two years old or more(1).

The many advantages of breastfeeding for both the mother and the newborn are highlighted in recent evidence-based literature from WHO, United Nations International Children's Emergency Fund (UNICEF), and American Academy of Pediatrics (AAP). In addition, to reducing the incidence of infections, allergies, and chronic disorders, breastfeeding has been demonstrated to enhance cognitive development and scholastic performance (1-6). It also provides a bonding opportunity for mother and child and can help promote

maternal health by reducing the risk of breast and ovarian cancer, type 2 diabetes, and postpartum depression (3-6).

Global breastfeeding practices

Breastfeeding is a universal practice that provides numerous health benefits to both the mother and the child. Globally, failing to adhere to WHO's breastfeeding recommendations has led to economic losses of over US\$508 billion annually. Within an hour of delivery, the WHO, AAP, and UNICEF advise beginning breastfeeding; continuing it exclusively for the first six months; and continuing it with safe and sufficient supplemental foods for up to two years and beyond. However, over half of the children in the world are not breastfed according to these recommendations, with global rates of 48% for Early Initiation of Breastfeeding, 44% for Exclusive Breastfeeding from 0-5 months, and 65% for Continued Breastfeeding up to 12-23 months(7).

Ninety-seven percent of infants receive human milk, according to a survey conducted to assess rates of breastfeeding and mechanisms of support, protection, and promotion for breastfeeding, organized by the Federation of European Nutrition Societies, in which eleven countries participated. The survey also identified Norway (71%), Sweden (61%), and Germany (51%) as the three countries with the highest breastfeeding rates. Despite high early initiation breastfeeding rates, a WHO report for the European region showed a gradual decline in these rates over the first six months, to 25% as an average of all countries who were surveyed, with an overall decrease in exclusive breastfeeding rates, 39% in the Netherlands and 13% in Denmark. This decline was primarily due to a lack of appropriate support for breastfeeding practices (BFP)(8).

The consequences of not following the recommendations include significant health, human capital, and economic costs, such as \$508 billion in total economic cost (0.6% of global income), \$23.94 billion in health system costs, 197 million lost IQ points, 4.58 million child obesity cases, 93,626 maternal deaths, and 423,876 child deaths. The numbers vary by region, with the lowest prevalence found in North America, where

only 25.8% of infants under six months are exclusively breastfed. On the other hand, the highest rate of exclusive breastfeeding is found in the South Asia region, where 57.5% of infants under six months are exclusively breastfed(7, 9).

South Asian and local breastfeeding practices

Breastfeeding rates in South Asia and Pakistan have seen an upward trend in recent years although there is still room, for improvement. As per UNICEF the exclusive breastfeeding rate for infants below 6 months of age in South Asia witnessed an increase from 35% in 2005 to 57.5% in 2022(1, 2, 4). The Cost of Not Breastfeeding tool developed jointly by the WHO and UNICEF indicates that if breastfeeding support continues at rates in the Asian region there will be substantial improvements in annual health outcomes, human capital development and economic costs. However failure to support breastfeeding leads to health problems. This includes around 19,530,572 cases of child diarrhea with 32,559 associated deaths, about 495,792 cases of child acute respiratory illness with approximately 81,045 associated deaths each year, and roughly 7,309 cases of breast cancer with around 4,273 associated deaths per year among other

outcomes. Moreover there are human capital costs such as a loss of 40,225,684 IQ points and about 14-178,276 school years annually. The estimated total expenditures of not breastfeeding amounts to \$20.8 billion per year, of which \$4.3 billion is spent for breast milk substitute and \$16.5 billion for morbidity and mortality costs along, with healthcare system expenses (7).

In Pakistan the rate of breastfeeding among infants under 6 months old was 37.7%, in 2022 showing an improvement from 29% in 2012. However it is still concerning that the prevalence of breastfeeding in Pakistan remains below the recommended rate of 50%. Pakistan faces costs of 5.9 billion from the lower rate of breastfeeding. This includes direct healthcare expenses such as increased cases of diarrhea and respiratory infections and indirect costs like reduced productivity due to child morbidity and mortality (7, 10).

Additionally, in Pakistan around 35% of infants are fed formula within one hour of birth(11). This practice can disrupt the establishment of breastfeeding and contribute to weaning. Notably there are variations observed across regions, and at district levels. In Khyber Pakhtunkhwa 61.1% of newborns receive breast milk within the first hour of life

while Gilgit Baltistan reports the lowest percentage of 20.1%(9, 11).

Breastfeeding rates in regions of Pakistan vary with 40-44%, in Kashmir, Punjab and Baluchistan while approximately 50% in Sindh Khyber Pakhtunkhwa and Gilgit Baltistan (2-4). Multiple factors contribute to the varying rates of breastfeeding in Pakistan and South Asia. These include beliefs, lack of support from healthcare providers early introduction of non-breast milk feeds, workplace assistance for breastfeeding mothers, limited maternal knowledge on the subject fewer antenatal visits and insufficient specialized services(10). The ongoing Covid 19 pandemic and aggressive marketing by formula manufacturers have further negatively impacted breastfeeding rates. WHO and UNICEF have permitted sanctioning actions by authorized government agencies after infractions are found. Additionally, 44 nations have made efforts to strengthen these regulations. Furthermore 51% of countries have implemented policies prohibiting the use of free or low-cost breast milk substitutes. In health facilities across 79 countries worldwide, their use has been banned(12). Despite the abundance of lactation tools, mothers require access to resources to discuss their breastfeeding concerns due to their

strong desire to breastfeed. The success and longevity of breastfeeding are significantly influenced by lactation self-efficacy, and many women discontinue when they are unable to overcome obstacles. Maternal breastfeeding self-efficacy refers to a mother's belief in her ability to breastfeed her child, based on Bandura's self-efficacy theory(13). According to Dennis (14, 15), this belief influences a mother's decision on whether to breastfeed, how much effort to put into breastfeeding, and how to handle challenges while breastfeeding. When a mother has high self-efficacy, she is more likely to choose to breastfeed, persist even when faced with difficulties, use positive self-talk, and react positively to challenges. A strong desire to breastfeed is the main factor in motivating a mother to do so. Attitudes, societal norms, and self-efficacy can all have an impact on one's ability to persevere(13-15). It is, therefore, essential to continue offering breastfeeding women the support they require through user-friendly media so they can feel empowered and capable of achieving their breastfeeding targets.

