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ASSESSING THE IMPACT OF A PLANNED TEACHING PROGRAM ON MOTHERS' KNOWLEDGE OF DOMICILIARY MANAGEMENT AND STORAGE OF EXPRESSED BREAST MILK IN BANGALORE RURAL DISTRICT

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ABSTRACT

This study was intended to assess effectiveness of planned teaching programme on knowledge of mothers regarding domiciliary management of expressed breast milk and its storage. The study was carried out among 60 mothers of infants at selected areas, Bangalore. For this study conceptual frame work is based on King's goal attainment theory. The approach used for this study was Evaluative approach. One group pre test and post test design is used to collect the data. The independent variable of the study was planned teaching programme on domiciliary management of expressed breast milk and its storage and dependent variable is knowledge level of mothers on domiciliary management of expressed breast milk and its storage.

The structured questionnaires on domiciliary management of expressed breast milk and its storage were developed to collect data. The pilot study was conducted to find the feasibility of the study 06-01-2020 to 11-01-2020 among 60 mothers of infants in selected areas, Bangalore. The main study was conducted from 22-01-2020 to 22-02-2020 among 60 subjects; the subject was selected by Convenience sampling technique and data was analyzed and interpreted using descriptive and inferential statistics.

In the study the distributions of the samples by age shows that majority 43.4% of subjects in belong to the age group of 31-35 years and 18.3% were aged Less than 25 years. Regarding the education 35% mothers had pre-university education and above and 20% were no formal education. Majority 63.3% mothers were house wives and 8.4% were government employees. Majority 48.3% of subjects lives in Pucca house and 28.3% were in Semi pucca houses. Majority 88.3% mothers were living in primipara. Regarding Family income/month majority of the mothers (48.3%) reported Rs. 10001-15000 as Family income/month and 8.3% mother's had income Less than Rs. 5000. Among the participants 31.57% of mothers had information from mass media, and 30% mothers had information from Health personnel.

The study reveals that overall mean knowledge score obtained by the subjects was 13.75(45.83%) with standard deviation of 5.118 in the pre-test and the overall knowledge obtained score was 23.5 (78.33%) with the standard deviation of 5.774 with standard deviation 3.409 in the post-test.

The obtained 't' value 13.966 is greater than the table value at the degree of freedom 59 and was found to be significant at the level of 0.05. Hence the research hypothesis which stated there will be significant difference in pre and post level of knowledge regarding domiciliary management of expressed breast milk and its storage was accepted. This showed that the planned teaching programme was effective in increasing the knowledge of mothers regarding domiciliary management of expressed breast milk and its storage.

Findings related to association between and pre test knowledge level of mothers and selected demographic variable. Findings revealed that there was a statistically significant association between the knowledge score with demographic variables like age, education and source of information at the level of $p<0.05$. Hence the research hypothesis stated that there will be significant association between the posttest knowledge score with selected demographic variable was accepted.

Key Words: *Planned teaching program, demographic, storage expressed milk.*

INTRODUCTION:

Expressing breast milk refers to the process by which a woman expels milk from her breast. The breast milk can then be stored and fed to her baby at a later point in time. Milk may be expelled manually using the hands or with a pump especially designed for expressing breast milk, the best way of providing a baby with breast milk is to breastfeed, but for various reasons this may not always be possible. For example, the mother may need to be

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separated from her infant to go to work or the infant may be hospitalized away from the mother. At these times, expressing breast milk enables a woman to feed her baby with the substance which provides optimal nutrition (breast milk) even though she is separated from the baby. For women who need to be separated from their baby for more than a few hours, expressing breast milk is required to ensure that the mammary glands (the glands in the breast which produce milk) continue to produce a sufficient quantity of milk to provide for the baby's nutritional requirements.

After expressing breast milk can be stored in different ways, such as at room temperature (no more than 25 degrees C), for up to six hours. In a cool box, with ice packs, for up to 24 hours. In a fridge (at four degrees C or colder), for up to five days. Store it at the back of the fridge, where it's coldest, away from meat, eggs, or uncooked foods. In a fridge's freezer compartment, for two weeks. In a home freezer (at minus 18 degrees C or lower), for up to six months. Frozen breast milk should ideally be defrosted in the fridge, and can be stored there for 12 hours. It can also be defrosted in a jug surrounded by hot water. Never re-freeze breast milk once it has thawed.

