

Assessment of Knowledge regarding Human Breast Milk Bank among the Nursing Officers in JIPMER Puducherry

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Abstract

World Health Organization and United Nations Children's Fund in 1980 has stated that if the baby does not get his/her own mother's milk, the best food for that baby is Human breast milk from another lactating mother. Donor milk has a broad range of therapeutic uses. Common reasons for prescribing donor milk are prematurity, allergies, feeding formula intolerance, immunologic deficiencies, etc. Breastfeeding is not recommended for mothers who have specific health problems. In the absence of the infant's mother's milk, donor milk offers the benefits of human milk for the infant, including optimal nutrition, easy digestibility, and immunological protection against many organisms. Human milk also contains growth factors that can protect immature tissue, promote maturation, particularly in the gastrointestinal tract, and promote the healing of tissue damaged by infection.

A human breast milk bank is a service that collects, screens, processes, and dispenses by prescription. Human milk is donated by nursing mothers who are biologically not related to the recipient infant. The optimum nutrition for newborn is breastfeeding, if possible for the first year.

Human milk is recognized for its numerous benefits, including tolerance to allergens, providing passive immunization, improving lipid profile, and controlling blood pressure. In studies conducted in the neonatal unit, infants fed human breast milk had fewer severe infections, less necrotizing enterocolitis, and less colonization by pathogenic organisms. The majority of mothers are encouraged to breastfeed their babies. However, breastfeeding arises when the baby is sick or admitted to the hospital, particularly in premature infants. Also, the mothers may be unable to provide an entire volume of milk due to numerous physical and emotional behaviors to breastfeeding. So, the pasteurized donor milk from a healthy mother should be the first consideration for supplementation. In such cases, the role of breast milk banks becomes crucial as these are the place where the donor milk is stored and is made available for use in vulnerable populations. India is a developing country where neonatal mortality is very alarming. Breast milk banks are essential for the control of cases of neonatal mortality and malnutrition.

Methodology-This cross-sectional study aimed to assess the level of knowledge of nursing officers regarding the human breast milk banks and to identify service-related factors associated with the level of knowledge on human breast milk banks among nursing officers. One hundred seventy-six participants were selected for the studies who fulfil the inclusion criteria of the study. A structured questionnaire was used to assess the knowledge level among the nursing officers. Both inferential statistics and descriptive statistics were used in this study.

Results-A total of 176 nursing officers were analyzed. Findings revealed that most nursing officers had inadequate knowledge (93.18%) regarding the human breast milk bank.

Conclusion-Most of the nursing officers are having inadequate knowledge regarding the breast milk bank. The study also reveals the clinical experience; the area of posting has a significant correlation in the knowledge level of the participants so that the institute can plan for in-service education programs to update the staff's knowledge.

Keywords: Human breast milk bank; Preterm neonates; Nursing officers; Nutrition

Abbreviations

HMB-Human milk bank, DHM-Donor human milk

The WHO and UNICEF made a statement in 1990: "Where the biological mother cannot breastfeed, the first alternative should be the use of human milk from other sources, if available [1]. Breastfeeding is recommended exclusively for the first six months of life [2]. Breast milk is the standard way to feed infants: It is accepted worldwide as the optimal exclusive first source of nutrition. Mothers may be unable to provide an entire volume of milk due to numerous physical and emotional reasons for breastfeeding. These at-risk infants will benefit a lot from the breast milk nutrients, and in case the mother is unable to provide the breast milk, then the pasteurized donor milk from a healthy mother should be the first consideration for supplementation. In such cases, the role of breast milk banks becomes crucial as these are the place where the donor milk is stored and is made available for ready use.

A study on mother's views of milk banking to determine the knowledge and the view of mothers towards milk banking showed that most mothers revealed positive approaches and opinions about the establishment of milk banking and milk donation. However, some concerns due to the risk of infectious diseases and religious beliefs were identified, and efforts should be made to raise awareness, and mothers should be informed about the importance of breast milk and breastfeeding. So that milk bank can be regarded as an additional chance [3].

Study on prevalence and factors associated with breastmilk donation in banks that receive human milk in primary health care units to estimate the prevalence and analyze factors associated with breastmilk donation at primary health care units to increase human breast milk bank reserves. The study showed that 7.3% of mothers had donated breast milk, have been encouraged to donate breastmilk by healthcare professionals, relatives, or friends receiving information on breast milk expression by the primary health care unit and receiving help from unit professionals. Breastfeeding was associated with a higher prevalence of donation [4].

Even though human breast milk banks and their functioning are accepted in several parts of the world, most people in developing countries like India are unaware of the utilization of breast milk banks.

The current study aims to assess the knowledge regarding human breast milk bank among nursing officers, help transform the information to mothers approaching them, and gain knowledge and motivate mothers for breast milk donation and utilize this facility.