Methods

The objective of this literature review was to gather pertinent details regarding the provision of professional assistance via social

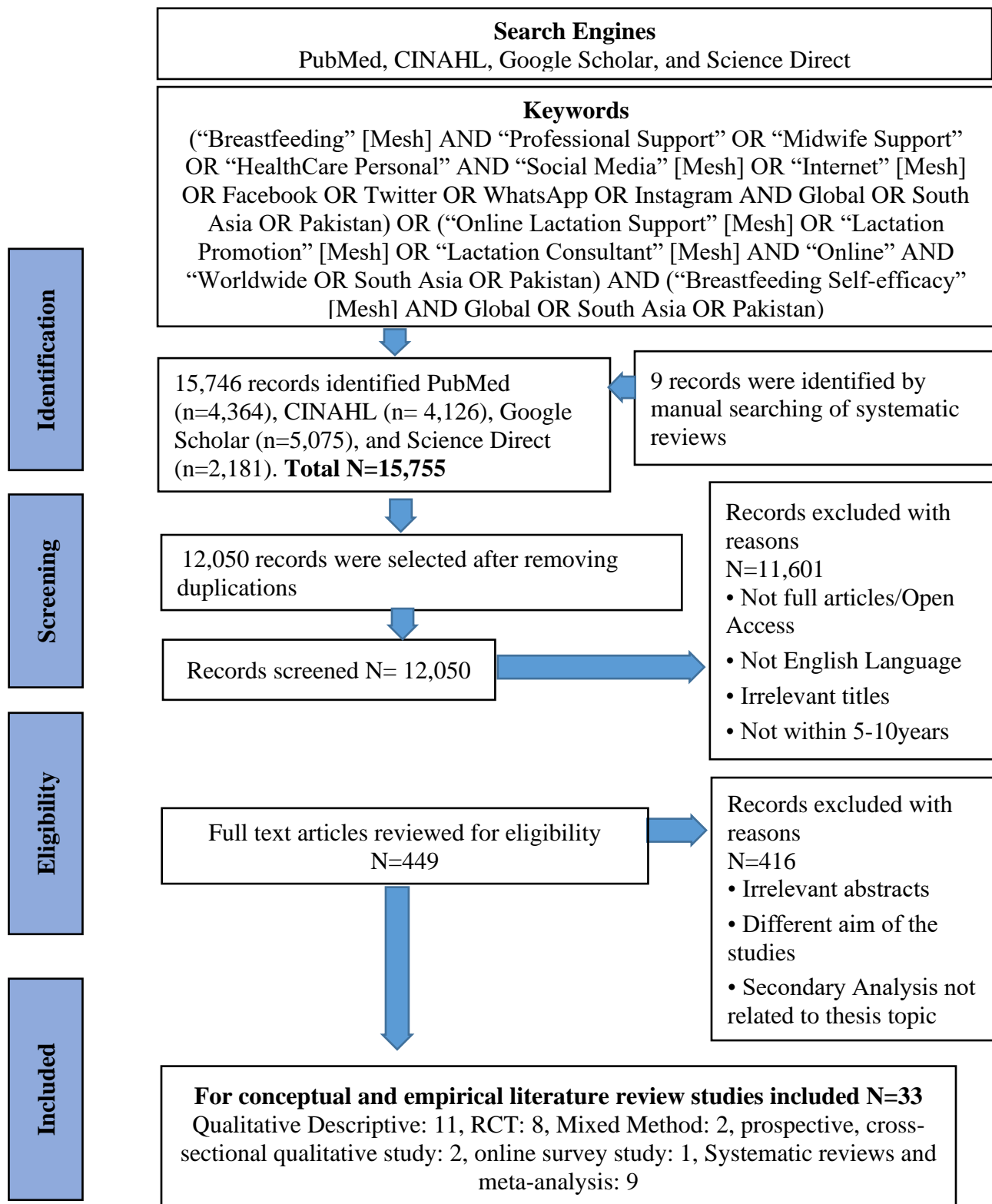
media in improving mothers' self-efficacy in breastfeeding. An extensive search of various databases, including PubMed, CINAHL, Google Scholar, and Science Direct, was conducted to achieve this. The search for relevant literature was conducted thoroughly and exhaustively, utilizing specific keywords (“Breastfeeding” [Mesh] AND “Professional Support” OR “Midwife Support” OR “HealthCare Personnel” AND “Social Media” [Mesh] OR “Internet” [Mesh] OR Facebook OR Twitter OR WhatsApp OR Instagram AND Global OR South Asia OR Pakistan) OR (“Online Lactation Support” [Mesh] OR “Lactation Promotion” [Mesh] OR “Lactation Consultant” [Mesh] AND “Online” OR “Digital” OR “Internet-based” OR “Virtual” OR “Cyber” AND “Worldwide OR South Asia OR Pakistan) AND (“Breastfeeding Self-efficacy” [Mesh] AND Global OR South Asia OR Pakistan) in various ways. These databases produced 15,746 hits. Additionally, nine records were found by manually scanning systematic reviews and meta-analyses. Filters like English Language, Free Access, Last 5-10 Years, and Full-Text Articles were also used, and these produced 449 articles.

