

Original Research Article

A Study to Assess the Effectiveness of Educational Package on Knowledge Regarding Breast Milk Expression and Its Storage among Working Lactating Mothers

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ABSTRACT

Introduction: Breast milk is the milk produced by the breasts (or mammary glands) of a human female to feed a child. Milk is the primary source of nutrition for newborns before they are able to eat and digest other foods; older infants and toddlers may continue to be breastfed, in combination with other foods from six months of age when solid foods should be introduced. *Expressing milk* means squeezing milk out of *your breast* so you can store it and feed it to *your baby* later. You might want to *express milk* if: you have to be away from *your baby*, for example, because *your baby* is in special care or because you're going back to work.

Methodology: The research approach adopted for the study was a quantitative approach. The study was conducted on 80 working lactating mothers (40-control group; 40-experimental group) and purposive sampling was used. The Reliability of structured knowledge questionnaires was calculated by split half method, which was found to be significant. Data analysis was done using descriptive and inferential statistics.

Results: The Mean pre test knowledge score was 9.55 and 9.075 respectively in experimental and control group. The Mean post-test knowledge score was 24.35 in experimental group and 10.2 in the control group. Further, the mean difference was found to be 19.10 from Pre test to Post test. The 't'(cal) value was 28.54 which was greater than 't' (theoretical) value at 0.05 level of significance. Hence, the null hypothesis was rejected and it was concluded that there was a significant difference between Mean Pre-test and Mean Post-test knowledge score. It revealed that educational package was effective in enhancing knowledge on breast milk expression & its storage among working lactating mothers. Hence, hypothesis (H₁) is accepted.

Conclusion: This study concluded that there was a significant difference in the level of knowledge among the working lactating mothers group before and after the administration of educational package. This showed that the intervention educational package was effective in increase level of knowledge on breast milk expression & its storage.

Keywords: Effectiveness, Educational package, Breast milk expression, Lactating mothers

INTRODUCTION

Breast milk is a dream product to feed and immunize every human born on earth. No manufactured food can match

with the content of breast milk and there is no such entity as breast milk substitute. Thus it is a best gift a mother can give her baby. Breast milk is perfect food for

neonate. Only breast milk offers complete nutrition, early protection against illness and safe healthy food at once. [1]

Breast milk is the perfect food made for baby. It is the best for the child as it is safe, clean and hygienic. It is readily available on demand whenever baby is hungry, essential elements are present in it like antimicrobial factors such as lysozymes, macrophages, lactoferrin etc. It is free from contamination, it enhances emotional bond between mother and child, and also helps in both physical and mental growth of the baby. It is also a good way to relieve painful engorgement. [2]

Breast Fed babies are less likely to develop infection, have lower risk of developing allergy, ear and orthodontic problems a lower risk of diabetes, heart disease, obesity and lymphoma in later life. Breast Fed babies have higher IQ than those who are given other forms of milk. Breast feeding is one of the first bonding experiences between the mother and the child. Breast milk is constantly available and it is the safest and the most secure source of nourishment for the babies. It protects the baby against illness and ensures warmth and comfort of the baby that is held close to the nursing mother. [3]

The World Health Organization's definition of exclusive breastfeeding is that an infant receive only breast milk from its mother or expressed breast milk and no other liquid or solids with the exception of drops of syrups consisting of vitamins, mineral supplements or medicines. [4]

The practice of exclusive breastfeeding for six months is essential to the baby as well to the mother to promote maternal and child bonding. Expressed breast milk is advised to be given to the baby if the mother is to stay away from the child for long period of time. However, the period of maternity leave in India lasts for only three months and at the same time crèches are not provided in the work places to promote exclusive breastfeeding. Mothers are thus encouraged to express breast milk and store it in containers. If the nutritional

value of the milk is to be conserved and infections prevented, it has to be stored within appropriate temperature range. [5]

The WHO recommends that for the first six months of life, infants should be exclusively breastfed to achieve optimal growth, development and health. Thereafter, infants should receive nutritionally adequate and safe complementary foods, while continuing to breastfeed for up to two years or more. [6]

Globally, less than 40% of infants under six months of age are exclusively breastfed, despite the documented benefits of breastfeeding. In addition, only 46.4% of infants aged less than six months in India are exclusively breastfed. In many Indian societies, exclusive breastfeeding is influenced by various socio-economic, cultural and biological factors. The rates of exclusive breastfeeding have shown little improvement in the last decade excluding some states like Assam where, as a result of concerted effort, in the last four years over 1.7 million Assamese infants have been exclusively breastfed, protected against under nutrition and disease, and given the best start in life. [7]

