

# Knowledge and Practice on Expression and Storage of Breast Milk among Employed Mothers Attending B. P. Koirala Institute of Health Sciences

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## ABSTRACT

**Background:** Expressing breast milk, storing it properly and feeding the baby when mother is away at work is a newly emerging solution for the interruption of continue breastfeeding problem all over the world. The study aimed to assess the knowledge and practice on expression and storage of breast milk among employed mothers attending B.P. Koirala institute of health sciences along the association with demographic variables and correlation between knowledge and practice.

**Method:** A descriptive cross-sectional study was conducted among 106 employed breastfeeding mothers attending various pediatric units of BPKIHS, Dharan through Purposive sampling method. Data were collected using a semi-structured questionnaire through interview technique. They were analyzed using descriptive and inferential statistics at level of significance 0.05 in Microsoft Excel 2010 with SPSS 11.5 Version.

**Results:** Majority (72.6%) of the respondents were in the age group 20-29 years with mean age 27.55 and standard deviation of 4.30. The knowledge score in expression and storage of breast milk was found adequate in 46.2% of respondents with mean score 6.76 and standard deviation of 3.08. Practice was found appropriate in 39.6% of them with mean score 6.04 and standard deviation of 4.540. The correlation between knowledge and the practice was found positively statistically significant. with P value 0.01( $r=0.469$ ).

**Conclusion:** The study revealed that majority of the respondents had inadequate knowledge as well as inappropriate practice on expression and storage of breast milk. The correlation of knowledge and practice was found positively statistically significant.

**Keywords:** EBM, Employed Mothers, Knowledge, Practice, Storage

## INTRODUCTION

Breastfeeding is a basic human activity, vital to infant and maternal health and of immense economic value to households and societies.<sup>[1]</sup> Defining breastfeeding is complex. The term is used to describe any breast milk intake directly at the breast or indirectly regardless of the

mode of its delivery. Breast milk has all the nutrients babies need to stay healthy and grow. It protects them from diarrhea and acute respiratory infections – two leading causes of infant death. It stimulates their immune systems and response to vaccinations.<sup>[2,3]</sup> Studies performed in developing countries have shown that the

mortality risk among the infants, who have not consumed breast milk, is 6 to 10 times higher than those who have consumed breast milk. [4]

Many women return to work less than 6 months after giving birth, and this can have a significant impact on exclusive breastfeeding. In Nepal, the maternity leave is for 98 days in government setting (labor Act 2074) but in private services the mother has no any definite provision of getting the maternity leaves. [5,6]

The World Health Assembly has set a goal of increasing the rate of exclusive breastfeeding to at least 50% by 2025. In Southeast Asia, less than 50 percent of women initiate breastfeeding within the first hour of birth, and only 30 percent exclusively breastfeed their children in the first six months. [7,8]

According to NDHS 2016, 66% of children under age 6 months were exclusively breastfed. It has also showed that Children in rural areas are exclusively breastfed for a longer duration than children from urban areas. [9] Expressed breast milk can be used, and for working mothers this is one way to continue breast feed even when they are away from their babies. [10] Milk expression, by hand or with a pump device, may help mothers to overcome some obstacles to successful breastfeeding and, therefore, increase breastfeeding duration. [11]

Working does not necessarily have to lead to lower rates of breastfeeding but it can be affected if appropriate support is not available. [12] Mothers who want to return to work and to continue breastfeeding usually express breast milk. Knowledge of appropriate human milk handling and storage is essential for breastfeeding success. [13,14]

## METHODS

This descriptive cross-sectional study was carried out in different pediatric units including Pediatric OPD, Immunization clinic, Pediatric emergency, Pediatric ICU and Pediatric wards of

BPKIHS. A total of 106 employed mothers who had their child less than 1 year of age and had come to BPKIHS as an attendant (visitor) for the treatment or consultation of their child were enrolled through Non-probability purposive sampling technique. Ethical approval was obtained from the institutional Review committee BPKIHS, Dharan (IRC /1289/018). Informed written consent was obtained from each participant prior to data collection.