First, the titles and abstracts of the publications in the databases were examined. Due to redundancy, triviality, and the

researcher's assessment of the review subject, 3,705 articles were removed. As a result, 12,050 were obtained in total. After removing 11,601 publications based on irrelevant abstracts and secondary analysis of these papers, 449 articles, including full-text articles and reports, were evaluated for eligibility. 33 study articles were included from a total of 449 articles for literature synthesis.

Despite a thorough literature search, no study that had investigated mothers' perspectives on the use of social media for professional support in boosting their self-efficacy for breastfeeding was identified that had been conducted in Karachi, Pakistan. The literature search strategy is shown in Figure 1 below and the literature reviewed is presented in Appendix 1 Table.

Figure 1. PRISMA Flow Diagram.



Review Article

Results

The review strongly indicated that technology plays an important and positive role in enhancing mothers' breastfeeding self-efficacy(16). Specifically, online breastfeeding support groups and mobile applications, and other digital interventions are not merely checkbox solutions; they appear to contribute to positive maternal breastfeeding experiences (3, 16-35).

Web-based electronic networking and breastfeeding support

A qualitative study, by Alianmoghaddam, Phibbs, and Benn, 2019, on exclusive breastfeeding support through social media, conducted in the United Kingdom, explored the perspectives of 30 mothers who utilized social media for breastfeeding support. The study found that social media was a convenient and accessible platform for mothers who seek breastfeeding information and support. The mothers highlighted the importance of peer support, information sharing, and the use of visual aids, such as videos and images, in their breastfeeding journey(36). Similar qualitative studies revealed that the social media support groups provided an easy platform for sharing experiences, exchanging information, and obtaining emotional support. Moreover, the

mothers emphasized the significance of the social media group members' empathy and understanding in their breastfeeding journey(17).

Morse and Brown (34) in their online survey, conducted in the United Kingdom, which consisted of open and closed questions, to explore the experiences of 2,011 mothers who used local Breastfeeding Support Facebook (BSF) groups, support a similar thought. According to the survey, local BSF groups were highly regarded and frequently utilized because of their connections to community in-person services. Self-assurance and efficacy were boosted which prolonged their breastfeeding duration. The results have significant ramifications for the creation of comprehensive online initiatives to enhance (37).

An RCT(22), was conducted in Nigeria among 200 mothers. The intervention group was added to a WhatsApp group and received messages about Breastfeeding Practices (BFPs), while the control group did not receive any messages. The messages sent to the intervention group were based on the WHO's guidelines for breastfeeding and covered topics such as the benefits of breastfeeding, how to breastfeed, and common breastfeeding problems. The study found that because of the support provided to

the mothers in the intervention group, they had significantly higher rates of exclusive breastfeeding and longer duration of breastfeeding, compared to the control group. The findings show that WhatsApp groups could be an effective way to promote BFP in low-resource settings, where access to healthcare and information may be limited.

A prospective longitudinal self-report survey study in rural Australia evaluated the effectiveness of a breastfeeding app "Breastfeeding Solutions" by Nancy Mohrbacher, who is an International Board Certified Lactation Consultant (IBCLC) from the United States. The results showed that the app had a positive impact on breastfeeding outcomes and increased breastfeeding rates in the intervention(19). It can thus be concluded that breastfeeding educational apps have the potential to be an effective tool for improving breastfeeding outcomes in rural areas.

A content analysis of 65 mHealth programs, including mobile applications and text messaging, showed that most of the apps (76%) were free, 94% provided informational support, and they were largely for postpartum women, with a focus on breastfeeding duration and troubleshooting. Text-messaging services were also pro-

breastfeeding and mostly provided informational support (25).

Peer and professional breastfeeding support through social media

In one of the qualitative exploratory studies, Dewanti and colleagues explored whether mothers attending an online Mother Support Group received support and information from other mothers or peers, as well as from professional experts, in the online forum benefited through it, as well as strongly agreed to promote it. Some mothers felt overwhelmed with loads of information that was circulated and preferred to learn in an individual settings(38). It is clear that mothers' experiences in a group setting, where they can learn in a comfortable setting can help them work through their breastfeeding journey.

A study by Morse and Brown study explored the experiences and perceptions of midwives who provide breastfeeding support through local Facebook groups. Themes were identified about (a) the importance and value of these groups in meeting the needs of mothers and improving breastfeeding rates, (b) the challenges of sustaining these groups due to reliance on volunteers and lack of support, and (c) the benefits of these groups as communities of practice for midwives. The

findings suggested that midwives saw the value of providing online support but felt unsupported by others in the wider healthcare system.(39).

A study (37) examined the role of midwives in moderating BSF groups and their impact on mothers' perceptions of support. The study surveyed 2,028 mothers in local BSF groups and found that midwife moderation was not common (5% of groups) but highly valued, with mothers perceiving a higher level of support and greater engagement. Mothers who had midwife moderators also viewed local face-to-face support to be valuable for breastfeeding more confidently. They indicated that online support supplements face-to-face support and improves continuity of care(40). These results lend support to the creation of integrated online public health initiatives.

