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Addressing milk kinship in milk banking: experience from Singapore's first donor human milk bank

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INTRODUCTION

The KK Human Milk Bank (KKHMB), the first and only human milk bank in Singapore, was established in August 2017 to provide safe pasteurised donor human milk (PDHM) to vulnerable preterm and sick infants with insufficient own mother's milk, as the use of donor human milk (DHM) is potentially lifesaving for these infants.⁽¹⁻⁴⁾

To promote inclusivity and equal access to DHM by all the communities in our multiracial country with a Malay population of 13.5%,⁽⁵⁾ the concept of milk kinship in Islam, which could hinder the acceptability of PDHM in Muslim preterm infants, had to be addressed.

CONCEPT OF MILK KINSHIP

Milk kinship is established when a child receives human milk from a woman other than his biological mother. The child is considered a milk sibling of her children and marriage among them and other blood relatives is prohibited.^(6,7) This marriage prohibition extends to all the other unrelated infants who have received milk from the same woman,^(6,7) as stated in the Quran, "*Prohibited to you [for marriage] are your mothers, your daughters, your sisters, your father's sisters, your mother's sisters, your brother's daughters, your sister's daughters, your mothers who have suckled you, your sisters through nursing...*".⁽⁸⁾ The two major sects of Islam, the Sunni and the Shia, differ in their opinions on requirements for establishing kinship.⁽⁷⁾ While the Shiites believe that the infant must suckle directly at the milk mother's breast and receive at least ten feeds from her so as to support growth,^(7,9) the Sunnis believe that any mode of feeding and amount of milk establishes kinship.^(7,10) Since 1985, the International Islamic Fiqh Academy has prohibited the establishment of conventional, Western-style milk banks, where donor information remains anonymous to the recipients, to prevent a possibility of unknowingly marrying their milk relatives.^(6,11)

MILK KINSHIP AND MILK BANKING AROUND THE WORLD

Milk banks from different parts of the world have addressed milk kinship in different ways. Muslim countries have reported modified models of milk banking. Kuwait⁽¹²⁾ and Malaysia⁽¹³⁾ trialled a peer-to-peer donation model between 2–3 families to provide unpasteurised DHM to Muslim preterm infants. The donor and recipient families meet prior to the donation to discuss mutual suitability, religious implications regarding kinship, and prohibition of marriage between the recipient infant and the donor's children. Similar models from Turkey,⁽¹⁴⁾ Saudi Arabia⁽¹⁵⁾ and Bangladesh⁽¹⁶⁾ with electronically stored records for future verification still await approval from Islamic authorities in their respective countries. Iran is one of the few Muslim countries to have set up several conventional milk banks since 2016⁽¹⁷⁾ with their Supreme Leader's backing. He stated, "*If the milk is not directly transferred from the breast into the neonate's mouth, no Mahramiah (kinship) takes place*" (personal communication, Dr Hosseini, Clinical Director, Department of Neonatology, Tabriz University of Medical Sciences, Iran, 24 May 2020).

The European Council for Fatwa and Research (ECFR), a school of Islamic law focusing on issues with specific relevance to Muslims in Western countries, decreed that using milk from a conventional milk bank does not constitute kinship.⁽¹⁸⁾ This is based on the teachings of Islamic scholars that kinship is established only if the infant receives enough milk from the milk mother to satisfy hunger and support growth.⁽⁶⁾ Owing to the anonymity of the donor's identity and the pooling of milk from different donors in milk banking, it is impossible to decipher whether the milk from one particular donor "*satisfied the baby's hunger and supported growth*". Nonetheless, a survey of milk banks revealed that almost two-thirds of them had encountered Muslim parents who declined PDHM over concerns of milk kinship.⁽¹⁹⁾ Thereafter, the ECFR decided to enforce the National Institute for Health and Care Excellence recommendations⁽²⁰⁾ of ensuring the traceability of every aliquot of DHM.⁽²¹⁾ These records are

maintained for 30 years to allow Muslim parents to verify whether milk kinship was present between two potential marriage partners.