A semi-structured self-developed questionnaire was used to assess the knowledge and practice of the participants which was divided into 3 parts: Part I consist of 12 questions related to socio-demographic characteristics. Part II consisted of 12 score related questions to assess knowledge in expression and storage of breast milk. Each correct response was given 1 score and incorrect response was given 0. Median (50%) was taken as cut off point. Score  $\geq 50\%$  was considered adequate knowledge and below 50% inadequate knowledge.

Part III consisted of 12 score related questions regarding practice in expression and storage of breast milk. Right practice was given score 1 and wrong practice was given 0 score. Median (50%) was taken as cut off point. Right Practice  $\geq 50\%$  was regarded appropriate and below 50% inappropriate practice.

Instrument was pretested among 10% of the sample size in the same setting to identify the feasibility, completeness, comprehensiveness and appropriateness. Necessary modifications were made as per the inconvenience faced during pretest. Data was collected by interviewing the participants in a separate corner. Every day 4-5 subjects were interviewed altogether in different selected units of pediatric department for the period of 4 weeks till the estimated sample size was obtained.

The collected data was checked on the same day for completeness to find out errors and missing of information. Data obtained were coded and entered in Microsoft excel 2010 and converted to

SPSS sheet version 11.5 for statistical analysis. Descriptive statistics was used to describe the socio-demographic and other related variables. Inferential statistics; Pearson's Chi Square test, Fisher's Exact test and independent t test were used to

illustrate the association between the outcome variable with various independent variables. Correlation between knowledge and practice was assessed with the Pearson's correlation test.

## RESULTS

**Table 1: Socio-Demographic Characteristics of Respondents. n = 106**

Characteristics	Category	Frequency (%)
Age	20-29	77 (72.6)
	30-39	29 (27.4)
Educational qualification	Basic (class 1-8)	15 (14.2)
	Secondary (class-9-12)	60 (56.6)
	Higher (bachelor and above)	31(29.2)
Religion	Hindu	77 (72.6)
	Christian	11 (10.4)
	Kirat	8 (7.5)
	Muslim	6 (5.7)
	Buddhist	4 (3.8)
Family Type	Joint	57 (53.8)
	Nuclear	34 (32.1)
	Extended	15 (14.2)
Family Income (Nrs)	15000-30000	24 (22.6)
	31000-50000	41 (38.7)
	>51000	41 (38.7)
Type of Work place	Private organization	47 (44.3)
	Self employed	36 (34.0)
	Government organization	23 (21.7)
Facility of feeding breaks If yes, duration (n=78)	Yes	78 (73.6)
	No	28 (26.4)
	30-60 minutes	76 (97.4)
	61-90 minutes	2 (2.6)
Breast feeding duration of current baby till date	1-3 months	14 (13.2)
	4-6 months	20 (18.9)
	7-9 months	43(40.5)
	10-12 months	29(27.4)
Duration of Maternity leave /rest received	15-30 days	31 (29.2)
	31-60 days	61 (57.5)
	61-90 days	14 (13.2)
Obstetrical Variables	Para1	63 (59.4)
	Para2	39 (36.8)
	>para 2	4 (3.8)
	Living 1	69 (65.1)
	Living2	35 (33.0)
	>living2	2 (1.9)
History of still birth	Yes	7 (6.6)
	No	99 (93.4)
History of Abortion	Yes	14 (13.2)
	No	92 (86.8)

Table 1 depicts that majority (72.6%) of the respondents were in age group between 20 - 29 years. More than half (56.6%, 53.8%) of the respondents had

completed secondary education level and belong to joint family respectively. Again more than half (57.5%) of the respondents received maternity leave for 31-60 days.