Study by the same researchers explored midwives' involvement in Facebook groups and their experiences and perceptions of using social media to communicate with and support breastfeeding mothers. Few midwives, most of whom were unpaid, were involved in offering Facebook support, according to the study, which polled 719 students and midwives. Although there was agreement on the advantages for mothers, midwives were generally concerned about

interacting with mothers online due to potential personal and professional risks and a lack of support. A potential risk could be that any advice offered by midwives carries a significant danger to their safety because it can be captured, modified, and published on women's social media profiles. On the other hand, midwives who had experience in moderating Facebook groups had a more positive view of its benefits and were less fearful of engaging online. Midwives and students sought further training, guidance, and support to engage safely and effectively with mothers using Facebook(41).

Ramadan and colleagues investigated the role of a Facebook breastfeeding support group in promoting breastfeeding in Lebanon, where breastfeeding rates are low. Participants were mothers who had breastfed, or were currently breastfeeding, and group leaders who were Lactation Consultants (LCs). The researcher analyzed data collected from posts and comments on the Facebook group in August 2020, using qualitative content analysis. The findings showed that social media platforms, specifically the Facebook group, can be used to build community resilience post-crisis by providing access to social support, community engagement, and material resources, especially if it is led by an LC(29). The research findings indicated that social

media had the potential to serve as a significant community resource in empowering women to breastfeed and enhancing community resilience during times of crisis, which reinforces the relevance of the current study.

Breastfeeding support via social media and breastfeeding self-efficacy

Social networking gives users the chance to participate in a variety of human interactions and daily activities, like giving and receiving (42). Lactation researchers have advised using social media to support breastfeeding mothers in order to adapt to the changing nature of how mothers convey support and exchange knowledge (42). The use of social networking sites to cover knowledge gaps, improve breastfeeding techniques, and overcome social isolation have all been examined in several qualitative studies that focused on breastfeeding support groups on social networking sites. At times these are the platforms through which a mother gets support to the extent of changing her intentions of BF and molding her actions to successful results.

BF's intentions of a mother would always assist her choices; however, her providing support and guidance will assure success rates. In one of the studies with 22 Finnish

mothers of premature infants, researchers discovered that mothers frequently received insufficient breastfeeding help from hospital staff during the postpartum period, and turned to peers in their Facebook group to find the knowledge and support they required(27, 28). Educative and supportive interventions that provided in three or more counseling sessions were successful in enhancing breastfeeding self-efficacy and outcomes (early initiation of breastfeeding and exclusive breastfeeding) according to a meta-analysis of thirteen randomized controlled trials(18).

A small randomized controlled trial of 33 primiparous women was conducted in Hong Kong in a private hospital's antenatal clinic that evaluated the feasibility and acceptability of an online WhatsApp group for breastfeeding support. The study found that the intervention was effective in increasing breastfeeding knowledge, intention, and self-efficacy among participants, and the majority of the participants reported being satisfied with the intervention(43, 44). Mehrabi et. al, compared the effectiveness of Mobile Instant Messaging (MIM) versus face-to-face counseling on breastfeeding self-efficacy of primiparous mothers in Iran. They found that both interventions were effective in boosting

breastfeeding self-efficacy, with no significant differences between the two groups. However, the MIM intervention was found to be more convenient and less time-consuming than face-to-face counseling(45). The study of the impact of breastfeeding support via social media on women's breastfeeding self-efficacy, Uzunçakmak(21) and colleagues, included 68 women, with 31 assigned to the intervention group and 37 to the control group. It demonstrated that the difference was statistically significant with mean scores between the intervention and control groups ($p < 0.05$). In contrast to the control group, the intervention group's BSES SF scores were higher at 3 and 6 months compared to baseline, whereas the control group's BSES SF scores were lower at 6 months compared to baseline. This study supports the value of social media-based teaching and counseling to raise women's self-efficacy in breastfeeding and promote its persistence(21).

A prospective cross-sectional qualitative study assessed the beliefs, practices, and results of breastfeeding among African American mother. In September 2017, researchers conducted four online focus groups with 22 African American women who were participants in Facebook breastfeeding support groups. Thematic

analysis of the data showed that peer support in Facebook communities helped American mothers feel more comfortable breastfeeding in public and extended breastfeeding time goals. According to the study, online support groups assisted mothers in overcoming breastfeeding obstacles, favorably influenced breastfeeding norms and confidence, and prolonged the planned breastfeeding time(28).

Mothers' perspectives of online support groups for breastfeeding

A study conducted in the UK(34), collected data through an online survey and semi-structured interviews. The survey was promoted through various channels, including social media, posters, and leaflets in local hospitals and clinics. Participants were eligible if they were mothers who had joined a local breastfeeding support group on Facebook, were aged 18 or over, and could understand English. In total, 122 mothers completed the survey, and 25 of these were invited for an interview. A similar study(20) employed a qualitative research design, where 30 mothers who had recently breastfed their babies participated in focus group discussions and interviews. Participants were recruited from a range of social media groups dedicated to breastfeeding support, including

Facebook and WhatsApp groups. The findings of both studies were consistent: online breastfeeding support in social media groups provided mothers with a convenient and accessible platform for seeking information and support related to breastfeeding. Participants reported that social media groups offered a sense of community and allowed them to connect with other mothers who were experiencing similar challenges and concerns related to breastfeeding(23, 24). The sense of community was particularly important for mothers who did not have access to local support groups or who felt uncomfortable attending such groups in person.

Robinson et al. conducted semi-structured interviews with 12 African American mothers who participated in a Facebook community focused on breastfeeding support. The data were analyzed using thematic analysis. The findings suggested that the Facebook community provided a supportive environment, where mothers could access breastfeeding information and advice, share their breastfeeding experiences, and connect with other breastfeeding mothers who shared similar experiences (28). The conclusions of sources (35, 46) indicate the effectiveness of online interventions in promoting and supporting breastfeeding.