The statistics shows early initiation of breast feeding accounts for 80 % and EBF under 3 months is about 43%; under 6 months is about 22%; at the age of 1 year is 29 %. However, rates of EBF at 3 and 6 months remain stagnant and low. [4]

The increase in technology and opportunities increases the percent of mothers that work out of home Barriers at the workplace might exacerbate the problem, contributing too many women's decision to stop breastfeeding long before the minimum period recommended. This may have detrimental effects for the child, the mother, and the employer too. Non-breastfeeding mothers may be more often absent from work than breastfeeding mothers because their babies suffer from more illnesses. Not only, by promoting breastfeeding at work, might employers be more successful in retaining their employees and in shortening periods of leave. [7]

One reason for early weaning is the mother working outside of the home. Women of child bearing age comprise a large sector of the workforce. In 1997, 73% to 78% of women ages 20 to 44 were either working or looking for work. In 1995, 59% percent of women who were married and had a child 1 year of age or younger returned to the work force. Lack of support and knowledge regarding management of breastfeeding while employed, a non-supportive work environment, and problems pumping breast milk are frequently given as reasons that working women wean early. Since work is often a barrier to breastfeeding, and many mothers return to work a short time after giving birth, it will be difficult for the nation to meet the Healthy People 2010 breastfeeding objectives. [8]

Storage of human breast milk by freezing or refrigeration of milk with and without heating has been recommended. This can hardly be avoided because of the social circumstances of most mothers who are regularly separated from their infants because of work or schooling as well as the particular needs of some pre-term or sick babies to be fed with expressed breast milk. The greatest fear that has hindered the prospects of in vitro storage of breast milk for any considerable period of time is the possibility of bacterial contamination and growth of infectious pathogens in the stored milk, thereby rendering it unsafe for human consumption. Bacteriological examination of refrigerated milks has proven their safety for human consumption for even up to 72 h. For storage over longer periods up to 1 month, freezing at -20°C could be recommended, but the most preferred method, especially for longer storage would be fresh freezing at -70°C , if affordable or available. [9]

HYPOTHESIS

- H₁:- The mean post-test knowledge score will be higher than mean pre-test knowledge score in experimental group.
- H₂:- There will be significant differences in mean post-test knowledge

score between experimental group and control group.

- H₃:- There will be significant association in pre-test knowledge score with selected socio-demographic variables.
- H₄:- There will be significant association in pre-test knowledge score with selected obstetrical variables

RESEARCH APPROACH

A quantitative approach was used in the present study to assess the effectiveness of educational package on breast milk expression and its storage among working lactating mothers.

RESEARCH DESIGN

The research design is the master plan specifying the method and procedure for collecting and analysing the needed information in a research study. The selection of design depends upon the objectives of the study and variables to be studied. It determines how the study will be organized when data will be collected and what interventions are to be implemented. Research design selected for the present study was quasi experimental pre- test post-test control group design.

Quasi-experimental research design involves the manipulation of independent variable to observe the effect on dependent variable; but it lacks at least one of the two characteristics of the true experimental design: randomization or a control group.

VARIABLES IN THE STUDY

Variables are qualities, properties or characteristics of person, things or situations that change or vary.

Independent Variables

An independent variable is a stimulus or activity that is manipulated or varied by the researcher to create an effect on the dependent variable. In this study the independent variable was educational package on breast milk expression and its storage.

Dependent Variables:

A dependent variable is the outcome of response due to the effect of the independent variable, which researcher

wants to predict or explain. In this study the dependent variables will be Knowledge on breast milk expression and its storage.

RESEARCH SETTING

Setting is the physical location and condition in which data collection takes place in a study. The present study was conducted in selected in urban area, ward no.18, at Sri Ganganagar, Rajasthan.

POPULATION

The term population refers to the entire set of individual or objects that possess specific characteristics that the researcher is interested in studying. In this study target population is working lactating mothers who are residing in selected urban area, Sri Ganganagar, Rajasthan

SAMPLE

Sample size:

Sample is a subject of the population selected to participate in a research study. Sample of the study consisted of 80 working lactating mothers and residing in selected urban area, Sri Ganganagar, Rajasthan. Mothers are consented to participate in the research during the six weeks data collection period, out of which 40 mothers were assigned to experimental group and 40 mothers were assigned to control group.

Sampling technique

Sampling defines the process of selecting a group of people or other elements with which to conduct a study. The purposive sampling is based on the belief that a researcher's knowledge about the population can be used to hand pick the cases to be included in the sample. The sampling technique used in this study was purposive sampling technique.

