

**BREASTFEEDING TECHNIQUES AND INFLUENCING FACTORS AMONG
PREGNANT WOMEN: A COMPARATIVE ANALYSIS OF PRACTICES,
BARRIERS, AND DETERMINANTS**

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Abstract

The study investigates breastfeeding practices, barriers, and determinants across different populations, with a focus on factors influencing exclusive breastfeeding rates, breastfeeding self-efficacy, and the impact of maternal and environmental circumstances. Data was collated from diverse studies across various regions, including Bangladesh, West Africa, Saudi Arabia, Romania, Poland, Canada, and South Africa, among others, to provide a comprehensive analysis. The research aims to identify key factors that promote or hinder breastfeeding, including socio-demographic characteristics, maternal ideation, health conditions, and workplace support. Findings reveal that breastfeeding practices vary significantly due to cultural, socio-economic, and policy differences across regions. High breastfeeding self-efficacy among mothers was associated with supportive family environments and adequate healthcare guidance, while barriers such as employment demands, inadequate health system support, and misconceptions about breastfeeding impacted exclusive breastfeeding rates. In high-risk pregnancies, breastfeeding duration was affected by medical complications, whereas mothers with chronic health conditions reported challenges in maintaining consistent breastfeeding. The review also highlights the role of urban agriculture, food security, and workplace policies in enabling breastfeeding in marginalized communities. The study emphasizes the need for targeted breastfeeding interventions, policy reforms, and education campaigns to address barriers and support mothers, particularly in underserved regions, to achieve optimal breastfeeding outcomes. Further research is recommended to explore breastfeeding practices in diverse cultural settings and the effects of nutritional status on breastfeeding sustainability.

Keywords: Breastfeeding Techniques. Pregnant women, Practices, Barriers, Determinants

Introduction

Breastfeeding is a critical component of infant health and development, providing essential nutrients and fostering mother-infant bonding. It is widely recognized that exclusive breastfeeding for the first six months of life can significantly reduce morbidity and mortality rates among infants. Despite the well-documented benefits of breastfeeding, many women encounter a range of challenges that can impede their ability to initiate and maintain this practice. Consequently, understanding the techniques employed by pregnant women, alongside the influencing factors, barriers, and determinants of breastfeeding, is essential for enhancing maternal and infant health outcomes.

Numerous studies have highlighted the various breastfeeding practices adopted by mothers across different cultural contexts. For instance, Agho et al. (2021) reported significant variations in breastfeeding practices among adolescent mothers in Bangladesh, emphasizing the need for targeted interventions to improve breastfeeding rates in this demographic. Similarly, research by Agho et al. (2019) in several West African countries underscored the importance of socio-economic and cultural factors that influence exclusive breastfeeding rates. These findings reveal the complexity of breastfeeding practices and the necessity for comparative analyses that take into account the diverse experiences of mothers from different backgrounds.

One of the critical aspects influencing breastfeeding success is maternal self-efficacy, which refers to a mother's confidence in her ability to breastfeed. Al-Thubaity et al. (2023) highlighted that high levels of breastfeeding self-efficacy among nursing mothers in Saudi Arabia were associated with longer durations of breastfeeding. Such insights are crucial as they suggest that interventions aimed at boosting maternal confidence could lead to improved breastfeeding practices. In contrast, factors such as employment and the associated challenges have been identified as barriers to exclusive breastfeeding. A study by Amer and Kateeb (2023) in Jerusalem found that employed mothers faced significant hurdles in maintaining exclusive breastfeeding, illustrating the need for supportive workplace policies.

Barriers to breastfeeding are multifaceted and can include a lack of social support, inadequate information about breastfeeding techniques, and difficulties in accessing appropriate healthcare services. Brani et al. (2024) explored how pregnancy risk levels influenced breastfeeding duration, identifying that women with high-risk pregnancies may require additional support to overcome barriers to breastfeeding. Furthermore, Hirani (2024) examined the experiences of refugee mothers in Canada, highlighting the unique challenges they face in relation to breastfeeding practices. Such qualitative insights provide valuable context for understanding the complexities of breastfeeding in vulnerable populations.

The role of healthcare professionals is paramount in facilitating successful breastfeeding practices. Cozma-Petruț et al. (2021) indicated that the knowledge and attitudes of healthcare providers can significantly influence mothers' decisions to initiate and continue breastfeeding. Similarly, Llorente-Pulido et al. (2021) identified that midwives play a crucial role in educating mothers about the benefits and techniques of breastfeeding, thereby acting as facilitators in the breastfeeding journey. The promotion of breastfeeding-friendly policies and practices within healthcare systems can substantially impact mothers' experiences and outcomes.

Socioeconomic factors also significantly influence breastfeeding practices. Elgzar et al. (2023) demonstrated a positive correlation between maternal ideation and exclusive breastfeeding practices among nursing mothers in Saudi Arabia, suggesting that women who have a supportive home environment and positive perceptions of breastfeeding are more likely to succeed. In contrast, disparities in breastfeeding practices have been observed among different socioeconomic groups, as illustrated by the work of Koroma et al. (2024), which highlighted how undernourished mothers in rural Sierra Leone experienced challenges that directly affected infant growth and mortality.

Moreover, the cultural context surrounding breastfeeding practices is integral to understanding the barriers and facilitators that women face. Cultural beliefs and practices can significantly shape mothers' attitudes towards breastfeeding. For instance, Kolmaga et al. (2024) investigated the attitudes of Polish women towards breastfeeding, revealing cultural barriers that may hinder exclusive breastfeeding efforts. Similarly, Quebu et al. (2023) conducted a qualitative study in South Africa, identifying various societal perceptions that impede breastfeeding practices among mothers. These studies underscore the necessity for culturally sensitive interventions that address the specific beliefs and practices within diverse communities.

While much is known about the benefits of breastfeeding, there remains a critical need for further research exploring the comparative techniques employed by pregnant women across different contexts, as well as the various factors influencing these practices. By conducting a scoping review that synthesizes existing literature on breastfeeding techniques and the barriers that pregnant women face, this study aims to provide a comprehensive overview that can inform future interventions and policies. Such insights will not only aid healthcare providers in delivering tailored support to mothers but also contribute to the global effort to improve breastfeeding rates and maternal-child health outcomes.

Breastfeeding remains a vital public health issue that requires ongoing attention and research. This study investigates the techniques, barriers, and determinants influencing breastfeeding among pregnant women, this scoping review aims to illuminate the complexities surrounding breastfeeding practices.