Evidence showed that an online participatory intervention through Facebook resulted in higher rates of exclusive breastfeeding and longer duration of exclusive breastfeeding. Further, the education through a messenger application resulted in higher breastfeeding self-efficacy and exclusive breastfeeding rates. These findings support the use of online interventions as a valuable tool in promoting and supporting breastfeeding, especially in areas where face-to-face interventions may not be easily accessible.

Challenges of social media-based breastfeeding support

A study (44) investigated the promotion and support of breastfeeding on Instagram, a well-known social media site with over 700 million active members globally. The researchers discovered that breastfeeding mothers use Instagram to publicly share a variety of topics related to breastfeeding and build supportive networks for new mothers to share experiences and boost confidence. They analyzed 4,089 images and 8,331 corresponding comments posted with well-known breastfeeding-related hashtags. However, there was very little educational material covered, and advertisements for goods were regularly shown and debated. According to the study, Instagram could

provide fresh ways and chances to "normalize," safeguard, promote, and assist breastfeeding more widely within its sizable and diversified worldwide online audience through lactation specialists(47).

The studies (44,45) also identified several challenges associated with accessing social media groups for breastfeeding support. These included concerns about the accuracy of information shared in the groups, the potential for information overload, and the difficulty in navigating and managing multiple social media groups simultaneously. The studies also found that accessing social media groups for breastfeeding support had both positive and negative impacts on mothers' breastfeeding experiences. On the positive side, participants reported that social media groups provided emotional support, helped them to overcome challenges, and increased their confidence in their ability to breastfeed. However, some participants also reported negative impacts, such as feeling overwhelmed by the volume of information shared in the groups and experiencing anxiety related to comparisons with other mothers(48).

One study (46) examined the use of a Babycenter.com breastfeeding support forum, which has over 140,000 users and over one million threads of discourse. Over

the course of ten days, the researchers examined 258 original posts and 1,445 comments from the forum. Based on the kinds of information that users wanted, the researchers categorized the postings into 15 categories. Feeding difficulties, supply problems, feeding frequency and length, pumping, physical health, excretion problems, storing milk, nipple problems, and general breastfeeding queries were the most frequent categories(49). The study found that breastfeeding mothers actively use online support forums to get information from people who had similar experiences. This presents a valuable resource for breastfeeding mothers and may be a key element of future breastfeeding interventions, though the authenticity of the information is unverified.

Discussion

A detailed examination of 33 studies has provided insights about online breastfeeding support. These studies emphasize the effects on mothers' self-confidence, the importance of professional and peer support and the overall outcomes of breastfeeding. The findings from these studies highlight both the advantages and challenges that come with the use of digital platforms for breastfeeding support. Overall, the above studies suggested that technology-based interventions, such as

online support groups and mobile instant messaging can be effective in supporting and improving breastfeeding self-efficacy among new mothers.

Only a few studies have been conducted concerning lactation support, mothers' self-efficacy, and breastfeeding outcomes in healthcare facilities in Pakistan and other South Asian countries. In view of the large number of malnourished children in these countries there is a need for action. Since healthcare workers and hospitals have a huge impact they should support and encourage healthy BFP, which can facilitate and motivate mothers to establish Exclusive Breastfeeding (EBF). Numerous studies suggest that lactation education as well as support, even after discharge and during follow-ups, can influence the maintenance of correct BFP(44, 50).

The cited studies, (17, 36, 37) emphasize the role played by social media as a convenient and easily accessible source of breastfeeding information and peer support. Regardless of their location these platforms serve as spaces where mothers can find comfort share their experiences and access a wealth of information to aid them in their breastfeeding journey. Additionally, the use of aids, like videos and images is also consistently highlighted across these studies underlining

how multimedia content enhances the understanding of breastfeeding related information. Furthermore Morse and Brown's (40) exploration of Local Breastfeeding Support Facebook (BSF) groups reinforces the idea that online communities can effectively connect mothers to services while fostering a sense of shared experiences and boosting self assurance. The combined research suggests that these digital communities play a role, in supporting breastfeeding mothers by connecting them to both real world support networks as well as creating a comprehensive and enhanced support system.

Furthermore the literature consistently highlights the effectiveness of technology based interventions, such as WhatsApp groups in Nigeria(22) and breastfeeding apps in Australia(19). Despite differences these initiatives demonstrate the potential for technology to overcome barriers by providing information and support to mothers in low resource settings. The findings indicate that technology based interventions not only increase breastfeeding rates but also serve as educational tools. This presents an opportunity to improve breastfeeding outcomes.

It is essential to acknowledge that breastfeeding support platforms have their

challenges alongside their advantages. Studies emphasize concerns related to the accuracy of information shared in groups the risk of information overload and the potential psychological impact, from comparing oneself with others(39, 40, 48). As digital platforms continue to grow in popularity it becomes crucial to update and modify the content and incorporate evidence-based information to ensure online breastfeeding support.

One study (47) examined the content shared on Instagram. While the platform provides visuals and allows mothers to share and celebrate their breastfeeding experiences there are concerns regarding the lack of resources and the influence of advertisements. This highlights the need to bring a balance in curating spaces that foster a sense of community but also provide reliable information.