**Table 2: Knowledge Regarding Expression and Storage of Breast Milk. n=106**

Characteristics	Variables	Frequency n (%)
Meaning of exclusive breast feeding	Feeding baby only breast milk for six months	67 (63.2)
	Feeding baby breast milk and formula milk for six months	22 (20.8)
	Feeding baby breast milk, water and honey for six months	15 (14.2)
	Others (lito, daal)	2 (1.9)
Meaning of breast milk expression	Correct meaning of BME	70 (66.0)
	Did not know	36 (34.0)

Characteristics	Variables	Frequency n (%)
Source of information	Health professionals	37 (34.9)
	Media	17 (16.0)
	School curriculum	20 (18.9)
	Relatives/Friends	32 (30.2)
Benefited from EBM	Baby	20 (18.9)
	Mother	27 (25.5)
	Both baby and mother	55 (51.9)
	Others (family)	4 (3.8)
Breast milk can be expressed to promote continued breast feeding	Yes	69 (65.1)
	No	0
	Don't know	37 (34.9)
Techniques of breast milk expression (MR) n=69	Hand expression	61 (88.4)
	Manual hand pump	36 (52.1)
	Electric breast milk pump	18 (26.0)
Necessity to maintain hand hygiene before EBM	Yes	104 (98.1)
	Don't know	2 (1.9)
Frequency that breast milk can be expressed in 24 hour	Every 3-4 hourly	18 (17.0)
	Every 6-12 hourly	11 (10.4)
	Only once	14 (13.2)
	Don't know.	63 (59.4)
EBM can be store or not	Yes	77 (72.6)
	No	4 (3.8)
	Don't know	25 (23.6)
Best container for EBM storage (n=77)	Glass or plastic bottle with proper lid	35 (45.4)
	A simple drinking glass	27 (35.0)
	A tea cup or bowl	11 (14.2)
	Others (thermos)	4 (5.1)
Safe storage of EBM at room temperature (n=102)	1-3 hours	27 (26.5)
	4-6 hours	16 (15.7)
	6-8 hours	18 (17.7)
	More than 8 hours	2 (1.9)
	Don't know	39 (38.2)
Safe storage of EBM in refrigerator (n=102)	1-2 days	34 (33.3)
	3-4 days	15 (14.7)
	Don't know	53 (52.0)
Sign of spoiled EBM	Sediment in layers	6 (5.7)
	Curdling	51 (48.1)
	Soapy smell	12 (11.3)
	Don't know	37 (34.9)
The best method to feed EBM to baby	Bottle feeding	45 (42.5)
	Spoon feeding	51 (48.1)
	Cup feeding	10 (9.4)

Table 2 depicts that majority (63.2%, 66%) of the responds replied the correct meaning of exclusive breastfeeding and breast milk expression respectively. Most (65.1%) of the respondents had an

idea that breast milk can be expressed to promote continued breast feeding. Almost all of the respondents (98.1%), agreed that maintenance of hand hygiene is necessary before expression of breast milk.

Table 3: Practice Regarding Breast Milk Expression and storage n=106

Characteristics	Category	Frequency (%)
Expressing breast milk	Yes	77 (72.6)
	No	29 (27.4)
Method followed to express breast milk (n=77)	Hand expression	56 (72.7)
	Manual hand pump	16 (20.8)
	Electric pump	5 (6.5)
Frequency of breast milk expression (n=77)	Daily	35 (45.5)
	Usually (more than 4 times a week)	16 (20.8)
	Rarely	24 (31.1)
	Others (just twice till today)	2 (2.6)
Amount of milk expressed each time (n=77)	<30mls	12 (15.6)
	30-60mls	40 (51.9)
	60-90mls	23 (29.9)
	More than 90 ml	2 (2.6)
Appropriate time for breast milk expression (n=77)	Just before leaving home for office	40 (51.9)
	During office hour	0
	After getting home from the office	3 (3.9)
	Others (when engorged)	34 (44.2)