Methodology

The methodology of this scoping review follows a systematic approach to analysing breastfeeding techniques, barriers, and determinants among pregnant women over a five-year period (2019–2023). Conducted in line with the PRISMA (2009) protocol, this review follows structured guidelines encompassing background research, methods, findings, and discussion. The data retrieved from each study include the author's details, publication source, participants' demographics, study objectives, methodology, outcomes, and key findings. By evaluating commonalities and disparities among the selected studies, the review aims to provide a comprehensive synthesis of existing research on breastfeeding practices.

A structured data search was conducted to identify relevant literature on breastfeeding techniques and influencing factors among pregnant women. The researcher selected key health and social science databases, including PubMed, Embase, PsycINFO, CINAHL, Web of Science, and Google Scholar, known for their broad repository of maternal and child health studies. To refine the search, a combination of specific keywords related to breastfeeding

techniques, barriers, and determinants was used. Boolean operations were applied to enhance precision, integrating search terms such as "exclusive breastfeeding," "lactation challenges," "maternal employment," and "cultural influences." Additionally, grey literature and expert recommendations were consulted to ensure a thorough examination of available studies. The search was restricted by language, with only English-language publications considered, and by timeframe, focusing on studies published within the past decade. A rigorous screening process was employed, first evaluating the relevance of titles and abstracts, followed by full-text reviews of potentially eligible articles. Studies that did not directly address breastfeeding techniques or their determinants among pregnant women were excluded to maintain the study's focus on the targeted population.

Following selection, the retrieved studies underwent critical evaluation based on predefined criteria, such as study design, population characteristics, outcome measures, and evidence quality. Extracted data were systematically organised into tables and spreadsheets for structured analysis. Narrative synthesis was then applied to compare findings across studies, identifying trends, similarities, and variations in breastfeeding practices and their determinants. Throughout the process, careful documentation was maintained, including search strings, database sources, and modifications to the search strategy, ensuring transparency and replicability. The identified keywords facilitated the retrieval of studies examining exclusive breastfeeding, mixed feeding, and associated barriers, including maternal employment, cultural attitudes, and healthcare support.

The review also assessed significant research findings related to breastfeeding determinants. Agho et al. (2021) demonstrated that higher maternal education levels were associated with increased breastfeeding rates in West African countries. Amer and Kateeb (2023) highlighted the impact of maternal employment on exclusive breastfeeding, noting that working mothers often faced challenges in sustaining exclusive breastfeeding. Studies by Brani et al. (2024) emphasised maternal self-efficacy as a crucial factor in breastfeeding duration, linking higher self-efficacy to better lactation outcomes. Furthermore, Cozma-Petruț et al. (2021) identified social support as a determinant of exclusive breastfeeding, revealing that mothers with strong support networks were more likely to sustain breastfeeding. Additional studies explored workplace support for breastfeeding, with Lauer et al. (2019) demonstrating how workplace policies influenced continued breastfeeding among employed mothers. Research by Hirani (2024) examined challenges faced by refugee mothers, stressing the need for culturally sensitive breastfeeding support programs. These findings illustrate the diverse socio-economic, cultural, and environmental factors influencing breastfeeding practices.

To maintain methodological rigor, inclusion and exclusion criteria were carefully defined. The study applied the PICO (Population, Intervention, Comparison, Outcome) framework to guide the selection of relevant research. Primary research articles, including cross-sectional, cohort, case-control, and intervention studies, were included if they provided original data on breastfeeding techniques, barriers, and determinants. The focus was on pregnant women or mothers with infants up to six months, examining breastfeeding initiation, continuation, and influencing factors. Studies assessing breastfeeding through validated tools or assessment criteria were prioritised. Additionally, the review targeted diverse populations, including urban, rural, and marginalised communities, ensuring a comprehensive analysis. Only studies

published in English between 2019 and 2024 were considered to capture recent trends and practices in breastfeeding.

Studies that did not meet these criteria were excluded from the review. Commentaries, editorials, conference proceedings, and case reports were omitted due to their lack of empirical data. Studies that focused solely on mothers of full-term infants or children with medical conditions unrelated to breastfeeding were also excluded. Research failing to employ quantitative methodologies or validated tools for assessing breastfeeding determinants was not considered. Additionally, studies that did not specifically analyse breastfeeding among pregnant women or distinguish them from other populations were omitted. Language restrictions led to the exclusion of non-English studies, and publications dated before 2019 were not considered to maintain relevance to contemporary breastfeeding research. Furthermore, studies lacking full-text accessibility were excluded, as complete data were necessary for a thorough evaluation.

A multi-stage data screening process was implemented to ensure the selection of relevant studies. The process began with title screening, followed by abstract review, and ultimately, full-text evaluation of eligible articles. This step-by-step approach facilitated the identification of high-quality studies that contributed valuable insights into breastfeeding practices, barriers, and determinants. The findings of this scoping review will contribute to understanding breastfeeding challenges, informing policy interventions and healthcare strategies to support pregnant women in achieving optimal breastfeeding practices