Midwives and other healthcare professionals play a role in improving the well-being of communities that offer assistance to breastfeeding. Research conducted by Morse and Brown(39-41, 48) has shown that healthcare providers' active engagement on digital platforms not only supplements in-person interactions but also enhances the support given to breastfeeding mothers and boosts their confidence levels. This

integration of online and offline support systems has become crucial for offering care and guidance. This piece of literature highlights that healthcare providers and lactation consultants can use this information to encourage mothers to seek out reputable social media groups for breastfeeding support and to provide guidance on how to navigate and manage such groups effectively. Additionally, further research is needed to explore the long-term impacts of social media group use on breastfeeding outcomes and to identify strategies for addressing the challenges associated with accessing such groups.

The connection between online breastfeeding support and breastfeeding self confidence is a recurring theme in the literature. Studies conducted in Hong Kong(44) Iran(45) and Turkey(21) collectively demonstrate that interventions through platforms effectively enhance participants knowledge, about breastfeeding as well as their intention to breastfeed with greater confidence. Similar findings were observed in others studies(17, 21, 23, 24, 29, 32, 36, 48, 51, 52). These consistent findings show that the online world is not only a place to find information but a dynamic tool that can positively influence the beliefs and actions of mothers regarding breastfeeding.

Additionally, the research conducted by Robinson et al. in 2019 and Wong, Mou, & Chien in 2021 explores the impact of media, on breastfeeding norms and community resilience (18, 27, 28). These studies emphasize how online platforms have the potential to support mothers while also creating societal changes in breastfeeding practices and community dynamics (53, 54). The need for further research is emphasized by Wagg, Callanan, & Hassett and Lebron, St. George, Eckembrecher, & Alvarez. In depth exploration of mothers experiences within breastfeeding support groups can reveal both positive and negative aspects of these interactions. Understanding how these platforms affect mothers breastfeeding journeys and their role in the support network is essential for refining and customizing interventions. In this way these online communities can be modified according to the needs of breastfeeding mothers (20, 49). In summary, the 33 studies provide a perspective on online breastfeeding support. From the convenience of social media platforms to the effectiveness of technology-based interventions, the findings highlight how digital spaces have potential to affect both maternal, and child health. However, it is necessary to examine and continuously study the complexities and difficulties that

come with these platforms. Additionally, it is necessary to maintain a resource, that is readily available to mothers for breastfeeding support. The findings about online support for breastfeeding can assist healthcare professionals, researchers and policymakers in developing effective strategies based on evidence.

Limitations

This literature review is subject to limitations. Since the review included publications published in English, from selected data bases, some significant studies might have gone unnoticed. Furthermore, some studies were inaccessible to reviewers due to restricted access to full articles.

Recommendations

Through an analysis of these studies on online breastfeeding support several recommendations emerge to enhance the effectiveness and sustainability of platforms in supporting breastfeeding mothers. Firstly there is a need for increased research and interventions specifically designed for healthcare facilities in regions like Pakistan and South Asia to address the prevalence of child malnutrition. Healthcare professionals, including lactation experts, and midwives

should actively participate on platforms in addition to their in person interactions to provide continuous and trustworthy support. Among the current literature review studies, half of the studies suggested in their recommendation for future studies, that further qualitative research is needed to explore the positive and negative experiences of mothers that use online breastfeeding support groups by healthcare professionals. Also, they recommended exploring the impact that such groups have on their breastfeeding journey regarding other avenues of support.

It is crucial to keep content up to date and make necessary adjustments to ensure accuracy and prevent overwhelming participants with too much information. Finding a balance on platforms, like Instagram, which heavily focus on visuals requires an effort to create spaces for building communities while also offering resources. Additionally, continuous research should explore both positive and negative aspects of mothers' experiences in breastfeeding support groups. This will enable the development of customized interventions. Policymakers, healthcare professionals and researchers must collaborate to establish evidence-based strategies that enhance the potential of platforms to support

breastfeeding mothers while minimizing the negative aspects for some participants of online support systems.

Conclusion

In conclusion the examination of 33 studies provides insights into online sources of support for breastfeeding. There is a positive impact on mothers' confidence, an emphasis on the role of healthcare professionals and recognition of the potential of technology-based interventions. While online platforms, including social media play a role in connecting mothers and sharing experiences to enhance breastfeeding knowledge, it is important to ensure accurate information is included along with the means to address adverse psychological impacts. The integration of both online and offline support systems is important. There is a need for ongoing research to understand different experiences within breastfeeding support groups. These findings emphasize the significance of evidence-based strategies in creating reliable resources that are accessible and tailored to the diverse communities of mothers around the world.

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Appendix 1. Literature Review Table

No.	Author's Name, Year and Country	Study purpose	Study design	Sample Size	Key Findings
1	Alian moghaddam, Phibbs, & Benn (2019) UK	To explore the influence of social media on exclusive breastfeeding practice	Qualitative study	30	Mothers require trustworthy internet resources for learning about infant feeding, smartphone apps can be a viable choice for promoting breastfeeding, and breastfeeding mothers on Facebook can receive information through poor connections. Exclusive breastfeeding practices can be supported and promoted using social media.
2	Almohanna, Win, & Meedya (2020) Country not mentioned	To identify the characteristics of current internet-based breastfeeding interventions employing e-technologies and investigate the effects of internet-based e-technologies on breastfeeding outcomes	Systematic review	16	The most successful strategy for enhancing breastfeeding outcomes and long-term exclusive breastfeeding rates was found to be the combination of instructional activities and web-based personalized assistance via discussion forums.
3	Black, McLaughlin, & Giles (2020)	To investigate the experiences of women using a social media Facebook group for breastfeeding support and attempts	Qualitative: Exploratory, deductive approach.	8	Through the basic idea of the SCT: reciprocal determinism, the symbiotic link between members of a social media group promotes increased breastfeeding success and