ADDRESSING MILK KINSHIP IN SINGAPORE

In 2016, in the planning phase of KKHMB, guidance on milk kinship was sought from the Islamic Religious Council of Singapore, Majlis Ugama Islam Singapura (MUIS). A fatwa (ruling on a point of Islamic law by a recognised authority) committee was formed to deliberate on the matter. The scientific evidence on the benefits of PDHM in preterm infants,⁽²²⁾ teachings of Islamic religious leaders from Europe and Middle East regarding milk kinship^(6,18,23) (EL-Khuffash, personal communication, 2 September 2013) and the views of Islamic scholars on relations that prohibit marriage (Mahramīyāh) through milk supply from milk banks⁽²⁴⁾ were discussed through dialogue sessions and written communication with our team. The ability of the milk bank to ensure anonymity of the donor, full traceability for every bottle of PDHM received and dispensed, and the ability to maintain records of Muslim recipients for 30 years to facilitate exclusion of milk kinship prior to marriage if requested by concerned families were emphasised.

The fatwa committee was satisfied that the intent of the KKHMB is to support mothers in their efforts to establish lactation and to optimise the health of sick premature infants through the provision of an exclusive human milk diet. It reached the conclusion that human milk offers the best chance for preterm infants to develop and grow, and the establishment of a milk bank is an initiative in line with the objectives of Shariah (Muslim law) which, among others, emphasises the need for the preservation of human life.

A fatwa was issued stating that feeding milk from the KKHMB does not establish kinship owing to a combination of factors including:⁽²⁴⁾ (a) anonymity between donors and recipients; (b) the amount of milk donated by each donor and the number of times the recipient

infant receives milk from the same donor is confidential; (c) premature infants are fed PDHM through a tube placed through the nose rather than directly by mouth; (d) the volume of milk required for a premature baby to be fully fed is not known; and (e) milk from milk banks is therapeutic as it prevents serious illnesses and helps in the maturation of the digestive system.

MUIS rendered strong support to the milk bank initiative and reached out to the Muslim community by making available the full fatwa and a set of frequently asked questions on milk kinship on their official website as well as other media channels. A briefing session for Singapore's Islamic religious leaders was held prior to the milk bank's launch, to enable them to support and guide Muslim families on this matter. Muslim women were also encouraged to donate their excess breast milk to lend support to KKHMB.

PDHM UTILISATION WITHIN THE MUSLIM COMMUNITY

Informed consent is routinely obtained before PDHM can be dispensed to recipients. Muslim parents are informed about the Fatwa and directed to the MUIS website for further guidance if required. From the launch of the KKHMB in August 2017 to December 2020, 682 Muslim infants received PDHM, making up 33.5% of the 2035 recipients. Indications for PDHM usage in Muslim infants are shown in Table I.

Of all eligible infants, only four families refused PDHM owing to religious concerns. This suggests that continued monitoring of parental acceptance is necessary to ensure the sustainability of our milk banking model within the local Muslim population.

Table I. Indications for use of pasteurised donor human milk in Muslim infants (n = 682).

Indication	No. (%)
Prematurity	565 (82.8)
Small for gestational age	50 (7.3)
Congenital heart disease	34 (5.0)
Gastrointestinal malformation/illness	11 (1.6)
Hypoxic ischaemic encephalopathy	10 (1.5)
Sick infants with insufficient own mother's milk	8 (1.2)

Contraindications to own mother's milk	3 (0.4)
Pentalogy of Cantrell (cardiac and gastrointestinal malformations)	1 (0.2)

REFLECTIONS

Given the proven benefits of human milk and the risks of informal milk sharing,⁽²⁵⁻²⁷⁾ all infants, especially those born preterm, should have access to DHM from a safe source, such as a milk bank. MUIS acknowledged this and drew on the legal maxims in Islam, which state: *“Any harm must be eliminated. Hardship begets facility. When the condition becomes tight, then [the law] is widened.”*⁽²⁴⁾ Early engagement of the Islamic authoritative body (i.e. MUIS) in the endeavour to provide the neediest infants with the chance of better health resulted in a positive partnership with the desired outcome. Providing all the relevant scientific and information, open discussions and communication helped facilitate the decision-making process. The active role of MUIS in engaging the local Islamic leadership and providing guidance to the Muslim community through various media platforms and education efforts enabled vulnerable Muslim infants to utilise PDHM, thus fulfilling our goal of ensuring that all communities have equal access to safe DHM.

CONCLUSION

Addressing milk kinship and modelling milk banks in a culturally and socially acceptable manner may pave the way for milk banking in multiracial societies similar to ours. We do acknowledge that milk kinship continues to be a major challenge in some countries and the milk bank model we have adopted may not be deemed acceptable in other communities. However, we believe that similar efforts involving early engagement of the relevant authorities, open dialogue and finding a common ground may allow vulnerable preterm infants to benefit

from this precious resource in a manner that respects and does not compromise religious beliefs.

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