



NEED ASSESSMENT FOR ESTABLISHMENT OF HUMAN MILK BANK AT A TERTIARY CARE TEACHING HOSPITAL IN WESTERN INDIA

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Abstract: **Background:** Exclusive breastfeeding is the gold standard for infant feeding that is uniquely appropriate to infants that promote survival as well as growth and development. In the absence of the mother's own milk due to various reasons, human donated milk serves as a boon for the infant. Human milk banks serve as the first alternative to cater to the need of such infants. **Objectives:** The study was conducted to assess the current knowledge and beliefs held by pregnant women and health care workers and their willingness and acceptance among health care workers and beneficiaries. **Methods:** A cross-sectional study was conducted wherein total 90 subjects including health care workers and 3rd trimester pregnant women were enrolled for the study in a tertiary care teaching hospital and data was collected using separate pre-tested questionnaires. **Results:** Around 90% of the health care workers felt that there is a need for more guidance in relation to human milk banks. Majority of the expectant mothers (90%) had little or no awareness about the human milk bank. About half of the expectant mothers (52%) were willing to feed their child donated human milk. **Conclusion:** There's an immense gap in terms of knowledge, awareness and acceptance of donated mothers' milk through human milk banks amongst would-be beneficiary mothers. Appropriate sensitization using various IEC techniques may help them overcome the ignorance and stigma.

Index Terms – Human Milk Bank, Breastfeeding, Pregnant women, Knowledge, Awareness

I. INTRODUCTION

Exclusive breastfeeding for the first six months and continuing till 2 years of age is the gold standard for infant feeding. It is uniquely appropriate to infants because of its nutritional composition and non-nutritive bioactive factors that promote survival as well as growth and development.

In the absence of the mother's own milk or when the mother is ill and unable to nurse the newborn owing to lactational challenges, weakness or separation, human donated milk serves as a blessing for the infant. Earlier, there was a practice of wet nursing, where the children were breastfed by friends, relatives, or strangers.^{1,2} In today's era, Human Milk Banks (HMB) play an essential role in providing human milk to infants, especially preterm infants who are more vulnerable. This can significantly reduce morbidity and mortality among vulnerable infants. Because of the availability of human breast milk provided by the human milk banks, the incidence of Neonatal enterocolitis (NEC) has shown a significant fall.^{3,4}

There are only 517 milk banks around the world. In 1989, the first milk bank in India was formed. There are approximately 25 milk banks in India that assist the sick and vulnerable infants.^{3,4} The additional cost of a donor milk programme is much lesser when compared to the cost of a Neonatal Intensive Care Unit (NICU) stay. There are numerous challenges in establishing a human milk bank. The cultural viewpoint, prefixed current mindset, lack of awareness and understanding among health care practitioners, mothers and their family members are few to be seen as massive hurdle.^{5,6}

There is an urgent felt need to neutralize the stigma and misconceptions among mothers and health care workers about donating human milk enabling more mothers to come forward for donating milk. Simultaneously efforts should be put in the direction where the recipient baby's mother agrees to use donated milk.⁷

Assessing baseline knowledge and awareness on this issue amongst the stakeholders and further designing precise knowledge and awareness tools shall prove an effective workup for establishing and running a human milk bank.

II. OBJECTIVES:

The study was conducted at a tertiary care hospital in rural area with the following objectives:

1. To assess the current knowledge and beliefs held by pregnant women and health care workers.
2. To find out the willingness and acceptance among health care workers and beneficiaries.

III. METHODOLOGY:

A cross-sectional study was conducted wherein health care workers (Group 1) and ANC 3rd trimester pregnant women (Group 2) were selected and enrolled for the study at Dhiraj Hospital, a tertiary care teaching hospital in rural area of Gujarat, India as per inclusion and exclusion criteria.

Sample sizing was done using 4PQ/L2 based on reference study: Sheela J., Shashikala V. Knowledge and attitude of postnatal mothers on human milk banking. International journal of Science and Healthcare research. 2020;5(4): 135-141.

The sample size obtained was 90. For uniform representation, an equal number of participants from each group (ANC Mothers and Healthcare Providers) was ensured, i.e., 45 subjects in each group.

Inclusion criteria

Group 1:

- Health care workers (Doctors and Nursing staff) working in Obstetrics & Gynecology and Pediatrics department of the hospital
- Willingness for participation

Group 2:

- Mothers in 3rd trimester of Pregnancy
- Willingness to participate

Exclusion criteria:

Group 1:

- Health care workers of different departments other than Obstetrics & Gynaecology and Paediatrics of the hospital.

