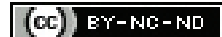


# Impact of Educational Interventional Programme Regarding Breast Feeding on the Level of Knowledge, Perception and Attitude of Post Natal Mothers

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## ABSTRACT

**Introduction:** Nonpractice of breast feeding and noncompliance with immunisation are the two most important contributing factors of infant mortality which could be because of ignorance, illiteracy, social and cultural belief.

**Aim:** To assess the level of knowledge, perception, and awareness among pregnant mothers after an educational intervention programme.

**Materials and Methods:** A semi structured questionnaire was used for the pre and post-test experimental study among 145 mothers who delivered at a tertiary care center, Puducherry; during the study period of two months (November- December 2019). Those who were not willing to participate, who had postpartum complications were excluded from the study (15 mothers). Health education was imparted by one of the authors, in three stages. Stage I: Video demonstration of breast feeding for 10 minutes. Stage II: Focused group

discussion for 10 minutes. Stage III: Mannequin demonstration for 10 minutes. Post-test was done on day three of life. Total of 37 questions in the form of yes/no, fill in the blanks and multiple-choice questions were used. Each question carried one mark. Wilcoxon signed rank test was used to describe the effectiveness of teaching by comparing pre-test - post-test score. The p-value of <0.05 was considered as statistically significant.

**Results:** The median age of mothers was 26-30 years, around 62.7% were multiparous and about 50% had completed a basic undergraduate course. The post-test score of knowledge, attitude and perception were significantly higher than the pre-test scores (p-value=0.001).

**Conclusion:** There is a significant improvement in the level of knowledge, perception and attitude regarding breast feeding after the educational intervention.

**Keywords:** Health education, Lactational mothers, Questionnaire

## INTRODUCTION

Breast feeding is one of the most important natural gifts to all mothers and their babies. It promotes the bonding between them, and it improves the sensory and cognitive development for the babies. Breast feeding also helps to prevent acute infections with the help of anti-infective factors present in it. It also helps in boosting up the immunity. It is easily available, safe, and inexpensive and hence can be given as and when required. Breast fed babies have turned out to be more intelligent and show good scholastic performance [1]. As per World Health Organization (WHO)'s literature update in 2012, exclusive breast feeding during the first six months of life has helped in the reduction of morbidity and mortality of the newborn [2].

As per 2007 global census, 10 million children died before the age of five years because of infectious diseases and malnutrition.

In developing countries, the rate of infant mortality is 6-10 times higher in those who are not practicing breast feeding [3]. Infant mortality rate as per 2019 is 28/1000 live births in India as estimated by United Nations (UN)- Inter agency group for child mortality estimation [4], which clearly explains the same situation decades later also. The rate of exclusive breast feeding is also not much different [5]. These data clearly explain the gap between the recommendations by WHO and United Nations Children's Fund (UNICEF) and implementation of those in practice. Nonpractice of breast feeding and noncompliance with immunisation are the two most important contributing factors of infant mortality which could be because of ignorance, illiteracy, social and cultural belief [6]. Thereby, breast-feeding practices is considered as one of the important public issue with social and economic implications. Hence, WHO recommends exclusive

breast feeding for six months and thereby adding complementary feeding in addition to the continuation of breast milk until two years of age [7]. Raheel H and Tharkar S studied the reason for nonpractice of exclusive breast feeding in Saudi Arabia and concluded two main reasons- lack of knowledge on breast feeding and delayed initiation of breast feeding [8]. Similarly, studies from India also highlight the gap between the necessity of exclusive breast feeding and the practice followed. Lack of knowledge among mothers and different cultural practices could be a barrier for varied practices [5,9-11]. This study was aimed to assess the level of knowledge, attitude and perception among pregnant mothers after an educational intervention programme.

## MATERIALS AND METHODS

A pre and post-test experimental study was done to assess the level of knowledge, perception, and awareness among pregnant mothers after an educational intervention programme at Pondicherry Institute of Medical Sciences, Puducherry. The study period was two months (November- December 2019). The study was approved by Institutional Ethics committee (RC/19/54).

**Inclusion criteria:** All mothers who had delivered at Pondicherry Institute of Medical Sciences, Puducherry during the study period of two months (n=145) were included in the study after taking informed consent.

**Exclusion criteria:** Those who were not willing to participate, who had postpartum complications were excluded from the study (15 mothers). Twenty mothers were excluded from analysis later as they couldn't finish all three sessions of health education.

