

Knowledge and Attitude Regarding Human Milk Banking among Postnatal Mothers in Selected Hospitals

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Abstract: ***Background:** Donation of breast milk from one woman to an unrelated infant has a long history. Before this century, the infant would have been directly breastfed by the woman who was referred to as a "wet nurse".¹ **Objectives:** 1) To assess the knowledge regarding human milk banking among postnatal mothers. 2) To assess the attitude regarding human milk banking among postnatal mothers. 3) To correlate between knowledge and attitude regarding human milk banking among postnatal mothers. 4) To associate the knowledge score with selected demographic variables. 5) To associate the attitude score with selected demographic variables. **Material and Method:** The study was conducted in postnatal wards of selected hospitals. Systematic rational approach and descriptive research design was used in this study. 100 postnatal mothers were selected for the study. The sampling technique used in this study was non-probability convenience sampling. **Result:** Majority 55(55%) of postnatal mother had good level of knowledge score and 37(37%) of them had average level of knowledge score. In the levels of attitude score, majority 83(83%) of the postnatal mothers were "Agreed. The correlation coefficient 'r' 0.209 hence there is a poor positive correlation between knowledge and attitude of postnatal mothers regarding human milk banking. **Conclusion:** The study participants would welcome having access to a human milk bank for both donating and receiving milk.*

Keywords: Knowledge; Attitude; Human milk banking; and Postnatal mothers

1. Introduction

A human milk bank or breast milk bank is a service which collects, screens, processes, and dispenses by prescription human milk donated by nursing mothers who are not biologically related to the recipient infant. The optimum nutrition for newborn infants is breastfeeding, if possible, for the first year.² Human milk banks offer a solution to the mothers that cannot supply their own breast milk to their child, for reasons such as a baby being at risk of getting diseases and infections from a mother with certain diseases, or when a child has a condition such as necrotizing enterocolitis.³ It was found that human milk banks had an increase in the amount of milk collected in 2012 compared to 2007, in addition the amount of milk donated by each donor had also increased.⁴ Mothers' Milk Bank (Human milk bank) says, this service provides mothers with an alternative to infant formula and allows the mother to give their newborn the nutrition it needs for healthy growth.⁵ The International Milk Banking Initiative (IMBI), was founded at the International HMBANA Congress in 2005. It lists 33 countries with milk bank programs.⁶ The World Health Organization (WHO) states that the first alternative to a biological mother not being able to breast feed is the use of human milk from other sources.⁷

The New Zealand Breastfeeding Authority fully supports the establishment of Human milk banks in maternity services. There is evidence that breastfeeding; hence the use of human milk is an important factor in the survival of children.⁸

There is strong and consistent evidence that feeding mother's own milk to pre-term infants of any gestation is

associated with a lower incidence of infections, necrotising enterocolitis, and improved neurodevelopmental outcome as compared with formula feeding. Long term beneficial effects have also been reported for pre-term infants⁹

Available data indicate that feeding with donor human milk rather than standard pre-term infant formula to low-birth weight infants of less than 32 weeks gestation reduces the incidence of necrotising enterocolitis. Enteral feeds can be commenced earlier when human milk is available.¹⁰ Growth is slower in the short term in the infants fed donor human milk, but there are insufficient data to assess the effects on long-term growth outcomes. Breastfed infants were noted to have earlier age discharge (mean 2.7 days lower) than those not breastfed, partly explained by lower morbidity in the breastfed infants and the researchers recommend that supporting the establishment of successful breastfeeding in preterm infants should therefore be given high priority in neonatal care.¹¹

When the infant's mother cannot supply her breast milk to her baby, milk from other mothers may be used as an alternative. WHO and UNICEF joint statement in 1979 indicated "Where it is not possible for the biological mother to breastfeed, the first alternative, if available, should be the use of human breast milk from other sources. Human milk banks should be made available in appropriate situations". The statement was endorsed by World Health Assembly 33.32 1980. Milk banking includes pooling and storing breast milk collected from different donors for future use. A human milk bank is a physical unit where collected human milk is screened, processed, stored and distributed upon the doctor's prescription for its use. Banking of donated breast

milk has been in existence for many years in developed countries and has been “prescribed” to aid in the treatment of many ailments in the neonatal period.¹²

Inclusion Criteria

- 1) Postnatal mothers who are able to read, write and understand Marathi and English.
- 2) Postnatal mothers who are willing to participate in the study.