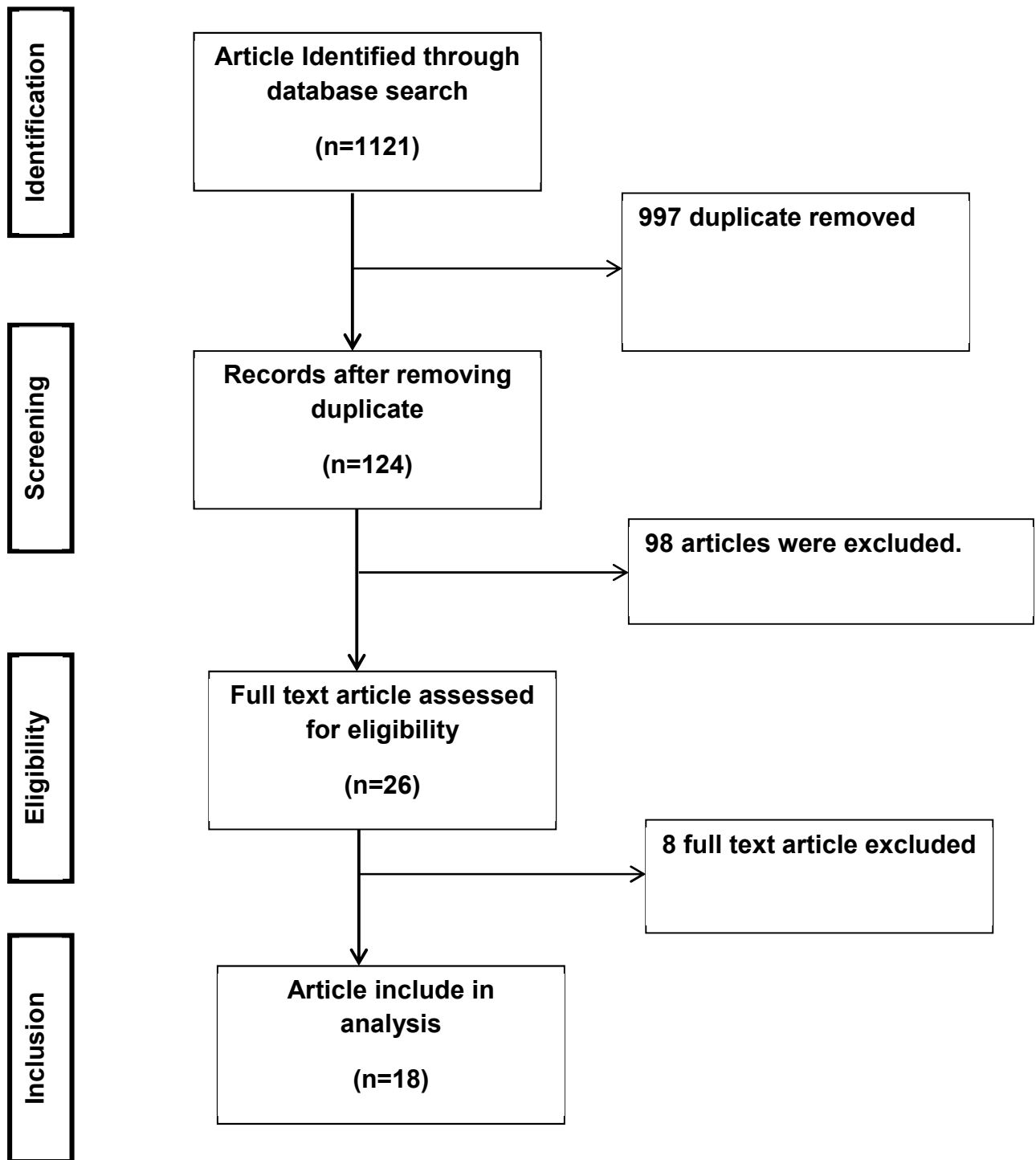


Figure 1 The PRISMA Framework for the Study

The first database search yielded 1121 documents, and 997 more records were acquired through various means. There were 124 unique records left after deleting duplicates, ready for further investigation. In order to determine whether a record was suitable for inclusion or deletion, researchers used predetermined criteria during the evaluation process. Out of the 124 records, 98 were deemed ineligible due to factors such as case reports, non-empirical data, inappropriate methodology, systematic or narrative evaluations, and the absence of data. In the end, the study only included 18 records that fulfilled the inclusion criterion.

Results

Table 1: Summary of literature search in Table

S/N	Title of the article	Author & Year of publication	Objective of the study	Research design	Findings
1	Nutritional Status of Breastfeeding Mothers and Impact of Diet and Dietary Supplementation : A Narrative Review	Carretero-Krug, A., Montero-Bravo, A., Morais-Moreno, C., Puga, A.M., Samaniego-Vaesken M. L. , Partearroyo, T., & Varela-Moreira, G. (2024). 16(2), 301. https://doi.org/10.3390/nu16020301	Therefore, in this narrative review, nutrient intakes were compared with the dietary reference values (DRVs) proposed by the European Food Safety Authority (EFSA) as well as by the World Health Organization/ Food and Agriculture Organization (WHO/FAO).	Narrative review	There seems to be a positive association between nutritional supplementation of the lactating mother and the concentration of certain nutrients in human milk. The present narrative review provides an update on the nutritional status (fatty acids and micronutrients) of breastfeeding mothers and the impact of diet and dietary supplementation on human milk composition.
2	The Relationship between Maternal Ideation and Exclusive Breastfeeding Practice among Saudi Nursing Mothers: A Cross-Sectional Study.	Elgzar, W.T., Al-Thubaity, D.D., Alshahrani, M.A., Essa, R.M., & Ibrahim, H.A. (2023). 15(7), 1719. https://doi.org/10.3390/nu15071719	It investigated the relationship between maternal ideation and EBF practice among Saudi nursing mothers at Maternal and Children's Hospital (MCH) in Najran, Saudi Arabia.	Correlational cross-sectional study	Breastfeeding initiation within one hour occurred among 85.1% of women, while 39.2% fed their newborn only colostrum during the first three days. EBF until six months was practiced by 40.9% of the participants day and night and on-demand (38.7%). Furthermore, 60.8% of the study participants had satisfactory overall EBF practices. The cognitive part of maternal ideation shows that 68.2% of the participants had adequate knowledge and 63.5% had positive beliefs regarding EBF practice. The maternal psychological ideation dimensions show that 81.4% had high EBF self-efficacy. The maternal social ideation dimensions showed that high injunctive and descriptive norms were present among 40.9% and 37.5%.

					respectively. In addition, healthcare providers (39.2%) had the most significant social influence, followed by husbands (30.5%). Binary logistic regression shows that the mother's age, occupation, and education are the significant demographic predictors of satisfactory EBF practices ($p < 0.05$). All maternal ideation constructs were positive predictors of satisfactory EBF practices ($p < 0.05$).
3	Knowledge Gaps and Current Evidence Regarding Breastfeeding Issues in Mothers with Chronic Diseases.	Sokou, R., Parastatidou, S., Iliodromiti, Z., Lampropoulou, K., Vrachnis, D., Boutsikou, T., Konstantinidi, A., & Iacovidou, N. (2023) <i>Nutrients</i> . 15(13), 2822. https://doi.org/10.3390/nu15132822	This review aimed at summarizing the available research literature regarding breastfeeding in mothers with chronic diseases	Scoping review	The literature related to breastfeeding extends in various scientific areas and multidisciplinary effort is necessary to compile an overview of current evidence and knowledge regarding breastfeeding issues in mothers with chronic diseases. Studies indicate that mothers with chronic conditions may benefit from the appropriate care and support in the hospital and in the society that can contribute to the establishment and maintenance of exclusive breastfeeding.
4	Breastfeeding and Complementary Feeding Practices among Caregivers at Seshego Zone 4 Clinic in Limpopo Province, South Africa	Mphasha, M.H., Makwela, M.S., Muleka, N., Maanaso, B., Phoku, M. M. (2023). 10(6), 986. https://doi.org/10.3390/children10060986	The aim of this study was to determine breastfeeding and complementary feeding practices among caregivers of children under 24 months in Seshego, Limpopo Province.	A quantitative and cross-sectional design	The findings show that 55% of participants had good breastfeeding and complementary feeding practices. Moreover, 94.2% of participants breastfeed within an hour after delivery at a healthcare facility. Only 43.6% of children were exclusively breastfed. Most participants (52.3%) gave children food before six months and 45.1% introduced complementary feeding at the appropriate age. Also, 69.7% of children across all age groups were not given infant formula. No statistical association was observed between feeding practices and sociodemographic. Breastfeeding was initiated within an hour after delivery at the healthcare facilities, however, post discharge exclusive breastfeeding maintenance remains a challenge. Few infants were introduced to complementary feeding at the appropriate age.
5	Mothers' Employment and Exclusive Breastfeeding Practices: A Brief Report	Amer, S., & Kateeb, E. (2023). 20(3), 2066. https://doi.org/10.3390/ijerph20032066	This study aims to describe breastfeeding habits and demographic	Cross-sectional study	Two hundred and five mothers exclusively breastfed their children for 6 months or more (44.1%). Almost 11% ($n = 52$) used bottle feeding exclusively, and 44.2% ($n = 208$) combined both breastfeeding and bottle feeding. Having a full-time job increased the