Characteristics	Category	Frequency (%)
Practice on storage of EBM (n=77) If yes, practice on storage (n=54)	Yes	54 (70.1)
	No	23 (29.9)
	In a container at room temperature	33 (61.1)
	In refrigerator	20 (37.0)
Storage of EBM in room temperature (<77°F or 25°C) (n=33)	Others (thermos)	1 (1.6)
	1-3 hours	16 (48.5)
	4-6 hours	11 (33.3)
	6-8 hours	6 (18.2)
Storage of EBM in refrigerator (<39°F or 4°C) (n=20)	1-2 days	19 (95.0)
	3-4 days	1 (5.0)
Ensuring hygiene of EBM (MR) (n=77)	Washing the hands with soap and water before expression	77 (100)
	Cleaning the equipment thoroughly before using them	56 (72.7)
	Cleaning the breasts thoroughly before expression	28 (36.7)
	Storing the EBM in clean and dry place	43 (55.8)
Cleaning of equipment used for storing EBM (n=77)	Boiling	23 (29.9)
	Using dish wash agent and water	31 (40.3)
	Using antiseptic solution	17 (22.0)
	Rinsing in plain water	6 (7.8)
Feeding expressed breast milk to baby (n=77)	Yes	63 (81.9)
	No	14 (18.9)
Method of feeding (n=63)	Bottle feeding	29 (46.0)
	Spoon feeding	21 (33.4)
	Cup feeding	13 (20.6)
Milk Preparation before feeding (n=63)	Yes	44 (69.8)
	No	19 (30.1)
Technique of warming EBM (n=44)	Heating in a stove	16 (36.4)
	Heating in a microwave	5 (11.4)
	Dipping in a bowl of warm water	21 (47.7)
	Others (adding hot water in milk)	2 (4.5)
Condition avoided for feeding with EBM (n=63)	If it is sediment in layers	6 (9.6)
	If it is curdling	47 (74.6)
	If it gives soapy smell	5 (7.9)
	Others (change of color)	5 (7.9)

Table 3 reveals that majority (72.6%) of the respondents had followed the practice of expressing breast milk and the most common technique followed was hand expression (72.7%). The majority (70.1%)

of the respondents had the practice of storing EBM. More than half (61.1%) of the respondents had the practice of storing it in room temperature.

**Table 4: Association of knowledge regarding expression and storage of breast milk with selected Socio-demographic variables**

Characteristics	categories			P value
		Inadequate n (%)	Adequate n (%)	
Educational qualification	Basic	47 (44.3)	26 (24.6)	0.001
	Above basic	10 (9.4)	23 (21.7)	
Religion	Hindu	41 (38.7)	36 (34.0)	0.859
	Others	16 (15.0)	13 (12.3)	
Type of family	Nuclear	23 (21.7)	11 (10.4)	0.125
	Joint	26 (24.5)	31 (29.2)	
	Extended	8 (7.6)	7 (6.6)	
Type of work place	Government organization	2 (1.9)	10 (9.4)	0.001
	Private organization	27 (25.5)	30 (28.3)	
	Self-employed	28 (26.4)	9 (8.5)	
Obstetrical variables	Primipara	32 (30.2)	32 (30.2)	0.336
	Multipara	25 (23.6)	17 (16.0)	
	Living 1	35 (33.0)	32 (30.2)	0.678
	Living >1	22 (20.8)	17 (16.0)	
	History of still birth	52 (49.1)	47 (44.3)	0.447
	No history of still birth	5 (4.7)	2 (1.9)	
History of abortion	48 (45.3)	44 (41.6)	0.397	
No history of abortion	9 (8.5)	5 (4.7)		
Provision of feeding breaks in work place	Yes	42 (39.6)	36 (34.0)	0.980
	No	15 (14.1)	13 (12.3)	

Mean Knowledge: Mean ± SD = 6.76 ± 3.085

Table 4 shows that the mean knowledge of respondents is 6.76 with standard deviation ±3.085. Knowledge

regarding expression and storage of breast milk is found significantly associated with

educational qualification and type of work place with P-Value 0.001 in each.