NEED FOR STUDY:

It is a well-known fact that breast feeding is the best method of feeding for babies both nutritionally and emotionally. WHO recommends exclusive breast feeding for babies up to 6 months for optimal growth and health and to continue breast feeding till 2 years or longer if the mother and child are willing. 2, 3 today the commonest obstacle for this is maternal employment. 4 Based on these facts, WHO also recommends countries to grant 24 weeks of maternity leave to protect maternal and child health. 5 Parliament of India passed an amendment to the Maternity Benefit Bill (2016) stating every organization (public or private) with more than fifty female employees should grant 26 weeks maternity leave to all working mothers in their organization. Sadly, many organizations are yet to implement it. In such a scenario and after 26 weeks of maternity leave, working mothers have to make a difficult choice regarding feeding options for their babies. Breastfeeding is undoubtedly the best form of feeding. Breast milk is the best nutritional choice for infants and it is possible to administer it even in the absence of the mother during feeds by pumping and storing and using it as and when required. A simpler alternative is Formula feeds. Formula milk provides babies with the nutrients they need to grow and thrive.[5]

OBJECTIVES OF THE STUDY

1. To assess the pre-test knowledge among mothers of infants regarding the domiciliary management of expressed breast milk and its storage.
2. To assess the post-test knowledge among mothers of infants regarding the domiciliary management of expressed breast milk and its storage.
3. To find out the effectiveness of planned teaching programme regarding the domiciliary management of expressed breast milk and its storage by comparing pre test and post test knowledge of mothers of infants.
4. To find association between pre test knowledge of mothers of infants and their selected demographic variable.

MODIFIED CONCEPTUAL FRAMEWORK

A conceptual Frame work is the battle plan of attack that is developed to research a topic that demands an answer. The present study is aimed at evaluating the effectiveness of planned teaching programme on knowledge of mothers regarding domiciliary management of expressed breast milk and its storage. The modified conceptual framework for the study is based on Imogene Kings Goal Attainment theory. This conceptual framework focuses on inter-personal relationship, communication between investigator and mothers.

Perception:

Perception is an each person representation of reality. The element of perception are the importing of energy from the environment and organizing it by information, transferring energy, processing information, storing information and expressing information in the form of overt behaviors. The investigator perceives the need to improve and update the knowledge regarding domiciliary management of expressed breast milk and its storage among mothers. The mothers perceive the need to know more about domiciliary management of expressed breast milk and its storage.

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Judgment:

Judgment is a set of expected behavior of person occupying a position in a social system, rules that define right and obligation in position. A relationship with one or more individual interacting for a purpose. The investigator decided to enhance the knowledge of mothers on domiciliary management of expressed breast milk and its storage through planned teaching programme. The mothers also decided to utilize the planned teaching programme and update their knowledge on domiciliary management of expressed breast milk and its storage.

Action:

Action is the physical and mental activity to achieve the goal what individual perceive. The investigator prepares and administers structured questionnaires and planned teaching programme on domiciliary management of expressed breast milk and its storage. The mothers give the consent to participate in the study and update their knowledge on domiciliary management of expressed breast milk and its storage to avoid complications.

Reaction:

Reaction is not specifically defined but might be considered to be included in the sequence of behaviors described in action and also referred as the process where subjects transform information. In the present study the investigator and mothers together setting mutual goal to improve knowledge regarding domiciliary management of expressed breast milk and its storage.

Interaction:

Interaction is defined as process of perception and communication between person and environment, between person and person, represented by verbal and non verbal behaviors that are goal directed. The investigator conducts the pre test by using structured questionnaires. Then administers planned teaching programme on domiciliary management of expressed breast milk and its storage among mothers. The mothers participate in pre test and utilize the planned teaching programme on domiciliary management of expressed breast milk and its storage.

Transaction:

Transaction is defined as an observable behavior of human being interaction with the environment. When transaction between mothers and investigator goals are attained. In this stage investigator reassesses the knowledge of mothers after utilization of planned teaching programme on domiciliary management of expressed breast milk and its storage.

Feedback:

The positive outcome indicates effectiveness of planned teaching programme on domiciliary management of expressed breast milk and its storage among mothers by improved knowledge and negative outcome indicates inadequate knowledge on domiciliary management of expressed breast milk and its storage, where mothers need to be reinforced for further learning.

