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**Research Article****A STUDY TO ASSESS THE EFFECTIVENESS OF SELF-INSTRUCTIONAL MODULE ON KNOWLEDGE REGARDING EXPRESSION AND STORAGE OF BREAST MILK AMONG WORKING MOTHERS OF INFANTS IN DACHNIPORA BLOCK OF DISTRICT ANANTNAG KASHMIR****\*Ulfat AminBhat**

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**Abstract**

This study was conducted with the aim of assessing the knowledge among working mothers of infants regarding expression and storage of breast milk. Having sound knowledge regarding expression and storage of breast milk is first step towards promoting practice of expressed Breast milk, which in turn promotes exclusive breast feeding. So all working breastfeeding mothers should be motivated to learn different techniques of expression and storage of breast milk.

**Objectives**

- Assess the pre-test knowledge score regarding “expression and storage of breast milk among working mothers of infants”.
- Assess the post-test knowledge score regarding “expression and storage of breast milk among working mothers of infants”
- To compare the pre-test and post- test knowledge score regarding “expression and storage of breast milk among working mothers of infants.
- To find out the association of pre-test knowledge score regarding expression and storage of breast milk with their selected demographic variables (Age, Educational status, Parity, Previous experience with expression and storage of breast milk, Nature of job, monthly family income).

**Hypotheses**

- H1: There is significant increase in mean post-test knowledge score as compared to mean pre-test knowledge score regarding storage of expressed breast milk among working mothers of infants at 0.05 level of significance.
- H2: There is significant association of pre-test knowledge score of working mothers with their selected demographic variables at 0.05 level of significance.

**Keywords:** Breastfeeding, Infant, Expressed breast milk.

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**INTRODUCTION**

Breast milk is best food for baby, which protects him against infections, helps him to grow and develop during first years of life. Breastfeeding can prevent a major section of neonatal mortality and morbidity. It is the fundamental right of every child. Breastfeeding improves quality of life by nutritional, immunological, psychological, economic and child spacing benefits to both mother and the child. Breastfeeding should be started within one hour of birth, i.e. golden hour, irrespective of the mode of delivery (Kramer, 2001). The first year of life is vital in laying the foundation of good health. At this time certain biological and psychological needs must be met to guarantee the survival and healthy development of the child into future adult (Margaret *et al.*, 2012). Breastfeeding helps to develop emotional bond between child and mother. It provides warmth, love and affection to the baby. Breast milk provides many benefits to nation, including reduced health care costs and reduced employee absenteeism for care attributable to child illness. In 1980's the importance of breast feeding has been so widely realized that the World Health Organization started to celebrate World Breast Feeding Week from 1st – 7th August, in more than 170 countries with a particular theme every year (Layna *et al.*, 2005). Development of appropriate breastfeeding promotion interventions will help to achieve the Healthy People 2020 goals of increasing the ratio of mothers who breastfeed their infants. 82% of mothers breastfeeding in early postpartum period, 61% at six months and 34% at one

year of age (U.S. Department of Health and Human Services [DHHS], 2011) (Jessica *et al.*, 2017). Every lactating mother is encouraged to exclusively breastfeed her infant from birth till six months of age, followed by continued breastfeeding with appropriate complementary food after 6 months of age up to two years or beyond (WHO). Though it's a natural process, breastfeeding success has many obstacles like breast engorgement, inadequate milk production, working mothers, Neonatal Intensive Care Unit admissions of neonates etc. For example, problems of latching are seen in 54.8% of cases and Problems for initiation of breast feeding are present in 5.65% as found in study conducted by Manjubala Dash (2018). The literature is rich in documentation stating that continuation of Exclusive Breast Feeding is associated with many factors. Evidence-based research articles reported that the most common factors for termination of early breastfeeding were lack of paid maternal leave, maternal beliefs, and perceptions like inadequate breast milk and painful breastfeeding associated with incorrect infant position and latch (Li, Fein, Chen and Grummer-Strawn, 2008; Ogbuanu *et al.*, 2011) (Kelsey *et al.*, 2014). The maternal characteristics such as age, income, education, knowledge, and ethnicity have been associated with the initiation and continuation of Exclusive Breast Feeding (Wiener and Wiener, 2011)<sup>7</sup>. The lack of support, encouragement, and education from healthcare professionals, family, and friends can become barriers to exclusive breastfeeding (Moore and Coty, 2006; Murimi *et al.*, 2010). With growing urbanization and industrialization, more and more women have joined the work force. About 50% of women employed in the workplace are of reproductive age and