A semi structured questionnaire for the assessment of knowledge, attitude and perception was prepared. Each correct answer was given one mark with no negative marking. Questionnaire included 19 questions to assess knowledge, 11 for attitude and seven for perception (Total score=37). The questionnaire was piloted on 75 antenatal mothers during August-September 2019. Questionnaire was validated and attained an alpha score of 82. Pre-test was conducted on day 1 within 24 hours of birth. Health education was conducted in three stages in the postnatal ward of the hospital. Multiple sessions for separate groups, involving 4-5 mothers, were conducted so as to involve the mothers delivered through normal delivery or caesarean section.

### The sessions details are as follows:

**Stage I:** 10 minutes video comprising how to breast feed, significance of exclusive breast feeding, advantages of breast feeding, signs of good attachment, how to check the adequacy of breast feeding, expressed breast milk and about the storage, cons of pre-lacteal feeds, galactagogues, burping techniques, etc. Video was projected in the demonstration room of the ward for all mobile mothers. Bedside video demonstration was done for non-ambulant post caesarean mothers.

**Stage II:** Focused group discussion of 4-5 mothers to clear all their doubts for 10 minutes.

**Stage III:** One-on-one demonstration on mannequin how to swaddle, how to position the baby for breast feeding and explained the further steps for proper latching, different positions for burping for around 10 minutes.

Post-test was conducted on Day third of life with the same questionnaire. A consent form was obtained from the study participants after explaining in detail about the study. The anonymised data collected was kept confidential and private.

## STATISTICAL ANALYSIS

The data was entered in Microsoft excel and was analysed using statistical software Statistical Package for the Social Sciences (SPSS) version 20.0. Descriptive statistics like frequency and percentage was used for qualitative variables and median and interquartile range used for quantitative variables. Mann-Whitney U test and Kruskal-Wallis test was used to find the association of demographic characteristics with the level of knowledge, perception, and attitude. Wilcoxon signed rank test was used to describe the effectiveness of teaching by comparing pre and post-test score in knowledge, perception, and attitude. The p-value of <0.05 was considered as statistically significant.

## RESULTS

The demographic data like age, educational qualification, occupation, income, type of family, religion, socioeconomic status, mode of delivery and parity were collected [Table/Fig-1].

Demographic variables		Frequency (n=110)	Percentage
Age (Years)	<20	5	4.5
	21-25	44	40.0
	26-30	53	48.2
	31-35	6	5.5
	>35	2	1.8
Educational status	Primary schooling	11	10.0
	Higher secondary (upto 12 <sup>th</sup> std)	28	25.5
	Undergraduates	55	50.0
	Post graduates	16	14.5
Occupation	Working in medical field	11	10.0
	Working in nonmedical field	8	7.3
	Nonworking	91	82.7
Monthly income**	<10000	31	28.2
	10000-100000	65	59.1
	>100000	14	12.7
Locality	Rural	96	87.3
	Urban	14	12.7

Religion	Hindu	106	96.4
	Christian	4	3.6
	Muslim	0	0
Socioeconomic status*	I	0	0
	II	18	16.4
	III	73	66.4
	IV	19	17.3
	V	0	0
Mode of delivery	Normal delivery	69	62.7
	Caesarean section	41	37.3
Parity	Primi	41	37.3
	Multi	69	62.7

**[Table/Fig-1]:** Frequency and percentage distribution of demographic variables.

\*: socioeconomic status based on Modified Kuppaswamy scale; \*\*: Monthly income in Indian rupees (INR)

The percentage of mothers that responded correctly to each question in the questionnaire is shown in [Table/Fig-2]. Most of them had statistical significance while comparing pre-test to post-test.

Total 66% mothers revealed that their knowledge prior to the education intervention programme was from their own mothers. Only 22% was from health care professionals like doctors, nurses etc. The other 12% said that they received their knowledge from media.

The data was then associated with the level of knowledge, perception and attitude about breast feeding among breast feeding mothers [Table/Fig-3-5]. Educational status of the mother had a statistically significant impact in the post-test scores (p-value=0.05). This shows that the educational intervention programmes helped the educated mothers more.