	from Jerusalem Governorate	32066	factors influencing these practices in Jerusalem Governorate.		chance of not breastfeeding children ($\pi_2 = 9.2, p = 0.002$), and being a stay-at-mother increased the chance of exclusive breastfeeding ($\pi_2 = 4.4, p = 0.044$). In the final model, having a preterm baby and being a stay-at-home mother increased the odds of exclusively breastfeeding by 3.6 and 2.3, respectively. On the other hand, having a full-time job decreased the odds by 0.3. A mother's full-time employment was a determinant factor in abandoning exclusive breastfeeding before 6 months
7	Determinants of High Breastfeeding Self-Efficacy among Nursing Mothers in Najran, Saudi Arabia.	Al-Thubaity, D.D., Alshahrani, M.A., Elgzar, W.T., & Ibrahim, H.A. (2023). 15(8), 1919. https://doi.org/10.3390/nu15081919	This study investigates the determinants of high breastfeeding self-efficacy among Saudi nursing mothers.	Descriptive cross-sectional study	The mean score for all BSES-SF items was between 3.23–3.41, the highest mean score was in mothers who felt comfortable breastfeeding with family members present (3.41 ± 1.06), and the lowest mean was in mothers who could breastfeed their baby without using formula as a supplement (3.23 ± 0.94). The overall BSE score was high among 67% of the study participants. Binary logistic regression showed that being a housewife, being highly educated, having breastfeeding experience, and being multiparous are positive predictors for high BSE ($p \leq 0.001$). In addition, having adequate breastfeeding knowledge and positive breastfeeding attitudes were positively associated with higher BSE ($p = 0.000$).
8	Factors Influence Breastfeeding Duration after High Risk and Low Risk Pregnancies	Brani, P., Iliadou, M., Andersson, E., Daskalakis, G., Drakakis, P., & Dagla, M. (2024). 12(18), 1896. https://doi.org/10.3390/healthcare12181896	This study aims to identify predictors of breastfeeding duration among women of high-risk and low-risk pregnancy, focusing on exclusive and mixed feeding practices.	Prospective cohort study	Results revealed birth weight as a consistent significant predictor of breastfeeding duration. For women with high-risk pregnancy, additional factors like infant gender, jaundice, and early introduction of solid foods influenced breastfeeding duration. The mixed breastfeeding model for women with high-risk pregnancy explained 72.9% of the variance. Exclusive and mixed breastfeeding models for women with low-risk pregnancy also highlighted birth weight's influence.
9	Barriers to Exclusive Breastfeeding for Mothers in Tswelopele Municipality,	Quebu, S.R., Murray, D., & Okafor, U.B. (2023). 10(8), 1380. https://doi.org/10.3390/chil	This study explores the experiences and opinions of mothers about the	Qualitative study	The analysis of the collected data revealed that opinions clustered around four topics: mother-related barriers to EBF, baby-related barriers to EBF, support systems to enhance EBF, and complications caused by barriers to EBF. The findings from these themes and

	Free State Province, South Africa: A Qualitative Study.	dren10081380	barriers and support systems of exclusive breastfeeding (EBF), in a bid to promote this practice in the Tswelopele Municipality of the Free State Province of South Africa		sub-themes imply that the maternal factor is strongly influenced by other factors regarding the success or failure of this practice. These include extreme breast discomfort, maternal illness, the fear that the mother's milk supply is insufficient, a lack of understanding about EBF, and the influence of different cultural factors. When mothers encounter difficulties with breastfeeding, these challenges may impede their ability to practice EBF. In addition, while some participants were eager to breastfeed their babies and continued EBF for a period of six months, their infant's health and behavioral issues prevented them from doing so. Some of these problems included infant sickness and crying. From the prenatal to the postnatal period, mothers and their families should have access to breastfeeding education and counseling, along with sufficient time to make informed infant nutrition decisions. During counseling sessions, conversations with these stakeholders should focus on fostering a realistic understanding regarding what to expect when breastfeeding for the very first time, debunking breastfeeding-related misconceptions, and addressing inaccurate information and concerns.
10	Breastfeeding Practices and Determinant Factors of Exclusive Breastfeeding among Mothers of Children Aged 0–23 Months in Northwestern Romania.	Cozma-Petruț, A., Filip, L., Banc, R., Mîrza, O., Gavrilaş, L., Ciobârcă, D., Badiu-Tișa, I., Hegheș, S.C., Popa, C.O., & Miere, D. (2021) 13(11), 3998. https://doi.org/10.3390/nu13113998	The aim of the present study was to assess current BF practices, and to investigate the factors associated with exclusive BF (EBF) under 6 months of age in northwestern Romania.	A quantitative research design	Almost all mothers (95.7%) breastfed their child at least once. The EBF rate was 46.7%, the continued BF rate at one year of age was 54.2%, and the continued BF rate at 2 years of age was 30.3%. The place of delivery and parental leave duration were strong determinants of EBF. The improving rates observed in this study for all the BF practices assessed suggest the continuation of efforts to develop effective national policies and programs for promoting, protecting, and supporting BF in Romania.
11	Breastfeeding at Night Is Awesome"	Madiba, S., Modjadji P., & Ntuli, B. (2023)	The purpose of this study was to	Qualitative study	Mothers were knowledgeable of the importance and value of BF preterm infants and conceded that breast milk has advantages

