Maternal & Child Nutrition

WILEY

Maternal & Child Nutrition

ORIGINAL ARTICLE OPEN ACCESS

Exploring the Perspectives and Experiences of Donor and Recipient Mothers Regarding Human Milk Bank Services in Iran

Zahra Mahdikhani[1] | Shahideh Jahanian Sadatmahalleh[1] | Zainab Alimoradi[2] | Abbas Habibelahi[3]

[1]Department of Reproductive Health and Midwifery, Faculty of Medical Sciences, Tarbiat Modares University, Tehran, Iran | [2]Social Determinants of Health Research Centre, Research Institute for Prevention of Non-Communicable Diseases, Qazvin University of Medical Sciences, Qazvin, Iran | [3]Shariati Hospital, Tehran University of Medical Sciences, Tehran, Iran

Correspondence: Shahideh Jahanian Sadatmahalleh (Shahideh.Jahanian@modares.ac.ir)

Received: 20 February 2025 | **Revised:** 29 June 2025 | **Accepted:** 25 July 2025

Funding: The authors received no specific funding for this work.

Keywords: breast milk | human milk bank (HMB) | infant | milk donation | qualitative study

ABSTRACT

Human milk provides essential nutrition for infants, particularly vulnerable preterm and low-birth-weight neonates. This qualitative study explored Iranian mothers' perspectives on human milk bank (HMB) services through semi-structured interviews with 16 participants (9 donors, 7 recipients) across four HMBs. Using inductive content analysis, we identified five key themes: (1) Expanding opportunities for HMB utilization requires integrating milk donation education into prenatal programs and addressing awareness gaps; (2) Familiarizing parents with HMB services through healthcare providers and social media is crucial for engagement; (3) Infrastructure limitations including equipment shortages and insufficient HMB locations hinder service delivery; (4) Donated human milk (DHM) represents both hope for recipients and fulfillment for donors; and (5) Religious beliefs about milk kinship and family support significantly influence participation. Findings reveal that while Iran has developed the Middle East's most extensive HMB network, cultural and religious considerations around milk kinship require sensitive approaches. Donors reported altruistic motivations and emotional rewards, whereas recipients described DHM as critical for infant survival. Key barriers included limited public awareness, equipment deficiencies, and concerns about milk safety. The study highlights the need for culturally adapted education campaigns, standardized equipment, and policy support to expand services. These results provide valuable insights for improving HMB implementation in Muslim-majority contexts while addressing unique regional challenges in neonatal nutrition. The research underscores DHM's potential to reduce infant mortality when combined with appropriate infrastructure and community engagement strategies.

1 | Introduction

Islamic law and WHO/UNICEF endorse wet nurses or milk banks when breastfeeding isn't possible due to specific conditions (Global Strategy for Infant and Young Child Feeding 2003; Abdelrahmman et al. 2024). Donor human milk's (DHM) cost-effectiveness—reducing preterm birth burdens on families and healthcare systems—aligns with public health priorities, which prioritize mother's milk or DHM as alternatives (Boyd et al. 2007; McGuire and Anthony 2001; Ganapathy et al. 2012).

Abbreviations: DHM, donated human milk; HMB, human milk bank; NICU, neonatal intensive care unit.

This is an open access article under the terms of the Creative Commons Attribution-NonCommercial License, which permits use, distribution and reproduction in any medium, provided the original work is properly cited and is not used for commercial purposes.

© 2026 The Author(s). *Maternal & Child Nutrition* published by John Wiley & Sons Ltd.

Summary

- Many Iranian mothers lack awareness of Human Milk Bank (HMB) services, underscoring the need for broad education campaigns through healthcare providers and social media. Limited facilities and equipment restrict HMB capacity, making expansion and standardisation essential.
- Cultural and religious beliefs, particularly Islamic views on milk kinship, influence acceptance and require sensitive communication and family engagement. Donor mothers are motivated by altruism, while recipients express gratitude and trust in milk safety.
- Integrating HMB education into maternal care, supported by government and philanthropic partnerships, can overcome logistical and financial barriers.
- Iran's growing HMB network offers valuable lessons for similar settings, highlighting that strengthening awareness, infrastructure, and cultural engagement is key to improving neonatal health outcomes.

Facilitators and barriers to milk donation vary across countries and regions, with commonly reported motivations like altruism, excess milk production, and desire to prevent milk wastage (Gribble 2014). There is limited information existing on how recipients perceive human milk banks (HMBs). Mothers of premature infants face many challenges, with unsuccessful infant feeding being one of the most critical. They often experience high levels of stress, anxiety, and depression (Roque et al. 2017). However, multiple barriers hinder HMBs utilization, including high costs, distrust in screening protocols and data systems, donor-recipient anonymity concerns, infant age/gender mismatches, safety concerns, limited awareness, and lack of healthcare provider support (Kadıoglu and NH 2015; Karacan et al. 2024). Additionally, cultural and religious attitudes influence the supply and demand for DHM (Işık et al. 2020; Onur et al. 2019).

In Iran's hospital-based HMB system, processed donor milk is distributed exclusively to neonatal intensive care units (NICUs) under physician prescription (Oguntokun 2024; Mortazi 2016). Eligible infants receive pasteurized milk following national protocols prioritizing extremely low birth weight neonates (< 1000 g) (Hosseini 2015). Despite fewer than 20 HMBs operating in the Middle East, Iran leads the region with 12 HMBs (Shahbazi Sighaldeh et al. 2025). The first Iranian HMB was established in 2016 following a visit by Ministry of Health officials to a Dutch HMB (Doshmangir et al. 2025). By [current year], the national HMB network had expanded to include ten major cities, establishing the most extensive milk banking infrastructure in the Middle East (Doshmangir et al. 2025; Human Milk Bank Global Map n.d.). Although breast milk donation has historical significance in Iran, cultural and religious factors restrict its widespread adoption (Human Milk Bank Global Map n.d.).

Islamic law prohibits marriage between milk siblings (Gribble et al. 2025). For donated human milk (DHM) to be religiously acceptable, HMBs must either prevent milk kinship ties or ensure they are traceable to avoid forbidden marriages. Consequently, Muslim families in Western nations may be reluctant to use donor human milk, given concerns over donor anonymity and the high number of contributors (Oguntokun 2024). Islamic tradition holds breast milk as sacred, with beliefs that maternal traits are transmitted through breastfeeding, potentially causing hesitancy towards donor milk in Muslim-majority societies like Iran (Mortazi 2016). However, no previous research has systematically compared donor and recipient experiences within Iran's religious-cultural framework or examined how these intersecting perspectives might inform service improvement. Iran's HMBs are a recent development, adapted from international models. Yet their implementation faces unique challenges due to stark cultural differences, particularly in European contexts. Iranian HMBs require deeper exploration of stakeholder perspectives. This qualitative study examines donor and recipient mothers' experiences to identify strategies for service improvement.