SAMPLING CRITERIA

Inclusion criteria

The study will include the mothers who

- are willing to participate.
- don't have breast complications.
- are working in companies and factories.
- can understand Hindi and English

Exclusion criteria

The study will exclude the mothers who

- are not working.

- are not willing to participate in the study.
- with breast disorders and other breast related problems.
- are not present at the time of data collection.

DESCRIPTION OF TOOL

Research instruments or research tools are the devices used to collect data. The tools facilitate the observation and measurement of variables. The following tools are used for collecting data in this study. The tools has three parts

Tool 1: Socio Demographic Profile: It consist of 9 items, which includes age, education, occupation, family monthly income, type of family, source of information, duration of work, working pattern, working place distance.

Tool II: Obstetrical Profile: It consists of 3 items, which includes para, baby weight, sex of the baby.

Tool III: Educational Package Knowledge Questionnaire: It consists of Introduction, definition, importance, purposes, types and methods, storage time, sterilizations methods related of breast milk expression & its storage.

VALIDITY OF TOOL

Validity refers to which an instrument measures what it is intended to measure. Content validity is the extent to which the method of measurement includes all the major elements relevant to the concept being measured. The demographic Performa statement of problem, objectives, hypothesis and operational definitions and criteria check list for validation of the tool were submitted to 7 experts to establish to content validity. The experts were requested to give their opinion regarding relevance, appropriateness and usefulness of the items of the tool. Tool was collected from all the experts and modification was made as per the suggestion.

PILOT STUDY

Pilot study helps to assess the data collection plans, identify the inadequacies of the plan and make due modification as requiring, find out the feasibility of

conducting the present study and to determine the methods of statistical analysis. The investigator had done the pilot study at selected urban area ward no-18, Sri Ganganagar, Rajasthan. The permission has been taken from the community area. The tool was administered after obtaining their consent.

RELIABILITY OF THE TOOL

Reliability of the research instrument was defined as the extent to which the instrument yields the same results in repeated measures. It was then concerned with the consistency, accuracy, precision, stability, equivalence and homogeneity. The tool was administered to 8 working lactating mothers. The reliability of the tool was computed by using split half and Karl Pearson's correlation formula. The reliability of the tool is about, $r = 0.8$. Hence the tool was found to be reliable and feasible for the main study.

DATA COLLECTION PROCESS

Data collection process is the gathering of information to address a research problem. The data is collected by using interview schedule.

The data collection comprised three phases:

- Pre-intervention phase
- Intervention phase
- Post-Intervention phase

PLAN FOR DATA ANALYSIS

RESULTS

Table 2: Description of pre-test level of knowledge among working lactating mothers in experimental and control group.

S.NO.	LEVEL OF KNOWLEDGE	EXPERIMENTAL GROUP(n=40)		CONTROL GROUP(n=40)	
		f	%	f	%
1	Inadequate (<50%)	35	87.5	39	97.5
2	Moderately Adequate (51-75%)	5	12.5	1	2.5
3	Adequate (76-100%)	0	0	0	0

Table 3: Description of post-test level of knowledge among working lactating mother in experimental and control group.

S.NO.	LEVEL OF KNOWLEDGE	EXPERIMENTAL GROUP(n=40)		CONTROL GROUP(n=40)	
		f	%	f	%
1	Inadequate (<50%)	0	0	38	95
2	Moderately Adequate (51-75%)	13	32.5	3	7.5
3	Adequate (76-100%)	27	67.5	0	0

Analysis is the method of organizing, shorting and structuring data in such a way that researcher can be answered or meaningful inferences can be drawn. The collected data were coded, entered in master sheet, compiling and categorizing the information to summarize and organize the data meaningfully. Analysis and interpretation of data are based on the objectives of the study are presented. It consists of both descriptive and inferential statistics.

- Percentage analysis was used to assess the level of knowledge among both the groups.
- Inferential statistics were used to determine the effectiveness, association and comparison to identify the differences.
- The effectiveness of Educational package was assessed by using paired t - test.
- Comparison of the post-test score between the groups was calculated by using unpaired t - test.
- The association with selected socio-demographic variables was established by using Chi-square test.