The overall knowledge was found adequate in 49 (46.2%) of the respondents whereas practice was found appropriate in 42(39%) of them.

The Mean age was 27.51 with SD  $\pm 4.243$  in those respondents having adequate knowledge and the monthly family income was Mean  $\pm SD = 59387.76 \pm 25772.091$ .

Regarding breastfeeding duration of current baby till the date(months), among those having adequate knowledge was Mean  $\pm SD = 6.235 \pm 3.0467$  whereas inadequate was Mean  $\pm SD = 6.904 \pm 2.8260$ . The Mean  $\pm SD$  of total duration of maternity leave received (days) in those having adequate knowledge was  $50.82 \pm 17.805$  and duration of feeding breaks in work place (minutes) was Mean  $\pm SD = 39.17 \pm 15.330$ .

**Table 5: Association of practice regarding expression and storage of breast milk with selected socio-demographic variables n=106**

Characteristics	Categories	Practice analysis		P value
		Inappropriate	Appropriate	
Educational qualification	Basic	49(46.2)	24 (22.6)	0.035
	Above basic	15 (14.1)	18 (17.0)	
Religion	Hindu	45 (42.5)	32 (30.2)	0.507
	Others	19 (17.9)	10 (9.4)	
Type of family	Nuclear	25 (23.6)	9 (8.5)	0.143
	Joint	30 (28.3)	27 (25.5)	
	Extended	9 (8.5)	6 (5.7)	
Type of work place	Government organization	3 (2.8)	9 (8.5)	0.020
	Private organization	35 (33.0)	22 (20.8)	
	Self-business	26 (24.5)	11 (10.4)	
Obstetrical variables	Primipara	39 (36.8)	25 (23.6)	0.884
	Multipara	25 (23.6)	17 (16.0)	
	Living 1	41 (38.7)	26 (24.5)	0.822
	Living >1	23 (21.7)	16 (15.0)	
	History of still birth	60 (56.6)	39 (36.8)	1.000
	No history of still birth*	4 (3.8)	3 (2.8)	
History of abortion	55 (51.9)	37 (35.0)	0.748	
No history of abortion	9 (8.5)	5 (4.7)		
Provision of feeding breaks in work place	Health institution	62 (58.5)	42 (39.6)	0.391
	Yes	49 (46.2)	29 (27.3)	
	No	15 (14.2)	13 (12.3)	

Fisher's exact test\* Mean  $\pm SD = 6.04 \pm 4.540$

Table 5 shows that the mean practice score of the respondents is 6.04 with the standard deviation  $\pm 4.540$ . Practice is found significantly associated with educational qualification and type of work place with P-Value 0.035 and 0.020 respectively.

Age in years of respondents having appropriate practice was Mean  $\pm SD = 27.79 \pm 4.135$ . Family income per month was Mean  $\pm SD = 57738.10 \pm 25332.00$  where as it

was Mean  $\pm SD = 51093.75 \pm 25062.917$  in those having inappropriate practice.

Breast feeding duration of current baby till the date (months) was Mean  $\pm SD = 7.107 \pm 3.1010$  with appropriate practice and duration of maternity leave/rest received (days) was Mean  $\pm SD = 52.86 \pm 21.015$ . Likewise, duration of feeding breaks in work place (Minutes) was Mean  $\pm SD = 41.90 \pm 16.713$ .

**Table 6: Correlation between Knowledge and Practice n=106**

		Total knowledge	Total practice
Total knowledge	Pearson's correlation	1	0.469
	Sig. (2-tailed)	-	.001
Total Practice	Pearson Correlation	0.469**	1
	Sig. (2-tailed)	-	-

\*\*Correlation is significant at the 0.01 level (2-tailed).

