



RESEARCH ARTICLE

A DESCRIPTIVE STUDY OF THE ATTITUDE AND EXPERIENCES OF DONOR MOTHERS IN A HUMAN MILK BANK AT A TERTIARY HEALTHCARE CENTRE

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Abstract

Background- Of the 27 million babies born in India, 3.5 million are preterm and 7.6 million with low birthweight, increasing the risk of mortality neonates. Human milk has the greatest impact on child survival. Every newborn is unable to benefit from their mother's milk, because of maternal illness, death or lactational failure. Understanding donors experiences and attitude towards donation is important as it will help improve milk donation and motivate potential donors.

Aim- The aim of this study is to describe the attitude and experiences of donor mothers in the Human Milk Bank (HMB).

Methods- This is a descriptive study conducted in the HMB attached to a tertiary hospital with a time bound sample of 72 mothers who had donated milk at least once. A validated questionnaire was used to collect data and appropriate tests of significance applied.

Results- Mean age group of this study was 24.63 and the range was from 18 to 33 years. 20% population was below 20 years of age. 25% were primiparous and 75% were multiparous. 55% mothers have completed their middle and high schooling. 43% mothers belonged to Class 4 of the Modified Kuppuswamy Scale. Altruism was the main reason for milk donation followed by breast engorgement. There is significant correlation between education level of mother and knowledge about contraindications of donating HMB. Experiencing pain and discomfort during donation was more in primiparous women. Fear about affecting their own health due to frequently donating at HMB was more in primiparous mother.

Inference- Educating mothers and creating awareness among them and their family members regarding HMB is important. Primiparous mothers are more apprehensive in donating milk and need more support and counseling. Establishment of collection centres in the communities will bridge the demand and supply gap in PDHM and ultimately reduce neonatal mortality and morbidity.

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Introduction:-

Mother's milk is the best for the baby in terms of its nutritive and immunological properties. Exclusive breastfeeding till 6 months of age has been recommended by World Health Organization (WHO) and it has significantly improved the infant survival in developing countries. (1) In situations where mother's milk is not available, Pasteurized Donor Human Milk (PDHM) is recommended. The WHO and United Nations International Children's Emergency Fund

(UNICEF) recommend the use of PDHM as the first alternative when mother's milk is not available, particularly for preterm neonates.(2)(3)As part of integrated new-born care,HMB reduce death and illness as well as lower health care costs.Studies support the health benefits of donor human milk, for infants born prematurely, with birth weight less than 1500g (4) and for infants born in resource limited settings. (5)(6)

A myriad studies demonstrate the positive effects of donor human milk on vulnerable infants as compared with formula, such as reduced risk of sepsis and necrotizing enterocolitis, greater feeding tolerance, reduced length of NICU stay, and substantial cost savings for resource-strapped public health systems. (7),(8),(9),(10),(11),(12),(13).

A HMB collects, screens, processes and distributes milk donated by healthy donor mothers.(14)But the numbers of HMBs are highly inadequate to meet the demand of PDHM.There are many papers available in literature which describe the clinical profile of recipients, milk collected and the functioning of milk bank. (15),(16),(17).Only very few papers are available in the literature which describes the demographic profile of donors.(18),(19),(20). Though human milk donations increase every year, the demand for PDHM exceeds the supply.(21)Hence understanding donor's attitudes and their experiences towards donation is important as it will help improve milk donation and motivate potential donors.

Aim:-

The aim of this study was to describe the attitude and experiences of the donor mothers in HMB.

Objectives:-

1. To assess the attitude regarding Human Milk Donation in mothers.
2. To assess the association between demographic variables and attitude regarding Human Milk Donation.
3. To record the experiences of the mothers while donating milk at the HMB.

Materials And Methods:-

1. Study design- This was a hospital based cross-sectional descriptive study.
2. Study site-Conducted in HMB attached to a tertiary care hospital during the month of November 2021.
3. Sample size-A time bound sample of 72 post-partum mothers formed the study.
4. Inclusion and Exclusion criteria-Mothers who have donated their milk atleast once to the HMB. Informed and written consent was taken before participation. Mothers who did not give consent were excluded from the study.
5. Data Source- A validated and predesigned questionnaire was used. Data regarding the demographic profile of mothers like age,parity,education level and socio-economic class was collected. The socio-economic status was assessed using Modified KuppaswamyScale(MKS)(22). The questionnaire consisted of 13 questions regarding the attitude, subjective experiences and behaviours of the mothers.