SCORING PATTERN

Table 1: Percentage wise distribution of working lactating mothers according to their knowledge score

Level of knowledge	Percentage (%)
Inadequate knowledge	≤50%
Moderate Knowledge	51-75%
Adequate knowledge	76-100%

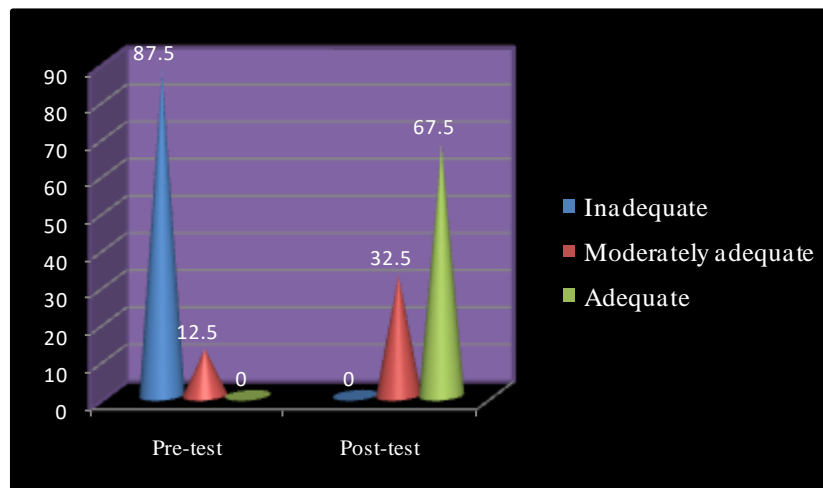


Figure 1: Bar graph showing comparison of pre-test and post-test level of knowledge among working lactating mother in experimental group.

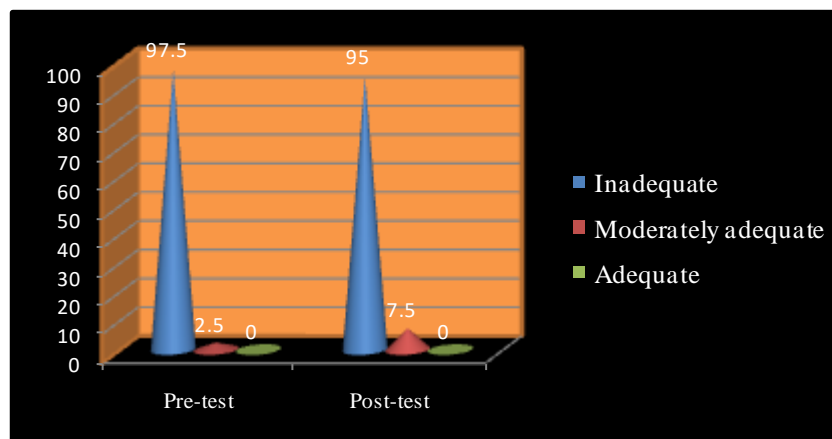


Figure 2: Bar graph showing comparison of pre-test and post-test level of knowledge among working lactating mother in control group.

Table 4: Analysis on the level of knowledge before and after implementation on educational package in experimental group.

S.NO.	Experimental Group	Mean	Mean differences	Df	Calculated t Value	Remarks
1	Pre-Test	9.55	19.10	39	28.54	S*
2	Post-Test	24.35				

NOTE:S*- Significant at 0.005 level (p<0.05)

Table 5: Comparison of post-test level of knowledge between experimental and control group.

S.NO.	Group	Mean	SD	SE	Df	Calculated t Value	Remarks
1	Experimental Group(n=40)	24.35	2.43	3.3	78	4.28	S*
2	Control Group (n=40)	10.2	3.18				

NOTE:S*- Significant at 0.005 level (p<0.05)

Association of pre-test knowledge score with socio demographic variable in experimental group:

There is significant association between types of family, occupation and source of information of working lactating mothers with their pre test knowledge score in the experimental group at 0.005 level (p<0.05). Other socio-demographic

variables like age, education, monthly income, duration of work, working pattern and work place distance are found to be non significant.

Association of pre-test knowledge score with socio demographic variable in control group:

There is significant association between education and source of information of

working lactating mothers with their pre test knowledge score in the control group at 0.005 level ($p < 0.05$). Other socio-demographic variables like age, type of family, monthly income, duration of work, occupation, working pattern and work place distance are found to be non significant.

