A STUDY TO EVALUATE THE EFFECTIVENESS OF SELF INSTRUCTIONAL MODULE ON KNOWLEDGE REGARDING HUMAN MILK BANKING AMONG ANTENATAL MOTHERS IN SELECTED COMMUNITY AREA, BENGALURU

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ABSTRACT:

Background: Breast milk is the complete nutrition for babies during first 6 months of life. Unavailability of breast milk can put the baby in life threatening conditions. Human milk banks are services which collect, screen, process and distribute donated breast milk. Research evidences suggest that pasteurized donor human milk can provide many of the components and eliminate the risk of transmission of infectious agents. The study was conducted to evaluate the effectiveness of self instructional module on knowledge regarding human milk banking among antenatal mothers.

Methods: Pre experimental one group pre test-post test design was adopted. Convenient sampling technique was used to select the 60 antenatal mothers from selected community area, Bangalore. A structured knowledge questionnaire was used to collect data from the subjects.

Results: The obtained data were analysed by using descriptive and inferential statistics and interpreted in terms of objectives and hypotheses of the study. The level of significance was set at 0.05level. In the pre test 44(73.33%) of the antenatal mothers had moderate knowledge. 15(25%) had adequate knowledge and 1(1.7%) had inadequate knowledge. On the contrary, during post test 49(81.66%) of the antenatal mothers found with adequate knowledge. The SIM used in this study enhanced the knowledge of the participants. The statistical paired 't' test implies that the difference in the pre test and post test value was found to be statistically highly significant at 0.05 % level ($p<0.01$) with a paired 't' test value of 13.03(13.91). A significant association was found between the pre test knowledge and socio demographic variable of type of family ($\chi^2 = 16.31$) at 0.05% level of significance. H_1 and H are accepted.

Conclusion: In the pre test about 44 (73.33%) of the samples had moderate knowledge while in the post test 11(18.33%) had moderate knowledge. However, the responses with adequate knowledge were 15(25%) in

pre test and were increased to 49 (81.66%) in post test. These findings indicate that the Self Instructional Module was effective in enhancing the knowledge of antenatal mothers regarding human milk banking.

KEYWORDS: Self Instructional Module, knowledge, Antenatal mothers, Human milk banking

INTRODUCTION

Breastfeeding is one of the most effective ways to ensure child health and survival. Breast milk is the ideal food for infants. It is safe, clean and contains antibodies which help to protect against many common childhood illnesses. The ideal food for young infant is human milk which has the specific characteristics that match the growing infants nutritional requirements during the first year of life.

In India, though breastfeeding is universal but traditionally, initiation of breastfeeding is considerably delayed. The nutritional needs of a normal full-term baby has been found to be adequately met by the breast milk of a healthy mother for the first four to six months of life.

In India the burden of low birth weight babies in various hospitals is about 20% with significant mortality and morbidity. Feeding these babies with breast milk can significantly reduce the risk of infections. Hence the Government, health experts and the civil society must join hands to propagate the concept of human milk banking for the sake of thousands of low birth weight and preterm babies. Three major causes that contribute to about 60% of all deaths in the newborn period is prematurity and low birth weight, birth asphyxia and infections, inappropriate practices such as delayed initiation of breastfeeding, delayed clothing and early bathing, not seeking care when newborns are sick.

Globally it is estimated that 17% of live birth infant born are low birth weight. About 13 million premature babies born every year worldwide and about 1 million premature babies die in the first month of life. Most of these deaths can be prevented with extra attention to warmth, prevention of infection and optimal feeding.

In Asia, the first milk bank "Sneha" was established under the leadership of Dr. Armeda Fernandez at Sion hospital in Dharavi, Mumbai, in 1989.12 Nearly 3000 to 5000 babies benefit from the services of this milk bank every year. Nearly 800 to 1200 litres of human milk each year is received and feed to sick and vulnerable babies in the Neonatal Intensive Care Unit.1 There are more than 50 donor milk banks in India to date. In 2014, human milk banking guidelines were published which became the basis for the establishment of new milk banks.

Amrutha Dhare is the first Karnataka government run human breast milk bank for newborns, is now up and running at Vani Vilas Hospital, Bengaluru. The milk bank was launched formally on March 8th 2022. In November 2021, the hospital started its dry run and the bank collected 27 litres of milk from nine donors. Out of this, 24 litres have already been used on nearly 90 infants till March 8th 2022.