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return to work within one year of their infants' births. In India, increased female literacy rate to 65.46% according to 2011 census and rapid urbanization have increased the workforce participation rate of females in rural sector to 26.1% and to 13.8% in the urban sector (Jessy, 2016). Based on these facts, the Maternity Benefit (Amendment) Act, 2017 which came into force on April 01, 2017, has extended the earlier available maternity leave period of 12 weeks to 26 weeks, thereby excelling the international standard of 14 weeks maternity leave as recommended by the International Labour Organization. The Parliament of India passed an amendment to the Maternity Benefit Bill (2016) stating every organization (public or private) with more than ten female employees should grant 26 weeks maternity leave to all working mothers in their organization. Many organizations are yet to implement it. In such settings 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-feeding has been recognized as a pre-requisite for growth and development of healthy child. In the modern urban setting, it is complicated by the increasing number of women to work in situations where they are separated from their infants and depend on the formula feed. About 50% of the women had been employed when they become pregnant and return to their work places when their children are three months old.

Breast milk is important for low birth weight and sick newborns. They require biochemical and protective factors present in mother's milk. However, the mothers of these babies have lactation problems and may find it difficult to keep up their breast milk supply. The factors responsible for this include perinatal stress, anxiety, and separation from baby due to work. Breast milk contains different anti-infective factors like lactoferrin and high level of bifidus factors which protect the baby from infections, viable phagocytic, macrophage, lymphoid cells. Para amino benzoic acid provides protection against malaria, large protein content causes lower solute load on the kidney (Ghai *et al.*, 2010). The active fat lipase in the breast milk promotes digestion of fat and provides free fatty acids. Numerous studies have shown that breast feeding between six months and two years of age has been decreased incidence of allergic disease, bacterial meningitis, bacteremia, diarrhea, respiratory tract infection, necrotizing enterocolitis, otitis media, urinary tract infection, late onset sepsis in preterm babies, lymphoma, leukemia, Hodgkin's disease, hypercholesterolemia, asthma, and post neonatal infant mortality (Dudenhausen, 2014; Silfverdal, 2011; Wiener and Wiener, 2011). Research showed that prolonged Exclusive Breast Feeding has revealed that reduction in the risk of sudden infant death syndrome, allergic dermatitis, respiratory infections in infants, and necrotizing enterocolitis in preterm infants (Krame and Kakuma, 2012). Mothers play a very important role in child's health and in shaping his future. It is possible to administer the breast milk even in the absence of the mother by expressing, storing and using it as and when required.<sup>3</sup>Expressed Breast milk is widely practiced by mothers as an important dimension of breastfeeding behaviour. Expressing breast milk permits mothers to be periodically away from their infants to exercise lifestyle choices while continuing to breastfeed. Win *et al.* (2006) reported that women who expressed breast milk were more likely to continue breastfeeding up to 6 months than those who did not express (Nwet *et al.*, 2016). If mother has to breastfeed her infant fortuitously during the period of separation, she must learn the