Age		
	Frequency	Percent
Less than 20 Years	15	20.8
21-25 Years	32	44.4
26-30 Years	20	27.8
More than 31 Years	5	6.9
Parity status		
	Frequency	Percent
Multiparous	18	25.0
Primiparous	54	75.0
Socio-economic status (modified Kuppaswamy scale)		
Grades	Frequency	Percent
I	1	1.4
II	8	11.1
III	23	31.9
IV	31	43.1
V	9	12.5

Education Status		
Qualification	Frequency	Percent
Primary Schooling	23	31.9
Middle & High schooling	40	55.6
Graduates	8	11.1
Post-Graduates	1	1.4

Table 1:-

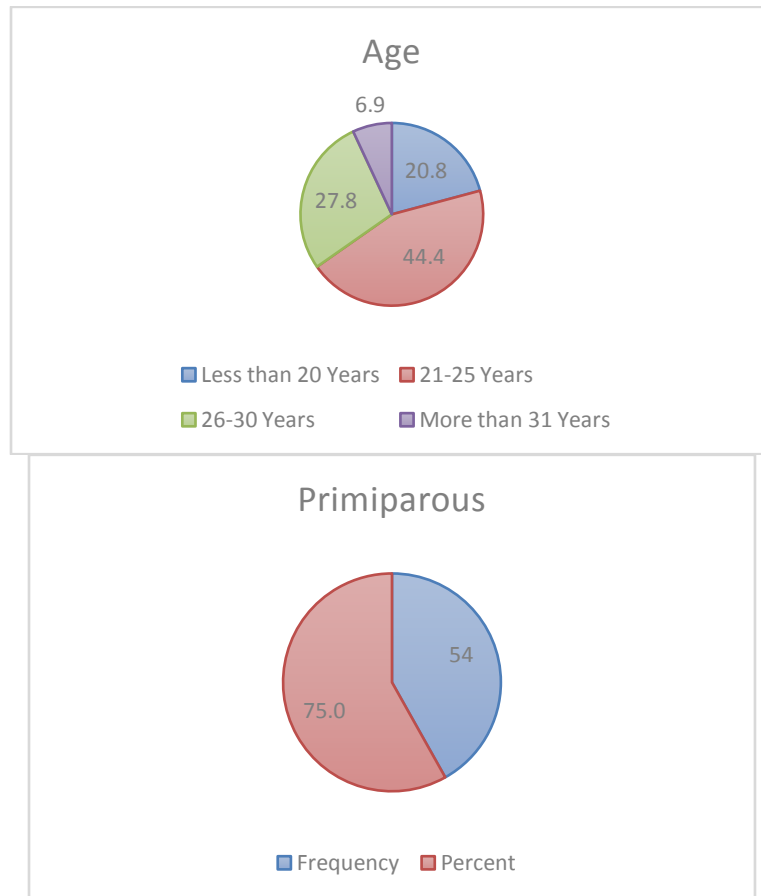
Results:-

Table 2:-

Correlations		
		Knowledge about contraindication
Socio-economic status	Pearson Correlation(r)	-.065
	p value	.589
	N	72
Education	Pearson Correlation(r)	.292*
	p value	.013
	N	72
Age	Pearson Correlation(r)	.127
	p value	.287
	N	72

*. Correlation is significant at the 0.05 level (2-tailed).

1. Will you receive milk from HMB for your baby if needed?			Frequency	Percent
Maybe			37	51.4
No			5	6.9
Yes			30	41.7
Total			72	100.0
2. Will you recommend PDHM for other mothers who are in need of it?				
			Frequency	Percent
Maybe			19	26.4
No			3	4.2
Yes			50	69.4
Total			72	100.0
3. Who recommended you to donate milk?				
			Frequency	Percent
Family members			2	2.8
Healthcare workers			65	90.3
Other mothers			5	6.9
Total			72	100.0
4. Did your spouse support you to donate milk?				
			Frequency	Percent
No			5	6.9
They are unaware			23	31.9
Yes			44	61.1
Total			72	100.0
5. Did your family members support you to donate milk?				
			Frequency	Percent
No			2	2.8
They are unaware			7	9.7
Yes			63	87.5
Total			72	100.0
6. Will you recommend other mothers to donate their excess milk to HMB?				
			Frequency	Percent
			13	18.1
7. Do you think this hospital has adequate safety measures in HMB?				
	Frequency	Percent		
Don't know	24	33.4		
Yes	48	66.6		
Total	72	100.0		
8. Do you think your health will be affected by frequently donating milk to HMB?				
	Frequency	Percent		
Maybe	15	20.8		
No	54	75.0		
Yes	3	4.2		
Total	72	100.0		
9. Did you have adequate milk after donating?				
	Frequency	Percent		
	1	1.4		
No	4	5.6		

Reduced somewhat	4	5.6		
Yes	63	87.5		
Total	72	100.0		
10. Did you experience pain or discomfort during donation?				
	Frequency	Percent		
Little discomfort	30	41.7		
No	40	55.6		
Yes	2	2.8		
Total	72	100.0		
11. If facility for milk collection is available nearby your home, will you continue to donate your excess milk to HMB?				
	Frequency	Percent		
May be	27	37.5		
No	0	0.0		
Yes	45	62.5		
Total	72	100.0		
Maybe				
No			2	2.8
Yes			57	79.2
Total			72	100.0

Table 3:- Reasons for Donation * Parity status Crosstabulation.

