

# Milk Kinship and Implications for Human Milk Banking: A Review

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## Abstract

**Context:** Articles discussing human milk banking and the sharing of milk among women have increasingly been appearing in the medical and nursing literature in the early-21st century. The articles usually focus on Western-style milk banks, as well as informal ways of providing women's milk to premature or sick infants and others in need of human milk. This article will review this literature within the context of Muslims living in predominantly Islamic countries and the potential effects of migration within a country or to another country on knowledge of these issues.

**Evidence Acquisition:** Articles consulted were sourced from the bibliographies of the author's previous articles and the references in other articles consulted during previous research. Following that, a search of the term "milk kinship" was conducted on Medline via Web of Science and in PubMed, but all relevant articles had already been accessed.

**Results:** A relatively few articles have discussed these matters in the Islamic context, to acknowledge the constraints that the creation of a kinship relationship by milk under Islamic law places on how breastfeeding or breast milk is shared. Nevertheless, these issues, and how needy infants can be provided with the life-giving breast milk they need, have begun to receive attention in international journals. Yet Muslim mothers may not be conversant with the issue of milk kinship in relation to milk banking or milk donation.

**Conclusions:** Some recent authors have made recommendations on how human milk donation can be achieved in the hospital setting through complying with the religious requirements. Donated human milk can be used in the hospital, provided the conditions are met.

**Keywords:** Breast Feeding, Milk, Human, Milk Banks, Islam

## 1. Context

Human milk is the perfect food for human infants, providing all of the nutrition required by healthy full-term infants and also protection against illness (1-5). Its positive effects may continue even after weaning (6). Replacing breastfeeding with artificial substitutes may in fact increase health risks (7, 8). Milk from a woman other than the child's mother creates a relationship by milk, or milk kinship, which is described as the 'milk bond' in many cultures. While this relationship has personal and familial importance in all the cultures in which it occurs, it carries much greater importance among Muslims because of the religious implications and the concept of 'Mahram'. (Males who are closely related by blood and forbidden as marriage partners to women that is, males with whom any sexual relationship would be incestuous - are 'Mahram' to her. Basically, these include her male ancestors, her male descendants, her brothers and her nephews. A similar relationship is established by radaa'ah through breastfeeding as by blood.) Children who receive the milk of the same women are thus related by milk, as milk siblings, with sim-

ilar prohibitions against marriage as they would face if related by birth (9-13). Such a marriage would be incestuous. The milk relationship can extend beyond this to other family members. On a social and cultural plain, milk kinship has, historically, led to systems of alliances whereby men related by milk were able to call on their milk brothers for political or other support (14).

In the Muslim world it is important that the mothers of the children who receive the same milk are known to each other so that an inadvertent marriage cannot occur in the future. Two factors that complicate this matter today, and that are of great relevance to this discussion of milk kinship, are migration away from the home village or city where family and friendship networks exist, and the establishment in Western countries of human milk banks, which have increased in number in recent years. These milk banks provide women's milk to premature or sick infants whose mothers are not providing sufficient milk for their needs, as an act of mercy, and the milk usually comes from unpaid donors as a gift. Western-style milk banks have two practices that make it impossible for the parents

of the recipient infant, and the mothers who donate the milk, to know each other. These two practices are: first, the anonymous nature of the donation process and second, the pooling (mixing together) of the milk of several mothers, with the result that each feed of banked milk contains the milk of several unknown women and in unknown proportions.

## 2. Evidence Acquisition

In the first stage of evidence acquisition, articles consulted were sourced from the bibliographies of the author's previous articles and the references in other articles consulted during previous research. Following that, a search of the term 'milk kinship' was conducted on Medline via Web of Science and in PubMed, but all relevant articles had already been accessed. Eligible articles were in English and were published no earlier than 1980.

## 3. Results

### 3.1. Background and Literature Review

For all forms of milk sharing in the Muslim world, certain requirements apply because of the milk kinship it establishes. The requirement for all mothers involved to know each other and to understand the religious laws on milk kinship has in the past been relatively easy to follow. However, today, with emigration to other towns or countries and the growth of human milk banks in Western countries, women and their families find themselves in different environments which may pose difficulties.