Exclusion Criteria

- 1) Postnatal mothers who are having postnatal complication such as postnatal psychosis.
- 2) Postnatal mothers who have already attended similar type of studies within 5 years.

Hypothesis

- 1) H₁:- There will be individual difference in the knowledge regarding human milk banking among postnatal mothers.
- 2) H₀₁:- There will be no individual difference in the knowledge regarding human milk banking among postnatal mothers.
- 3) H₂:-There will be individual difference in the attitude regarding human milk banking among postnatal mothers.
- 4) H₀₂:-There will be no individual difference in the attitude regarding human milk banking among postnatal mothers.

2. Methodology

Systematic rational approach and descriptive study design was used in this study. The study was conducted in selected hospitals of Wardha city. In this study the sample was postnatal mothers in selected hospitals. Sampling Technique was Non-probability convenience sampling and 100 postnatal mothers were selected for the study. The Structured knowledge questionnaire including demographic variables and self structured attitude scale was used for the study.

3. Major Findings of the Study

Section I: - Distribution of Samples With Regard to their Demographic Variables.

Table 1: Percentage wise distribution of postnatal mothers according to their demographic variables, n=100

S. no.	Demographic Variables	Frequency	Percentage (%)
1.	Age (Yrs)		
	18 - 22	21	21%
	23 - 27	63	63%
	28 - 32	14	14%
	33 - 37	2	2%
	38 and above	0	0%
2.	Residential area		
	Urban	50	50%
	Rural	50	50%
3.	Types of family		
	Nuclear	37	37%
	Joint	59	59%
	Extended	4	4%

4.	Education		
	Primary education	21	21%
	Secondary education	41	41%
	Higher Secondary	27	27%
	Graduate	9	9%
	Post graduate and above	2	2%
5.	Occupation		
	Home maker	51	51%
	Labourer	32	32%
	Self employed	11	11%
	Service	6	6%
6.	Family income per month		
	Rs. 3001 – 8000	53	53%
	Rs. 8001 – 13000	32	32%
	Rs. 13001 – 18000	12	12%
	Rs. 18001 and above	3	3%
7.	Parity		
	Primipara	61	61%
	Multipara	39	39%

- Distribution of postnatal mother according to their age in years shows that 21% of them were belonging to the age group of 18-22 years, 63% were in the age group of 23-27 years, 14% were in the age group of 28-32 years and remaining 2% were belonging to the age group of 33-37 years and none of them were belonging to the age group of 38 and above respectively.
- Distribution of postnatal mother according to their residential area shows that 50% from urban area and 50% from rural area respectively.
- Distribution of postnatal mother according to their type of family shows that 37% were belonging to the nuclear family and 59% were belonging to the joint family and 4% were belonging to the extended family respectively.
- Distribution of postnatal mother according to their educational qualification shows that 21% were educated up to primary , 41% were educated up to secondary standard, 27% were educated upto higher secondary, 9% were educated up to graduate, and 2% were educated up to post graduated and above.
- Distribution of postnatal mother according to their occupation shows that 51% were homemakers, 32% were labourer, 11% were self employed, and 6% were service respectively.
- Distribution of postnatal mother according to their family income per month shows that 53% were Rs.3001 – 8000/-, 32% were Rs 8001-13000/-, 12% were Rs.13001-18000/- and 3% were Rs. 18001/- & above respectively.
- Distribution of postnatal mother according to their parity shows that 61% of them were belonging to the primipara and 39% of them were belonging to multipara.