METHODOLOGY

Research Approach

The research approach is an overall plan or blue print chosen to carry out the study. The selection of research approach is the basic procedure for the conduct of research inquiry . Research approach used in this study is evaluative approach.

Research Design

In the present study the pre experimental design with one group pre test post test was adapted to assess the knowledge of mothers regarding the domiciliary management of expressed breast milk and its storage

Setting of the study

Research setting is the physical location and conditions in which data collection takes place. The present study was undertaken in areas under Nelamangala, Bangalore. This setting was selected because of the geographical proximity, availability of the samples and permission to conduct the study.

Variables

Variables are qualities, properties or characteristics of persons, things or situations that change or vary 50**.** Variables of the present study were the following

Independent variable: Planned teaching programme regarding domiciliary management of expressed breast milk and its storage.

Dependent variables: knowledge of mothers of infants in selected areas.

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Demographic variables: Age, education status, occupation, type of House, parity, Family income/month and source of information.

Population

The target population for the present study comprised of mothers of infants at selected areas, Bangalore.

Sample

In this study the sample consisted of mothers of infants at Nelamangala, Bangalore.

Sample Size

Sample size refers to the number of subjects needed for the study. The total sample size of this study is 60 mothers of infants in Nelamangala, Bangalore.

Sampling Technique

In this study, convenience sampling technique was adopted.

Description of the tool

Structured knowledge questionnaires, which includes the following parts.

Part - I: Demographic Data

This section consisted of 7 items seeking personal information such as Age, education status, occupation, type of House, parity, Family income/month and source of information.

Part - II: Knowledge questionnaires

The knowledge questionnaires consisted of 30 items on four aspects such as General information of breast milk and breast feeding, Questions related to expression of breast milk, Questions related to storage of breast milk and Questions related to human milk bank.

RESULTS

Analysis is a detailed examination of the elements or structure of something. In research, analysis means commutation of certain measures along with searching for patterns of relationship that exist among data group. Descriptive and inferential statistics were used to analyze the data that was collected. The Findings of data has been finalized and organized in accordance with the plan for data analysis. These are presented under the following sections.

Section I : Description of demographic characteristics of mothers of infants in selected areas.

Section II : Knowledge level of mothers regarding the domiciliary management of expressed breast milk and its storage.

Section III **:** Comparison of the pre-test and post-test knowledge score of mothers of infants in selected areas.

Section IV **:** Association between post test knowledge scores and selected demographic variables.

SECTION – I: DEMOGRAPHIC CHARACTERISTICS OF MOTHERS OF INFANT

Table 1: Frequency and Percentage Distribution of mothers according to age N = 60

Age	Frequency	Percentage
Less than 25 years	11	18.3
26-30 years	17	28.3
31-35 years	26	43.4
36 years and above	6	10.0
Total	**60**	**100**

The table 1 depicts that majority 43.4% of subjects were in the age group of 31-35 years, 28.3% of subjects were in the age group of 26-30 years, 18.3% of the subjects were aged Less than 25 years and remaining 10% of them were aged 36 years and above.

Table 2: Frequency and percentage distribution of mothers according to education. N = 60

Education	Frequency	Percentage
No formal education	12	20.0
Primary education	16	26.7
Secondary education	11	18.3
PUC and above	21	35.0
Total	**60**	**100**

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The table 2 shows that the 35% of the subjects had pre-university education and above, 26.7% had primary education, 18.3% of the subjects had secondary education and remaining 20% of them had no formal education.

Table 3: Frequency and percentage distribution of mothers by occupation. N = 60

Occupation	Frequency	Percentage
House wife	38	63.3
Coolie	6	10.0
Private employee	11	18.3
Government employee	5	8.4
Total	**60**	**100**

The table 3 depicts that among mothers 63.3% were housewives, 18.3% were private employees, 10% were coolie workers and remaining 8.4% were government employees.

Table 4: Frequency and percentage distribution of mothers according to type of house N = 60

Type of house	Frequency	Percentage
Pucca house	29	48.3
Semi pucca house	17	28.3
Kaccha house	14	23.3
Total	**60**	**100**

The table 4 shows that majority 48.3% subjects lives in Pucca house, 28.3% were in Semi pucca houses and 23.3% were in Kaccha houses.