Milk kinship is established if the child receiving the milk of another woman is under two years of age and amount of milk is sufficient to reach the stomach and build flesh and bone. These requirements are then subject to interpretation by religious scholars of the different schools of jurisprudence. The interpretations agree that the breast milk must reach the infant's stomach and thereby build flesh and bone (15, 16). The main point on which interpretations differ is how many breastfeeds or how much milk are enough to do this. It is understandable that there are different interpretations as how much an infant needs for growth depends on diverse factors; for instance, a newly born child needs less milk for growth than an older, larger child. According to Sardoueinassab, an academic trained in Iranian law, this requirement is met when breastfeeding has continued across a 24-hour period, or if the infant receives at least 10 breastfeeds (15). Ghaly cites the Shi'ite Ja'fari school as requiring only direct suckling at the breast to create kinship by milk, which therefore does not address feeding human milk by hand (tube, cup or bottle)

(16). However, other interpretations of the religious law include any method by which an infant receives the milk of another woman, not only by direct suckling. According to Ghaly, some Sunni schools of religious jurisprudence require a minimum of five breastfeeds (16), while, according to Fortier (17), the Maliki (Sunni) school in Mauritania has variously interpreted the minimum requirement as only one to three breastfeeds.

Sardoueinassab (15) points out that the relationship by milk is vested in the male (in this case, the husband of the women who suckles the foster child), on the basis that her milk resulted from the conception of an infant from his sperm. As a consequence of the paternal lineage, any children fathered by this man with other women are also included in the kinship tie and the prohibition on marriage.

As readers in the Islamic world are aware, child adoption as practised under Western civil law does not establish kinship in Islam, nor does it allow inheritance of property unless this is provided for in a Will. Establishing a relationship through milk has been used to create kinship with the adopted child and avert any future awkwardness in the intimacy of the domestic environment between this child and the parent of the opposite sex. As the foster child becomes 'Mahram' to her through breastfeeding, just the same as if he had been born to her, there is no requirement for her to veil in his presence. If the adoptive mother is unable to breastfeed the child the necessary number of times, the relationship through milk can be established if the child is breastfed by a close kinswoman of the adoptive father (15). Guidance on the specific requirements should be sought from religious authorities.

The present author has previously described the implications of milk kinship in an article addressed to hospital staff in Western countries, including those working in neonatal intensive care units (NICU), who know nothing of milk kinship (11). However, recent research has found that, even in a predominantly Muslim country, mothers and health professionals may not be conversant with how religious law affects the use of milk banks, at least those that use the Western methods with which they are unfamiliar. Gurol et al. (18) surveyed 350 Anatolian women of child-bearing age to find out their knowledge and opinions on milk banking, which at the time of writing does not exist in Turkey. The vast majority (90.6%) had never heard of the practice and only 36.3% were aware of the religious implications. Therefore information about the implications may be needed by Muslim women living in predominantly Islamic countries, as well as those living in Western countries. Further studies are recommended, in other regions, to ascertain the extent to which Muslim mothers understand these issues and how best to provide this information to them.

### 3.2. Informal Milk Sharing and Wet-Nursing

Milk kinship is, of course, established in all other situations where a baby receives the milk of a woman who is not his biological mother not only in human milk banking. These situations include informal sharing between family members or close friends, or other women who know each other well; and wet-nursing, where a woman is employed to breastfeed the baby. The sharing of breastfeeding or breast milk may occur for convenience within a family or friendship circle (19), or it may be out of human generosity to save the life of a child who cannot receive his own mother's milk or if the maternal milk supply is insufficient. Thus sharing between women who are kin or know each other has traditionally made human milk banking unnecessary in Muslim countries (12). However, with the increased use of the feeding bottle and artificial food, urbanisation, and migration to other districts or countries, the traditional method of providing breast milk for a baby in need, especially premature or sick babies, is not the simple matter that it was. Thus in recent years health professionals and religious experts in predominantly Muslim countries have found it necessary to publish articles about the issues surrounding the use of human milk banks (12, 13, 20).

As a literature review, this paper is not intended to provide guidance about correct practice, other than in reference to the literature on the subject. For individual cases, the advice of the relevant religious authorities should be sought.