art of breast milk expression and storage; mother can express breast milk and stock it in a refrigerator or in a cool place to feed her baby in her absence. Expressed breast milk can be collected and stored in sterile containers. It can be stored for up to six months in a freezer at  $-18^{\circ}\text{C}$  or lower temperature (Ghai *et al.*, 2010). Breast milk expression has proven to be friendly in establishing the breast feeding. Breast milk expression, by-hand or with a pump device, may help mothers to overcome some obstacles to successful breastfeeding and, therefore, increase breastfeeding duration. Expressing and feeding breast milk is a qualitatively different experience from breastfeeding directly from the mother's breast. Feeding expressed milk diminishes a few advantages of the nutritional components of the milk, even from a bottle, human milk feeding is superior for infants compared with infant formula (Samuel *et al.*, 2012). Most breast feeding mothers in the United States now use breast pumps and bottles to provide breast milk to their infants, with many doing so soon after delivery or at high frequency. Still in India practice of Expression of breast milk remains low. Main cause for this may be the lack of sufficient information and appropriate knowledge about Expression of breast milk. It is important that all mothers should have adequate scientific knowledge regarding expression of breast milk so that she will be able to prevent correct the problems if any and increase the milk supply to prevent malnutrition. Present study was planned to study the level of knowledge of mothers regarding expression of breast milks (Waghmare Shital *et al.*, 2013). The Sample Registration System Bulletin Jammu and Kashmir reported in December 2016, that infant Mortality rate has dropped from 41 to 34 to 26 in 2013, 2014, 2015 respectively and the reason was exclusive breast feeding and oral rehydration. Researcher as junior grade nurse in neonatal intensive care unit had noticed that neonates admitted in neonatology were fed with formulae feed due to which they are suffering from many problems in later life. Based on above mentioned data and researchers own experience, researcher was interested to take up this study. Mothers are one committed to care and to provide breast feeding to children, but when they are away from children due to any reason they are not able to breast feed their children. Therefore, the researcher has decided to provide a self-instructional module regarding expression and storage of breast milk. This intern will help the working lactating mothers to develop their attitude and skills towards breast milk expression and will help them to follow healthy practices on expression and storage of breast milk.

## Review Literature

Ester Mary (2017) conducted a study on effectiveness of self-instructional module on knowledge regarding collection and storage of expressed breast milk among working mothers of infants at selected children hospital in Chennai. 100 working lactating mothers were selected by using convenient sampling technique. An Information booklet and pamphlet were used to educate the mothers. In pre-test out of 100 lactating mothers 15 had adequate knowledge, 35 had moderate knowledge, 50 had inadequate knowledge. In post-test out of 100 lactating mothers 65 had adequate knowledge 25 had moderate knowledge, 10 had inadequate knowledge. The pretest mean value is 10.62. With 24.81 standard deviation and posttest mean value is 25.96 with 0.98 standard deviation. The paired-t test reveals that self-instructional module was effective in increasing the knowledge on collection and storage of expressed breast milk among mothers of infants at the level of  $p < 0.05$  (Mary Easter, 2017).

**Preeti Malhotra et al. (2017)**; conducted a prospective study to assess knowledge, attitude and breast-feeding practices of working mothers in Punjab, India. 1000 mothers were selected by purposive sampling technique. The study results revealed that some (38%) of the mothers had prior knowledge regarding importance of Colostrum, whereas 67.2% were not aware of it. 42% mothers had knowledge about importance of breastfeeding while rest 58 said breastfeeding was not important. It was concluded that mothers have an average knowledge about breastfeeding and poor breastfeeding practices were followed. Thus, it is important to educate mothers and families regarding breastfeeding and its importance, we need to strengthen public health education system to promote breastfeeding (Preeti Malhotra et al., 2017).

**Malays, (2008)** conducted a study on to assess the knowledge on collection and storage of breast milk among mothers of infants in banglore. 100 mothers were selected by random sampling method. The results revealed that 66% mothers had inadequate knowledge, 30% had moderately adequate knowledge and 14% had adequate knowledge regarding the collection and storage of breast milk (Malays, 2008).

**Janet Danso (2014)** conducted a cross sectional study to examine the practice of exclusive breastfeeding among 1000 professional working lactating mothers in Kumasi Metropolis of Ghana. From the study findings, 48% of professional working lactating mothers were able to practice exclusive breastfeeding and 52% could not practice exclusive breastfeeding. The study concluded that professional working lactating mothers find it difficult to exclusively breastfeed their babies and full time employment status and family members influence undermine the practice of exclusive breastfeeding (Janet Danso, 2014).

**Nice Kurien (2013)** conducted a study on effectiveness of structured teaching program through pamphlet on knowledge regarding expression of breast milk and its Storage among working Mothers at Hoithram Hospital Indore. A sample size of 60 working mothers was selected using purposive sampling technique. Findings of the study indicated that the mean pre-test score of knowledge was 3.75 and post-test knowledge score of working mothers was 9.35 with the mean difference of 5.666. The computed 't' value of 27.17 at the level  $p < 0.05$  reveals the effectiveness of structured teaching (Nice Kurien et al., 2013).