Questions	Number (percentage) of correct answers for pre-test	Number (percentage) of correct answers for post-test	p-value
<b>To assess knowledge</b>			
Breast feeding should be started after ----- hours of normal delivery	88 (80)	97 (88.1)	0.1
Breast feeding should be started after ----- hours of LSCS	79 (71.8)	99 (90)	0.006
Colostrum should be given to baby- Yes/No	82 (74.5)	100 (90.9)	0.001
Duration of each feeding:	78 (70.9)	98 (89)	0.008
Frequency for feeding:	89 (80.9)	101(91.8)	0.01
Duration of exclusive breastfeeding:	88 (80)	105 (95.4)	0.005
Any pre-lacteal feeds to be given	85 (77.2)	98 (89)	0.01
Will effective breast-feeding help mother and baby- Yes/No/Don't know	78 (70.9)	93 (84.5)	0.01
Ideal position for breast feeding?	79 (71.8)	99 (90)	0.006
Ideal breast care means?	72 (65.4)	92 (83.6)	0.002
Is acute illness a contraindication for breast feeding- Yes/No/Don't know	75 (68.2)	90 (81.8)	0.002
What should be done to prevent regurgitation	78 (70.9)	92 (83.6)	0.02
How to get expressed breast milk?	78 (70.9)	89 (80.9)	0.08
Till what age breast feeding should be continued?	80 (72.7)	95 (86.3)	0.01
What increases breast milk- Baby sucking/Drinking lots of milk/Eating special food/Do not know	83 (75.4)	93 (84.5)	0.09
Side effects of Breast feeding- Nothing/Mother becomes weak/Breasts lose shape/Prolongs next pregnancy/Milk drips/Cannot go out/others	82 (74.5)	99 (90)	0.002
What all other than breast milk can be given for 6 months: Gripe water/Vasambu/Plain water/Honey/Others	88 (80)	102 (92.7)	0.006
How do you know that baby fed well-passing urine >6 times per day/Sleeping well for around 2 hours/Gains weight adequately/Don't know	90 (81.8)	104 (94.5)	0.003
How do you know that baby fed well-passing urine >6 times per day/Sleeping well for around 2 hours/Gains weight adequately/Don't know	76 (69.1)	99 (90)	0.001
<b>To assess perception</b>			
Breastfeeding can reduce neonatal infection- Yes/No	83 (75.4)	110 (100)	<0.001
Breastfeeding will not reduce beauty of mothers- Yes/No	88 (80)	108 (98.1)	<0.001
Bottle feeding is convenient- Yes/No	92 (83.6)	110 (100)	<0.001
Cow milk has high nutritive value- Yes/No	92 (83.6)	107 (97.2)	0.006
Working mother can provide expressed breast milk- Yes/No	95 (86.3)	104 (94.5)	0.03
Breast feeding can increase bonding between mother and the baby- Yes/No	93(84.5)	103(93.6)	0.031
Milk secretion can be increased when mother takes special foods like dry fish and garlic- Yes/No	88 (80)	106 (96.3)	0.002

Colostrum should be given to the baby- Yes/No	90 (81.8)	99 (90)	0.08
Breast feeding can affect healing of episiotomy wound- Yes/No	93 (84.5)	95 (86.3)	0.7
Breastfeeding should be stopped once the baby takes complimentary feeding- Yes/No	88 (80)	97 (88.1)	0.10
Applying vasambu will helps in the digestion: Yes/No	87 (79)	95 (86.3)	0.15
<b>To assess attitude</b>			
Breastfeeding on demand is difficult: Yes/No	92 (83.6)	105 (95.4)	0.003
Motivated to breast feeding: Yes/No	94 (85.4)	102 (92.7)	0.09
Breast feeding is not safe so not planning to give: Yes/No	103 (93.6)	103 (93.6)	1
Cow's milk is more nutritious and planning to stop breast feeding: Yes/No	102 (92.7)	108 (98.1)	0.05
Bottle feeding helps the baby gain more weight: Yes/No	104 (94.5)	110 (100)	0.01
Expressed breast milk is useless: Yes/No	99 (90)	109 (99)	0.003
Giving gripe water daily will increase digestion and hence planning to give: Yes/No	105 (95.4)	110 (100)	0.02

**[Table/Fig-2]: Comparison between the pretest-post-test score.**  
LSCS: Lower segment cesarian section; p-value <0.05 statistically significant