	Northern Ireland	to explore whether it has aided in extended breastfeeding success. Also to explore the value of social cognitive theory (SCT) in explaining these experiences.			a longer duration of breastfeeding.
4	Brockwa, Benzies, & Hayden (2017) Country not mentioned	To explore the theoretical link between BSE and breastfeeding outcomes by investigating (a) if interventions to improve BSE were successful and (b) if improvements in BSE resulted in improved breastfeeding rates.	Systematic Review and Meta-Analysis	11	To increase breastfeeding rates among mothers of full-term infants, practitioners can focus on the modifiable aspect of breastfeeding self-efficacy.
5	Cavalcant, Cabral, de Toledo Vianna, & Osório (2019) Brazil	To assess the impact on the duration of exclusive breastfeeding of a participatory intervention using an online social network	RCT	251	At 30 and 60 days postpartum, the intervention group's rates of exclusive breastfeeding were significantly greater than those of the control group.
6	Clapton-Caputo, Sweet, & Muller (2020) UK	To understand the expectations and experiences of women who access social media groups when exclusively expressing breast milk	Qualitative descriptive approach	10	Two key issues emerged from the research: the significance of emotional support and the requirement for trustworthy information to control exclusive expression. It emphasizes the effects of breastfeeding difficulties

					on mothers' emotional health as well as the necessity of prenatal and postpartum education and assistance.
7	Dewanti, Februhartanty, & Roshita (2019) Indonesia	To explore the experiences of mothers attending online Mother Support Group as their breastfeeding support	Qualitative exploratory	10	Online mother support groups in Indonesia were more successful than conventional face-to-face help in enhancing breastfeeding performance. This was made possible by the ease of use and accessibility of online help, as well as the prompt delivery of thorough information and answers to questions.
8	Fan et al., (2022) Hong Kong, Malaysia	To study the feasibility and acceptability of an online instant messaging peer support group, run by trained peer counselors on improving breastfeeding outcomes in primiparous women in Hong Kong.	Two-arm, assessor-blind, randomized controlled feasibility study	40	Peer support for breastfeeding in Hong Kong may be best achieved through instant messaging groups.

9	Ghasemi et al. (2019) Iran	To systematically review the effectiveness of interventions using Bandura's self-efficacy theory on breastfeeding self-efficacy in Iranian mothers.	Systematic Review	21	Breastfeeding self-efficacy is improved by intervention using Bandura's self-efficacy theory.
10	Heydari, Akhondzadeh, & Hojati (2019) Iran	To investigate the effect of education through cyberspace on breastfeeding in women with their first birth.	RCT (An experimental study)	31 in each group (experimental and control)	Social media can offer qualified assistance in boosting breastfeeding mothers' self-efficacy.
11	Lebron, St. George, Eckembrecher, & Alvarez (2019) Country not mentioned	To examine this online support forum to understand the information-seeking and sharing practices of its users.	Qualitative descriptive study	A total of 258 original posts and 1,445 corresponding comments	Breastfeeding mothers who are looking for knowledge from others with similar experiences frequently use online support forums. This offers breastfeeding women a valuable resource, and as such, it might play a significant role in future breastfeeding therapies.
12	Maleki, Faghihzadeh, & Youseflu (2021) Iran	To evaluate the effectiveness of educational interventions on improving breastfeeding self-efficacy (BSE).	Systematic Review and Meta-Analysis	40 RCTs	Compared to the usual/standard care, educational interventions had a beneficial impact on breastfeeding self-efficacy.

13	Marcon, Bieber, & Azad (2018) Country not mentioned	To systematically determine if and how breastfeeding is promoted and supported on the popular social media platform Instagram, which currently has over 700 million active users worldwide.	Qualitative descriptive study	4,089 images and 8,331 corresponding comments	90.9% of mothers in the online group reported that they could receive help at any time, making the mother support group more convenient and accessible.
14	Mehrabi, Zarei, Bazrafkan, & Safarpour (2020) Iran	To investigate the impact of mobile-based education and regular delivery of designed messages on breastfeeding self-efficacy in primiparous mothers.	Double-blinded RCT	120	When it came to boosting the self-efficacy of breastfeeding in primiparous mothers, mobile instant messaging was more successful than face-to-face counseling.
15	Moon & Woo (2021) Country not mentioned	To synthesize the evidence of mothers' experiences of online breastfeeding peer support.	Integrative review	14	Breastfeeding women were empowered by online peer support, which altered breastfeeding outcomes and attitudes.
16	Morse & Brown (2021) UK	To explore how and why women find, use and value local BSF groups and who is providing them.	Mixed Method: An exploratory online survey	2011	Facebook breastfeeding support groups can be a valuable resource for women. Utilizing this knowledge, healthcare providers may encourage moms to join online support groups and create methods to help them overcome the barriers to doing so.

17	Morse & Brown (2022) UK	To examine the impacts of moderator type on mothers' perceptions of online breastfeeding support, when midwives play an active role in moderation.	An online mixed methods survey	2,028	Facebook groups supervised by midwives have the potential to enhance community-based face-to-face services and foster better breastfeeding practices.
18	Morse & Brown (2022) UK	To examine how midwives involved in providing breastfeeding support via a local BSF group perceive the value of this provision and what are their experiences of creating these services and of engaging with mothers online.	Qualitative descriptive study	18	Midwives become involved in providing online assistance because they think it is valuable but do not feel supported by other agencies in doing so. Despite its worth, midwives are concerned about the sustainability of this service because it depends on volunteers. They want further support. The significant advantages for midwives were emphasized, and this information should guide future research, advice, and investment.
19	Morse & Brown (2022) UK	To understand the impacts of SM support for breastfeeding, including benefits and challenges, to establish the evidence for wider provision within maternity services.	Systematic review	13	Mothers appreciate SM groups for the social support that normalizes breastfeeding and offers the encouragement they attribute to better results. This emphasizes the need for UK research that focuses on provision related to broader services.