Section II

A) Assessment of knowledge of postnatal mothers regarding human milk banking

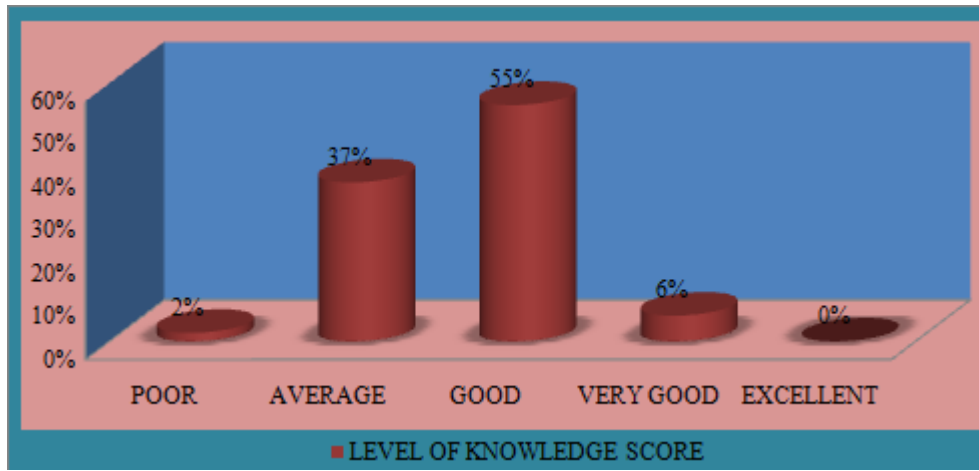


Figure 1: Level of knowledge score of postnatal mothers regarding human milk banking

Above figure no. 1 shows that, 2(2%) of them had poor level of knowledge, 37(37%) of them had average level of knowledge and 55(55%) of them had good level of knowledge score and 6(6%) of them had very good level of knowledge and none of them had excellent level of knowledge. The minimum score was 3 and the maximum score was 15, the mean score for the test was 9.21 ± 2.31

and mean percentage of knowledge was 46.05. Therefore, H_1 is accepted and H_{01} is rejected.

(B) Assessment of attitude of postnatal mothers regarding human milk banking

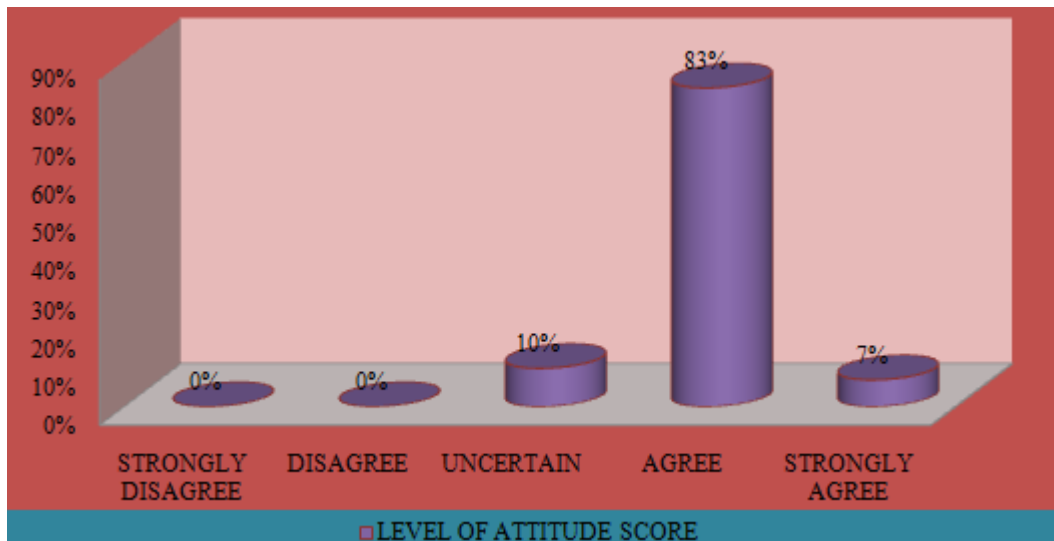


Figure 2: Level of attitude score of postnatal mothers regarding human milk banking

Above figure no. 2 shows that, The frequency and percentage wise distribution of postnatal mothers according to level of attitude regarding human milk banking. The levels of attitude were seen into 5 categories, strongly agree, agree, uncertain, disagree and strongly disagree. None of the postnatal mothers were “Strongly disagree” and none of the postnatal mothers were “Disagree”, 10(10%) of the postnatal mothers were “Uncertain”, 83(83%) of the postnatal mothers were “Agree” and 7(7%) of the postnatal mothers were “Strongly agree” about attitude score. The

minimum score was 35 and the maximum score was 65, the mean score for the test was 53.01 ± 5.764 and mean percentage of knowledge was 70.68. Therefore, H_2 is accepted and H_{02} is rejected.