Demographic variables		Median of pretest	IQR	p-value	Median of post-test	IQR	p-value
Age (Years)	<20	4	2.5-5	0.338	15	5.5-19	0.367
	21-25	6	3-10		16	12.25-18.75	
	26-30	7	2-9.5		17	12-19	
	31-35	7	3.5-11		16.50	13.25-17.75	
	>35	3	1-3		19	19-19.5	
Educational status	Primary schooling	8	3-12	0.187	18	15-19	0.05
	Higher secondary (upto 12 <sup>th</sup> std)	4	2-7.75		13.5	10-17.75	
	Undergraduates	7	4-10		17	13-19	
	Post graduates	6.5	1.25-8.75		18.5	13-20	
Occupation	Working in medical field	7	3-9	0.546	17	11-19	0.771
	Working in non medical field	7.5	3.25-10.75		17.5	14.5-19.75	
	Non working	6	3-9		17	12-19	
Income (INR)	<10000	4	2-9	0.292	15	12-19	0.424
	10000-100000	7	3-10		17	13-19	
	>100000	6.5	1.75-8.25		19	11-20	
Locality	Rural	6	3-9	0.517	17	12-19	0.567
	Urban	6.5	3.75-10.75		17.5	14.25-19	
Religion	Hindu	6	3-9.25	0.603	7.5	4.75-9	0.568
	Christian	7.5	2.25-14.25		7.5	5.5-8.75	
	Muslim	0					
Socioeconomic status	I	0		0.333			0.313
	II	4.5	3-7.25		14.5	12-19	
	III	7	3-10		17	12-19	
	IV	6	2-9		18	15-19	
	V	0					
Mode of delivery	Normal delivery	6	3-9	0.607	17	12-19	0.488
	Caeserean section	7	3-10		17	13-19	
Parity	Primi	6	3-8	0.435	16	12-18.5	0.256
	Multi	7	2-10		17	12-19.5	

**[Table/Fig-3]: Association between level of knowledge of breast feeding mothers with selected demographic variables.**  
IQR: Inter quartile range; p-value <0.05 statistically significant

Demographic variables		Median of pretest	IQR	p-value	Median of post- test	IQR	p-value
Age (Years)	<20	6	2.5-8	0.461	10	7.5-11	0.659
	21-25	7	2.75-8		11	10-11	
	26-30	8	4.5-9		11	10-11	
	31-35	6.5	5.75-8.25		10.5	10-11	
	>35	5	2-2		11	11-11	
Educational status	Primary schooling	8	6-9	0.234	11	10-11	0.151
	Higher secondary (upto 12 <sup>th</sup> std)	7	1-8		10	8-11	
	Undergraduates	8	6-9		11	10-11	
	Post graduates	7.5	4.25-9		10.5	10-11	
	Working in medical field	8	7-10		11	11-11	
Occupation	Working in non medical field	7	1-8	0.257	11	10-11	0.475
	Non working	7	5-9		11	10-11	
	<10000	7	4-8		11	9-11	
Income (INR)	10000-100000	8	5.5-9	0.35	11	10-11	0.446
	>100000	7	4.75-8.5		11	9.5-11	
	Rural	7	5-9		11	10-11	
Locality	Urban	8	4.75-9	0.793	11	10-11	0.244
	Hindu	7.5	5.5-8.75		10.5	8.5-11	
Religion	Christian	7.5	4.75-9	0.904	11	10-11	0.174
	Muslim	0					
	I	0					
Socioeconomic status	II	7	5-8.25	0.656	11	9.75-11	0.098
	III	8	3-8		11	9.5-11	
	IV	7	7-9		11	11-11	
	V	0					
Mode of delivery	Normal delivery	6	3-9	0.607	17	12-19	0.488
	Caeserean section	7	3-10		17	13-19	
Parity	Primi	7	5.5-9	0.822	11	10-11	0.755
	Multi	8	2-9		11	9.5-11	

**[Table/Fig-4]: Association between level of perception of breast-feeding mothers with selected demographic variables.**  
IQR: Inter quartile range; p-value <0.05 statistically significant

All the other factors like age, parity, socioeconomic status etc., did not have a statistically significant impact on the pre-test and post-test scores. The median score for the level of knowledge, level of attitude, and level of perception significantly increased from pre-test scores to post-test scores with a significant p-value. [Table/Fig-6]

## DISCUSSION

This study was conducted to assess the effect of educational intervention programme on knowledge, attitude and perception among breast feeding mothers. In this study, a total of 110 mothers completed the pre-tests and post-tests. The 30-minute educational intervention programme had a statistically significant impact on the knowledge, attitude, and perception

of breast-feeding mothers. Though this study had more impact on educated mothers, even the uneducated mothers had an impact. Almost all the responses by mothers to the questionnaire had improved knowledge, attitude, and perception following health education and was also statistically significant; which is similar to other studies [5,9-22]. The usefulness of colostrum was known and had been given by only 74.5% mothers. Comparing with other studies, it is less than 80% in Madhya Pradesh [9] and less than 90% as reported in Varanasi [10] but more than 60.7% in a study done in Jammu by Bala K et al., [5]. Many studies done in India revealed that the mothers lack adequate knowledge on exclusive breast feeding, the need for giving colostrum, the necessity to continue breast milk even during acute infection [5, 11, 12].