2 | Materials and Methods

2.1 | Design and Setting

In qualitative research, the goal is to elucidate the participants' experiences of specific life events. This type of research focuses on interpreting the participants' narratives and seeks to explain the reasons behind their statements (Austin and Sutton 2014). We employed a content analysis approach to analyse the collected data and cognitive processes. Content analysis involves the classification of textual data into similar clusters or conceptual categories to identify patterns and relationships between different variables (Given 2008). The researchers further utilized qualitative content analysis to understand the experiences of donor and recipient mothers, enabling the identification and extraction of key themes through meticulous data examination. The four selected HMBs operate under Iran's national standards, ensuring protocol homogeneity. While recruitment numbers varied slightly by site (reflecting local donation rates), thematic saturation was achieved across all locations. The study adhered to the Consolidated criteria for reporting qualitative research (COREQ) guidelines, which include a 32-item checklist for reporting qualitative research (Tong et al. 2007).

2.2 | Interview Guide

For the preparation of the interview guide, the researcher first derived exploratory questions by examining similar studies. These questions were subsequently discussed and finalized during a research team meeting to ensure their validity and relevance. Before each interview, written consent was obtained from the participants for both participation and audio recording. Interviews were conducted in Persian, and audio recordings were used to document the discussions. Each interview began with introductory questions to familiarize the researcher and participant with each other and create a comfortable atmosphere. The questions were primarily open-ended and general to facilitate dialogue and interaction. Following this, the main questions, designed to understand the participants' experiences and gather information relevant to the study

objectives, were posed. If further clarification or additional information was needed, probing questions were asked during the interview to delve deeper into the participants' experiences.

2.3 | Participants

The target population of the study consisted of donor and recipient mothers. We used purposive sampling with maximum variation to recruit donor and recipient mothers from four HMBs (two in Tehran, one each in Tabriz and Mashhad). Participants were stratified by age (15–25, 25–35, 35–45 years), education (primary to university), occupation (housewives, private/government employees), and location (urban/rural) to ensure demographic diversity. This approach captured varied perspectives while maintaining research rigour. Diversity was ensured by recruiting equal numbers from predefined strata (age/ethnicity/SES), verified through iterative analysis. No strata required oversampling, as saturation occurred uniformly. Minimum recruitment targets were set at two donors and two recipients per stratum. Eligible participants had verifiable experience with HMB services (as either donors or recipients), with voluntary participation as the sole exclusion criterion. HMB administrators assisted in identifying potential participants who met these criteria.

2.4 | Setting of Data Collection

Semi-structured interviews were conducted using a guide with open-ended and probing questions to explore participants' experiences in depth. Each session was audio-recorded after obtaining written informed consent. Donor and recipient mothers participated in secure, semi-structured interviews conducted via Google Meet at their convenience to share their experiences. Following the interviews, all recordings were transcribed verbatim and prepared for thematic analysis. Participant recruitment continued until achieving theoretical saturation, determined through weekly team analysis of code emergence patterns. While initial estimates suggested 12–15 participants might suffice, we conducted 16 interviews to confirm that no new themes emerged in final demographic subgroups.

2.5 | Rigour

To enhance the credibility of the findings, two coded interviews were returned to the participants to confirm the alignment of the analysis with their actual experiences. In addition, all stages of the research were meticulously documented to ensure dependability. To ensure rigour, the study adhered to the criteria outlined by Guba and Lincoln (Shenton 2004), including credibility, dependability, confirmability, and transferability. To ensure methodological rigour, credibility was strengthened through gender-matched interviews and prolonged engagement, while dependability was achieved by having a single researcher conduct all interviews with transparent documentation of all research stages. Confirmability was enhanced through team reviews of Persian-language transcripts and member checking with two participants, and transferability was supported by including verbatim quotations and detailed demographic data to enable contextual evaluation of findings. This comprehensive approach aligns with established criteria for qualitative trustworthiness.

2.6 | Researcher Reflexivity

The research team consisted of individuals with diverse academic and professional backgrounds in reproductive health and neonatology. To manage potential biases, the researchers regularly discussed and critically examined their assumptions and interpretations. This diversity within the team allowed us to avoid personal biases and assumptions. All authors sought to challenge their preconceived notions through dialogue and critique during the data collection, analysis and interpretation. This reflective process helped us develop more comprehensive results and minimize potential biases.

2.7 | Data Analysis

Data analysis was conducted using qualitative content analysis, and the Granheim and Lundman approach (Graneheim and Lundman 2004) was used to identify and categorize recurring patterns and key concepts in the data. Thematic structure emerged through iterative reconciliation of: (1) software-generated patterns and (2) researcher interpretation. Weekly meetings ensured groupings reflected both data patterns and contextual nuances specific to Iranian HMBs. Through ongoing team discussions, categories were further refined while maintaining codebook stability, ultimately yielding key themes on donor and recipient mothers' experiences with HMB services.

2.8 | Ethics Statement

The study protocol was approved by the Ethics Committee of Tarbiat Modares University (code: IR.MODARES.REC.1401.250). All procedures were conducted in accordance with the ethical standards set by the Regional Research Committee and the Declaration of Helsinki (1964) and its subsequent amendments. Participants received both verbal and written information about the study and provided written consent to participate before its commencement. They were also informed of their right to withdraw at any time without consequences.

They were assured that their participation was voluntary, confidential, and anonymous, and that they could withdraw from the study at any time without any consequences.

3 | Results

A total of 16 interviews were conducted with mothers, including 9 donor mothers and 7 recipient mothers, recruited exclusively from visitors to the milk bank. The study included 16 mothers: 6 from each of Tehran's two milk banks, 6 from Tabriz, and 4 from Mashhad. The interviews were conducted

TABLE 1 | Semi-structured interview guide.

Domain	Primary questions	Probing follow-ups
Awareness	How did you first learn about the milk bank?	What information sources were most/least helpful?
Challenges	What difficulties have you encountered when donating/receiving milk?	How did these challenges affect your experience?
Service Improvement	What changes would make the milk bank more useful to mothers like you?	Which improvements should be prioritized? Why

between March 2024 and July 2024 via Google Meet. On average, the interviews lasted between 30 and 45 min. To ensure diversity, participants were purposively selected based on available demographic records. (see Table 1 for full demographic details). Data analysis led to the identification of 400 initial codes, 150 final codes, 5 main themes and 12 subthemes (see Tables 2 and 3).

3.1 | Theme 1: Identifying and Expanding Opportunities for Parents to Utilize Hmb Services

The mothers stressed the importance of promoting milk donation by including it in breastfeeding education and increasing awareness of HMB services. They noted that many parents are unaware of DHM and HMBs, leading to missed opportunities. They called for standardizing equipment and expanding HMBs to meet demand.

