



KNOWLEDGE AND ATTITUDE OF NURSES WORKING IN TERTIARY CARE HOSPITAL ON THE USE OF HUMAN DONOR MILK : CROSS SECTIONAL STUDY

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ABSTRACT **Background:** Breastfeeding is a nutritional standard for babies, some babies need alternative nutritional strategies for various reasons, and best alternative to a mother's own breast milk is the donor human milk (DHM) from a human milk bank. **Aim:** To assess the Knowledge and Attitude of nurses working in tertiary care hospital on the use of Human Donor Milk. **Methodology:** This is a cross sectional study conducted among 113 nurses working in Tertiary Care Hospital. Data collected by interview methodology by using semi structured questionnaire. data analysis done by descriptive statistics and chi square test. **Result:** Out of 113 participants 91.15% (103 out of 113) had good knowledge score and majority of nurses (71). 62.84% had positive attitude. There was significant association observed between the educational qualification level and attitude of nurses regarding human donor milk **Conclusions:** Maximum participants have good knowledge and positive attitude toward human milk donation, however, participants are not totally aware about guidelines. Indications and contraindications of human milk donation.

KEYWORDS : Human donor milk, Nurses, knowledge, Milk bank

INTRODUCTION

India is a developing country and has its own challenges related to health. One among them is significant mortality and morbidities among underfive children. Breast milk is the best choice for infants and newborns.^[1]

According to NFHS 5 (2019-21)^[2] data exclusive breastfed children among 0- 6 month age group are 63.7% and among no breastfed children only 12.7% children receiving adequate diet. In 0-5 age group 32.1% are underweight. Infant mortality rate is 28per 1000 live birth. Breastfeeding can reduce the risk of malnutrition and infections and indirectly it can reduces burden of under 5 morbidity and mortality.

Breastfeeding is a nutritional standard for babies, but sometimes the conditions for establishing this type of nutrition may not be provided. Some babies need alternative nutritional strategies for various reasons, such as a premature birth,^[3] intolerance to their mother's milk, or special maternal conditions.^[4] Donor human milk is one of the best substitutes for feeding infants and premature neonates admitted to the Neonatal Intensive Care Units (NICUs)^[5] (Bertino et al., 2009). The use of donor milk is associated with biological and clinical benefits for the infant.^[4] 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 World Health Organization (WHO), American Academy of Pediatrics (AAP)^[6] and United Nations Children's Fund recommend that the best alternative to a mother's own breast milk is the milk from a healthy wet nurse or donor human milk (DHM) from a human milk bank (HMB).

The first milk bank in Asia under the name of 'Sneha', founded by Dr. Armeda Fernandez, was started in Sion hospital Mumbai, on 27th November, 1989 in Sion hospital. Currently, the number of human milk banks has grown to nearly 90 all over India.^[7]

Human Milk Banks are functional in many hospitals in India; however, the level of response is low. Most of the health care workers are not aware about human milk donation Also very few studies have been conducted in India to assess knowledge of health care workers regarding Human Milk donation. Nurses play a vital role in increasing the human milk donation. Knowing their knowledge and attitude

towards human donor milk will help us in understanding the issues regarding the promotion of milk donation at healthcare level.

OBJECTIVES:

1. To assess the Knowledge and Attitude of nurses working in tertiary care hospital on the use of Human Donor Milk.
2. To find out the association of knowledge and attitude with demographic variables.

METHODS

This is a cross sectional study conducted among nurses working in Tertiary Care Hospital. All nurses with at least experience of 2 years are included and those who were not willing were excluded. Sample size-calculated by $(1.96)^2 PQ/e^2$ p is taken from previous study^[8] Considering $p=33, q=67$, and taking error $=9$.N=104 .We have included 113 participants in this study. Total 500 nurses working in tertiary care hospital, after applying inclusion and exclusion criteria 113 participants were selected by using systemic random sampling. Considering maximum female nurses working in tertiary care hospital; all participants in the study were female.

Data collection and analysis:

Data collection was started after getting clearance from Institutional Ethical Committee.

Before starting the study participants were well informed about the nature of the study and written informed consent of each study participant was taken. Data was collected by interview method with semi-structured and validated questionnaire. Questionnaire contains sociodemographic information, 21 questions to assess knowledge and 14 questions to assess attitude. The possible range of score was 0-21 for knowledge

Correct answer was awarded with score of 1 and incorrect answer was awarded with score of 0. The total knowledge score was categorized into three category Poor (score 0-7), Average (score 8-14) and Good (score 15-21). Attitude is assessed with 4 point likert scale. The possible range of score was 0-56. The total attitude score was categorized into three category negative attitude (score 0-14), Neutral attitude (score 14-35) and positive (score 35-56).