### 3.3. Human Milk Banking

In Muslim countries, when an infant is breastfed by someone other than the mother, it has traditionally been done by a relative or someone well-known to the mother, to fulfill the requirement that the mothers must be known to each other and thereby prevent any future marriage between milk siblings. Thus there has previously been little need for milk banks. Increasing migration to other regions or countries has changed the situation for the family of a newborn infant, as they may no longer live near other relatives and friends.

In Western countries, human milk banks have been established to provide women's milk to the most vulnerable of infants if the biological mother is not breastfeeding or expressing her milk, or has yet to produce a sufficient volume. These infants include premature infants in neonatal intensive care units (NICUs) and other sick or vulnerable infants. The banked milk is prioritised for the most vulnerable infants and as there is insufficient available to meet needs of infants in the community, these milk banks are usually hospital-based. There is an inherent difficulty in

using human milk banks in the Western model to provide women's milk to Muslim infants who cannot be breastfed by the mother, who need additional milk, or whose mother is temporary absent. This is because, as mentioned, the standard practice of Western-style human milk banks is to use the milk of several unidentified mothers and to pool it. Any infant receiving the banked milk thus receives milk sourced from a number of women, and as the donors are anonymous and unknown to the mother, this poses religious problems for Muslim parents in Muslim countries. The extent to which this is a problem has been complicated by recent interpretations.

There has been confusion among Western health professionals with the publication of an article by El-Khuffash and Unger (20) suggesting that a 2004 fatwa issued by the European Council for Fatwa and Research (ECFR) makes it possible for Muslim families living in the West to accept milk from Western-style human milk banks for their premature or sick infant. In a forthcoming article, Khalil et al. (13) cite jurisprudence of the Hanafi School (Sunni) that any mixing of other substances with the milk (for instance human milk fortifiers manufactured from cow's milk), a common practice, changes the milk and means that milk kinship cannot occur. They also cite the Hanafi School that multiple donors (more than three) make it impossible to know the contribution made by the milk of any one woman; they interpret this to mean that this prevents the situation of kinship by milk, especially if the milk is changed by the addition of fortifiers and pasteurisation (13). However, the acceptance of the 2004 ECFR ruling by local Islamic councils in Western countries is not guaranteed, although it occasionally occurs (for instance, in the case of a South African mother seeking permission to donate her milk to a milk bank for sick infants as an altruistic act) (21). Families offered banked milk should consult the appropriate religious authorities. It may be that milk donated by a family member or friend, someone known to the mother, can be arranged instead.

### 3.4. Human Milk Donation in the Hospital Setting in Muslim Countries

Ozdemir et al. surveyed 401 Turkish religious officers in the Turkish province of Malatya for their opinions on the acceptability of donor human milk in a Muslim setting, since the Turkish ministry of health is investigating the setting up of human milk banks in that country. Of those surveyed, 96% correctly identified that two unrelated infants breastfed by the same women become related through the milk, that is, they become milk siblings (12). The majority (76.3%) considered that this relationship applied to all the women who suckled an infant, and their relevant kin (12). Of the religious officers, 71.3% agreed that

human milk banking was acceptable if Islamic principles were followed, and recommended that each milk “pool” should have a maximum of three donors and no more than three recipient infants, all of whose identities must be known to all participant mothers (that is, the milk donors and the mothers of the infants who receive the milk) (12). Karadag et al. (22) surveyed 1,042 mothers at two maternity hospitals in Turkey and found that the majority were opposed to the introduction of Western-style human milk banks, whereas a milk bank that met religious requirements would be acceptable to some.

Despite the complexities of observing religious law, formalised milk donation has been implemented in hospitals in some Muslim countries, while care was taken to be observant of the religious requirements that the mothers be known to each other and that the religious implications were explained to them. Besides the examples where this has been put into practice, in Kuwait and Malaysia (23, 24), other authors have proposed protocols for implementing human milk banking in a Muslim country by adapting the procedures to enable full adherence to Islam law. Ramli et al. (25), like the religious officers interviewed by Ozdemir et al., propose that there should be only a limited number of milk donors, that there is no mixing of their milk, that all donated human milk is labelled with the donor’s ID, and that all donors and the parents of the recipient infant be known to each other. Alnakshabandi and Fiester (26) have similarly proposed a ‘conditional identified milk banking system’ whereby a limit of three donors is imposed for any recipient infant and the identities of the recipient and all donors are recorded. These authors and also Ramli et al. recommend that all milk donors’ names and identification details be placed on the recipient infant’s birth certificate. Khalil et al. (13) propose a single-donor policy with open knowledge about the identities of donor and recipient or, alternatively (for example, in the West with its anonymous milk banking systems), that the use of multiple donors, pasteurisation and the addition of milk fortifiers may be acceptable under some Schools of jurisprudence, after a clear discussion of the religious issues.