	Mothers' Intentions of Continuation of Breastfeeding Extreme and Very Preterm Babies upon Discharge from a Kangaroo Mother Care Unit of a Tertiary Hospital in South Africa.	11(7), 1048. https://doi.org/10.3390/healthcare11071048	describe the BF intentions and practices of mothers of VLBW infants at home following discharge and assess the role long stay in KMC has on their decision to BF beyond discharge.		over formula. Mothers had positive feelings toward BF their preterm infants. The stay in KMC increased the direct BF of their preterm infants, mothers' BF efficacy, and had a positive influence on mothers' intentions to continue BF following discharge and to exclusively breastfeed for six months. Their BF intentions, efficacy, and practices were influenced by the skilful BF counselling, training, and support they received from the nursing staff. High intention to BF among these mothers is suggestive of their knowledge and confidence in BF for their VLBW infants.
12	The Effect of Breastfeeding Practices of Undernourished Mothers in Rural Sierra Leone on Infant Growth and Mortality.	Koroma, A.S., Stephenson, K.B., Iversen, P.O., Manary, M.J., Hendrixson, D.T.(2024)11(2), 233. https://doi.org/10.3390/children11020233	We aimed to describe breastfeeding practices and their effects on growth and mortality among a high-risk mother-infant cohort in rural Sierra Leone.	A randomized nutrition intervention trial	The study's primary outcomes were infant weight and length gains at 6 weeks of age. We included 1270 singleton infants in the analysis, with 1092 (85.6%) having 24-week outcome data. At 6 weeks, 88% were EBF, but the rate of EBF decreased to 17% at 24 weeks. The EBF infants at 6 weeks had improved length (difference of 0.9 mm/week; 95% CI 0.4 to 1.3; $p < 0.001$) and weight (difference of 40 g/week; 95% CI 24 to 53; $p < 0.001$) gains compared to the non-EBF infants. At 12 weeks, the EBF infants had improved weight (difference of 12 g/week; 95% CI 2 to 22; $p = 0.024$) gain. The EBF infants had lower mortality than the infants who were not EBF (hazard ratio of 0.39; 95% CI 0.18 to 0.84; $p = 0.017$). In summary, the infants who were EBF had greater weight and length gain and reduced mortality than those who were not EBF.
13	Breastfeeding Practices among Adolescent Mothers and Associated Factors in Bangladesh (2004–2014).	Agho, K.E., Ahmed, T., Fleming, C., Dhami, M.V., Miner, C.A., Torome, R., Ogbo, F.A, on behalf of the Global Maternal and Child Health Research	This study aims to estimate breastfeeding indicators and factors associated with selected feeding practices.	Prospective cohort study	Only 42.2% of adolescent mothers initiated breastfeeding within the first hour of birth, 53% exclusively breastfed their infants, predominant breastfeeding was 17.3%, and 15.7% bottle-fed their children. Parity (2–3 children), older infants, and adolescent mothers who made postnatal check-up after two days were associated with increased exclusive breastfeeding (EBF) rates. Adolescent mothers aged 12–18 years and who watched television were less likely to

		Collaboration (GloMACH). 2021. 13(2), 557. https://doi.org/10.3390/nu13020557			delay breastfeeding initiation within the first hour of birth. Adolescent mothers who delivered at home (adjusted OR = 2.63, 95% CI:1.86, 3.74) and made postnatal check-up after two days (adjusted OR = 1.67, 95% CI: 1.21, 2.30) were significantly more likely to delay initiation breastfeeding within the first hour of birth. Adolescent mothers living in the Barisal region and who listened to the radio reported increased odds of predominant breastfeeding, and increased odds for bottle-feeding included male infants, infants aged 0–5 months, adolescent mothers who had eight or more antenatal clinic visits, and the highest wealth quintiles.
14	Exclusive Breastfeeding Rates and Associated Factors in 13 “Economic Community of West African States” (ECOWAS) Countries.	Agho, K.E., Ezeh, O.K., Ghimire, P.R., Uchechukwu, O.L., Stevens, G.J., Tannous, W.K., Fleming, C., & Ogbo, F.A Global Maternal and Child Health Research collaboration (GloMACH). <i>Nutrients</i> . 2019; 11(12):3007. https://doi.org/10.3390/nu11123007	This paper examined EBF rates and associated factors in 13 “Economic Community of West African States” (ECOWAS) countries.	Retrospective survey	In ECOWAS countries, EBF rates for infants 6 months or younger ranged from 13.0% in Côte d’Ivoire to 58.0% in Togo. EBF decreased significantly by 33% as the infant age (in months) increased. Multivariate analyses revealed that mothers with at least primary education, older mothers (35–49 years), and those who lived in rural areas were significantly more likely to engage in EBF. Mothers who made four or more antenatal visits (ANC) were significantly more likely to exclusively breastfeed their babies compared to those who had no ANC visits. Our study shows that EBF rates are still suboptimal in most ECOWAS countries
15	Barriers and Facilitators for Exclusive Breastfeeding in Women’s Biopsychosocial Spheres According to Primary Care Midwives in Tenerife (Canary Islands, Spain)	Llorente-Pulido, S., Custodio, E., López-Giménez, M.R., Sanz-Barbero, B., & Otero-García, L. (2021). 18(7), 3819. https://doi.org/10.3390/ijerph18073819	The objective of our study is to determine, from a primary care midwife’s perspective, which biopsychosocial factors can favour or be detrimental to exclusive breast feeding.	A qualitative study	According to the perceptions of the primary care midwives who were interviewed, the barriers and facilitators that influence exclusive breastfeeding related to the biopsychosocial spheres of women are, at an individual level, the physical and emotional aspects during the postnatal period; at the relationship level, the presence or not of support from the close family and partner; at the community level, the environment and social networks the new mothers may have; and at the work level, characteristics of jobs and early return to work
16	Barriers Affecting Breastfeeding Practices of	Hirani, S.A.A.(<i>International Journal of Environmental</i>	We reviewed literature to (i) identify and understand	Ethnographic study	Findings suggest that psychosocial barriers, healthcare barriers, environmental barriers, and maternal and child health-related barriers impede the breastfeeding practices of refugee