20	Morse & Brown (2023) UK	To explore midwife involvement in Facebook groups, exploring experiences and perceptions of its users to communicate with and support mothers.	Online survey consisting of open and closed questions	719	Extending possibilities to offer Facebook support would be advantageous for midwives, services, and families, according to midwives' experiences.
21	Orchard & Nicholls (2020) Country not mentioned	To explore the influence of social media on breastfeeding decision-making, promotion, and support	Systematic Review	22	Social media can be used to change people's perceptions and behaviors towards breastfeeding.
22	Pilus, Ahmad, Zulkefli, & Shukri (2022) Iran	Develop, implement, and evaluate the effect of using a face-to-face and WhatsApp-based health education intervention based on social cognitive theory, namely the Self-Efficacy in Breastfeeding (SeBF) module, on mothers' self-efficacy, knowledge, and attitudes in a district in Selangor state.	RCT	160	Participation in the SeBF program, developed based on the social cognitive theory, over WhatsApp and in person boosted self-efficacy and breastfeeding expertise.
23	Qian et al. (2021) Country not mentioned	To analyze the existing evidence to determine whether mHealth-based interventions can improve the status of breastfeeding	Meta-Analysis, Systematic Review	15 RCTs with a total sample size of 4,366	The rate of postpartum exclusive breastfeeding, breastfeeding efficacy, participant attitudes towards breastfeeding, and newborn health issues can all be greatly

					improved by mHealth-based interventions.
24	Ramadan, Bonmatí-Tomas, Juvinyà-Canal, & Ghaddar (2022) Lebnon	To identify breastfeeding challenges, facilitators, and assets and to determine how community assets via social media could build community resilience to pandemics and disasters' effects.	Qualitative descriptive study	1,000 posts per month	Due to the assistance and resources obtained from a Facebook breastfeeding support group, difficulties experienced during breastfeeding were lessened.
25	Robinson, Davis, Hall, Lauckner, & Anderson (2019) USA	To describe (1) the experiences of African American mothers who participate in breastfeeding support groups on Facebook and (2) the breastfeeding beliefs, practices, and outcomes for this population of mothers.	Prospectiv, cross-sectional qualitative study with an online focus group design.	22	Participants in this study reported increased confidence when breastfeeding in public and extended objectives for breastfeeding length due to a favorable perception of African American breastfeeding mothers and continued support from other women with similar experiences.

26	Sari & Fajri (2022) Regency of Banjarnegara	To find out which breastfeeding video media affect breastfeeding self-efficacy.	RCT (a quasi-experimental design with a pretest post-test control group design.)	30	Giving women videos on how to properly breastfeed their children can boost their confidence in doing so.
27	Schindler-Ruwisch, Roess, Robert, Napolitano, & Chiang (2018) Country not mentioned	To determine mHealth breastfeeding support resources and characterize the type of social support they provide.	Qualitative descriptive study	mHealth programs (n = 65)	Although there are many free texting and mobile applications that have the potential to be widely used, the majority mostly just offer informative support. The usefulness of these programs might benefit from further research.
28	Skelton et al (2018) USA	To leverage mothers' attitudes and behaviors regarding social media usage to understand the effects on breastfeeding outcomes	Qualitative exploratory	12	Social media groups can help to positively affect attitudes, behaviors, and knowledge about breastfeeding. They can also help to breastfeed last longer.
29	Sukriani & Arisani (2020) Nigeria	To determine the Effectiveness of WhatsApp Group Towards Pregnant women in The Practice of First Week Breastfeeding in Palangkaraya	Quasi-experimental study with posttest only with control group design	36	Improved nursing practices among moms in the first week following delivery can be achieved through the usage of WhatsApp groups.

30	Uzunçakmak, Gökşin, & Ayaz-Alkaya (2021) Turkey	To determine the effect of breastfeeding support through social media on women's breastfeeding self-efficacy	RCT	68	Women's breastfeeding self-efficacy was raised through a training and counseling intervention based on social media. To increase women's confidence in their ability to breastfeed and to promote breastfeeding continuity, healthcare professionals should employ social media technologies.
31	Wagg, Callanan, & Hassett (2019) UK	To document and describe the posts made within an online breastfeeding support group.	Qualitative descriptive study	501 posts over the week	A qualitative approach should be used to conduct further research on the effects of this support channel within the larger context of professional, familial, and offline support.
32	Wheaton, Lenehan, & Amir (2018) Australia	to (a) explore the usability of the application among rural Australian breastfeeding women and (b) to describe participants' infant feeding outcomes compared with the general population	Prospective longitudinal self-report survey design	46	Breastfeeding mothers in a rural area of Australia approved of the smartphone app.
33	Wong, Mou, & Chien (2021) Country not mentioned	To examine the effects of different approaches to educational and supportive interventions that can help sustain breastfeeding and improve	Meta-Analysis, Systematic Review	13	Facebook breastfeeding support groups can be a valuable resource for women. Healthcare providers can utilize this data to encourage the use of online support groups and to create strategies to assist mothers in

		breastfeeding self-efficacy for primiparous postnatal women; and to identify key characteristics of the effective interventions in terms of delivery time, format and mode, main components, use of the theoretical framework, and number of sessions			overcoming obstacles to gaining access to online assistance.
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