**Mori J Good Win (2010)** conducted a study on middle class mothers on breast feeding duration and employment at Washington. The survey reveals that the usual duration of breast feeding is significantly shorter for working women, 16 weeks average compared with the 25 weeks for non-working mothers (Morse and Bottoff, 2009).

**Hemalatha, (2008)** conducted a pre-experimental study to assess the effectiveness of lecture cum demonstration programme on knowledge regarding breast milk expression and its storage among 60 mothers of babies in Neonatal intensive care unit in selected hospital, Bangalore. The study revealed that 35% of mothers had average knowledge & 65% had poor knowledge score. After the teaching programme, 45% of mothers had good knowledge score, 43% had average knowledge score and 12% had poor knowledge score. It was concluded that mothers had poor knowledge and lecture cum demonstration method was effective in improving their knowledge and practice score regarding the collection and storage of breast milk (Hemalatha, 2008).

## MATERIAL AND METHODS

### Research Setting

Setting is the physical location and the condition in which data collection takes place in a study<sup>61</sup>. The setting chosen for present study were villages of Dachnipora block of district Anantnag viz Aswoora, Banderpora, Bewoora, Chenigund, Chandpora, Durgund, Hatigam K Kalan, Kanelwan, Khiram Darga, Khiram Bala, Mirgund, Mahind, Nowshera, Satkipora, Sirhamapayeen, Sirhamabala & Srigufwara in which target population was found. This setting was selected as per feasibility & availability of study subjects.

### Study population

A population is the entire aggregation of cases in which a researcher is interested. Population is a set of people or entities to which the results of a research are to be generalized<sup>61</sup>. The target population of this study was the working mothers of infants in Dachnipora block of district Anantnag Kashmir. The accessible population for present study was working mothers of infants from Aswoora, Banderpora, Bewoora, Chenigund, Chandpora, Durgund, Hatigam, K Kalan, Kanelwan, Khiram Darga, Khiram Bala, Mirgund, Mahind, Nowshera, Satkipora, Sirhamapayeen, Sirhamabala and Srigufwara.

### Sample and sampling technique

A sample is a portion of the population that represents the entire population. Thus, it is a subset of the population. Sampling technique defines the process of selecting representative elements of the population with which to conduct a study. The sample for the present study comprised of 50 working mothers from Aswoora, Banderpora, Bewoora, Chenigund, Chandpora, Durgund, Hatigam K Kalan, Kanelwan, KhiramDarga, KhiramBala, Mirgund, Mahind, Nowshera, Satkipora, Sirhamapayeen, Sirhamabala and Srigufwara villages of Dachnipora block of district Anantnag, who were available during the period of data collection and present in selected villages. The convenient sampling technique was adopted to select the study subjects for the present study.

**Table 1. Selection of study subjects from different villages**

N=50		
S No	Name of village	Number of study subjects selected for final study
1	Aswoora	2
2	Banderpora	2
3	Bewoora	1
4	Chenigund,	1
5	Chandpora	3
6	Durgund	2
7	Hatigam	4
8	K Kalan	4
9	Kanelwan	5
10	KhiramDarga	3
11	KhiramBala	2
12	Mirgund	3
13	Mahind	4
14	Nowshera,	2
15	Satkipora	2
16	Sirhamapayeen	2
17	Sirhamabala	5
18	Srigufwara	3

Table 2.

Variables	Sub items	Adequate	Moderate	Inadequate	Chi Test	P Value	df	't' value	Result
Age	20-25 Years	0	1	0	1.102	0.212	3	3.841	NS*
	26-30 Years	0	14	18					
	31-35 Years	0	8	2					
	Above 35 Years	0	4	3					
Educational Status	High school	0	2	6	5.113	0.238	4	9.49	NS
	High secondary	2	4	5					
	Graduate & above	2	26	3					
	One	03	5	2					
Parity	Two	6	13	12	10.813	0.021	4	9.49	S*
	Three	1	4	4					
	Yes	1	16	04					
Previous experience regarding expression & storage of breast milk	No	6	9	14	7.130	0.124	2	5.99	S*
	Govt	6	27	4					
Nature of job	Private	3	7	3	3.112	.485	2	5.99	NS
	10000-20000	0	0	1					
Monthly family income	Rs 20,000-30,000	3	5	3	2.310	.930	4	9.49	NS
	Above Rs30,000	10	18	10					

### Data collection tool and technique

Data collection tool or instrument is a device used to measure the concept of interest in a research project that a researcher uses to collect data<sup>61</sup>. In the present study the data collection tool used was knowledge questionnaire for assessing knowledge regarding expression and storage of breast milk among working mothers of infants.