The collected data was summarized and tabulated by descriptive

statistics, Chi square test was used to find association between knowledge, attitude and demographic characteristics.

RESULTS:

Demographic Variables:

Total responses of 113 participants were received from different departments of tertiary care hospital. Maximum participants were from age group 35-39 accounting to about 33.62% Out of the total participants; about 32.27%(37 out of 113) had worked in NICU ward with the exposure to human milk bank collection, processing of donor human milk. Only 6.19% (07 out of 113) had received training regarding human milk bank (Fig 1 &2).

Table 1 shows participants knowledge regarding donor human milk. Out of total participants maximum 107(94.7%)have knowledge about WHO recommendation of donor human milk.110(97.3%)have knowledge that donor human milk have biological and clinical benefits.83(73.5%) knows that it is more nutritious than formula milk. Maximum participants 107(94.7%) have knowledge that mother on chemotherapy can donate milk while only 55(48.7%) knows about galactosemia is not contraindication.

Fig 3shows results of knowledge analysis, that 8.84% (10 out of 113) had average knowledge regarding donor human milk; whereas about 91.15%(103 out of 113) had good knowledge regarding donor human milk. Mean knowledge score attributed to 17.36 with a standard deviation of 2.08. Maximum participants answered correct regarding the basic information on use of donor human milk attributing a range of 97.3% to 89.4%; however, questions focused on guidelines. Indications and contraindications received low scores with the range of 64.6% to 48.7%. **Table 2** shows Participants response to attitude questionnaire. Out of total participants 37(32.7%) were strongly agreed for donor human milk should be first choice for baby who is admitted in ward and mothers milk is not available and 13 (11%)were strongly agreed forgoing milk of other mother with adequate breast milk for such babies while 20(17.7%)were strongly disagreed for this.10(8.8%) participants were strongly agreed for considering social and cultural belief while advising human donor milk while maximum 42(37.2%) were disagreed for this and 20(17.7%) strongly disagreed. Only 3(2.7%) disagreed for statement "human donor milk is easier to digest than formula milk".

With regard to attitude, majority of nurses (71). 62.84% had positive attitude and (42)37.16% had neutral attitude (**fig 4**). Table 3 shows that all the demographic variables, age, job experience and education level; showed no significant association with the knowledge of nurses on the use of donor human milk. There was significant association observed between the educational qualification level and attitude of nurses regarding human donor milk table 4.

Nurses with qualification of BSc nursing and above; showed 76.47% positive responses and about 23.53% of neutral responses in comparison to GNM/RGNM staff attributing to 56.96% of positive responses and about 45.33% of neutral responses.

DISCUSSION

In the present study, we found that majority (91.6%) of nurses had good knowledge and (62.8%) had positive attitude regarding Human milk donor. There was significant association observed between the educational qualification level and attitude of nurses regarding human donor milk.

These findings are comparable with study conducted on final year B.Sc. nursing students in KLE Karnataka, in which majority of students had positive attitude (88.2%) and good knowledge score⁸ and study conducted by Ekşioğlu A et al.^[9] at Turkey.

Other studies indicate the importance of nurses' knowledge of donor milk. Mothers are rarely aware of donor milk and know nothing about the contents of this kind of milk and its associated risks and disadvantages. Mothers believed that higher awareness among nurses and receiving information from the clinical team plays a crucial role in selecting this nutritional method (Mackenzie, Javanparast, & Newman 2013; Pal et al., 2019).^[10]

In contrast to our study results study conducted among One hundred nurses working in the NICUs of three hospitals affiliated to Iran University of Medical Sciences revealed that, most nurses had

appropriate knowledge about donor milk. About 68% of them believed that human donor milk would reduce the growth rate of the baby, but 33% said that the formula milk was easier to find and less stressful than donor milk. Nurses did not express a positive attitude toward donor milk in most questions. Approximately 48% were opposed to receiving human donor milk^[11]. It should be noted that the donor human milk bank in Iran is a newly established center and its activities are very limited and only three donor human milk banks are active. Therefore, it seems that the lack of information of participants in this study about these centers results from the lack of widespread use of human donor milk at the hospitals and the limited availability of human donor milk banks in Iran. However, providing information in this regard to nurses seems necessary (Mohamadinasab 2019).^[12]

According to Shoghi et al study in Iran^[11] nearly half of the nurses mentioned the costs of donor milk as the most important obstacle for not using donor milk in their region. After costs, parents' preference, access to the milk bank, supplier preferences, and preparation for consumption, were the most important barriers for the use of donor milk. On the other hand our study and other studies^{[13],[14]} participants said use of donor milk is much less costly and easier to access than formula milk. It may be due to unawareness about scientific benefits of human milk and also limited milk banks available in study area.