Table 5: Frequency and percentage distribution of mothers by parity N = 60

Parity	Frequency	Percentage
Primipara	53	88.3
Multipara	7	11.7
Total	**60**	**100**

The table 5 reveals that 88.3% of subjects were primipara mothers and only 11.7% were multipara mothers.

Table 6: Frequency and percentage distribution of mothers according to Family income/month. N = 60

Family income/month	Frequency	Percentage
Less than Rs. 5000	5	8.3
Rs. 5001-10000	18	30.0
Rs. 10001-15000	29	48.3
Rs. 15001 and Above	8	13.4
Total	**60**	**100**

The table 6 shows that among mothers majority 48.3% of subjects had family income of Rs. 10001-15000, 30% had Rs. 5001-10000 as Family income/month, and 8.3% had family income Less than Rs. 5000 and only 13.4% had family income of Rs. 15001 and above.

Table 7: Frequency and percentage distribution of mothers according source of information. N = 60

Source of information	Frequency	Percentage
Books and magazines	4	6.6
Mass media	19	31.7
Family and friends	19	31.7
Health personnel	18	30.0
Total	**60**	**100**

The table 7 reveals that 31.7% of subjects gets information by their mass media, 31.7% from family and friends and 30% of them had health personnel as their source of information.

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SECTION II: KNOWLEDGE LEVEL OF MOTHERS REGARDING THE DOMICILIARY MANAGEMENT OF EXPRESSED BREAST MILK AND ITS STORAGE

Table 8: Overall pre test and post test knowledge scores of the mothers. N = 60

Knowledge level	Pre test		Post test	
	Frequency	%	Frequency	%
Inadequate knowledge	34	56.7	6	10.0
Moderate knowledge	23	38.3	14	23.3
Adequate knowledge	3	5.0	40	66.7
Total	**60**	**100**	**60**	**100**

Table 8 depicts that majority 56.7% of the mothers had inadequate knowledge, 38.3% had moderate knowledge and 5% of them had adequate knowledge in the pre test. After administration of planned teaching programme 66.7% of the subjects had adequate knowledge, 23.3% had moderate knowledge and only 10% had inadequate knowledge regarding domiciliary management of expressed breast milk and its storage in the post test.

Table – 9: Area wise analysis of pre test knowledge scores of mothers. N = 60

Knowledge aspects	Number of Items	Maximum Score	Mean	Mean %	Median	SD
General information of breast milk and breast feeding	6	6	1.97	32.83	1.5	1.301
Expression of breast milk	8	8	4.77	59.62	5	2.126
Storage of breast milk	12	12	5.2	43.33	5	2.711
Human milk bank	4	4	1.82	45.5	2	0.911
Overall	30	30	13.75	45.83	15	5.118

Table 9 depicts that the maximum mean percentage obtained by the mother in pre test is in the aspect of Expression of breast milk (59.62%), followed by Human milk bank (45.5%), Storage of breast milk (43.33%) and least mean knowledge score (32.83%) found in the aspect of General information of breast milk and breast feeding. Therefore overall mean knowledge scores of respondents were found to be 13.75 (45.83%) with standard deviation 5.118.

Table – 10: Area wise analysis of post test knowledge scores of mothers. N = 60

Knowledge aspects	Number of Items	Maximum Score	Mean	Mean %	Median	SD
General information of breast milk and breast feeding	6	6	4.78	79.66	5	0.958
Expression of breast milk	8	8	6.48	81.0	7	1.524
Storage of breast milk	12	12	9.05	75.41	10	2.954
Human milk bank	4	4	3.18	79.5	4	1.157
Overall	30	30	23.5	78.33	25	5.774

Table 10 depicts that the maximum mean percentage obtained by the mother in post test is in the aspect of Expression of breast milk (81%), followed by General information of breast milk and breast feeding (79.66%), Human milk bank (79.5%) and least mean knowledge score (75.41%) found in the aspect of Storage of breast milk. Therefore overall knowledge scores of respondents were found to be 23.5 (78.33%) with standard deviation 5.774.