Group 2:

- Non pregnant women
- Mothers who are in 1st and 2nd trimester of gestation

Data Collection and analysis:

Baseline data for both groups was collected using separate pre-tested questionnaires and was sorted, segregated and analysed using the Microsoft Excel software. Institutional ethical clearance was sought before commencement of the study.

IV. RESULTS AND DISCUSSIONS:

Majority (96%) of the health care workers enrolled in this study had awareness about importance in regard to human milk banks, also they felt that a human milk bank is much needed in this hospital. 83% of them preferred donated human milk especially in case of sick or preterm infants.

In the group of health care workers, 83% of them expressed unavailability of donated human breast milk to be a hurdle and having them choose pre-lactates over human milk. In a study published in 2016, choosing prelacteal feeding and neonatal difficulty in breastfeeding has been observed with delayed breastfeeding initiation.⁸

Almost 88% of them agree that necrotizing enterocolitis, sepsis and even extended hospital stays can be prevented if donated human milk was easily available. In a meta-analysis conducted in 2020, highlights the potential benefits of access to donated breast milk properly stored in human milk bank and plays a role in reduction of necrotizing enterocolitis.⁹

42% of the health care workers answered that preterm infants and full-term infants will be benefited from human milk banks, 19% said it will be very beneficial for sick infants, 52% agreed with all the three stated conditions.

90% of the health care workers group felt that there is a need for more guidance in relation to human milk banks in the health care staff. According to 42%, guidance and knowledge should be extended by the department of Obstetrics and Gynaecology, 65% said it should be provided by the Paediatrics department, 29% said Nursing department, while 4% said marketing department.

90% of the health care workers said they are willing to bring about a change in the current situation by promoting the human milk bank.

When inquired about the basic knowledge about breastfeeding, 95% of the pregnant mother group knew about giving only breast milk first thing right after the child is born. 94% of them knew about the practice of exclusive breastfeeding after the birth and preferred to breastfeed. 65% mothers were aware about the correct duration of exclusive breastfeeding, while 31% answered 8 months. (Figure 1)

90% of the expectant mothers had little to no awareness about the human milk bank. Out of the 48 subjects of this group, 67% of the expectant mothers in this study thought that donated human milk is better than top feeding (milk powder). When asked about if they would like to donate their breast milk if needed, 67% said they would. But when asked the mothers whether they are willing to feed donated human milk if they are unable to breastfeed, 52% of expectant mothers were willing to feed their child donated human milk. (Figure 1) A cross-sectional survey on post-partum women’s knowledge, attitudes and regarding human milk banks and milk donation, observed that these women are supportive of human milk banks but are more willing to donate rather than receive donated milk.¹⁰

Also, when asked if there is something that is inhibiting them from donating breast milk, 35% were concerned there may be less milk for their own child, 35% said human milk bank is very far away, 25% said it was time consuming, 18% were worried that it might not be a safe practice and 0.8% said they were shy to donate.(Figure 2) A study conducted in Ethiopia, found that the mothers who were aware about human milk banks, were 5.8 times more likely to accept the donor milk.¹¹

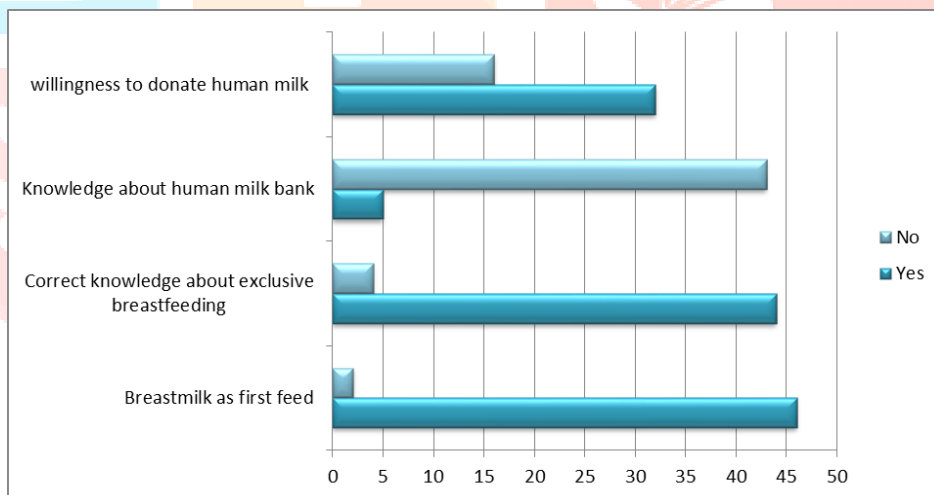


Figure 1: Knowledge about Exclusive breastfeeding and Human Milk Bank among pregnant mothers