Expanding Opportunities for Milk Donation

The mothers reported physical/emotional challenges from excess milk production and distress over discarding surplus milk. Key barriers to milk donation included restrictions in the donor human milk (DHM) market, alongside facilitating factors such as accessible equipment, easy transportation, and supportive staff. Donor motivations included receiving recognition, sharing experiences, and visually confirming the impact of their milk on recipient infants.

The participants reported that excess milk production motivated them to donate. Some mothers shared their negative experiences of discarding surplus milk in the past:

> *Interview 6, Donor Mother: "I had an oversupply of milk, which was painful... I would pump and even throw it away."*

A few of the mothers suggested that allowing the sale of DHM could encourage donation, especially among low-income families:

> *Interview 10, Recipient Mother: "I searched and found that in other countries, they sell DHM; I was so desperate that I was willing to buy it..."*

Some mothers emphasized the importance of creating a positive experience for donors through appreciation and sharing success stories:

TABLE 2 | Demographic characteristics of participants.

Characteristic	Donors ($N = 9$)	Recipients ($N = 7$)	Total ($N = 16$)
Age			
Mean	29.8	32.2	32,0
Parity			
Primiparous	2 (22%)	3 (42%)	5 (31%)
Multiparous	7 (77%)	4 (57%)	11 (68%)
Education			
University	5 (55%)	6 (85%)	11 (68%)
Nonuniversity	3 (33%)	2 (28%)	5 (31%)
Occupational status			
Housewife	3 (33%)	3 (42%)	6 (37%)
Private sector	2 (22%)	2 (28%)	4 (25%)
Government employee	5 (55%)	1 (14%)	6 (37%)
Geographic distribution			
Urban	7 (77%)	4 (57%)	11 (68%)
Rural	3 (33%)	2 (28%)	5 (31%)
Native language			
Fars	4 (44%)	3 (43%)	7 (43%)
Turk	3 (33%)	2 (28.5%)	5 (31%)
Lur	1 (11%)	2 (28.5%)	3 (18%)
Baloch	0 (0)	1 (14%)	1 (0.06%)
Socioeconomic status (SES):			
Income less than expenses	2 (22%)	1 (14%)	3 (19%)
Income equals expense	5 (55%)	4 (57%)	9 (56%)
Income more than expenses	2 (22%)	2 (28%)	4 (25%)

> *Interview 7, Donor Mother: "They showed me a poster and said, Take a photo if you want to donate. They didn't say anything particularly motivational..."*

The participants suggested that small gifts, appreciation packages, and informational brochures could motivate mothers to donate:

TABLE 3 | Themes and subthemes related to human milk bank services and donor human milk.

Main theme	Subthemes	Sub-sub-themes
Identifying and expanding opportunities for parents to utilize HMB services	• Expanding opportunities for milk donation	*Identifying mothers with surplus milk as potential donors* *Buying and selling DHM as an incentive enhancing the donor experience* *Using motivational strategies to encourage donation* *Sharing donor stories to encourage donation*
	• Integrating milk donation into maternal breastfeeding education	*Emphasizing the impact of DHM on community health* *Training on milk expression and storage process for donor mothers*
	• Educating mothers on the importance of DHM	*Familiarizing parents with donor milk access opportunities* *Premature birth creates an opportunity to utilize milk bank services* *Maternal inability to breastfeed as a reason for receiving donated milk* *Quality assurance of donated milk is crucial for building trust*
Familiarizing parents with HMB Services	• Opportunities to familiarize parents with HMB Services	*Healthcare providers as advocates for HMBs* *Social media as a platform for awareness* *Sharing experiences through friends* *Learning from successful campaigns* *Use of cultural and social opportunities*
	• Missed opportunities due to lack of awareness	*Lack of awareness as a barrier to donation* *Unawareness about the possibility of receiving donor milk* *Poor awareness about milk banks*
Expanding HMB activities through infrastructure improvement	• Need for standardizing equipment and infrastructure	*Equipment shortages and malfunctions* *Milk banks' challenge in maintaining donor milk inventory*
	• Expanding the number of milk banks to meet neonatal demand for donor milk	*Low donor milk inventory volume* *Inadequate number of milk banks* *Leveraging philanthropic capacities*
DHM as a symbol of generosity and hope	• The joy of helping other infants as a motivator for continued donation	*Fulfillment of generosity through milk donation* *The fulfilling sense of supporting preterm infants through milk donation* *Understanding the need for milk donation in medically fragile infants* *Emotional commitment to milk donation for medically vulnerable infants*
	• Receiving donor milk instills hope for the infant's survival in the mother	*Milk donation as a symbol of selflessness* *Donor milk serves as a beacon of hope for mothers of critically ill infants* *Reassurance for recipient mothers through milk bank support*
The interplay of beliefs, family support, and collaboration with HMBs	• The importance of family support in overcoming the challenges of milk donation	*Spousal approval for milk donation* *Negative beliefs as a barrier to donation* *Adapting to the challenges of donation* *Spousal and family cooperation and encouragement as motivators for milk donation*

(Continues)

TABLE 3 | (Continued)

Main theme	Subthemes	Sub-sub-themes
	• Belief in the positive impact of milk donation	*Belief in the life-saving role of DHM* *Conviction and positive motivation to participate in milk donation*
	• Distrust among influential figures as a key driver of donor milk rejection	*Endorsement by influential figures of donor milk for infant health* *Negative attitudes among influential figures as a barrier to donor milk acceptance*

Abbreviations: DHM, donated human milk; HMB, human milk bank.

> *Interview 1, Donor Mother: "They could place brochures and small gifts in the hospitals to promote milk donation."*

The participating mothers recommended creating opportunities for donors and recipients to share their experiences, both in person and through social media.

> *Interview 2, Donor Mother: "There should be a space where donor mothers can connect and learn from each other..."*

Integrating Milk Donation into Maternal Breastfeeding Education

Some of the participants highlighted the lack of adequate information about the benefits of DHM for preterm infants and the need to educate them about the process of collaborating with HMBs.

The mothers stressed the importance of informing parents about the long-term health benefits of DHM for preterm infants and their families:

> *Interview 3, Donor Mother: "I think knowing that by donating milk, they're saving a baby's life could be a strong motivator. Many families don't realize that preterm babies might undergo surgery, even die without DHM."*

Mothers stated that the effectiveness of milk donation by donors is influenced by proper training on how to express milk and its correct, hygienic storage.

One donor mother said,

> *"Proper milk expression requires training, and experienced mothers should ideally pass this knowledge of to others."*

Another donor mother added:

> *"To prevent milk spoilage during freezing and transportation processes, necessary training must be provided to donors."*

Educating Mothers on the Importance of DHM:

Some mothers believed that education about DHM and HMB services should be provided to mothers of preterm infants, as many families were unaware of these resources.