Present study reveals that single nurses had a more positive attitude toward donor milk than married nurses did. In justifying this finding, it can be said that the views of post-marital individuals about parenting and its related issues are very much influenced by the context and culture of the couple's family. So maybe after the marriage, the people take this issue more seriously, and this can affect their attitude, compared with the pre-marriage state (Ergin & Uzun 2018).^[15]

CONCLUSIONS

- Maximum participants have good knowledge and positive attitude toward human milk donation, however, participants are not totally aware about guidelines. Indications and contraindications of human milk donation.
- There should be regular training programme focussing on the guidelines, indications and contraindications of donor human milk conducted for nurses working in tertiary care hospital.

Fig 1.Age distribution of participants



■ 25 to 29 year ■ 30 to 34 year ■ 35 to 39 year ■ 40 to 44 year ■ 50 year and above

Fig 2. Job Experience of Participants

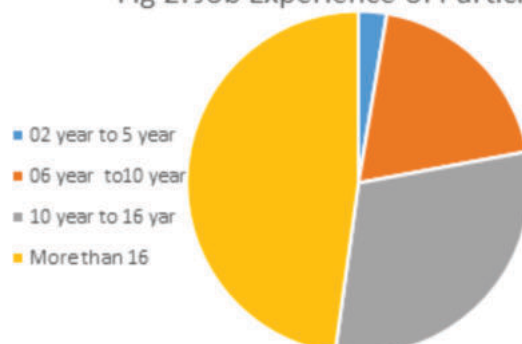
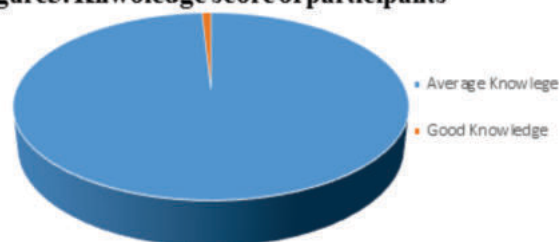


Figure3. Knowledge score of participants



	Question	CORRECT N=113 (%)	INCORRECT N=113 (%)
1.	WHO recommends that LBW infants, including those with very low birth weight, who cannot be fed mother's own milk should be fed donor human milk.	107 (94.7%)	6 (5.3%)
2.	The use of donor milk is associated with biological and clinical benefits for the infant.	110 (97.3%)	3 (2.7%)
3.	Human donor milk is more nutritious than formula milk.	83 (73.5%)	30 (26.5%)
4.	Human donor milk is NOT a natural way of nourishing infants.	110 (97.3%)	3 (2.7%)
5.	To receive human donor milk, proper prescription and requisition form filling is NOT mandatory.	70 (61.9%)	43 (38.1%)
6.	HMBANA guidelines require that human milk donors be seronegative for hepatitis B and C, HIV, and HTLV.	101 (89.4%)	12 (10.6%)
7.	Raw human milk and pasteurized donor milk is same.	81 (71.7%)	32 (28.3%)
8.	Many nutritional components of human milk are only minimally altered or reduced through pasteurization.	73 (64.6%)	40 (35.4%)
9.	Each container of donor milk is tested for harmful bacteria	106 (93.8%)	7 (6.2%)
10.	Human Milk Fortifier is made exclusively from 100% donor milk	84 (74.3%)	29 (25.7%)
11.	Mothers on chemotherapy can donate milk.	107 (94.7%)	6 (5.3%)
12.	Galactosemia is NOT a contraindication to the use of pasteurized donor milk.	55 (48.7%)	58 (51.3%)
13.	Preterm infants, receiving donor human milk have lower rates of necrotizing entero-colitis and infections than those infants receiving infant formula.	106 (93.8%)	7 (6.2%)
14.	Preterm infants, receiving donor human milk have improved feeding tolerance, compared with those receiving infant formula	98 (86.7%)	15 (13.3%)
15.	Infants having risk of medical issues from mother should be advised human donor milk.	108 (95.6%)	05 (4.4%)
16.	Babies who have lost their mother in immediate post-partum period can receive human donor milk.	107 (94.7%)	6 (5.3%)

Table No 2: The Attitude of nurses toward human donor milk.