Section III

Correlation between Knowledge and Attitude Regarding Human Milk Banking among Postnatal Mothers

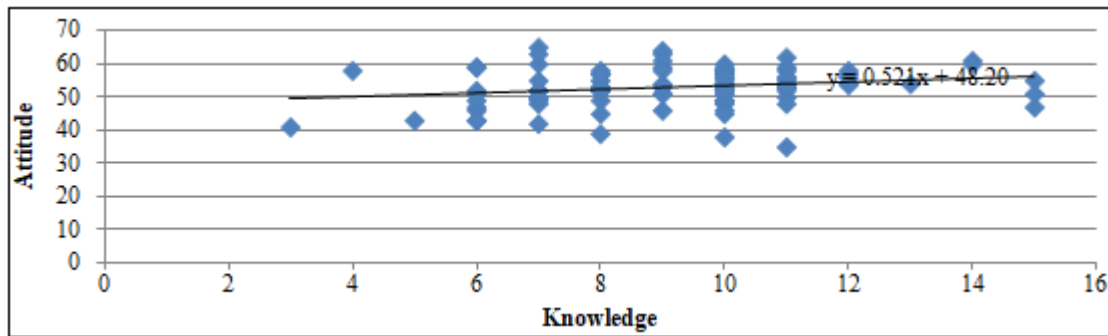


Figure 3: Correlation between knowledge scores and attitude scores of postnatal mother regarding human milk banking

Above figure no. 3 shows that, The correlation coefficient 'r' 0.209 is a poor level of correlation. The correlation coefficient r, always lies between -1 and +1. i.e. $-1 \leq r \leq 1$. The 'r' for given data is calculated as 0.209. Hence, it is statistically interpreted that there is a poor positive correlation between knowledge and attitude of postnatal mothers regarding human milk banking.

Section IV

A) Association of knowledge score with selected demographic variable

There is a significant association between knowledge score with type of family and family income per month. There is no significant association between knowledge score with age, residential area, education, occupation and parity.

Table 2: Association of knowledge score of postnatal mothers regarding human milk banking in relation to family income per month, n=100

Family Income(Rs.)	Frequency	Mean knowledge score	F-value	p-value
Rs. 3001 – 8000	53	8.79 ± 2.282	3.019	0.034 S, p<0.05
Rs.8001 – 13000	32	10.09 ± 2.085		
Rs.13001 – 18000	12	8.42 ± 1.975		
Rs.18001 & above	3	10.33 ± 4.163		

Table no. 2 show that there was a significant association of knowledge score in relation to family income per month.

Table 3: Association of knowledge score of postnatal mothers regarding human milk banking in relation to type of family. n=100

Type of family	frequency	Mean knowledge score	F-value	p-value
Nuclear	37	10.05 ± 2.134	4.670	0.012 S, p<0.05
Joint	59	8.64 ± 2.195		
Extended	4	9.75 ± 3.594		

Table no. 3 Show that there was a significant association of knowledge score in relation to type of family.

B) Association of attitude score with selected demographic variables

There is no significant association between attitude score with age, residential area, type of family, education, occupation, family income per month and parity.

4. Discussion

A study was conducted to assess mothers' knowledge of and attitudes toward human milk banking in South Australia. In-

depth semi structured interviews were conducted with 12 mothers who were breastfeeding and had preterm or sick babies. In addition, 2 focus groups were conducted—1 with breastfeeding mothers as potential donors (n = 5) and the other with mothers of preterm or high-risk infants (n = 4)—to answer questions raised by early analysis of the individual interview data. Breastfeeding mothers, as potential donors, unanimously supported donating their breast milk to a human milk bank, provided it would be easy (especially if required to drop off milk) and not overly time consuming. Mothers of preterm or sick infants would use a human milk bank if they were assured the milk was safe and appropriate for their babies. This study concludes that the study participants would welcome having access to a human milk bank for both donating and receiving milk in South Australia.¹³ Hence, the findings are supported.

A study was conducted to assess the attitudes of mothers towards donated breast milk. In this study six hundred eighty breastfeeding mothers were interviewed to ascertain their acceptance of donated breast milk. Mother's attitudes toward stored breast milk, human milk banking, and breastfeeding in the event of human immunodeficiency virus (HIV) positivity were solicited. About 71 percent would not accept donated breast milk for their baby while the rest would consent only if the donor were a close family relative, owing to fear of transfer of diseases 28 percent, fear of transfer of genetic traits 22 percent, and religious and cultural taboos 14 percent. However, 60 percent were willing to donate breast milk. Only 38 percent would accept milk from a breast milk bank. None would breastfeed if mothers were HIV positive.¹⁴

A study was conducted to assess the attitudes towards donated breast milk among mothers, families and healthcare providers of potential recipient infants. The qualitative data was derived from eight focus group discussions which included four groups with mothers, male partners grandmothers, nurses and doctors about their attitudes towards donated breast milk. Each group had between four and eleven participants, leading to a total of 48 participants. Although breast milk was important to child health there were concerns about undermining of breast milk because of concerns about HIV and marketing and promotion of formula milks. In addition there were concerns about the safety of donor breast milk and discomfort about using another mother's milk. Participants believed that education on the importance of breast milk and transparency on the processes involved in sourcing and preparing donor milk would improve the acceptability.¹⁵

5. Recommendations

Keeping in view the findings of the study, the following recommendations are made:

- 1) The study can be conducted to evaluate the effectiveness of planned teaching on human milk banking.

