

HUMAN MILK DONATION: KNOWLEDGE, ATTITUDE AND ACCEPTANCE AMONG RECIPIENT MOTHERS OF HUMAN MILK AT A TERTIARY CARE HOSPITAL

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Abstract

Background: The advantages of breast milk to a child are so essential that even the mother's absence must not deprive the baby of them. Human milk banking is essential to ensure all infants have access to breast milk. Human milk banks provide the service of collecting, screening, and processing human milk given by nursing mothers who have not been genetically linked to the recipient infant. The goal is to evaluate Knowledge, Attitude and Acceptance among recipient mothers about human milk. **Materials and Methods:** Mothers who have just given birth with inability to breast feed the baby due to various reasons and opted for donors milk for baby were surveyed using a hospital-based questionnaire at Niloufer Hospital, a tertiary care pediatric hospital in Hyderabad. A total of 150 recipient mothers who satisfied the study's inclusion criteria have been included. The mothers informed written consent was obtained. The data about Knowledge, Attitude and acceptance about human milk donation was collected by using a predesigned semi-structured questionnaire that was read out to the mothers. The data was entered into a Microsoft excel sheet and results were computed using SPSS 20. The significance was computed using the chi square test. **Result:** Among 150 recipient mothers, 112 was aware of milk banking. 46% recipients believe that mother's breast milk is only beneficial to her own child. Majority of recipients were multiparous 69.3%(104) and 23.3% recipients were primie's. 55.5% recipients had NVD and 44.6% underwent LSCS. 40 % recipients believed that donor milk contains more nutrients than formula feed. 55.3% recipients believed that donor breast milk provides some immunological benefits. Among recipients, 90% accepted and 10% refused milk from milk bank. Among those who accepted, 39.3% accepted because mother was in other hospital which is far away. 27.3% accepted due to insufficient milk. 17.3% accepted as the mother was sick and unable to feed. Among those who refused, majority preferred formula milk (6/15) and 5 recipients refused due to fear of transmission of infections. **Conclusion:** Most postpartum mothers had a moderate level of knowledge about the importance of donating breast milk and accepting the donated milk for their babies as they are under the impression that formula is preferable to breast milk as a supplement. These findings suggested that mothers and their families need to be educated about the benefits of human breast milk banks and to opt human donor milk so to provide nourishment to the infants as a choice when mothers milk is not available and promote the decision making among the parents in selecting an excellent feeding plan for their sick neonates.

INTRODUCTION

Breastfeeding or getting donated human milk provides the greatest possible nutritional start to life

for every infant. Babies do best on a diet of human breast milk, the healthiest kind of milk available.^[1] Donor human milk and Breast milk have been shown to be the ideal nutritional option for the most delicate and vulnerable newborns in the neonatal intensive

care unit. The advantages of breast milk to a child are so essential that even the mother's absence must not deprive the baby of them. While a few mothers are urgently attempting to breastfeed their kids despite limited success owing to physical infirmities, surgery, or chronic diseases, others are unable to give them formula because of the stress, agony, and stomach distress it causes in their babies.

For babies who are unable to be breastfed, donor milk is the next best option, according to the WHO (World Health Organization). Donor breast milk loses its micronutrients as well as anti-infective properties due to the pasteurization and degradation processes. Donor human milk is thus not a perfect substitute for fresh breast milk. In order to ensure that all infants have access to breast milk, human milk banking is an initiative that must be taken. The collection, screening, and processing of human milk given by nursing mothers who have not been biologically related to the receiving newborn is the work of a service known as a human milk bank.^[2]

The initial step that has to be taken before introducing a new health intervention is to evaluate whether or not it will be acceptable to lactating mothers. To learn more about the Attitude, Acceptance and knowledge among lactating mothers about human milk donation, the current research was carried out.

MATERIALS AND METHODS

The current research was done from July 2021 to June 2024 for a period of three years and is a questionnaire based Prospective study done at Niloufer Hospital for Women and Child Health, Hyderabad, a tertiary care pediatric hospital. The approval from institutional ethics committee was obtained. The study comprised of 150 postnatal mothers who attended well baby clinic and Dhatri milk bank at Niloufer Hospital for receiving donor's milk. The informed written consent was obtained from mothers. The mothers have been interviewed based on a predesigned semi-structured questionnaire. (Figure1). Mothers were made aware of the study's objective and its non-intervention nature.