### RESULTS

The knowledge score of working lactating mothers showed that among the total sample (n=50) in the Pre-test, 46% of subjects had inadequate knowledge score, 54% of subjects had moderate knowledge score and none of subjects had adequate knowledge score regarding expression and storage of breast milk and in Post-test maximum number of the subjects 86% had adequate knowledge score, 14% of subjects had moderate knowledge score and none of subjects had inadequate knowledge, regarding expression and storage of breast milk. The Mean Post-test knowledge score of the subjects was significantly higher (39.04) than that of the Mean Pre-test knowledge level (16.72). As such, Mean-difference is (22.32), and p value <0.001 which indicate that there is significant difference between Pre-test and Post-test Mean knowledge score. This clearly indicated effectiveness of self instructional module. The association of demographic variable with pre test knowledge score of working lactating mothers of infants using Chi square test revealed that there was statistically significant association with variable i.e. Parity and Previous experience with expression and storage at  $p \leq 0.05$  level and no association was found with variables Age, Educational status, Nature of job and monthly family income.

### DISCUSSION

#### To assess the pre-test knowledge score regarding “expression and storage of breast milk among working mothers of infants”

In the pre-test 46% of study subjects had inadequate knowledge score, 54% of study subjects had moderate knowledge score and none of study subjects had adequate knowledge score regarding expression and storage of breast milk. In pre-test mean score was 16.72, range 17, standard deviation was 3.14.

The findings revealed that majority of working mothers had moderate knowledge score, so they need to be educated and informed about expression and storage of breast milk.

#### To assess the post-test knowledge score regarding “expression and storage of breast milk among working mothers of infants”

In post-test, majority of study subjects (86%) had adequate knowledge, 14% had moderate knowledge and none of the study subjects had inadequate knowledge. In post-test mean score was 39.04, range is 27, and standard deviation was 6.17. The findings revealed that majority of working mothers had adequate knowledge and post-test mean score was increased indicating effectiveness of self-instructional module.

#### To compare the pre-test and post-test knowledge regarding “expression and storage of breast milk among working mothers of infants

Mothers mean knowledge score of 16.72 in pre-test and 39.04 in post-test. Thus improvement in score by 22.32 indicates the effectiveness of self-instructional module. The obtained 'P' value was found to be significant at 0.05 scores of significance. Hence research hypothesis ( $H_1$ ) is accepted which states that mean post-test knowledge scores of working mothers regarding expression and storage of breast milk is higher than the mean pre-test knowledge scores as measured by knowledge questionnaire at 0.05 scores of significance.

#### To find out the association of pre-test knowledge score regarding expression and storage of breast milk with their selected demographic variables (Age, Educational status, Parity, Previous experience with expression and storage of breast milk, Nature of job, monthly family income)

There was significant association between pre-test knowledge scores of study subjects and the selected demographic variables like Parity and Previous experience with expression and storage of breast milk. Hence, here the researcher accepts the research hypothesis ( $H_2$ ) which states that there is significant association between pre-test scores of knowledge and selected demographic variables such as Parity and Previous experience with expression and storage of breast milk at the significant scores of 0.05. However no significant association was found between pre-test knowledge scores of study subjects and the selected demographic variables like

Age, Educational status, Nature of job and monthly family income. Hence, here the researcher partially accepts the research hypothesis (H<sub>2</sub>) and accepts null hypothesis (H<sub>02</sub>) which states that there is no significant association between pre-test scores of knowledge and selected demographic variables such as Age, Educational status, Nature of job and monthly family income at the significant scores of 0.05

## Conclusion

Based on the analysis of findings, the following inferences were drawn. There was evident increase in knowledge scores in all the areas included in study after administration of self instructional module. Thus it was proved that self instructional module was effective for improving knowledge regarding expression and storage of breast milk among working lactating mothers of infants in Dachnipora block of district Anantnag Kashmir.

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