Table 6 shows that there is a positive correlation between knowledge and practices of respondents on expression and

storage of breast milk ( $r=0.469$ ) and correlation is significant at the P value 0.01.

## DISCUSSION

This descriptive cross-sectional study aimed to assess the knowledge and the existing practice regarding expression and storage of breast milk among employed mothers. Most (72.6%) of the respondents belong to the age group 20-29 years. This finding is consistent to the finding of the study done by Niguse Tadele et al in which the majority (68.5%) of the study participants were between the age group 20-30 years. [15] This could possibly be justified by the fact that the most fertile and appropriate period of child bearing in a woman's life is when she is between 20-30 years old.

The mean monthly income of family was 53726.42 with standard deviation 25261.125. The significant monthly family income is justifiable as majority of the respondents belonged to joint families. All of the respondents were found above the poverty line may be because all of them were engaged to some kind of employment.

(The official monetary poverty line in local prices is NRs 19,261 (Central Bureau of Statistics [CBS], 2011) per person per year. This is approximately 225 US dollars as of April 2013 transaction rate. It implies that a Nepali consuming approximately 0.6 dollar a day is considered as non-poor).

Regarding the type of work place, 44.3% of the respondents were engaged in private sectors and 34.0% of them had their own employment. Only 21.7% of the respondents were working in government sectors. This finding of the study denotes that government employment for the females in this setting is still lacking.

Regarding the duration of maternity leave received by the respondent only 13.2% of the respondents had received maternity leave for 2-3 months. Though maternity leave was received by every participant, it was not provided uniformly in every sector of employment. Women got maternity leave of three months only in government sector which was not able to meet the recommended standard set by the

WHO which is 14 weeks. The finding was consistent to the study conducted by A. Attahiru et al in which it was found that although all the respondents were given maternity leave at their work place, some (8.9%) had less than three months' duration. [16]

Majority (73.6%) of the respondents had provision of feeding breaks in their work place. It can be justified that when a mother is provided with the feeding breaks in her office, she may not feel the necessity to express her breast milk to feed her baby latter on.

Regarding the overall knowledge of the respondents, 46.2% of them were found having adequate knowledge and 53.8% of them inadequate knowledge on expression and storage of breast milk.

Significant number, (65.1%) of the respondent in this study believed that breast milk can be expressed to promote breast feeding. In fact, expression of breast milk is the only solution for a working woman to continue exclusive breast feeding and to extend the duration of feeding. A multiple response question was asked to respondents regarding different available techniques of breast milk expression. Majority (88.4%) of the respondents had information regarding the hand expression method of breast milk. It can be justified as because hand expression is always simple and economical to all women. This result was similar to the finding of study done by Rhona J. McInnes et al where it is mentioned that 'in the early days, when a mother needs to express, hand expressing will be far more successful than using a pump. [17] At the same time manual hand pump was also known to 52.1% and the least (26.0%) knowledge was obtained for electric breast milk pump.

A lactating mother can express her breast milk every 3-4 hourly. Most (59.4%) of the respondents in this study were unknown about the appropriate frequency of breast milk expression. It can be referred to a similar type of study done by Valerie J. Flahermans et al on "Breastfeeding" by Feeding Expressed Mother's Milk, which

states that frequency of pumping is another important aspect of ensuring enough supply. Mothers should be encouraged to pump a minimum of 8 times a day and potentially up to 12 times a day during the first several weeks when breast milk supply is being established.<sup>[18]</sup>

This study reveals that only 17.7% of the respondents had correct knowledge regarding the safe storage of expressed breast milk in room temperature (<77°F C or 25°C). Australian Breast feeding association [19] recommends that expressed breast milk can be stored safely for 6-8 hours in room temperature. In this study, 38.2% of the respondents had no idea about this.

On the similar context, the respondents in this study were found to be inadequately knowledgeable regarding the storage of expressed breast milk in refrigerator (39°F or 4°C). Only 14.7% replied correctly that it can be stored safely for 3-4 days. It can be justified that the people in this setting are not used to for regular health information and they are not properly informed on this matter.