Inclusion Criteria

Post natal mothers

- Attending well baby clinic
- With babies in NICU
- Insufficient milk
- Sick mother unable to feed
- Not the biological mother/adopted baby
- Breast infection or a fungal infection of the areola or nipple
- Infection of the breast area with herpes simplex virus or varicella zoster virus
- Willing to accept the donor's milk for their baby.
- Who are there in the setting when the data are being collected

Exclusion Criteria

- Smokers, tobacco and nicotine users
- HIV, Hepatitis B, TB positive mothers
- Has ever had hepatitis or jaundice

Data was done using Microsoft excel 2013 version and analysis was done using SSPS 20.0 version Data presented as percentages and association between variables was studied using the chi square method $P < 0.05$ is considered as statistically significant.

Figure 1: Semi Structured Questionnaire:

1. Name

2. Age of mother

Age	
Less than 20years	1
20 to 30years	2
More than 30years	3"

3. IP NO

4. Residence

Rural	1
Urban	2

5. Education of the mother

Illiterate	1
Up to 8thclass	2
9th to 12thclass	3
Beyond 12thclass	4

6. Family income

Less than Rs10,000	1
Rs10,000- Rs20,000	2
>Rs20,000-Rs30,000	3
>Rs 30,000	4

7. Parity of the mother

Primipara	1
Multipara	2

8. Type of the delivery

Primipara	1
Multipara	2

9. Occupation of the mother

Primipara	1
Multipara	2

Knowledge about Breast Milk Donation:

1. Had heard of breast milk donation or milk bank? NO-1, YES-2
2. Source of information-
10. Health care worker -1, Mass media -2, Friends /relatives -3
3. If you do not have sufficient breast milk, is donor breast milk better than formula feed? No-1, Yes-2
4. Donor breast milk contains more nutrients than formula feed? NO-1, YES
5. Donor breast milk provides some immunological benefits? NO-1, YES-2
6. Donor breast milk increases the risk of allergy in recipient infants? NO-1, YES-2
7. Donor breast milk may transmit infections to the recipient infant? NO -1, YES-2

Attitude towards Donor Breastmilk

1. Breast milk of a mother is only beneficial to her own child. Agree -1, Disagree-2

- I would prefer to feed my baby formula feed rather than donated breast milk. Agree -1, Disagree-2
- All nursing mothers must be informed about and encouraged for donating milk to milk banks. Agree -1, Disagree-2
- Donor breast milk decreases the bonding between mothers and baby. Agree -1, Disagree-2
- 5 What would you prefer to do to excess breast milk?

Pour out-1, donate to milk bank or other babies-2
 Acceptability Of Donated Breast Milk Among Recipients

Reasons For Acceptance

- Insufficient milk-1
- Sick mother unable to feed-2
- Not the biological mother/adopted baby-3
- Mother is in other hospital which is far away-4

Reasons For Refusal

- Fear of transmission of infection-1
- Against traditions and customs-2
- Fear of acquiring allergy-3
- Prefers formula feeds/animal milk-4

RESULTS

Among 150 recipient's, majority (104/150) belonged to 20 - 30 years age group followed by <20 years (27/150) and >30 years (8/150). Majority of the recipients were from rural areas (84) compared to urban areas (66). 18 recipients studied beyond 12 th class. Among 150 recipients, 49 recipient's family income was between 10,000-20,000 rupees followed by 29 recipients with family income between 20,000-30,000 rupees and 19 had income >30,000 rupees. Majority of recipients were multiparous (104) and 35 recipients were primie's. 83 recipients had NVD and 67 were underwent LSCS.

Among 150 recipients, 112 was aware of milk banking. Out of 112 majority (68.8%) belonged to 20-30 years age group. 51.9% rural recipients were significantly aware of milk banking. There was no significant association found between family income, education status, parity, type of delivery, occupation and knowledge of milk banking. (P>0.05).

About 69 out of 150 recipients believed that donor breast milk is better compared to formula feed if mother's breast milk is insufficient. There was no significant association found with demographic factors like age, residence, parity, type of delivery. But significant association seen with occupation, family income and educational status.

In the present study source of information for majority of recipients were healthcare workers (100/150). Among those majority were urban residents [Table 1 & 2]. 60 out of 150 recipients believed that donor milk contains more nutrients than formula feed. There was no significant association found on this belief with age, education status, family income, parity & type of delivery. More urban residents significantly believed this compare to rural recipients. (P<0.05).