6. Conclusion

Much of the previous research on human milk banking has focused on the clinical and technical processes and has not sought out the views of mothers, despite their crucial role in the supply and demand side of the milk banking process. Our findings suggest that mothers would welcome the establishment of a human milk bank.

The present study concludes that the significant difference was found in knowledge and attitude of postnatal mothers and they had good knowledge and positive attitude towards human milk banking. The study participants would welcome having access to a human milk bank for both donating and receiving milk.

References

- [1] www.bpnimaharashtra.org, www.breastfeedingindia.com
- [2] Mothers' Milk Bank: About Mothers' Milk Bank. (n.d.). Retrieved from [http://mothersmilkbank.com.au/about-mmb/Commonwealth of Australia. \(2014\). Donor Human Milk Banking in Australia - Issues and Background Paper. Retrieved from http://webcache.googleusercontent.com/search?q=cache:cFHjv3CJ2t8J:www.health.gov.au](http://mothersmilkbank.com.au/about-mmb/Commonwealth%20of%20Australia.%20(2014).%20Donor%20Human%20Milk%20Banking%20in%20Australia%20-%20Issues%20and%20Background%20Paper.%20Retrieved%20from%20http://webcache.googleusercontent.com/search?q=cache:cFHjv3CJ2t8J:www.health.gov.au)
- [3] Italian Association of Donor Human Milk Banks (2015) Survey of Italian Human Milk Banks. Retrieved from <http://jhl.sagepub.com.ipacez.nd.edu.au>
- [4] Bertino, E., Giuliani, F., Occhi, L., Coscia, A., Tonetto, P., Marchino, F., Fabris, C. (2009). Benefits of Donor Human Milk for Preterm Infants: Current Evidence. *Early Human Development*, 85 (10), 9-10. doi:10.1016/j.earlhumdev.2009.08.010
- [5] Nash, C., & Amir, L., (n.d.) *Human Milk Banking: A Review*. Retrieved from http://www.breastfeedingindia.com/breastfeeding/human_milk_banks.html
- [6] Nagin, M. K., (2014). *Human Milk Banks*. Retrieved from <http://breastfeeding.about.com/od/breastmilkpumpingcare/a/milkbank.htm>
- [7] Hanson, LA et al: Breastfeeding is a Natural Contraceptive and Prevents Disease in Infants: Linking Infant Mortality and Birth Rates. *Acta Paediatrica* 1994; 83: 3 – 6
- [8] Edmond K and Bahl R. Optimal Feeding of Low-birth Weight Infants: Technical Review. World Health Organization, Geneva 2006
- [9] Torres M I, Lopez C, Roman S V., et al.(2010) Does opening a milk bank in a neonatal unit change infant feeding practices? A before and after study. *International Breastfeeding Journal*, 5:4
- [10] Altman M, Vanpee M, Cnattingius S et al (2009) Moderately preterm infants and determinants of length

of hospital stay. *Arch. Dis. Child. Fetal Neonatal Ed*; 94: F414-F418

- [11] American Academy of Pediatrics. Breastfeeding and the Use of Human Milk, *Pediatrics* 1997, 100: 1035 – 39
- [12] Mackenzie C, Javanparast S, Newman L. Mothers' knowledge of and attitudes toward human milk banking in South Australia: a qualitative study. <https://www.ncbi.nlm.nih.gov/pubmed/23515087>
- [13] Ighogboja IS, Olarewaju RS. Mothers' Attitudes towards Donated Breast milk. Available at URL: <http://jhl.sagepub.com/content/11/2/93>
- [14] Aprile Mda, Feterbaum R, Andreassa N, Leonac. Growth and clinical evaluation of low birth weight infants. [online] 2010 [cited Sep 14] Available from: URL: <http://www.ncbi.nlm.nih.gov/pubmed>

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