The study aimed to assess nursing officers' level of knowledge and identify the service-related factors associated with the level of knowledge on human breast milk banks among nursing officers.

Materials and methods

The research design adopted for this study is a cross-sectional study design, conducted in Jawaharlal Institute of Post-graduate Medical Education and Research (JIPMER), an institute of national importance, Puducherry among the nursing officers in the Super-Speciality Block (SSB) and Women and Child Health Block (WCH) of JIPMER. The sampling technique was used is convenient sampling.

Nursing officers who have attended recent classes regarding the human breast milk bank, working in OT, and were on extended leave and maternity leave were excluded from the study.

Sample size, $n=171$, the sample size is estimated using the statistical formula for estimating a single group. The sample size is estimated at a 5% level of significance and 10% relative precision.

Data collection procedures were done after obtaining informed consent from the nursing officers who are participating in the study; the data collection will be done by data collection Proforma using a self-administered questionnaire containing socio-demographic variables, structured questionnaire to assess the knowledge regarding human breast milk bank.

Data analysis

The socio-demographic characteristics were expressed as frequencies and percentages. The comparison between adequate and inadequate knowledge and its association with socio-demographic data was carried out using the chi-square test or exact fisher's test.

Results and Discussion

A total of 176 nursing officers were recruited as per eligibility criteria. Table1. Regarding the socio-demographic profile, the findings revealed that most participants belong to the age group of 20-30years (51.70%). Regarding the educational status of most of the participants' educational status was with B.sc Nursing educational level (67.05%). Most of the participants have not experienced breast milk donation (93.18%), but they accept breast milk donation (94.29%).

Sl. No	Demographic Variable	Frequency (n)	Percentage (%)
1	Age		
	1. 20-30years	91	51.70
	2. 30-40years	80	45.45
	3. 40-50years	5	2.84
	4. 50-60years	0	0
2	Year of experience		
	1. <5years	54	30.68
	2. 5-10years	90	51.14
	3. 10-15years	27	15.34
	4. 15-20years	5	2.84
3	Educational status		
	1. GNM	28	15.91
	2. B.sc nursing	118	67.05
	3. PBD	5	2.84
	4. M.sc Nursing	25	14.20
4	Area of posting		
	1. SSB	94	53.41
	2. WCH	82	46.59
5	Training		
	1. Yes	1	0.57
	2. No	175	99.43

6	No. of hospital experience		
	1	45	25.57
	2	75	42.61
	3	42	23.86
	4	8	4.55
	5	3	1.70
7	Having lactating children		
	1. Yes	44	25
	2. No	132	75
8	Experience in breast milk donation		
	1. Yes	12	6.82
	2. No	164	93.18
9	Given exclusive breastfeeding		
	1. Not applicable	5	2.84
	2. Yes	71	40.34
	3. No	100	56.82
10	Accepting breast milk donation		
	1. Yes	165	94.29
	2. No	10	5.71
11	Mode of delivery		
	1. Normal delivery	57	32.39
	2. LSCS	39	22.16
	3. Vacuum delivery	2	1.14
	4. Forceps delivery	3	1.70
	5. Not applicable	75	42.61
12	History of pregnancy		
	1. Not applicable	75	42.86
	2. Primi mothers	48	27.43
	3. Multigravida mothers	52	29.71
	4. Infection at pregnancy	0	0
13	History of childbirth		
	1. Not applicable	75	42.61
	2. Preterm	7	3.98
	3. Term	90	51.14
	4. Low birth weight	4	2.27

14	<i>Place of delivery</i>		
	1. Not applicable	76	43.18
	2. Home	2	1.14
	3. Institution	98	55.68

Table 1: Frequency and percentage distribution of the participants' demographic variables.
(n=176)

	<i>Frequency</i>	<i>Percentage</i>
Inadequate knowledge	164	93.18
Adequate knowledge	12	6.82

Table 2: Frequency and Percentage distribution of knowledge level of the participants.

Table 2 showed that most of the participants have inadequate knowledge (93.18%) regarding the functioning of HMB

<i>Socio demographic variable</i>	<i>Frequency of adequate knowl- edge</i>	<i>Percentage of adequate knowl- edge</i>	<i>P value</i>
Age			
1. 20-30 years	6	6.59	0.806
2. 30-40 years	6	7.5	
3. 40-50 years	5	0	
4. 50-60 years	0	0	
Year of experience			
1. <5years	4	7.41	0.395
2. 5-10years	8	8.89	
3. 10-15years	0	0	
4. 15-20years	0	0	
Area of posting			
1. SSB	2	2.13	0.008
2. WCH	10	12.20	
Educational status			
1. GNM	1	3.57	0.244
2. B.sc nursing	10	8.47	
3. PBD	1	20	
4. M.sc Nursing	0	0	