83 out of 150 recipients believed that donor breast milk provides some immunological benefits. There was no significant association found on this belief with age, education status, family income, parity, type of delivery and occupation of mother. 98 out of 150 recipients believed that, donor breast milk increases the risk of allergy in recipient infants. 80 of 150 recipients believed that donor breast milk may transmit infections to the recipient infant. Regarding these beliefs, there was no significant association with age, educational status, family income, parity, type of delivery and occupation of mother.

This study reports a low knowledge of the concept of donor breast milk and low awareness of policy regarding the use of Donor Breast Milk (DBM) in India but a relatively high willingness of mother to participate in the concept.

Table 1: Residence and Source of Information

	K1 (Y=112) N (%)	K3 (Y = 69) N (%)	K4 (Y = 60) N (%)	K5 (Y = 83) N (%)	K6 (Y = 98) N (%)	K7 (Y = 80) N (%)
RURAL (N=84)	57 (50.9)	35 (50.7)	33 (55.0)	49 (59.0)	57 (58.2)	52 (65.0)
URBAN (N=66)	55 (49.1)	34 (49.3)	27 (45.0)	34 (41.0)	41 (41.8)	28 (35.0)
P VALUE	0.031	0.230	0.840	0.404	0.464	0.018

Table 2: Residence and source of information

RESIDENCE	NO SOURCE N (%)	HEALTH CARE WORKER N (%)	MASS MEDIA N (%)	FRIENDS/ RELATIVES N (%)
RURAL (N=84)	25 (67.6)	49 (49.0)	5 (100.0)	5 (62.5)
URBAN (N=66)	12 (32.4)	51 (51.0)	0 (0.0)	3 (37.5)
TOTAL	37 (100.0)	100 (100.0)	5 (100.0)	8 (100.0)

Recipients attitude: 69 out of 150 recipients believe that mother's breast milk is only beneficial to her own child. There was no association observed with socio-demographic factors in regards to this belief. (P>0.05) .71 recipients don't want to feed unknown mothers' milk. 82 recipients agreed for donating milk to milk banks. 100 recipients believe that donor breast milk decreases the bonding between mother and baby. 113 recipients want to pour out excess breast milk. There was no significant association found with socio- demographic factors and recipient's attitude. 86 out of 150 recipients prefer to feed formula milk rather than donated breast milk. Among these 86, majority had an NVD. This association was statistically significant.

Recipients Acceptance: Among recipients 90% accepted and 10% refused milk from milk bank. Among those who accepted ,39.3% accepted because mother was in other hospital which is far away. 27.3% accepted due to insufficient milk. 17.3% accepted as the mother was sick and unable to feed.

Among those who refused, majority preferred formula milk (6/15) and 5 recipients refused due to fear of transmission of infections. [Table 3]

Table 3: reasons for acceptance and refusal among recipient mothers

	Frequency	Percent
ACCEPTANCE	135	90.0
Insufficient milk	41	27.3
Sick mother unable to feed	26	17.3
Not the biological mother/adopted baby	9	6.0
Mother is in other hospital which is far away	59	39.3
REFUSAL	15	10.0
Fear of transmission of infection	5	3.3
Against traditions and customs	3	2.0
Fear of acquiring allergy	1	.7
Prefers formula feeds/animal milk	6	4.0
Total	150	100.0

DISCUSSION

The most beneficial nourishment for an infant's overall growth and development is breast milk from their mother. Breastfeeding is best for babies, and all mothers should do it. However, in some instances, if mother is unable to feed her child directly, her breast milk must be expressed as well as given to the newborn. This is especially important in the case of preterm babies and other infants who are at a high risk for complications.

Breastfeeding has been shown to dramatically lower the risk of infection, particularly necrotizing enterocolitis, in infants, and when a mother's own milk is unavailable or inadequate, Pasteurized donor human milk is the next best option.^[6,7] Babies who have not been breastfed reportedly need more medical attention in their first year of life, including more doctor's visits, hospitalizations, and medication.^[8] It was stated in the 2013 Census that there were 28 neonatal fatalities for every 1000 live births in India, making it the country with the highest incidence of low birth weight infants. The National Health Mission, Government of India has set one of its primary objectives as lowering the country's infant mortality rate.^[9] Donor mother's milk obtained from a human milk bank may have a significant effect on decreasing the death rate of newborns.^[3]

This research employed a questionnaire to evaluate women's knowledge as well as attitudes towards human milk banking; the results were discussed and analyzed. Tertiary care facility in Hyderabad, India was used for the research. The study was carried out on 150 recipient mothers to assess knowledge, attitude and acceptance of human breast milk donation.