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SECTION III

COMPARISON OF THE KNOWLEDGE LEVEL OF MOTHERS OF INFANT

Table 11: Area-wise comparison of knowledge scores of mothers. N = 60

S No	Knowledge aspects	Pre test		Post Test		Mean difference	t value	Inference
		Mean	SD	Mean	SD			
1	General information of breast milk and breast feeding	1.97	1.301	4.78	0.958	2.81	16.677	S
2	Expression of breast milk	4.77	2.126	6.48	1.524	1.71	5.996	S
3	Storage of breast milk	5.2	2.711	9.05	2.954	3.85	10.394	S
4	Human milk bank	1.82	0.911	3.18	1.157	1.36	9.866	S
Overall knowledge		13.75	5.118	23.5	5.774	9.75	13.966	S

From the table 11 it is evident that the obtained "t" value 13.966 is greater than the table value both at 0.05 level of significance. Therefore, "t" value is found to be significant. Hence it is inferred that there is significant difference between the knowledge mothers of infants in selected areas regarding the domiciliary management of expressed breast milk and its storage.

SECTION IV: ASSOCIATION OF THE POST TEST KNOWLEDGE SCORES OF MOTHERS WITH THE DEMOGRAPHIC VARIABLES

Table – 12: Association of post test knowledge score of mothers with the demographic variables. N= 60

Variables	Below Median	Median and above	Chi square	Df	P value (0.05)	Inference
Age in years						
Less than 25 years	8	3	9.225	3	0.026	S
26-30 years	11	6				
31-35 years	7	19				
36 years and above	3	3				
Education						
No formal education	8	4	8.041	3	0.042	S
Primary education	11	5				
Secondary education	4	7				
PUC and above	6	15				
Occupation						
House wife	20	18	1.058	3	0.787	NS
Coolie	3	3				
Private employee	4	7				
Government employee	2	3				
Type of house						
Pucca house	16	13	2.824	2	0.244	NS
Semi pucca house	8	9				
Kaccha house	5	9				

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Variables	Below Median	Median and above	Chi square	Df	P value (0.05)	Inference
Parity						
Primipara	26	27	0.095	1	0.758	NS
Multipara	3	4				
Income						
Less than Rs. 5000	4	1	15.064	3	0.002	S
Rs. 5001-10000	14	4				
Rs. 10001-15000	7	22				
Others	4	4				
Source of information						
Books and magazines	3	1	5.526	3	0.137	NS
Mass media	7	12				
Family and friends	13	6				
Health personnel	6	12				

The table 12 shows χ2 value computed between the pre test knowledge level of mothers of infants in selected areas on domiciliary management of expressed breast milk and its storage and selected demographic variables. Variables such as age, education and source of information were significant at 0.05 level. Thus it can be inferred that there is significant association between knowledge level of the mothers and selected variables. Therefore the hypothesis stated there will be significant association between knowledge level of mothers and the selected demographic variables is accepted.

The focus of this study was to evaluate the effectiveness of planned teaching programme on knowledge of mothers regarding domiciliary management of expressed breast milk and its storage in areas under Nelamangala, Bangalore, Karnataka. Evaluative approach and one group pre test – post test design was used in the study. The data was collected from 60 samples through convenience sampling technique.

The data collected was subjected to analysis using descriptive statistics in terms of frequencies, percentage and inferential statistics like 't' test and chi square test to find the association.

CONCULSION

MAJOR FINDINGS OF THE STUDY

- In the study majority 43.4% of subjects in belong to the age group of 31-35 years and 18.3% were aged Less than 25 years.
- Regarding the education 35% mothers had pre-university education and above and 20% were no formal education.
- Majority 63.3% mothers were house wives and 8.4% were government employees.
- Majority 48.3% of subjects lives in Pucca house and 28.3% were in Semi pucca houses.
- Majority 88.3% mothers were living in primipara.
- Regarding Family income/month majority of the mothers (48.3%) reported Rs. 10001-15000 as Family income/month and 8.3% mother's had income less than Rs. 5000.
- Among the participants 31.57% of mothers had information from mass media, and 30% mothers had information from Health personnel.
- Over all mean knowledge score of the subjects in pre test were 13.75, found to be Inadequate. Over all mean knowledge score of the subjects in post test was 17.85, found to be improvement in the knowledge.
- The total difference in the mean of overall knowledge score was 9.75 with the 't' value of 13.966 and found to be significant at the level of $p<0.05$.

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