			Parity status		Total
			Multiparous (N=18)	Primiparous (N=54)	
Reasons for Donation	Altruistic	Number	11	31	42
		%	61.1%	57.4%	58.3%
	Baby in NICU	Number	1	2	3
		%	5.6%	3.7%	4.2%
	Breast engorgement	Number	5	19	24
		%	27.8%	35.2%	33.3%
	Doctor asked me to	Number	0	2	2
		%	0.0%	3.7%	2.8%
	Was asked to donate	Number	1	0	1
		%	5.6%	0.0%	1.4%

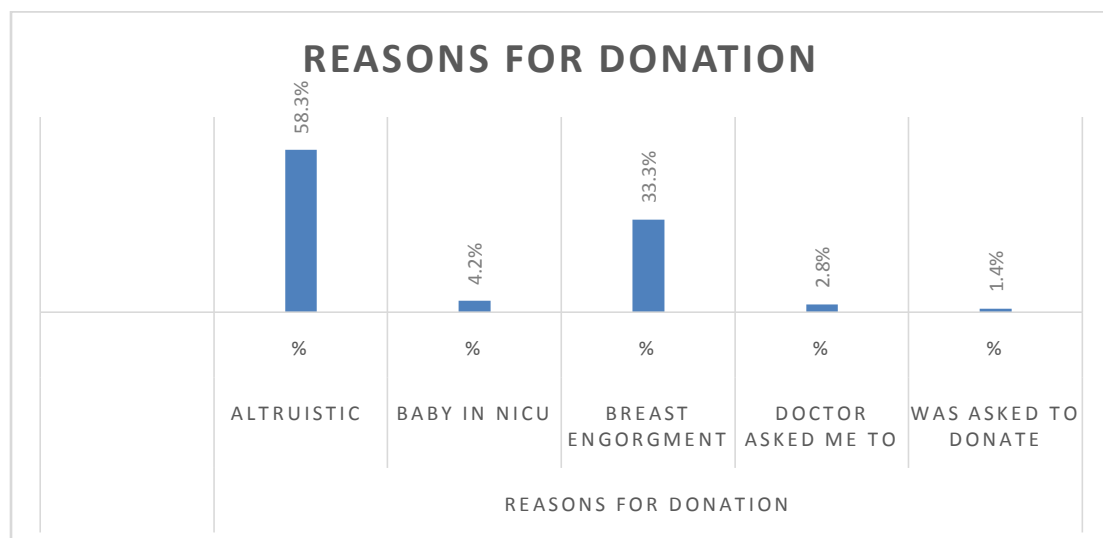


Table 4:- Perception about health effects of donation Versus Education Status Crosstabulation.

			Education Status				Total
			Graduates	Middle & High schooling	Post-Graduates	Primary Schooling	
10.Do you think your health will be affected by frequently donating milk to HMB?	Maybe	Number	0 _a	7 _a	0 _a	8 _a	15
		%	0.0%	17.5%	0.0%	34.8%	20.8%
	No	Number	8 _a	32 _a	1 _{a, b}	13 _b	54
		%	100.0%	80.0%	100.0%	56.5%	75.0%
	Yes	Number	0 _a	1 _a	0 _a	2 _a	3
		%	0.0%	2.5%	0.0%	8.7%	4.2%
Total		Count	8	40	1	23	72
		% within Education Status	100.0%	100.0%	100.0%	100.0%	100.0%

Each subscript letter denotes a subset of Education Status categories whose column proportions do not differ significantly from each other at the .05 level.

Table 5:- Pain or discomfort during donation * Parity status Crosstabulation.