In cases when there's just not enough breast milk, 41.3% of mothers believe that donor milk is beneficial. More urban residents significantly believed this compared to rural donors.55.3% of mothers believed that donor breast milk provides some immunological benefits. There was no

significant association found on this belief with age, education status, family income, parity, type of delivery and occupation of mother.

65.33% of mothers believed that donor breast milk rises the risk of allergy in recipient infants.53.3% of mothers believed that donor breast milk may transmit infections to the recipient infant. Regarding these beliefs, there was no significant association found with age, education status, family income, parity, type of delivery and occupation of mother.46.6% believed that mother's breast milk is only beneficial to her own child. There was no association found with socio-demographic factors in regards to this belief. (P>0.05) .55% mothers preferred to feed formula milk rather than donated breast milk. 54.6% mothers agreed for donating milk to milk banks.66.6% mothers believed that donor breast milk decreases the bonding between mother and baby. 70% mothers wanted to express the excess breast milk. There was no significant association found with socio-demographic factors and mothers attitude.

58.2% of multipara mothers believed that donor breast milk decreases the bonding between mother and baby. This association was statistically significant.

Among recipients, 135 mothers accepted and 15 mothers refused milk from milk bank. Among those who accepted ,39.3% accepted because mother was in other hospital which is far away. 27.3% accepted due to insufficient milk. 17.3% accepted as the mother was sick and unable to feed.

Among those who refused, majority preferred formula milk (6/15) and 5 recipients refused due to fear of transmission of infections. Like this study, the studies in Benin and Izmir showed a major concern about infection transmission which was the common reason mothers were unwilling to accept donated breast milk for their babies.^[10] The authors of these studies specifically reported that59.1% and 62.2% of surveyed mothers in Benin and Izmir respectively, were unwilling to receive donated breast milk stating the risk of contracting infections as a major concern. According to the findings of this research, mothers in India have a limited understanding of the idea of donor breast milk and a limited awareness of the policy on the use of Donor Breast Milk (DBM), but they have a relatively high desire to engage in the concept. Similar results were found in a survey of 198 mothers at a tertiary hospital in south Nigeria,^[4] While just 25.8% of respondents had heard of donor-conceived breast milk (DBM), 59.1% were firm believers that human milk banking is essential to aiding orphaned and abandoned infants. Although only 41.6% of women in a poll of 448 in Izmir, Turkey were familiar with the idea of milk banking, 68.8% were eager to give their breastmilk.^[5] Similarly, we found that healthcare providers were the most prevalent source of knowledge regarding donor breast milk, and a research in south Nigeria,^[4] by Iloh KK et al. Contrarily in a similar study in Turkey, media accounted for 85.7% of the information source. While just 28% of Nigerian

women have access to the internet and other forms of electronic media.^[4,5] This difference might be explained by the larger exposure to media forms available to mothers in Turkey.

We found that knowledge of the donor breast milk concept and preference of donor breast milk over infant formulas were predictive of the mothers that would be potential breast milk donors. This is in line with the findings from a similar multi-center study in eastern Ethiopia which showed that acceptance of donor milk banking was more likely among mothers who had heard about donor milk banking and wet-nurses.^[8] Another study in Rio de Janeiro, Brazil found that enhancing the understanding of the donor breast milk concept through encouragement by healthcare professionals, relatives, or friends, receiving information on breast milk expression by the primary health care unit, and receiving help from the unit professionals to breastfeed were associated with a higher prevalence of breast milk donation.^[9] Consistent with the results of a previous multi-center research conducted in eastern Ethiopia, this data suggests that mothers who have heard about donor milk banks are more likely to adopt the practice. Knowledge of donor milk, access to information on breast milk expression, and help from unit personnel were all associated with a greater likelihood of breast milk donation, according to research conducted in Rio de Janeiro, Brazil.^[9]

CONCLUSION

Our research shows that although most women are familiar with the idea of human milk banking, only a small percentage are willing to accept the donors breast milk. The main cause of this is because people aren't aware of the benefits of human milk, thus neither they nor their families are prepared to break with cultural norms and mostly prefer to give their children formula. For the sake of the future of

thousands of high risk neonates born in our country, the government, health specialists including pediatricians, lactation experts, and NICU nursing staffs, and social workers should join hands to disseminate the idea of human milk bank emphasizing about both donation and receiving donors milk during the prenatal period itself.

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