DISCUSSION

1. In the experimental group during pre-test, 35(87.5%) of them had inadequate knowledge, 5(12.5%) of them had moderately adequate knowledge and none of them had adequate knowledge.
2. In the control group, during pre-test, 39(97.5%) of them had inadequate knowledge, 1(2.5%) of them had moderately adequate knowledge and none of them had adequate knowledge.
3. Mean pre-test knowledge score was 9.55, Mean percentage was 23.87%, Standard Deviation was 3.56 among working lactating mother in experimental group.
4. In the control group, Mean pre-test knowledge score was 9.075, Mean percentage was 22.68%, Standard Deviation was 3.2 among the working lactating mother.
5. With regard to scores, in experimental group after the intervention none of them had inadequate knowledge, 13(32.5%) of them had moderately adequate knowledge and of 27(67.5%) them had adequate knowledge.
6. In the control group, after the post test, 38(95%) of them had inadequate knowledge, 3(7.5%) of them had moderately adequate knowledge and none of them had adequate knowledge.
7. Mean post-test knowledge score was 24.35, Mean percentages was 6.08, Standard Deviation was 2.43 among working lactating mothers in experimental group.
8. In the control group, Mean post-test knowledge score was 10.2, Mean percentage was 25.5, Standard Deviation was 3.18 among the working lactating mothers.
9. The mean knowledge score of the pre test was 9.55 whereas, the mean knowledge score of the post test was 24.35 further, the mean difference was found to be 19.10 from pre test to post test. The 't' (calculated) value was 28.54 which was greater than 't' (theoretical) value at 0.05 level of significance. Hence the null hypothesis was rejected and it was concluded that there was a significant difference between mean pre-test and mean post-test knowledge score.
10. The experimental group mean post-test knowledge score 24.35 and control group mean post-test knowledge score was 10.2 with the standard error was 3.3. The calculated value was 4.28 which was greater than the table value at 78 degree of freedom (at 0.05 level of significance). Hence, hypothesis (H_2) is accepted.
11. There is significant association between types of family, occupation and source of information of working lactating mothers with their pre test knowledge score in the experimental group at 0.005 level ($p < 0.05$). Other socio-demographic variables like age, education, monthly income, duration of work, working pattern and work place distance are found to be non significant.
12. There is significant association between education and source of information of working lactating mothers with their pre test knowledge score in the control group at 0.005 level ($p < 0.05$). Other socio-demographic variables like age, type of family, monthly income, duration of work, occupation, working pattern and work place distance are found to be non significant.

CONCLUSION

This study concluded that there is a significant difference in the level of knowledge among the working lactating mothers group before and after the administration of educational package. This showed that the intervention educational package was effective in increase level of

knowledge on breast milk expression & its storage.

Recommendations

Keeping in view the findings of the present study, the following recommendations were made since the study was carried out on a small sample. The results can be used only as a guide for further studies.

- ❖ Similar studies with descriptive approach can be undertaken with large sample to generalize the findings.
- ❖ Similar research can be conducted among female health worker / ANMs who have more contact with the women and thus breast milk expression & its storage imparting.
- ❖ A study can be conducted with other variables.
- ❖ A true experimental study may be carried out to standardize the self instructional module.
- ❖ A study can be carried out by using other teaching strategies to ensure the knowledge on breast milk expression and its storage.

REFERENCES

1. E Premila Thamizhvana, Ganesh K, B Laxmi Chaitanya. A quasi experimental study to assess the effectiveness of educational package on knowledge regarding breastfeeding among primigravidae mothers. Asia pacific journal of research. 2015 Feb; 1 (24).
2. Riccardo D, Jenny B, Laura T. Human milk and formulas for neonatal nutrition. Springer link. 2017 Feb: 1-30.
3. Kalia R. Promotion of breast feeding practices. Ijns. 2004; 44:1128-37.
4. Laykewold E, Amha M, Amha A, Etagegnehu A. Exclusive breastfeeding practice and associated factors among mothers attending private pediatric and child clinics: a cross sectional study. International journal of paediatrics .2017 Dec.
5. Dr Satish Tiwari . Et al. Infant and young child feeding guidelines. Indian paediatrics. 2016;53:703-713.
6. Vishnu K, Kay S, Yun Z. Exclusive breastfeeding practices in relation to social and health determinants. BMC public health. 2013 Oct; 13(958).
7. Poreddi V, T Susheela, D Mythili. Knowledge, attitudes, and breast feeding practices of postnatal mothers: A cross sectional survey. International journal of health sciences. 2015 Oct; 9(4): 364-374.
8. Joan O, Kathryn M, Patricia K. Duration of breast milk expression among working mothers enrolled in an employer- sponsored lactation program. Pediatric nursing. 2004 April; 30 (2).
9. Michael O. Techniques for the storage of human breast milk: implications for anti microbial functions and safety of stored milk. European Journal of Pediatrics. 2000 Dec; 159 (11): 793-7.

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