The participants called for clear guidelines on milk bank eligibility, ensuring that families of preterm infants and mothers unable to breastfeed can access donated milk without hesitation. They also emphasized the need for strict quality standards to guarantee the safety of donated milk.

> *Interview 15, Recipient Mother: "If mothers are educated about the benefits of donated milk for preterm infants, more mothers will be encouraged to donate or receive it"*

The mothers noted that lack of awareness prevents premature infants from accessing milk banks, negatively impacting their physical and mental health. They called for better identification of eligible babies and improved parent education on milk donation services.

> *Interviewer 13 (Recipient): "In my opinion, there hasn't been proper awareness."*

The interviewed mothers highlighted cases where breastfeeding was impossible and stressed the need for milk bank support to ensure infant nutrition. They emphasized the necessity of expanding milk bank services to meet the demand for such vulnerable infants.

> *Interview 15 (Donor Mother): "I was able to breastfeed my twins — I even donated milk to the bank. But suddenly, my milk supply stopped completely."*

The study participants identified quality assurance of donor milk as fundamental for establishing recipient trust, citing safety verification and absence of pathogens as critical factors. Parental apprehensions regarding milk safety were reported as significant utilization barriers.

> *Interview 2 (Recipient Mother): "The pasteurization and testing procedures were excellent and really put our minds at ease..."*

3.2 | Theme 2: Familiarizing Parents With HMB Services

The mothers cited healthcare providers, social media, and peers as primary information sources about HMBs. They stressed the importance of strategic advertising and

culturally tailored outreach to increase awareness, noting that many underutilize HMB services simply due to lack of knowledge.

Opportunities to Familiarize Parents With HMB Services

The participants highlighted various ways to introduce HMBs, with healthcare providers and social media being the most accessible options.

A few of the mothers mentioned that healthcare providers played a crucial role in introducing them to HMBs. Many were unaware of HMBs until they were informed by the healthcare professionals or friends:

> *Interview 6, Donor Mother: "During my pregnancy and after my son was born, no one explained anything about HMBs."*

The mothers emphasized the potential of social media to reach parents, particularly those with infants in need of DHM:

> *Interview 3, Donor Mother: "... I think social media is a great opportunity for awareness."*

The mothers noted that friends and shared experiences played a significant role in raising awareness about HMBs:

> *Interview 1, Donor Mother: "One of my friends recommended me to donate my excess milk to an HMB."*

One of the mothers recommended using successful campaigns such as those for blood and organ donation as good models for promoting milk donation:

> *Interview 2, Donor Mother: "Before TV campaigns for organ donation, no one knew about it. We need similar campaigns for HMBs, too."*

A few of the participants suggested leveraging cultural events and festivals to promote milk donation:

> *Interview 6, Donor Mother: "We need cultural programs like New Year festivals to raise awareness about HMBs."*

Missed Opportunities due to Lack of Awareness

A number of the participating mothers attributed missed opportunities to use HMB services to the lack of awareness as well as inadequate information dissemination:

The mothers mentioned that poor information dissemination, particularly within the healthcare system, has led to missed opportunities for making use of HMB potentials, and thus, milk donation:

> *Interview 12, Donor Mother: "I didn't know about HMBs until my son was 7 months old. I deeply regretted not knowing about this issue sooner."*

One lesser-known reason for the low awareness of milk banks is families' unawareness about the possibility of using donated milk.

> *A recipient mother stated: "Many mothers don't even know about the existence of milk banks in their own cities and are unaware that they can go to a milk bank for their infant's nutrition upon a doctor's recommendation."*

Mothers spoke about the unawareness among their own social circles regarding the existence of milk banks.

> *One donor mother said, "When I explained about milk banks at a family gathering, none of them had any prior knowledge about it."*

3.3 | Theme 3: Expanding HMB Activities Through Infrastructure Improvement

The mothers highlighted the need to improve HMB infrastructure to expand services. Challenges included lack of standardized equipment and insufficient storage containers, which hindered HMB service delivery.

Need for Standardizing Equipment and Infrastructure

The participants reported issues with milk pumps, storage containers, and pasteurization equipment, which affected the quality of HMB services.

The HMB service user mothers faced challenges due to equipment shortages and malfunctions, which disrupted HMB operations:

> *Interview 4, Recipient Mother: "The pasteurization machine was broken, and they couldn't provide us with safe milk until it was fixed."*

Mothers pointed to the shortage and inaccessibility of storage containers for donated milk at milk banks.

> *One donor mother stated: "She had personally purchased milk storage containers, which were costly, but chose to donate the milk in those containers to the milk bank of her own accord."*

Expanding the number of milk banks to meet neonatal demand for donor milk

Mothers stated that the number of milk banks across the country remains insufficient and emphasized that milk banks should be established in major cities.

Regarding the low volume of stored milk, one mother stated:

> *"By increasing the number of milk banks, more donor mothers would be recruited, and the stored milk supply would become sufficient to meet the needs of preterm infants."*

The participants highlighted the limited accessibility of HMBs and the insufficient supply of DHM to meet the needs of preterm infants.

One mother remarked: "I know of a mother who resorted to shipping her donated milk by plane from another province to Tehran. Had there been a milk bank in her own city, she wouldn't have incurred these costs."

Some of the mothers emphasized the need to increase the number of HMBs and involve charitable organizations to address the shortage:

A recipient mother stated: "The deficiencies in milk banks could be addressed through support from philanthropists—such as shortages of milk expression containers and operational funding for the banks."

3.4 | Theme 4: DHM as a Symbol of Generosity and Hope

The recipient mothers described DHM as a beacon of hope, while the donor mothers viewed milk donation as the ultimate act of generosity. Both groups expressed satisfaction with the support provided by the HMB staff.

The Joy of Helping Other Infants as a Motivator for Continued Donation

The donor mothers described milk donation as a fulfilling experience, fostering a sense of attachment to the preterm infants they helped.

Donor mothers found joy in helping other infants and felt a deep connection to the preterm infants who received their milk.

Interview 3, Donor Mother: "I was very upset about stopping milk donation, as I wanted to continue donating. However, after a year, I had to stop."

A donor mother shared: "When I thought about the preterm infants being nourished by my milk, I felt I was playing a small part in supporting them through my donation."

Donor mothers understood the importance and need for milk donation for medically fragile infants.

"I knew that very preterm infants could require major gastrointestinal surgeries if not fed with human milk—and I deeply understood this critical need in their tiny bodies."

Donor mothers described how they felt an emotional commitment to the infants that they had been a milk donor for.

The donor mother added: "Though I'd never seen any of these preterm infants, I felt a profound, lasting bond with them."

Receiving donor milk instills hope for the infant's survival in the mother

Recipient mothers described DHM as a lifeline during difficult times, praising the generosity of donors and the support of HMB staff.

Milk donation was often perceived as a symbol of selflessness.