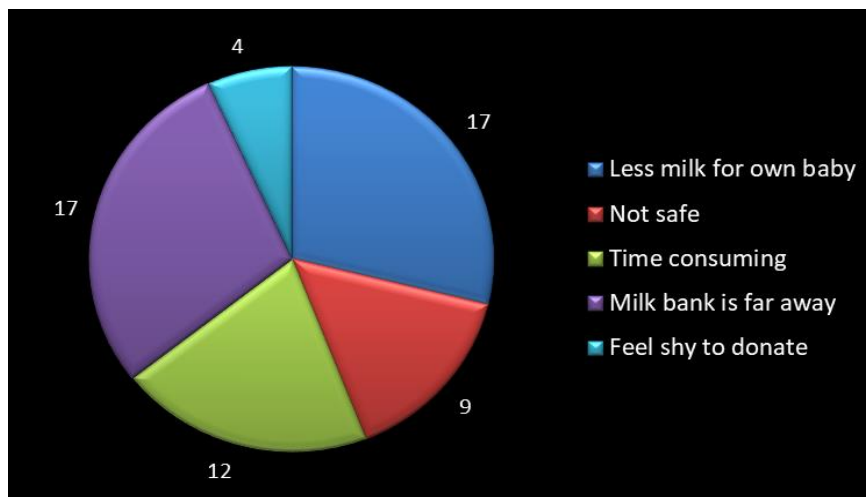


Figure 2: Various Inhibiting Factors about human milk bank among pregnant mothers

V. CONCLUSION:

There's an immense gap in terms of knowledge, awareness, acceptance and felt need of benefits of donated mothers' milk through human milk banks amongst healthcare workers and would-be beneficiary mothers. The issue has been aptly chosen which demand intense intervention through multi-pronged measures; of much feasible would be information, education and communication to start with.

REFERENCES

- [1] Kim, Jh, and S Unger. Human milk banking. *Paediatrics & child health*. 2010;15,9: 595-602.
- [2] Hylander, M A et al. Human milk feedings and infection among very low birth weight infants. *Pediatrics*. 1998; 102,3: E38.
- [3] Johnson, Tricia J et al. The Economic Impact of Donor Milk in the Neonatal Intensive Care Unit. *The Journal of pediatrics*. 2020; 224: 57-65.e4.
- [4] Lakshmi Priya.P. A study to evaluate the effectiveness of donor breast milk bank feed among preterm newborns from selected centers at madurai. 2018.
- [5] Ruchika Chugh Sachdeva et al. A Landscape Analysis of Human Milk Banks in India. *Indian Pediatr*. 2019,56; 663-668.
- [6] Mondkar, Jayashree et al. Understanding Barriers and Facilitators for Human Milk Banking Among Service Providers, Mothers, and Influencers of Preterm and Sick Neonates Admitted at Two Health Facilities in a Metropolitan City in India. *Breastfeeding medicine : the official journal of the Academy of Breastfeeding Medicine*. 2018; 13,10: 694-701.
- [7] Mackenzie, Catherine et al. Mothers' knowledge of and attitudes toward human milk banking in South Australia: a qualitative study. *Journal of human lactation : official journal of International Lactation Consultant Association* 2013; 29,2: 222-9.
- [8] Sundaram, M.E., Ali, H., Mehra, S. Et al. Early newborn ritual foods coorelate with delayed breastfeeding initiation in rural Bangladesh. *Int Breastfeed J* 11, 31 (2016).
- [9] Altobelli E, Angeletti P.M., Verrotti A et al. The impact of human milk on necrotizing enterocolitis: A systematic review and meta-analysis. *Nutrients*. 2020; 12(5): 1322.
- [10] Zhang N, Li JY, Liu XW, Jiang YL, Redding SR, Ouyang YQ. Factors associated with postpartum women's knowledge, attitude and practice regarding human milk banks and milk donation: A cross-sectional survey. *Midwifery*. 2020 Dec;91:102837.
- [11] Gelano, T.F, Bacha, Y.D., Assefa, N. et al. Acceptability of donor breast milk banking, its use for feeding infants and associated factors among mothers in Eastern Ethopia. *Int Breastfeed J* 13, 23 (2018).