			Parity status		Total	P value
			Multiparous (N=18)	Primiparous (N=54)		
pain or discomfort during donation	Little discomfort	Number	7	23	30	0.656
		%	38.9%	42.6%	41.7%	
	No	Number	11	29	40	
		%	61.1%	53.7%	55.6%	
	Yes	Number	0	2	2	
		%	0.0%	3.7%	2.8%	

The results have been tabulated above. The mean age group of this study was 24.63 and the range was from 18 to 33 years. Twenty percent (n=15) population was below 20 years of age. 75% (n=54) were primiparous and 25% (n=18) were multiparous. Fifty five percent (n=40) mothers have completed their middle and high schooling. There was one post graduate mother in the study group. Forty three percent (n=31) mothers belonged to Class 4 of the MKS. Altruism was the main reason for milk donation followed by breast engorgement. Fifty percent (n=36) of mothers knew more than 2 contraindications for donating milk to HMB, 23.6% (n=17) knew less than 2 contraindications and 26.4% (n=19) were not aware about any contraindications to donation. There was a significant correlation between education level of mother and knowledge about contraindications of donating HMB. Only 42% (n=30) mothers felt that they would receive milk from HMB for their baby if needed. Only 61% (n=44) of spouses supported their partner regarding donating milk at the HMB. Around 79.2 % mothers would recommend other mothers to donate their excess milk to HMB. 70% mothers would recommend PDHM to other mothers who need it for their babies. About 88% mothers said that they had adequate milk for their baby even after donating milk at the HMB. There is a significant correlation between education levels of mothers and perception about health effects of donation at HMB. (p=0.05). Ninety percent (n=65) of mothers responded that the motivation for donating milk was done by health care worker. Family members were motivational person in 2.8% (n=2) of donors. Sixty-six percent (n=48) of the donors felt that this HMB has adequate safety measures in place while collecting milk like hand washing, using sterilized equipments and focus on personal hygiene. If a milk collection facility is available nearby their house, 62.5% (n=45) of donors expressed their desire to continue milk donation. Forty one percent (n=30) mothers experienced a little discomfort during donation and only 3 mothers

experienced pain during donation. Experiencing pain and discomfort during donation was more in primiparous women.

Discussion:-

Human milk banks (HMBs) play a lifesaving role by helping babies receive the benefits of early initiation and exclusive feeding of human milk. Banks collect, pasteurize, test, and store safe donor milk from lactating mothers and provide it to infants in need. They make sure that even if babies cannot breastfeed, they still receive human milk as soon as possible. (23)(24) Importantly, HMBs are also key to protecting, promoting, and supporting breastfeeding.

Since introduction of HMBs in India in 1989, the motivation for donors and their attitude towards milk is steadily improving. The overall attitude towards milk donation is consistent with other studies. (25) The common reason for milk donation in this hospital based study is Altruism. There is a positive shift among mothers' attitude regarding milk donation, wherein more mothers are now donating milk as an act of altruism. At present India has approximately 50 HMB facilities at present which are mostly attached to NICUs, which are insufficient to meet the needs of the vulnerable infants. (26) Also more than half mothers have expressed desire to continue donation if a milk collection facility was available nearby. This indicates the need for establishment of community collection centres which can help us bridge the gap between the demand and supply of PDHM. In the present study 50% of donors were not aware about contra-indications for milk donation. Study also showed a positive correlation between level of education and awareness about contraindications about milk donation in mothers. However, there is no significant correlation between socio-economic status and awareness about contraindications about milk donation. Hence it is imperative for the HMBs to educate the donor mothers about the contraindications. Majority of mothers in this study were motivated by health care workers for donation of milk at the HMB. Since this is a hospital based HMB, this is in line with the expectations. Sixty percent mothers were supported by their spouse and family for donation. This states that there is a need for creating more awareness about milk donation not only among mothers, but to educate their family members about HMB. Involving the spouse and the family in this will help us create a better environment and experience for the mother, and in turn encourage other mothers of the family to donate milk.

Thirty-four of the donors were not aware about the safety protocols in the HMB. This factor along with lack of awareness about the contra-indications for milk donation has to be immediately addressed to improve quality of milk donation. In the study, we found that there is a correlation in the education status of the mother and their perception about health effects of donating frequently, mothers who had only completed primary and middle schooling felt that their health may be affected by frequent donations. Counseling mothers plays an important role in this context. Lastly the study showed that 45% primiparous women felt some discomfort or pain during donation. Providing extra support and help to these primiparous mothers may improve their experience of donation and motivate them to donate at the HMB.

Conclusion:-

Educating mothers during pregnancy and nursing can foster strong belief in the value of breastfeeding and inform them about the reasons for donating milk. Promoting altruism and sense of helping others could be influential in increasing the number of human milk donors. Family play a key role in encouraging mothers to donate milk. Creating awareness about contraindications and safety measures during donation will help us improve the quality of milk donated and avoid wastage of milk. Lastly, efforts towards establishment of community centres may help us increase the number of donors and in turn help us to reach more number of vulnerable infants in need of human milk.

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