Demographic variables		Median of pretest	IQR	p-value	Median of post- test	IQR	p-value
Age (Years)	<20	5.5	4-44	0.196	7	7-44	0.559
	21-25	4	1-5		7	6-7	
	26-30	4	2-6		7	6-7	
	31-35	5	3-6.25		6.5	4.25-7	
	>35	5.5	5-5		7	7-7	
Educational status	Primary schooling	4	1-6	0.188	7	7-7	0.394
	Higher secondary (upto 12 <sup>th</sup> std)	3	0-5		7	5.25-7	
	Undergraduates	4	3-6		7	6-7	
	Postgraduates	4	2.25-6		7	6-7	
	Working in medical field	6	4-7		7	6-7	
Occupation	Working in nonmedical field	4	0.75-5.5	0.232	7	5.5-7	0.819
	Nonworking	4	1-6		7	6-7	
	<10000	4	1-5		7	6-7	
Income (INR)	10000-100000	4	0.5-6	0.453	7	6-7	0.956
	>100000	4	3-6.25		7	5-7	
	Rural	4	1-6		7	6-7	
Locality	Urban	4.5	3-6	0.213	7	6.75-7	0.171
	Hindu	3.5	0.75-4		7	4.75-7	
Religion	Christian	4	1.75-6	0.335	7	6-7	0.802
	Muslim	0					
	I	0					
Socioeconomic status	II	4	1.75-5.25	0.478	7	6-7	0.263
	III	4	0-6		7	6-7	
	IV	4	3-6		7	7-7	
	V	0					
Mode of delivery	Normal delivery	4	2-6	0.98	7	6-7	0.507
	Caeserean section	4	1-6		7	6-7	
Parity	Primi	4	1-5	0.27	7	6-7	0.507
	Multi	4	2-6		7	6-7	

**[Table/Fig-5]:** Association between level of attitude of breast-feeding mothers with selected demographic variables.  
IQR: Inter quartile range; p-value <0.05 statistically significant

Parameters	Pre-test	Post-test	p-value
	Median (IQR)	Median (IQR)	
Knowledge	6 (3-9.25)	17 (12-19)	0.001
Attitude	4 (1.75-6)	7 (6-7)	0.001
Perception	7.5 (5-9)	11 (10-11)	0.001

**[Table/Fig-6]:** Overall comparison of mean pre- and post-test scores.  
IQR: Inter quartile range

Several studies done internationally especially in Taiwan, Singapore, France and Saudi Arabia revealed satisfactory outcome on exclusive breast feeding after multiple sessions of classes during antenatal and postnatal period [13-16].

The present study population had received only postnatal counselling sessions and had a statistically significant difference in knowledge, attitude and perception among mothers. Many studies done in India during antenatal period, postnatal period or during paediatric visits also had similar findings [9-12]. According to the study done by Dhandapany G et al., in Puducherry, only 21% received counselling during antenatal period regarding breast feeding and among that group, the level of awareness during postnatal period was very less. This emphasises the need for frequent educational programmes [17]. The present study authors also recommend the strengthening of already existing educational programs to promote breast feeding. Another study revealed that



77% of mothers had inadequate knowledge regarding breast feeding [18]. As found in the present study, there was significant association between the level of education and the knowledge of breast feeding. This study showed significant improvement following health education which was also similar to present study.

It is obvious from present study that breast feeding is not given due importance by health care professionals during antenatal visits. A study done at Pondicherry by Dhandapany G et al., revealed the fact that antenatally counselled mothers practiced good breast-feeding practices than noncounselled mothers [17]. Similar results were found after antenatal counselling in few other studies also [19-22]. The present study also reached the same conclusion which clearly shows the need for multiple sessions of counselling. Government also should take necessary steps to assess the progress of different initiations created by them to promote breast feeding.

### Limitation(s)

The present study had used only one time 30-minute educational intervention. Similar educational interventional programmes could be used multiple times starting from antenatal period itself to increase the impact.

### CONCLUSION(S)

Educational intervention improved the level of knowledge, perception and attitude regarding breast feeding among the study population. There is a definite need for health education, especially about mothering and breast-feeding for all women from adolescence. Educational intervention programmes should be developed by the government to impact the knowledge, attitude, and perception of mothers, so that exclusive breast feeding is followed and thereby reducing infant mortality.

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