The mothers of preterm infants expressed gratitude for the generosity of donor mothers and the support they received from HMBs:

Interview 4, Recipient Mother: "I'm grateful for the mindset of donor mothers... Even in their grief, they wanted to help other babies."

Mothers of critically ill infants expressed how they viewed donor milk as a beacon of hope.

A recipient mother highlighted: "In the darkest hours of my child's critical illness, every bottle of donor milk felt like a torch handed to us by strangers. It whispered: 'Your baby isn't alone in this fight.'"

Mothers found reassurance in the support given by milk bank staff.

A recipient mother spoke of the assistance from the milk bank staff and expressed: "All my reassurance came from the milk bank's support in nourishing my infant."

3.5 | Theme 5: The Interplay of Beliefs, Family Support and Collaboration With HMBs

The participant mothers emphasized the importance of family support and alignment of beliefs in facilitating milk donation. They also noted that negative beliefs and attitudes could hinder both the donation and receipt of DHM.

The Importance of Family Support in Overcoming the Challenges of Milk Donation

The donor mothers highlighted the need for spousal and family support, as milk donation is a demanding process.

Both the donor and recipient mothers stressed the importance of spousal support for milk donation:

Interview 15, Recipient Mother: "My family's priority was our own child's health. Both my mother and husband supported the decision."

Some mothers mentioned that negative beliefs like concerns about reduced milk supply for their own infants hindered donation:

Interview 6, Donor Mother: "Some family members worried that donating milk would reduce my supply for our own baby."

The donor mothers described the physical and emotional challenges of milk donation and the need for resilience:

Interview 6, Donor Mother: "Pumping and freezing milk is exhausting, but hearing about the experiences of other donors made it easier for me to continue donation."

Belief in the Positive Impact of Milk Donation

Most of the mothers believed that DHM played a crucial role in the health of recipient preterm infants and offered advantages over formula.

The donor mothers described DHM as a life-saving resource that prevents complications in preterm infants.

Interview 15, Donor and Recipient Mother: "DHM has far more benefits than formula. Historically, wet nurses used to provide milk to infants, and DHM continues this tradition."

All mothers, whether donor or recipient, felt a strong conviction and positive motivation to participate in milk donation.

A donor mother stated: "Mothers—whether donors or recipients—widely believe that donor milk safeguards the health of preterm infants while also preventing numerous complications."

Distrust Among Influential Figures as a Key Driver of Donor Milk Rejection

Distrust towards donated milk among individuals who influence parents could lead to the refusal of donor human milk.

Some mothers described how family members had endorsed and encouraged the use of donor milk for their infant.

"A recipient mother shared: 'My family not only had no objections to using donor milk for my infant's nutrition, but they actually endorsed it for the baby's health and actively encouraged me to use donated milk.'"

Whilst others acknowledged that family members may have negative attitudes to the use of donor milk and this could act as a barrier to its use.

"A donor mother revealed: 'Because I anticipated my mother-in-law might react negatively to my milk donation, I never told her I was donating my milk to the milk bank.'"

4 | Discussion

The present study aimed to explore the experiences of donor and recipient mothers regarding HMB services in four HMBs across Iran. The results of qualitative data analysis revealed five main themes: "Identifying and Expanding Opportunities for Parents to Utilize HMB Services", "Familiarizing Parents with HMBs as a Prerequisite for Benefiting from HMB Services," "Expanding HMB Activities through Infrastructure Improvement", "DHM: A Symbol of Generosity and Hope" and "The Interplay of Beliefs, Family Support, and Collaboration with HMBs". The discussion is structured around these five key findings.

4.1 | Identifying and Expanding Opportunities for Parents to Utilize HMB Services

Key strategies to promote milk donation involved identifying potential donors with surplus milk, facilitating DHM exchange, improving donor experience, using motivational incentives, and sharing inspiring donor stories to boost participation.

The mothers highlighted that excess milk production was their primary reason for approaching HMBs. Many shared their unpleasant experiences of discarding surplus milk during previous or current pregnancies. Our results are consistent with Alencar's study, which found that donors were often driven by having surplus milk and a desire to avoid discarding it (Alencar and Seidl 2009). Azema and Callahan found that among the 103 women interviewed, key reasons for donation included excess milk production, awareness of a baby in need (Azema and Callahan 2003). Osbaldiston and Mingle (2007) found that women donated breast milk due to oversupply, awareness of demand, reciprocal altruism, and lactation maintenance needs (Osbaldiston and Mingle 2007).

Some mothers had an oversupply of milk, while others had infants unable to breastfeed. Thus, identifying mothers with excess milk and providing them with counselling services are essential.

Some of the recipient mothers emphasized that allowing the sale of DHM could encourage donation and improve access to it for families with preterm infants. While financial incentives for milk donors have been suggested to boost milk bank supplies (Medo 2013), such compensation may erode altruistic motives and reduce donation quality/quantity (Gribble 2014). Research shows purchased human milk carries high bacterial loads (Keim et al. 2013; Geraghty et al. 2013), warranting examination of blood banks' experiences with paid donation before implementation (Gribble 2014). Scholars debate milk's economic valuation (Aguayo and Ross 2002) and compensation models (Carter and Reyes-Foster 2016), reflecting varied legal approaches. Some jurisdictions regulate human milk like blood, allowing only donations. Others permit sales by classifying it as food or under private law (David 2011). Islamic scholars have clearly ruled in their fatwas that selling human milk is allowed (Ismaili 1994). Reducing ethical issues is a key function of any regulations pertaining to donor human milk and human milk banking. The commercialization of donor human milk, the provision of adequate assistance for donor mothers who might be vulnerable to exploitation, and guaranteeing equitable chances for both providing and receiving donor human milk are the main issues at hand (Israel-Ballard et al. 2019). Financial incentives may have unfavourable effects, even if donors should be fairly compensated for the substantial commitment of consistently pumping breast milk for a period of time that could endure for years. Poorer mothers might be more inclined to give milk at the risk of their own health, endangering both themselves and their babies. Donors may hide risky lifestyle habits and medical histories to receive financial rewards (Tyebally Fang et al. 2021).

The mothers also suggested that providing free facilities and small appreciation gifts could motivate donors to continue donating. Studies have shown that social and personal factors like inadequate social support can discourage milk donation (Jandová et al. 2021; Gayà et al. 2021; Cormontagne et al. 2021). In the 2023 review study by Matthias et al. results indicated that HMBs should provide support to donors, which can include services such as milk pick-up, making breast milk donation more feasible (Mathias et al. 2023).

The participant mothers in this study also stressed the need to integrate education about the importance of milk donation into prenatal, antenatal, and postnatal care programs. Comprehensive education should be widely disseminated across communities. A 2020 study in Uganda identified the need for education and awareness campaigns in social settings during prenatal care and in neonatal units (Magowan et al. 2020). A review by Doshmangir et al. found that media and advertising encouraged the mothers to donate milk (Doshmangir et al. 2019). Our findings revealed that the mothers had not received educational or promotional content from national media, underscoring the need for HMBs to utilize national media and radio to raise awareness about HMBs among them.