The study findings show that nearly half (48.1%) of the respondents replied correctly regarding the spoiled sign of expressed breast milk. The expressed breast milk normally sediments in layers if left unshaken for some time and it also normally gives soppy smell. The only distinct sign of spoiled expressed breast milk is when it appears curdling.<sup>[19]</sup>

Regarding the overall practice of the respondents, 39.6% of them were found having appropriate practice and 60.4% of them inappropriate practice on expression and storage of breast milk.

In this study majority (72.6%) of the respondents had adapted the practice of breast milk expression. Likewise, majority (72.7%) of the respondents in this study adapted hand expression method of BME. Despite their adequate knowledge in manual breast pumps, only 20.8% were using it. The reasons for this were reported as hand expression being simple and economical,

money scarcity to purchase breast pumps though the women were employed, due to the bothering task of cleaning and maintaining breast pumps and unavailability of breast pumps in the market whenever needed. Electric breast pumps were used by very few (6.5%) of the study participants. The finding of this study was similar with a Cochrane review done by Becker GE et al in which it is mentioned that given its universal accessibility, the simplest way to express milk is by hand.<sup>[20]</sup>

Regarding time and place specific for expression of breast milk, if a breastfeeding mother expresses her breast milk during office hours when she feels heaviness and stores it properly to feed her child next day would be more practical for her. This study finding showed that none of the respondents had practice of expressing breast milk during office hours. The great barrier to not expressing breast milk during long working hours at office were recognized as lack of private places and support from the employer. The practice of storing EBM in this study was adapted by most (70.1%) of the respondents who had expression practice. The practice of storing the expressed breast milk was found to be doing haphazardly because the respondents were found unknown regarding the maintenance of room temperature or fridge temperature.

The result of the study showed that the significant percentage (81.9%) of respondents expressed their breast milk for feeding purpose to their child. More than half (52.2%) of the respondents had inappropriate practice regarding warming of expressed milk prior to feeding as they reported of heating it either in stove or a microwave. The appropriate technique of warming expressed breast milk is by dipping in a bowl of hot water which was practiced by only 47.7% of the respondents among total of 44 respondents. Heating expressed breast milk directly in fire can destroy the nutritional value of expressed breast milk which is no more acceptable. Majority (74.6%) of the respondents had



good practice at identifying the sign of spoiled expressed breast milk. [19]

The mean knowledge score of the respondents was 6.76 with standard deviation  $\pm 3.085$ . Among the total 106 respondents, (46.2%) were found having adequate knowledge whereas (53.8%) were found inadequate knowledge.

Knowledge was found significantly associated with the monthly income of the respondents, educational qualification and type of work place with the P Value 0.032, 0.001 and 0.001 respectively.

The mean practice score of the respondents was 6.04 with standard deviation  $\pm 4.540$ . Among the total 106 respondents, 39.6% of the respondents were found having appropriate practice and 60.4% of the respondents were found having inappropriate practice. Practice was found significantly associated with the educational qualification (p value=0.035) and the type of work place (p =0.020) of the respondents.

The knowledge of the respondents was found positively correlated with the practice on expression and storage of breast milk ( $r=0.469$ ) and correlation is significant at the P value 0.01. It denotes that when the knowledge is adequate, practice is also appropriate and when there is inadequate knowledge, practice is found inappropriate.

## CONCLUSION

The study findings revealed that majority of the respondents had inadequate knowledge as well as inappropriate practice on expression and storage of breast milk. Demographic characteristics like family income educational qualification and type of work place were found significantly associated with the knowledge and practice. There was a positive correlation between knowledge and practice on expression and storage of breast milk and found statistically significantly correlated. It can be concluded that breast milk expression practice was followed by majority of the respondents but its proper storage and true intension behind expression was found missing.

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