Objectives of the study:

1. To assess the existing level of knowledge regarding human milk banking among antenatal mothers.

2. To evaluate the effectiveness of self instructional module by comparing the pre test and post test score of knowledge regarding human milk banking among antenatal mothers.

3. To find out the association between the pre test knowledge score of antenatal mothers with selected socio-demographic variables.

Hypotheses:

H_1: There will be a significant increase in the post test level of knowledge on human milk banking after administration of self instructional module among antenatal mothers.

H_2: There will be a significant association between the pre test level of knowledge regarding human milk banking and selected Socio demographic variables.

Materials and methods:

Research approach: Evaluative approach

Research design: Pre experimental (one group pre test-post test design)

Variables under the study:

Independent variable: Self Instructional Module on knowledge regarding human milk banking

Dependent variable: Knowledge of antenatal mothers regarding human milk banking.

Setting of the study: The study was conducted at selected community area of Bangalore

Population: All antenatal mothers

Sample: The sample consists of antenatal mothers who fulfilled the inclusion criteria in selected community area, Bangalore.

Sample size: 60 Antenatal mothers

Sampling technique: Non probability - Convenient sampling technique

Sampling criteria:

Inclusion criteria

The study includes the antenatal mothers who were:-

➢ present at the time of data collection

➢ willing to participate in the study

➢ able to read, respond and understand Kannada or English

Exclusion criteria:

The study excludes the antenatal mothers who were:-

➢ sick at the time of data collection

➢ exposed to this information earlier

➢ not cooperative

Development and description of the tool:

➢ A structured knowledge questionnaire was used for data collection

The tool consists of two sections:

Section A: It consists of socio-demographic variables like age, educational status, occupation, monthly family income, religion, type of family, months of pregnancy, number of antenatal visits, No. of pregnancy, No. of delivery and source of information are the socio demographic variables.

Section B: It consists of structured knowledge questionnaire on knowledge regarding human milk banking among antenatal mothers. The items were 30 objective type questions.

➢ Self Instructional Module on knowledge regarding human milk banking was developed based on the review of literature and discussion with experts.

Data collection procedure:

Formal written permission was obtained from concerned authorities.

Phase I: In this phase, pre-test was conducted on a total of 60 antenatal mothers by distributing the structured knowledge questionnaire regarding human milk banking and instructions were given on answering the questionnaire and doubts were clarified.

Phase II: In this phase, a Self Instructional Module regarding Human Milk Banking was administered to the subjects.

Phase III: In this phase, post test was conducted by using the same tool on the 7th day after administration of the self instructional module.

D**ata analysis:**

The collected data was analysed by using both descriptive and inferential statistics based on the objectives and hypotheses of the study.

Descriptive statistics:

Socio demographic data were analysed by using frequency and percentage distribution.

The knowledge level of the antenatal mothers regarding Human Milk Banking before and after administration of SIM was calculated by using descriptive statistics like frequency, mean, mean percentage and standard deviation.

Inferential statistics:

The effectiveness of SIM regarding Human Milk Banking was analysed by paired 't' test.

Association between pre-test knowledge scores with selected socio-demographic variables were analysed by chi-square test.

Ethical consideration:

Written permission from the concerned authorities and informed consent from the subjects were obtained before conducting the study. No ethical issue was confronted while conducting the study.

Results: The collected data was analysed and interpreted by using descriptive and inferential statistics.

Section A: Description of socio-demographic variables

Table: 1 – Frequency and percentage distribution of socio demographic variables among antenatal mothers

N=60

S. No	Socio-demographic variables		Frequency	%
1.	Age in years	16-18	04	6.7
		19-21	09	15.0
		22- 25	20	33.3
		26 and above	27	45.0
2.	Educational status	Primary	03	5.0
		Secondary	21	35.0
		Higher secondary	15	25.0
		Graduate/post graduate	17	28.3
		No formal education	04	6.7
3.	Occupation	Home maker	27	45.0
		Labourer	06	10.0
		Govt. employee	13	21.7
		Private employee	07	11.7
		Others	07	11.7
4.	Monthly family income in Rupees	< 10,000	08	13.3
		10,001-15,000	19	31.7
		15,001-20,000	04	6.7
		>20,000	29	48.3
5.	Religion	Hindu	26	43.3
		Muslim	12	20.0
		Christian	20	33.3
		Others	02	3.3
6.	Type of family	Nuclear	11	18.3
		Joint	25	41.7
		Extended	10	16.7
		Others	14	23.3
7.	Months of pregnancy	Less than 3 months	14	23.3
		4-6 months	37	61.7
		More than 7 months	09	15.0
8.	Antenatal visits	Less than 2 visits	26	43.3
		2-4 visits	29	48.3
		More than 4 visits	05	8.3