	Refugee Mothers: A Critical Ethnography in Saskatchewan, Canada.	<i>Research and Public Health.</i> 2024; 21(4):398. https://doi.org/10.3390/ijerph21040398	concepts related to youth PMH and (ii) to summarize their definitions under broad conceptual themes. Method: We conducted a systematic review using PRISMA methodology.		mothers in Saskatchewan. Breastfeeding practices of refugee mothers can be promoted through healthcare support, culturally appropriate services, interpretation services in healthcare settings, implementation of baby-friendly initiatives, hospital and community-based breastfeeding campaigns, and follow-up services.
16	Attitudes and Barriers of Polish Women towards Breastfeeding—Descriptive Cross-Sectional On-Line Survey.	Kolmaga, A., Dems-Rudnicka, K., Garus-Pakowska, A. (2024)12(17), 1744. https://doi.org/10.3390/healthcare12171744	The main goal was to identify various barriers among mothers to breastfeeding.	Quantitative descriptive study	Most often, women gave birth at the age of 25–30, had one or two children, and attended higher education. Almost half of them lived in a large city and gave birth to a child by caesarean section. A total of 83.1% of mothers planned to breastfeed, but not all of them were able to do so for various reasons. One-third of them felt sorry for themselves that they had to change their feeding method. The majority of mothers did not receive sufficient help in the hospital in terms of learning how to breastfeed (61%), did not use the help of a lactation consultant (67%), and answered that there was no lactation consultant in their place of residence (65%). Only 43.2% of mothers returned to work without ceasing breastfeeding. A total of 42% of mothers experienced feelings of embarrassment when breastfeeding in a public place. The most frequently indicated barrier to breastfeeding in a public place was the lack of a suitable location where a woman would feel comfortable, calm, and intimate.

17	Exclusive Breastfeeding in Health Personnel: Incidence and Barriers.	Nanthakomon, T., Nukaw, S., & Kositamongkol, S. (2023). 10(8),1424https://doi.org/10.3390/children10081424	This study aimed to evaluate the incidence and factors related to EBF in our hospital personnel	Cross-sectional research design	There were 110 mothers enrolled. The mean maternal age was 32.5 ± 4.21 years, 66.36% came from the nursing department, the infant's age was 6–24 months, and 46.4% of mothers had previous breastfeeding experience. Our EBF for 6 months rate was 63.6%. Breastfeeding attitude (OR = 1.12, 95%CI 1.08–1.38), perception of breastfeeding obstacle (OR = 1.45, 95%CI 1.26–1.66), breastfeeding behavior (OR = 1.17, 95%CI 1.08–1.26), and support from health system (OR = 1.09, 95%CI 1.01–1.19) were significantly associated with EBF. From multiple logistic regression models, perception of breastfeeding obstacles (aOR 1.55, 95%CI 1.27–1.90), breastfeeding behavior (aOR 1.12, 95%CI 1.01–1.24), and support from health care system (aOR 0.84, 95%CI 0.72–0.97) remain the significant factors associated with successful EBF.
18	Identifying Barriers and Supports to Breastfeeding in the Workplace Experienced by Mothers in the New Hampshire Special Supplemental Nutrition Program for Women, Infants, and Children Utilizing the Total Worker Health Framework	Lauer, E.A., Armenti, K., Henning, M., & Sirois, L. (2019) 16(4), 529. https://doi.org/10.3390/ijerph16040529	Our study used the Total Worker Health Framework to characterize workplace factors acting as barriers and/or contributors to breastfeeding among women participating in the New Hampshire WIC.	Qualitative study.	Women in specific service-oriented industries (i.e., accommodation and retail) reported the lowest rates of breastfeeding initiation and workplace supports for breastfeeding and pumping. Further, how a woman hoped to feed and having a private pumping space at work were significantly associated with industry, breastfeeding initiation, and breastfeeding duration. A substantial portion of women reported being not sure about their workplace environment, policies, and culture related to breastfeeding.

Discussions

Four themes emerged from the analysis and synthesis of the data.

Theme 1: Support Systems for Breastfeeding

Several studies underscore the importance of healthcare providers as primary support systems for breastfeeding mothers. For instance, Elgzar et al. (2023) reveal that healthcare providers had a significant influence on EBF practices, with 39.2% of participants identifying them as key social support figures. Their findings suggest that healthcare professionals can play a pivotal role in educating mothers on the benefits of breastfeeding and providing the necessary encouragement, thereby enhancing maternal ideation and confidence in breastfeeding. Similarly, Quebu, Murray, and Okafor (2023) emphasize the role of prenatal and postnatal breastfeeding education and counseling offered by healthcare providers in Tswelopele Municipality, South Africa. The study notes that access to skilled breastfeeding counseling during counseling sessions enables mothers and families to make informed decisions, helping to debunk myths and address misconceptions about breastfeeding. This approach not only fosters a realistic understanding of what to expect during breastfeeding but also reduces anxiety and increases the likelihood of successful EBF practices.

Family support, especially from close relatives such as husbands, is also identified as a significant factor in encouraging breastfeeding. Elgzar et al. (2023) indicate that husbands were the second most influential social support after healthcare providers, with 30.5% of participants acknowledging their role. The involvement of husbands in supporting breastfeeding practices through encouragement and shared responsibilities around infant care can enhance maternal self-efficacy and increase adherence to recommended breastfeeding practices. This finding aligns with the work of Madiba, Modjadji, and Ntuli (2023), who highlight the positive influence of mothers' partners and family members on breastfeeding intentions and practices. Mothers who received support from their families were more likely to express a strong intention to continue breastfeeding after discharge from a Kangaroo Mother Care (KMC) unit, indicating that support systems extend beyond professional care to include familial and emotional backing.

The support systems for breastfeeding are not limited to social encouragement and professional counseling but also involve structural factors such as workplace policies. Amer and Kateeb (2023) provide evidence from Jerusalem Governorate, showing that stay-at-home mothers had a higher likelihood of exclusively breastfeeding compared to full-time employed mothers, whose work commitments often presented barriers to maintaining EBF. The study calls for better workplace policies that accommodate breastfeeding mothers, such as paid parental leave and flexible working hours, to enable continued breastfeeding. This suggestion aligns with Cozma-Petruț et al. (2021), who found that longer parental leave was associated with higher EBF rates in Northwestern Romania, suggesting that systemic support from national policies can significantly influence breastfeeding practices.

Theme 2: Determinants and Predictors of Exclusive Breastfeeding (EBF)

Carretero-Krug et al. (2024) examined the impact of maternal nutrition on breast milk composition, suggesting that a mother's diet and supplementation directly affect the nutritional quality of her milk. While this study does not explicitly address EBF rates, the implication is that adequate maternal nutrition can enhance breastfeeding success by providing essential nutrients that support infant health. Nutritional supplementation could be seen as an indirect facilitator of EBF by improving maternal and infant health outcomes. The

relationship between maternal psychological factors and EBF practices was studied by Elgzar et al. (2023), who found that cognitive, social, and psychological dimensions of maternal ideation significantly predicted EBF. Higher levels of breastfeeding self-efficacy and positive beliefs about breastfeeding were associated with more successful EBF practices. The study's findings underline the importance of maternal attitudes and confidence in sustaining EBF, with healthcare providers and family members playing a pivotal role in shaping these beliefs. Demographic factors such as age, occupation, and education also emerged as significant predictors, indicating that older mothers, homemakers, and those with higher education levels had better EBF outcomes.