Training undergone			
1. Yes	0	0	0.786
2. No	2	6.86	
No. of hospital worked			
1	3	6.67	0.945
2	6	8	
3	3	7.14	
4	0	0	
5	0	0	
6	0	0	
Having lactating child			
1. Yes	2	4.55	0.490
2. No	10	7.58	
Experience in breast milk donation			
1. Yes	2	16.67	0.161
2. No	10	6.10	
Given exclusive breastfeeding			
1. Yes	6	7.89	0.621
2. No	6	6.00	
Accepting breast milk donation			
1. Yes	12	7.23	0.378
2. No	0	0	
Mode of delivery			
1. Normal delivery	4	7.02	0.950
2. LSCS	2	5.13	
3. Vacuum delivery	0	0	
4. Forceps delivery	0	0	
5. Not applicable	6	8	
History of pregnancy			
1. Not applicable	6	8	0.598
2. Primi mothers	4	8.16	
3. Multigravida mothers	2	3.85	
4. Infection at pregnancy	0	0	
History of child birth			
1. Not applicable	6	8	0.808
2. Preterm	0	0	
3. Term	6	6.67	
4. Low birth weight	0	0	

<i>Place of delivery</i>			
1. Not applicable	6	8	0.140
2. Home	1	33.33	
3. institutions	5	5.1	

Table 3: Frequency distribution of the participants having adequate knowledge in various socio demographic variables.

	<i>Risk ratio</i>	<i>P value</i>	<i>Conf. Interval</i>	<i>Z value</i>
Area of posting	5.7317	0.806	1.293-25.407	2.30
Having lactating child	1.6666	0.4990	0.3796-7.316	0.68
History of pregnancy	1.0204	0.598	0.3342-3.4316	0.03
Place of delivery	4.1666	0.140	0.7063-24.580	1.58
Experience in breast milk donation	0.3658537	0.378	0.9017-0.1.483	-1.41

Table 4: Association of various clinical factors with level of knowledge of the participants.

Table 4 clearly stated that postings are the only clinical factor that showed significance with participants' knowledge.

Discussion

Regarding the first objective of the study to assess the knowledge level of nursing officers regarding human breast milk bank, study findings showed that most of the Nursing Officers who are working in WCH and SSB had inadequate knowledge of 93.18% and only 6.82% had adequate knowledge about breast milk banking.

A study on mother's views of milk banking to determine the knowledge and the view of mothers towards milk banking showed that most mothers revealed positive approaches and opinions about the establishment of milk banking and milk donation. However, there were some concerns due to the risk of infectious diseases and religious beliefs. Efforts should be made to raise awareness, and mothers should be informed about the importance of breast milk and breastfeeding. So that milk bank can be viewed as an additional chance [5].

A study on the acceptability of donated breast milk in a resource-limited South African setting showed that there are obstacles to the acceptability of donor milk, mainly stemming from lack of awareness/familiarity with the process around donor breast milk and that these could be readily addressed through education [6].

Another study showed that the knowledge of postnatal mothers regarding Breast milk donation was, on average, nearly poor level. The attitude of postnatal mothers is almost divided into highly favorable, moderately favorable, and unfavorable. Knowledge and attitude have no co-relation in this study [7].

A descriptive study was done to assess the characteristics of donation behavior and identify reasons, beliefs, and feelings for breast milk donation with women donors at two breastmilk banks.

The study concluded that the most frequently reported reasons for donating breast milk were altruism and excess milk production [8].

The study's second objective showed that the clinical factors like having a lactating child, history of pregnancy, and place of deliv-

ery were not having any significance related to HMB knowledge; however, posting is the only clinical factor that has significance with knowledge of participants.

The first human milk bank of Asia, 'Sneha,' was founded in 1989 in Mumbai, but there are still insufficient milk banks in India [9].

A study showed that health workers were more receptive to donating DHM and more likely to encourage others to use DHM banks than receiving DHM themselves. Only about one-third (31%) of health workers reported they would accept donor breastmilk to feed their children, while 47% would agree to donate or allow their partners to donate breastmilk to DHM banks. Fifty-six percent indicated they would encourage their clients to use DHM banks. Knowledge of DHM banks and prior work at a health facility with a DHM bank positively influenced the acceptance of DHM banking. Helping babies in need of breastmilk was identified as the primary reason to donate breastmilk, while the fear of HIV transmission was the significant barrier to DHM banking acceptance [10].

Conclusion

In order to provide quality care to neonates whose natural breast milk is unavailable due to medical or other reasons, the human breast milk bank provides the breast milk safely. Hence the knowledge of health care workers, especially nurses, needs to be updated through regular in-service programs and periodic rotation of staff in each department.

Acknowledgments

Nil.

Conflict of interest

Nil.

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