9.	Numbers of pregnancy	1	12	20.0
		2	35	58.3
		More than 2	13	21.7
10.	Number of delivery	0	06	10.0
		1	25	41.7
		2	26	43.3
		More than 2	03	5.0
11.	Source of information	Mass media/Print media	06	10.0
		Family members/ Relatives	14	23.3
		Friends/ Neighbours	18	30.0
		Health personnel	22	36.7
		Others	00	0.0

Section-B: Assessment of pre test level of knowledge regarding human milk banking among antenatal mothers

Table: 2 Frequency and percentage distribution of pre test knowledge regarding human milk banking among antenatal mothers.

N=60

Category	Knowledge	
	Frequency	**Percentage**
Inadequate	01	01.70
Moderate	44	73.30
Adequate	15	25.00
Total	60	100

Section-C: Assessment of post test knowledge regarding human milk banking among antenatal mothers.

Table: 3 Frequency and percentage distribution of post test knowledge regarding human milk banking

N=60

Category	Knowledge	
	Frequency	**Percentage**
Inadequate	00	00
Moderate	11	18.3
Adequate	49	81.7
Total	60	100

Section-D: Comparison between pre test and post test knowledge Score regarding human milk banking among antenatal mothers.

H_1: There will be a significant increase in the post test level of knowledge on human milk banking after administration of self instructional module among antenatal mothers.

Table 4: Comparison of mean, SD, paired 't'-value of pre test and post test knowledge score regarding human milk banking among antenatal mothers

N=60

Aspects	Max. Score	Knowledge score				paired 't' test
		Mean	SD	Mean %	SD %	
Pre test	30	17.60	3.98	58.70	13.26	13.03
Post test	30	24.73	4.02	82.44	13.43	
Enhancement	30	7.13	4.24	23.80	14.16	

* Significant at 5% level   df (59)   Table value=1.96

Table-4 projects the overall pre-test, post-test and enhancement of mean knowledge scores regarding knowledge on human milk banking among antenatal mothers. The mean % of pretest knowledge was 58.7 with SD 13.26. The mean % of post test knowledge found to be 82.44 with SD 13.43. However, the enhancement was proved as mean % (23.80) and SD % (14.16). Further, the paired 't'test value (13.03*) shows statistical significant at level of $p<0.05$ with df (59), establishing the effectiveness of SIM. Hence research hypotheses H_1 is accepted.

A similar result was found to evaluate the effectiveness of structured teaching programme on knowledge regarding human milk banking among mothers of infants. In pre test majority of the mothers 52(86.70%) were having inadequate knowledge followed by 7(11.70%) were having moderate knowledge and 1(1.70%) were having adequate knowledge. In post-test, majority of the mothers of infants 52(86.70%) were having adequate knowledge and only 18(13%) were having moderate knowledge. It is evident that the structure teaching programme was effective and has great impact on mothers of infants' knowledge regarding human milk banking.

Section- E: Association between pretest level of knowledge regarding human milk banking and selected socio-demographic variables.

H_2: There will be a significant association between the pre test level of knowledge regarding human milk banking and selected Socio demographic variables.

Table 5: Association between Demographic Variables and Pretest Knowledge Level on human milk bank among antenatal mothers.