4.2 | Familiarizing Parents as a Prerequisite for Benefiting From HMB Services

Mothers identified opportunities to raise awareness about DHM and HMB services, noting that lack of knowledge often leads to missed chances.

The participants identified healthcare providers and physicians as key sources of information about HMBs. They mentioned that missed opportunities to use HMB services often stem from a lack of awareness. Healthcare providers were seen as highly effective in disseminating information about HMBs. A study by Candelaria et al. found that mothers primarily learned about HMBs from NICU staff (Candelaria et al. 2018). A review investigation identified healthcare providers as the most significant facilitators of milk donation (Mathias et al. 2023). A survey conducted in Brazil with 737 donors found that encouragement from healthcare professionals and information provided by hospitals and healthcare centres were the most influential factors in the participant mothers' decision to donate (Pimenteira Thomaz et al. 2008). A cross-sectional study conducted in Iran in 2022 assessed the awareness and attitudes of 634 mothers with infants under 1 year towards HMBs. The results indicated that, while having low awareness, the participants held positive attitudes towards HMBs, highlighting the need for culturally appropriate educational programs (Hosseinzadeh et al. 2023).

A few of the recipient mothers in the present research also stressed the need to clarify opportunities for receiving DHM and build trust in its safety. A qualitative study in Uganda found that healthcare providers significantly influenced the mothers' decisions to accept DHM, as they were seen as knowledgeable and trustworthy (Magowan et al. 2020). In a study by Wombach, the donor mothers discovered milk donation through social networks, healthcare providers, or independent research. They received necessary information from different sources and mainly nurses, lactation consultants, paediatricians and social workers (Wambach et al. 2019).

The participants expressed a desire to share their experiences of donating and receiving milk to motivate others. They believed that sharing stories could encourage donors to continue and inspire others to start donating. In a study by Candelaria et al. the participants enjoyed sharing their donation stories and recommended milk donation to others (Candelaria et al. 2018). They also suggested using social media and successful campaigns such as those for blood and organ donation to raise awareness about HMBs.

4.3 | Expanding HMB Activities Through Infrastructure Improvement

Mothers highlighted the need for standardized equipment and more HMBs to meet demand. Key challenges were equipment shortages, inadequate storage, and limited milk supply. They urged addressing these gaps and utilizing charitable support to overcome financial barriers.

The expansion of HMBs is crucial, particularly in low- and middle-income countries due to the increasing number of preterm infants in these areas. This requires sustained attention from neonatologists and HMBs to ensure optimal nutrition for preterm infants (Sánchez Luna et al. 2021). A review identified barriers like a lack of practical and psychological support from healthcare professionals, insufficient trained staff, communication challenges, and inadequate infrastructure (Mathias et al. 2023). Enhancing the skills of healthcare professionals, standardization of milk handling processes, and ensuring quality control are essential (Javanparast et al. 2012).

4.4 | DHM: A Symbol of Generosity and Hope

Mothers saw milk donation as a generous act that brings hope. Donors felt fulfilled helping preterm babies, while recipients viewed donor milk as a lifeline in tough times.

A 2018 U.S. study reported that DHM not only nourishes the recipient infant but also emotionally nurtures the donor mother (Candelaria et al. 2018). A 2024 study in South Africa highlighted that the donor mothers appreciated the benefits of DHM for infants without access to their mothers' milk (Mampane and Wolvaardt 2024). Leung and Yau's (2015) study supports these findings, showing that the participating mothers had positive beliefs about milk donation and were motivated by the desire to support infant health (Leung and Yau 2015). Similarly, a study in France showed that mothers' reasons for donation were primarily altruistic, with an overall positive attitude (Leung and Yau 2015).

Our findings revealed that the recipient mothers viewed DHM as a symbol of generosity and a source of hope during the stressful period of caring for a preterm infant. A 2024 study by Chaudhari et al. reported that most participants appreciated HMBs, though some described the experience as merely “good” (Chaudhari and Aiyer 2024). However, a 2024 study in South Africa found that

cultural norms influenced the acceptance of DHM, with some participants preferring receiving milk from family members over strangers (Mampane and Wolvaardt 2024).

4.5 | The Interplay of Beliefs, Family Support and Collaboration With HMBs

The mothers highlighted that family support and shared beliefs are key to enabling milk donation, while negative attitudes can hinder both donating and receiving donor human milk.

Spousal and family support was crucial in their view for overcoming the challenges of milk donation. Some mothers said that negative belief such as concerns about reduced milk supply for their own infants hindered donation. An Iranian study on factors influencing milk donation found that social and familial factors were significant determinants, with family support being the strongest predictor of donation willingness (Doshmangir et al. 2025). Fonseca-Machado et al. (2013). reported that over 64% of donors cited support from family, partners and friends as a key factor, while Alencar et al (Alencar and Seidl 2010). found that 19% of women highlighted the emotional influence of individuals and hospital support as motivators for donation. A 2024 qualitative study in Uganda found that husbands played a decisive role in accepting DHM, with some mothers needing their approval (Magowan et al. 2020). Similarly, a 2024 study identified misconceptions like fears of disease transmission as barriers to donation (Chaudhari and Aiyer 2024). Cultural and social values within families significantly influence milk donation (Mantri et al. 2022). In an another Ugandan study in 2020, cultural taboos and spousal opposition were two major barriers for milk donation (Magowan et al. 2020).

In Turkey, attitudes towards HMBs were influenced by religious beliefs, cultural norms, and concerns about DHM safety. Both refugees and native Turkish women shared similar religious concerns, though they acknowledged the importance of breast milk. These findings should trigger HMB initiatives and public awareness campaigns in Turkey and similar sociocultural contexts (Varer Akpinar et al. 2022).

4.6 | Limitations

This study faced limitations, including the inability to explore experiences from other HMBs in Iran due to geographical, financial, and time constraints. Moreover, qualitative studies are influenced by the participants' cultural and social contexts, which may limit generalizability. The lack of access to the perspectives of mothers using other HMBs may further reduce the generalizability of the findings.

5 | Conclusion

The present qualitative study explored the experiences of some Iranian donor and recipient mothers regarding HMB services and identified five main themes. Lack of awareness about DHM, its benefits, and screening methods were found to be barriers that can be addressed through improved education. DHM has the potential to significantly reduce neonatal mortality and morbidity. Therefore, awareness campaigns and national policies to expand HMB capacity are essential. Future research works are needed to analyse the status of HMBs in Iran and develop interventions to address barriers to increase collaboration between healthcare sectors and private/public entities in providing HMB services.