In exploring breastfeeding in mothers with chronic diseases, Sokou et al. (2023) identified that appropriate support and care could facilitate EBF, even in challenging circumstances. Their findings suggest that multidisciplinary efforts in hospitals and community settings can mitigate the negative impact of chronic health conditions on EBF. This underscores the importance of targeted interventions and specialized care for mothers with chronic illnesses to promote EBF. Mphasha et al. (2023) assessed breastfeeding practices in Limpopo, South Africa, revealing that while initial breastfeeding initiation rates were high, maintaining EBF beyond the early postnatal period posed significant challenges. The study reported that 43.6% of infants were exclusively breastfed, but the introduction of complementary foods before six months was prevalent. This highlights the influence of cultural practices and possibly inadequate breastfeeding support post-discharge, which can undermine efforts to sustain EBF.

Amer and Kateeb (2023) focused on the impact of maternal employment on breastfeeding practices, finding that full-time employment reduced the likelihood of maintaining EBF, while being a stay-at-home mother increased the odds of exclusive breastfeeding. This indicates that work-related constraints are substantial barriers to EBF, necessitating policies that support breastfeeding-friendly work environments, such as extended maternity leave and lactation breaks. Al-Thubaity et al. (2023) explored factors influencing breastfeeding self-efficacy, finding that being a homemaker, having breastfeeding experience, higher education, and positive breastfeeding attitudes significantly predicted high self-efficacy. This suggests that these factors enable mothers to overcome common breastfeeding challenges and sustain EBF. The study underscores the need for breastfeeding education to enhance maternal confidence and skills.

Brani et al. (2024) identified predictors of breastfeeding duration in women with high-risk pregnancies, including infant birth weight, early introduction of solid foods, and the infant's gender. The study found that birth weight was a consistent predictor of breastfeeding duration, suggesting that infants with higher birth weights may have fewer breastfeeding difficulties, facilitating longer EBF periods. Quebu et al. (2023) investigated barriers to EBF in South Africa, identifying maternal and infant-related factors such as extreme breast discomfort, maternal illness, and misconceptions about milk sufficiency as significant challenges. The study emphasized the importance of continuous breastfeeding education and counseling to address these barriers and promote EBF. Cozma-Petruț et al. (2021) noted that factors such as the place of delivery and parental leave duration strongly influenced EBF practices in Romania. The findings suggest that institutional support during childbirth and policies enabling mothers to stay at home longer with their infants are crucial for promoting EBF.

Lastly, Madiba et al. (2023) found that the stay in a Kangaroo Mother Care (KMC) unit had a positive influence on EBF practices among mothers of very low birth weight infants, enhancing breastfeeding intentions, efficacy, and duration. This highlights the role of supportive hospital environments in encouraging mothers to exclusively breastfeed, even after discharge. EBF is influenced by a multitude of factors, including maternal ideation, socioeconomic status, employment, cultural practices, healthcare support, and infant characteristics. These determinants can act as both facilitators and barriers, suggesting the need for targeted interventions to support mothers in maintaining EBF.

Theme 3: Barriers to Exclusive Breastfeeding

Maternal factors significantly affect EBF practices. For instance, Quebu, Murray, and Okafor (2023) highlight that maternal discomfort, illness, and lack of understanding about EBF can hinder its success. Breast discomfort, perceived insufficient milk supply, and cultural influences were cited as common maternal barriers. These challenges often deter mothers from practicing EBF, even when they express a strong desire to breastfeed. Similarly, Elgzar et al. (2023) note that maternal ideation, including self-efficacy and beliefs about breastfeeding, play a crucial role in EBF practices. High self-efficacy and positive beliefs can support EBF continuation, while negative perceptions or doubts can create significant barriers. The findings underscore the need for comprehensive breastfeeding education and support to address maternal concerns and promote realistic expectations about breastfeeding.

Employment status is another significant barrier to EBF. According to Amer and Kateeb (2023), full-time employment was associated with lower rates of EBF among mothers in the Jerusalem Governorate. The need to return to work often forces mothers to introduce alternative feeding methods before six months, especially if workplace policies do not accommodate breastfeeding or provide adequate facilities. On the other hand, stay-at-home mothers were more likely to maintain EBF, indicating that employment-related time constraints and lack of breastfeeding-friendly environments hinder mothers' ability to exclusively breastfeed. Furthermore, Mphasha et al. (2023) found that post-discharge maintenance of EBF remains a challenge in South Africa, often due to a lack of support and conducive conditions for breastfeeding at workplaces and within communities.

The health status of both the mother and the infant also affects EBF. Quebu et al. (2023) and Brani et al. (2024) discuss how maternal health issues, infant sickness, and preterm birth can complicate EBF. Health complications, such as jaundice or low birth weight in infants, can necessitate the early introduction of formula or solid foods, disrupting EBF. For example, Brani et al. (2024) found that in cases of high-risk pregnancies, infant health conditions, such as gender-specific vulnerabilities or early introduction of complementary feeding, influenced breastfeeding duration. Madiba, Modjadji, and Ntuli (2023) also note that while mothers of very low birth weight (VLBW) infants were committed to breastfeeding, successful EBF was largely attributed to the extended stay in kangaroo mother care units, which facilitated breastfeeding training and support.

Cultural beliefs and social norms can either support or hinder EBF practices. Quebu et al. (2023) observed that cultural factors, including beliefs about milk sufficiency and infant feeding norms, could discourage EBF. The support systems available to mothers, such as healthcare providers and family members, also play a vital role in promoting EBF. Elgzar et

al. (2023) found that healthcare providers were the most significant social influence on EBF practices among Saudi mothers. Social support can help to alleviate the perceived or actual barriers by providing education, encouragement, and practical assistance. This finding is supported by Sokou et al. (2023), who emphasize the need for a multidisciplinary approach in supporting breastfeeding mothers, particularly those with chronic health conditions.

Lack of adequate knowledge about EBF is another barrier that mothers face. Mphasha et al. (2023) highlighted gaps in caregivers' knowledge about the appropriate age to introduce complementary feeding. Similarly, Cozma-Petruț et al. (2021) found that factors such as the place of delivery and parental leave duration significantly influenced EBF practices in Romania, underscoring the importance of informed decision-making. Increasing mothers' knowledge about the benefits of EBF and proper breastfeeding techniques can help mitigate these barriers, as mothers who are better informed are more likely to practice EBF successfully.