N=60

Socio demographic variables	Category	Knowledge level						Total	χ^2	p value
		Inade quate	%	Moderate	%	Adequate	%			
Age in years	16-18	0	0.0	1	25.0	3	75.0	4	11.4	0.07 NS
	19-21	0	0.0	5	55.6	4	44.4	9		
	22- 25	1	5.0	17	85.0	2	10.0	20		
	26 and above	0	0.0	21	77.8	6	22.2	27		
Educational qualification	Primary	0	0.0	2	66.7	1	33.3	3	7.53	0.48 NS
	Secondary	0	0.0	14	66.7	7	33.3	21		
	Higher secondary	1	6.7	13	86.7	1	6.7	15		
	Graduate/ post graduate	0	0.0	13	76.5	4	23.5	17		
	No formal education	0	0.0	2	50.0	2	50.0	4		
Occupation	Home maker	0	0.0	17	63.0	10	37.0	27	13.6	0.09 NS
	Labourer	0	0.0	6	100.0	0	0.0	6		
	Govt. employee	0	0.0	10	76.9	3	23.1	13		
	Private. Employee	0	0.0	5	71.4	2	28.6	7		
	Others	1	14.3	6	85.7	0	0.0	7		

Variable	Category	n	%	n	%	n	%	Total	χ²	p
Monthly family income in Rupees	< 10,000	0	0.0	4	50.0	4	50.0	8	8.48	0.20 NS
	10,001-15,000	0	0.0	18	94.7	1	5.3	19		
	15,001-20,000	1	3.4	19	65.5	9	31.0	29		
	>20,000	0	0.0	3	75.0	1	25.0	4		
Religion	Hindu	1	3.8	16	61.5	9	34.6	26	6.42	0.378 NS
	Muslim	0	0.0	8	66.7	4	33.3	12		
	Christian	0	0.0	18	90.0	2	10.0	20		
	Others	0	0.0	2	100.0	0	0.0	2		
Type of family	Nuclear	0	0.0	7	63.6	4	36.4	11	16.31	0.03 S
	Joint	0	0.0	22	88.0	3	12.0	25		
	Extended	1	10.0	4	40.0	5	50.0	10		
	Other	0	0.0	11	78.6	3	21.4	14		
Months of pregnancy	Less than 3 months	1	7.1	10	71.4	3	21.4	14	3.49	0.48 NS
	4-6 months	0	0.0	27	73.0	10	27.0	37		
	More than 7 months	0	0.0	7	77.8	2	22.2	9		
Antenatal visits	Less than 2 visits	0	0.0	19	73.1	7	26.9	26	1.92	0.75 NS
	2-4 visits	1	3.4	22	75.9	6	20.7	29		
	More than 4 visits	0	0.0	3	60.0	2	40.0	5		
No of pregnancy	1	1	8.3	9	75.0	2	16.7	12	8.02	0.09 NS
	2	0	0.0	23	65.7	12	34.3	35		
	More than 2	0	0.0	12	92.3	1	7.7	13		
No of delivery	0	0	0.0	2	33.3	4	66.7	6	10.8	0.09 NS
	1	0	0.0	22	88.0	3	12.0	25		
	2	1	3.8	17	65.4	8	30.8	26		

	More than 2	0	0.0	3	100.0	0	0.0	3		
Source of information	Mass media/ Print media	0	0.0	3	50.0	3	50.0	6	8.82	0.81NS
	Family members/ Relatives	0	0.0	8	57.1	6	42.9	14		
	Friends/ Neighbors	1	5.6	15	83.3	2	11.1	18		
	Health personnel	0	0.0	18	81.8	4	18.2	22		
	Others	0	0.0	0	0.0	0	0.0	0		

*Significant at 5% Level   NS - Not Significant

Table-5 presents the association of pre-test level of knowledge with selected socio-demographic variables. The chi-square test was carried out to determine the association between the pre test knowledge and socio-demographic variables. Out of which type of family (χ^2 = 16.31*) was found to be significantly associated with pre test knowledge at 5% level and other demographic variables were not significant.

Hence research hypotheses H_2 is accepted. It is evident that pre-test knowledge score is better influenced type of family.

Conclusion:

The main conclusions drawn from this study are majority of antenatal mothers had moderate knowledge in pre test and majority of antenatal mothers had adequate knowledge in post test. There is enhancement in post test knowledge score (Mean 7.13, SD 4.24).The difference between pre test and post test score revealed that Self Instructional Module is effective in improving the knowledge of antenatal mothers regarding human milk banking. The pre test knowledge of antenatal mothers regarding human milk banking is significantly associated with the variable type of family, but there is no significant association with other variables like age, educational status, occupation, monthly family income in rupees, months of pregnancy, number of antenatal visits, No. of pregnancy, No. of delivery and source of information.

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