Author Contributions

Zahra Mahdikhani: conceptualization, methodology, investigation, formal analysis, writing – original draft. **Shahideh Jahanian Sadatmahalleh:** supervision, project administration, validation, writing – review & editing. **Zainab Alimoradi:** data curation, resources, visualization, writing – review & editing. **Abbas Habibelah:** investigation, validation, writing – review & editing. All authors: Approved the final version of the manuscript and agreed to be accountable for all aspects of the work.

Acknowledgements

This study was conducted with the kind collaboration of the participants, and we would like to express our sincere gratitude to them for their valuable contribution. Portions of this manuscript were drafted/revised using DeepSeek Chat, an AI language model. The authors critically reviewed and validated all outputs before submission.

Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

The data sets used and analysed for the current study are available upon reasonable request from the corresponding author (shahideh.jahanian@modares.ac.ir).

References

Abdelrahmman, K., B. Borg, S. Mihrshahi, and K. Gribble. 2024. "Facilitators and Barriers of Wet Nursing From Antiquity to the Present: A Narrative Review With Implications for Emergencies." *Breastfeeding Medicine* 19, no. 3: 155–165.

Aguayo, V. M., and J. Ross. 2002. "The Monetary Value of Human Milk in Francophone West Africa: A PROFILES Analysis for Nutrition Policy Communication." *Food and Nutrition Bulletin* 23, no. 2: 153–161.

Alencar, L. C. E., and E. M. F. Seidl. 2009. "Doação De Leite Humano: Experiência De Mulheres Doadoras." *Revista de saúde pública* 43: 70–77.

Alencar, L. C. E., and E. M. F. Seidl. 2010. "Breast Milk Donation and Social Support: Reports of Women Donors." *Revista Latino-Americana de Enfermagem* 18: 381–389.

Austin, Z., and J. Sutton. 2014. "Qualitative Research: Getting Started." *Canadian Journal of Hospital Pharmacy* 67, no. 6: 436.

Azema, E., and S. Callahan. 2003. "Breast Milk Donors in France: A Portrait of the Typical Donor and the Utility of Milk Banking in the French Breastfeeding Context." *Journal of Human Lactation* 19, no. 2: 199–202.

Boyd, C. A., M. A. Quigley, and P. Brocklehurst. 2007. "Donor Breast Milk Versus Infant Formula for Preterm Infants: Systematic Review and Meta-Analysis." *Archives of Disease in Childhood-Fetal and Neonatal Edition* 92, no. 3: F169–F175.

Candelaria, L. M., D. L. Spatz, and N. Giordano. 2018. "Experiences of Women Who Donated Human Milk." *Journal of Obstetric, Gynecologic, and Neonatal Nursing: JOGNN* 47, no. 4: 556–563.

Carter, S. K., and B. M. Reyes-Foster. 2016. "Pure Gold for Broken Bodies: Discursive Techniques Constructing Milk Banking and Peer Milk Sharing in US News." *Symbolic Interaction* 39, no. 3: 353–373.

Chaudhari, V., and S. Aiyer. 2024. "Exploring Barriers and Facilitators for Human Milk Donation and Acceptance Among Donors and Recipients." *Journal of Neonatology* 38, no. 1: 75–80.

Cormontagne, D., V. Rigourd, J. Vidic, F. Rizzotto, E. Bille, and N. Ramarao. 2021. "Bacillus Cereus Induces Severe Infections in Preterm Neonates: Implication at the Hospital and Human Milk Bank Level." *Toxins* 13, no. 2: 123.

David, S. D. 2011. "Legal Commentary on the Internet Sale of Human Milk." *Public Health Reports®* 126, no. 2: 165–166.

Doshmangir, L., M. Naghshi, K. Gholipour, A. Ahmadi, H. Azizi, and V. S. Gordeev. 2025. "Factors Influencing Breast Milk Donation to a Human Milk Bank in Iran: Implications for Policymakers and Planners." *BMC Nutrition* 11, no. 1: 13.

Doshmangir, L., M. Naghshi, and R. Khabiri. 2019. "Factors Influencing Donations to Human Milk Bank: A Systematic Review of Facilitators and Barriers." *Breastfeeding Medicine* 14, no. 5: 298–306.

Ganapathy, V., J. W. Hay, and J. H. Kim. 2012. "Costs of Necrotizing Enterocolitis and Cost-Effectiveness of Exclusively Human Milk-Based Products in Feeding Extremely Premature Infants." *Breastfeeding Medicine* 7, no. 1: 29–37.

Gayà, A., M. Rittà, D. Lembo, et al. 2021. "Analysis of Thermal Sensitivity of Human Cytomegalovirus Assayed in the Conventional Conditions of a Human Milk Bank." *Frontiers in Pediatrics* 9: 640638.

Geraghty, S. R., K. A. McNamara, C. E. Dillon, J. S. Hogan, J. J. Kwiek, and S. A. Keim. 2013. "Buying Human Milk via the Internet: Just a Click Away." *Breastfeeding Medicine* 8, no. 6: 474–478.

Given, L. M. 2008. *The Sage Encyclopedia of Qualitative Research Methods*. Sage Publications.

Global Strategy for Infant and Young Child Feeding. 2003.

Graneheim, U. H., and B. Lundman. 2004. "Qualitative Content Analysis in Nursing Research: Concepts, Procedures and Measures to Achieve Trustworthiness." *Nurse Education Today* 24, no. 2: 105–112.

Gribble, K. D. 2014. "'I'm Happy to be Able to Help:' Why Women Donate Milk to a Peer via Internet-Based Milk Sharing Networks." *Breastfeeding Medicine* 9, no. 5: 251–256.

Gribble, K. D., P. Zambrano, A. Omer-Salim, et al. 2025. "Human Milk Bank Services and Islamic Milk Kinship: Pathways and Processes for Ensuring Respect for Religious Law and Tradition in the Provision of Donor Human Milk for Small Vulnerable Newborns." *International breastfeeding journal* 20, no. 1: 31.

Hosseini, M. Guideline for Establishing a Human Milk Bank in Hospitals of the Islamic Republic of Iran and Familiarization With Current Processes of Maternal Milk Banks. Neonatal Department, Tabriz University of Medical Sciences. 2015.

Hosseinzadeh, M., M. Mirghafourvand, M. Sahebihagh, P. Aghajari, V. L. Denson, and S. Golsanamloo. 2023. "Donor Breast Milk Banking: Knowledge and Attitudes of Iranian Mothers." *Journal of Transcultural Nursing* 34, no. 1: 47–58.

Human Milk Bank Global Map. n.d. https://public.tableau.com/app/profle/human.milk.bank.global.map/viz/HumanMilkBankGlobalMap_0/HumanMilkBankGlobalMap.

Ismaili, I. 1994. "Transplantation and Buying and Selling of Body Parts." *Fiqh* 1, no. 1: 201–214.

Israel-Ballard, K., J. Cohen, K. Mansen, et al. 2019. "Call to Action for Equitable Access to Human Milk for Vulnerable Infants." *Lancet Global Health* 7, no. 11: e1484–e1486.