The proposals by Alnakshabandi and Fiester in France, as well as Ozdemir and colleagues and Ramli and colleagues for systems of milk banking acceptable to Muslims in predominantly Muslim countries, would thus appear to make the 2004 fatwa of the European Council for Fatwa and Research unnecessary in settings where suitable milk banking procedures are readily available.

### 3.5. Questions of Epigenetics

Epigenetics is the term used to describe the changes in organisms resulting from modification of gene expression (that is, the switching ‘on’ or ‘off’ of genes by external

factors) without altering the actual genetic code. Ozkan et al. (27) have argued that new knowledge about epigenetics supports the existence of milk kinship on scientific grounds. They further hypothesized that unrelated infants who are breastfed by the same woman may be subject to genetic diseases through consanguinity even though the children may share similar epigenetics, but not the gene code itself. However, in a forthcoming paper Khalil and colleagues have sought to reassure parents and their advisors that any epigenetic changes through drinking the milk of another woman and the physical closeness of being breastfed by her will not cause changes to the actual genetic code and are unlikely to lead to risks of genetic diseases. Nevertheless, Irmak et al. (28) have suggested that correction of certain genetic deficiencies may be achievable if the affected neonate were to be breastfed by a woman without the genetic defect, provided this occurred within the first 24 to 48 hours. While this hypothesis has not been tested, the rapid expansion of knowledge of this new field means that these are lines of inquiry that deserve investigation and further discussion, both by proponents of an epigenetic effect and those who are skeptical.

### 3.6. Maternal-Infant Health Considerations

The concept of milk kinship is very ancient and is found in many cultures, sometimes in a secular context in which no religious laws or prohibitions are involved. Today, it is used in a secular context among predominantly Christian mothers involved in breastfeeding support groups in Australia to describe the close bond between children who have received the same milk (11). The term ‘milk brothers’ has been used in different parts of Europe, too (11). In early-20th-century Greece, an Orthodox Christian country, and historically in some Orthodox Christian parts of the Balkans and Greece, it was customary to seek a wet-nurse whose baby was the same gender as the baby in need of her milk, apparently to eliminate any possibility of a future marriage between the children (29, 30).

When NICU staff and the Muslim parents seek to avoid introducing an infant formula to a vulnerable infant whose mother is not yet producing sufficient milk, obtaining the milk of another woman will be necessary. Guidelines that make it possible to use donor milk in a hospital setting have been described. Use of donor milk will often be on a temporary basis to supplement the milk the mother herself is producing, although a small percentage of women may have ongoing low milk supply. The most important steps that the hospital-based health professional can take to meet longer-term goals are to:

- 1) Encourage the mother to provide her own milk, even if it is not yet sufficient,



- 2) Provide support for increasing her supply, including the support of a peer counsellor, if available,
- 3) Reassure her that increasing her own milk supply will mean that less donor milk will be needed,
- 4) Be respectful of her feelings and the stress inherent in having a premature or sick infant.

#### 4. Conclusions

The survey by Gurol et al. (18) demonstrates that there is a need for education of Muslim mothers about the kinship created by milk when an infant receives the milk of another mother. The recommendations of Ramli et al. (25) and Ozdemir et al. (12) are useful guidelines to assist ministries of health or hospitals in Muslim countries to make it possible for vulnerable infants to receive human milk when it is not available from the mother. Al-Naqeeb et al. and Hsu et al. (23, 24) have described the application of Islamic principles to make possible the provision of donated human milk in the hospital setting in Kuwait and Malaysia, respectively examples where this has been successfully done.

Usually, the need for donated human milk will be for only a short time, if the mother is well and supported and encouraged to increase her own milk supply.

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