Sr. No	Question	Strongly agree N (%)	Agree N (%)	Disagree N (%)	Strongly Disagree N (%)
1	Human donor milk should be first choice for feeding a baby in need who is admitted to your ward.	37 (32.7%)	48 (42.5%)	20 (17.7%)	8 (7.1%)
2	For mothers with insufficient milk, they can be given breast milk of other mother with adequate breast milk output.	13 (11.5%)	45 (39.8%)	35 (31.0%)	20 (17.7%)

3	Social and cultural beliefs should be considered while advising human donor milk.	10 (8.8%)	41 (36.3%)	42 (37.2%)	20 (17.7%)
4	Human donor milk should be promoted more compared to infant formula.	57 (50.4%)	48 (42.5%)	7 (6.2%)	1 (0.9%)
5	Human donor milk is easier to digest than infant formulas.	62 (54.9%)	48 (42.5%)	3 (2.7%)	0
6	Preterm infants, receiving donor human milk have lower rates of infection and necrotizing entero-colitis.	53 (46.9%)	56 (49.6%)	3 (2.7%)	1 (0.9%)
7	Abandoned neonates should be advised human donor milk	23 (20.4%)	70 (61.9%)	18 (15.9%)	2 1.8%)
8	ANC mothers with second pregnancy should not be counselled regarding milk donation.	9 (8.0%)	17 (15.0%)	51 (45.1%)	36 31.9%)
9	Male nurses should not be trained regarding human donor milk collection.	12 (10.6%)	15 (13.3%)	53 (46.9%)	33 (29.2%)
10	Family members of ANC and PNC mothers should be sensitized regarding human donor milk.	29 (25.7%)	76 (67.3%)	5 (4.4%)	3 (2.7%)
11	Staff working in human donor milk collection should undergo regular health checkups.	26 (23.0%)	79 (69.9%)	7 (6.2%)	1 (0.9%)
12	PNC mothers should be counselled regarding advantages and disadvantages of human donor milk.	56 (49.6%)	56 (49.6%)	1 (0.9%)	0 0
13	Nurses working in hospitals should be sensitized by training regarding human donor milk.	52 (46.0%)	59 (52.2%)	2 (1.8%)	0 0
14	More human milk banks should be established to increase the amount of human donor milk.	56 (49.6%)	55 (48.7%)	2 (1.8%)	0 0

Table No 3: Association between Knowledge and Demographic variables:

Variables	Group	Neutral		Positive		Total	Test
Age(years)	<34	11	24	16	43	27	X2=0.13P value=0.72
	35-39	13		27		40	
	40-44	9	18	16	28	25	
	45 and above	9		12		21	
Job Experience (years)	1-5	01	11	2	14	03	X2=0.64 P value=0.42
	6-10	10		12		22	
	11-15	12	31	22	57	34	
	16	19		35		54	
Education Level	BSC nursing & above	8		26		34	X2=3.87 P value=0.05
	GNM/R GNM	34		45		79	

Table No 4: Association between Attitude and Demographic Variables:

Variables	Group	Good		Average		Total	Test
Age(years)	<34	25	55	02	13	27	X2=0.482 P value=0.487
	35-39	30		10		40	
	40-44	20	40	05	06	25	
	45 and above	20		01		21	
Job Experience (years)	1-5	03	23	0	02	03	FET=0.362
	6-10	20		02		22	
	11-15	27	72	07	16	34	
	16	45		09		54	
Education Level	BSC nursing & above	30		04		34	X2=0.263 P value=0.677
	GNM/R GNM	65		14		79	
Variables	Group	Good		Average		Total	Test
Age(years)	<34	25	55	02	13	27	X2=0.482 P value=0.487
	35-39	30		10		40	
	40-44	20	40	05	06	25	
	45 and above	20		01		21	
Job Experience (years)	1-5	03	23	0	02	03	FET=0.362
	6-10	20		02		22	
	11-15	27	72	07	16	34	
	16	45		09		54	
Education Level	BSC nursing & above	30		04		34	X2=0.263 P value=0.677
	GNM/R GNM	65		14		79	

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