Işık, C., N. Ç. Keleş, and B. Şen. 2020. "Ebelik Öğrencilerinin Anne Sütü Bankacılığına Ilişkin Bilgi Düzeylerinin Incelenmesi." *Sağlık Profesyonelleri Araştırma Dergisi* 2, no. 1: 23–29.

Jandová, M., P. Měřička, M. Fišerová, et al. 2021. "*Bacillus cereus* as a Major Cause of Discarded Pasteurized Human Banked Milk: A Single Human Milk Bank Experience." *Foods* 10, no. 12: 2955.

Javanparast, S., L. Newman, L. Sweet, and E. McIntyre. 2012. "Analysis of Breastfeeding Policies and Practices in Childcare Centres in Adelaide, South Australia." *Maternal and Child Health Journal* 16, no. 6: 1276–1283.

Kadıoglu, M., and S. Nh. 2015. "Breast Milk Donation: The Situation in Turkey." *Journal of Health Science Profession* 1: 102–114.

Karacan, E., Ş. Çelikkanat, and Z. Güngörmüş. 2024. "Beliefs and Views of Breastfeeding Mothers Regarding Human Milk Banking: A Qualitative Study." *Nutrition* 119: 112299.

Keim, S. A., J. S. Hogan, K. A. McNamara, et al. 2013. "Microbial Contamination of Human Milk Purchased via the Internet." *Pediatrics* 132: e1227–e1235.

Leung, J. C. Y., and S. Y. Yau. 2015. "Perceptions of Breastfeeding Mothers on Breast Milk Donation and Establishment of Human Breast Milk Bank in Hong Kong: A Qualitative Study." *International Journal of Nursing* 2, no. 2: 72–80.

Magowan, S., K. Burgoine, C. Ogara, J. Ditai, and M. Gladstone. 2020. "Exploring the Barriers and Facilitators to the Acceptability of Donor Human Milk in Eastern Uganda–A Qualitative Study." *International Breastfeeding Journal* 15: 28.

Mampane, T., and J. E. Wolvaardt. 2024. "The Acceptability of a Donor Human Milk Bank and Donated Human Milk Among Mothers in Limpopo Province, South Africa." *Maternal & Child Nutrition*: e13651. https://doi.org/10.1111/mcn.13651.

Mantri, N., A. D. Goel, N. K. Joshi, P. Bhardwaj, V. Gautam, and M. K. Gupta. 2022. "Challenges in Implementation of Mother Milk Banks in Rajasthan: A Situational Analysis." *Journal of Mother and Child* 25, no. 2: 86–94.

Mathias, E. G., D. S. Patil, A. Kolakemar, et al. 2023. "Barriers and Facilitators for the Donation and Acceptance of Human Breast Milk: A Scoping Review." *Current Nutrition Reports* 12, no. 4: 617–634.

McGuire, W., and M. Anthony. 2001. "Formula Milk Versus." *Cochrane Database of Systematic Reviews*, no. 4: CD002971-CD. https://doi.org/10.1002/14651858.CD002971.

Medo, E. T. 2013. "Increasing the Global Supply and Affordability of Donor Milk." *Breastfeeding Medicine* 8, no. 5: 438–441.

Mortazi, A. 2016. "Research on the History and Necessity of Establishing Breast Milk Banks, and Related Jurisprudential and Legal Challenges." *Journal of Medical Ethics and History of Medicine* 8, no. 5: 55–68.

Oguntokun, B. O. The Ethics of Feeding Newborn Babies From Breastfeeding to Milk Banks: Islamic Perspectives: Hamad Bin Khalifa University (Qatar); 2024.

de Oliveira Fonseca-Machado, M., B. D. Miranda Parreira, F. Aparecida Dias, N. dos Santos Costa, J. C. dos Santos Monteiro, and F. Gomes-Sponholz. 2013. "Characterization of Nursing Mothers From a Human Milk Bank. Ciência." *Cuidado e Saúde* 12, no. 3: 590–598.

Onur, A., N. T. Er, and N. A. 2019. "Determining Health Care Professionals and Nutrition & Dietetics Students' Opinions About Breast Milk Banking." *Journal of Ankara Health* 8: 46–54.

Osbaldiston, R., and L. A. Mingle. 2007. "Characterization of Human Milk Donors." *Journal of Human Lactation* 23, no. 4: 350–357. https://doi.org/10.1177/0890334407307311.

Pimenteira Thomaz, A. C., L. V. Maia Loureiro, T. da Silva Oliveira, et al. 2008. "The Human Milk Donation Experience: Motives, Influencing Factors, and Regular Donation." *Journal of Human Lactation* 24, no. 1: 69–76.

Roque, A. T. F., G. C. Lasiuk, V. Radünz, and K. Hegadoren. 2017. "Scoping Review of the Mental Health of Parents of Infants in the NICU." *Journal of Obstetric, Gynecologic, and Neonatal Nursing: JOGNN* 46, no. 4: 576–587.

Sánchez Luna, M., S. C. Martin, and C. S. Gómez-de-Orgaz. 2021. "Human Milk Bank and Personalized Nutrition in the NICU: A Narrative Review." *European Journal of Pediatrics* 180: 1327–1333.

Shahbazi Sighaldeh, S., M. Moridi, A. Kazemnejad, V. Ghorban Sabagh, and F. Shateranni. 2025. "Effectiveness of a Theory-Based Educational Intervention on Enhancing Milk Donation Behavior: A Cluster Randomized Controlled Trial." *International Breastfeeding Journal* 20, no. 1: 17.

Shenton, A. K. 2004. "Strategies for Ensuring Trustworthiness in Qualitative Research Projects." *Education for Information* 22, no. 2: 63–75.

Tong, A., P. Sainsbury, and J. Craig. 2007. "Consolidated Criteria for Reporting Qualitative Research (COREQ): A 32-Item Checklist for Interviews and Focus Groups." *International Journal for Quality in Health Care* 19, no. 6: 349–357.

Tyebally Fang, M., E. Chatzixiros, L. Grummer-Strawn, et al. 2021. "Developing Global Guidance on Human Milk Banking." *Bulletin of the World Health Organization* 99, no. 12: 892–900.

Varer Akpinar, C., A. Mandiracioglu, S. Ozvurmaz, F. Adana, N. Koc, and F. Kurt. 2022. "Attitudes Towards Human Milk Banking Among Native Turkish and Refugee Women Residing in a Rural Region of Turkey: A Mixed-Methods Approach." *International Breastfeeding Journal* 17, no. 1: 74.

Wambach, K., T. Bateson, P. Matheny, and K. Easter-Brown. 2019. "A Descriptive Study of the Attitudes, Perceptions, and Experiences of Human Milk Donation." *Advances in Neonatal Care* 19, no. 6: 441–451.