Theme 4: Impact of Maternal Factors on Breastfeeding Techniques

Nutritional status and supplementation among breastfeeding mothers are critical maternal factors influencing breastfeeding techniques. According to Carretero-Krug et al. (2024), there is a positive association between maternal nutritional supplementation and the concentration of certain nutrients in breast milk. This implies that the dietary intake and nutritional status of mothers significantly impact the quality and composition of breast milk, thus affecting the technique and success of breastfeeding, as mothers with adequate nutrition may find it easier to sustain exclusive breastfeeding. The study emphasizes the role of nutrient intake in enhancing breastfeeding outcomes, especially concerning fatty acids and micronutrient content, which are crucial for the infant's growth and development.

Maternal ideation, including cognitive and psychological factors, also plays a vital role in shaping breastfeeding techniques. Elgzar et al. (2023) highlight that maternal knowledge, beliefs, and self-efficacy significantly predict exclusive breastfeeding (EBF) practices. Mothers who exhibit high breastfeeding self-efficacy and have positive beliefs towards EBF are more likely to initiate breastfeeding within an hour of birth and continue exclusive breastfeeding for six months. The study further indicates that maternal ideation dimensions, such as knowledge adequacy and social norms, positively influence breastfeeding techniques, underscoring the importance of education and social support in promoting optimal breastfeeding practices.

Chronic maternal conditions present another factor that can affect breastfeeding techniques. As Sokou et al. (2023) report, mothers with chronic diseases face unique challenges that may hinder their ability to breastfeed effectively. The study suggests that targeted support and care for these mothers, including in-hospital and community-based interventions, can help overcome barriers and facilitate successful breastfeeding. This finding highlights the need for healthcare professionals to address the specific requirements of mothers with chronic conditions, enabling them to adopt suitable breastfeeding techniques despite their health limitations.

Employment status and maternal occupation further influence breastfeeding practices. Research by Amer and Kateeb (2023) demonstrates that mothers who are employed full-time

are less likely to continue exclusive breastfeeding compared to stay-at-home mothers. The study found that employment outside the home is a significant barrier to sustained breastfeeding, with working mothers often resorting to mixed feeding or discontinuing breastfeeding earlier than recommended. This reflects how maternal responsibilities and workplace policies can impact breastfeeding techniques, suggesting the need for supportive work environments and policies that accommodate breastfeeding mothers.

Maternal experiences and breastfeeding self-efficacy also significantly affect breastfeeding techniques. Al-Thubaity et al. (2023) identify factors such as being a housewife, having prior breastfeeding experience, and possessing positive attitudes towards breastfeeding as predictors of higher breastfeeding self-efficacy. These factors contribute to the adoption of more effective breastfeeding techniques, as mothers with higher self-efficacy are likely to persist with exclusive breastfeeding and overcome challenges associated with breastfeeding.

High-risk pregnancies present additional factors influencing breastfeeding techniques. Brani et al. (2024) found that maternal and infant characteristics, such as birth weight and health status, significantly determine breastfeeding duration and technique. Women with high-risk pregnancies may face more difficulties in sustaining exclusive breastfeeding due to complications like jaundice or early introduction of solid foods. These findings highlight the importance of providing tailored breastfeeding support to mothers with high-risk pregnancies to improve breastfeeding outcomes.

Qualitative studies offer deeper insights into maternal barriers to breastfeeding. Quebu et al. (2023) explore maternal challenges, such as breast discomfort, illness, and cultural misconceptions about exclusive breastfeeding. These barriers can hinder mothers' ability to practice optimal breastfeeding techniques, indicating that comprehensive breastfeeding education and support are essential from the prenatal to postnatal period. This education should address common breastfeeding myths, provide practical breastfeeding techniques, and empower mothers to make informed decisions about infant nutrition.

Furthermore, specific breastfeeding support, such as Kangaroo Mother Care (KMC), can positively influence maternal breastfeeding techniques. Madiba et al. (2023) found that mothers who received KMC support developed stronger intentions to continue breastfeeding beyond hospital discharge. The prolonged stay in KMC settings enhanced their breastfeeding efficacy and encouraged exclusive breastfeeding practices. This suggests that structured breastfeeding programs that provide training, counselling, and support can significantly improve maternal confidence and breastfeeding techniques.

Conclusion

The findings indicate that successful exclusive breastfeeding (EBF) is influenced by a combination of support systems, maternal factors, and institutional policies. Professional healthcare guidance, family involvement, and workplace policies play vital roles in promoting EBF practices. Healthcare providers are identified as primary support figures who positively shape maternal ideation through education and counseling, while family members, particularly husbands, offer significant encouragement that enhances maternal self-efficacy. Additionally, institutional policies such as extended parental leave and flexible work hours are essential in mitigating employment-related barriers to breastfeeding. The multifaceted nature

of support underscores the need for comprehensive strategies that integrate professional, familial, and policy-driven approaches to foster an environment conducive to EBF.

Maternal factors such as nutrition, self-efficacy, and health conditions significantly impact breastfeeding outcomes. Adequate maternal nutrition and positive breastfeeding ideation facilitate EBF by improving the quality of breast milk and boosting mothers' confidence and skills. Conversely, barriers such as maternal discomfort, health issues, and work-related constraints hinder EBF, highlighting the necessity of targeted interventions to address these challenges. The role of cultural beliefs and social norms also emerged as critical in shaping breastfeeding practices, suggesting that continuous education and support are needed to counteract misconceptions and promote realistic expectations. Overall, a combination of supportive environments, informed decision-making, and tailored interventions is required to enhance breastfeeding techniques and sustain EBF for optimal maternal and infant health outcomes.

Recommendations

Based on the findings, it is recommended that a multi-tiered approach be adopted to enhance exclusive breastfeeding (EBF) practices. Firstly, healthcare providers should continue to be equipped with the necessary training to deliver personalized breastfeeding education and counseling. This training should emphasize not only the health benefits of EBF but also practical techniques to manage common breastfeeding challenges. Furthermore, healthcare systems should establish breastfeeding support groups to offer continuous encouragement and advice for mothers, even after they leave the healthcare facility. By strengthening professional support, mothers can receive the necessary guidance to overcome barriers and sustain EBF.

Secondly, workplace policies should be adapted to better accommodate breastfeeding mothers. Employers are encouraged to provide extended maternity leave, flexible working hours, and designated breastfeeding areas to support mothers in maintaining EBF upon returning to work. Additionally, family members, especially partners, should be included in breastfeeding education sessions to ensure they understand how to provide effective support and encouragement. Addressing cultural beliefs and misconceptions through community outreach programs can also help create a more supportive social environment for breastfeeding. These combined efforts will contribute to an ecosystem that supports mothers' decision-making and helps sustain EBF for the recommended duration.

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