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## **Full Length Research Article**

### **IMPACT OF VIDEO ASSISTED TEACHING EXCLUSIVE BREAST FEEDING, ON KNOWLEDGE, ATTITUDE AND PRACTICE OF WORKING LACTATING MOTHERS**

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#### **ABSTRACT**

**Background and Objectives:** Breastfeeding is a gift that lasts a lifetime. It gives babies the best start in life. Benefits are more; if it is exclusive for 6 months. (Anand *et al* 2002). Working lactating mothers may encounter unforeseen reasons for ceasing exclusive breast feeding (EBF). The study aims to evaluate the effectiveness of video assisted teaching on knowledge, attitude and skill regarding technique of EBF among working lactating mothers and to assess their infant feeding practices and breast feeding difficulties.

**Materials and methods:** A quasi experimental study with time series design was conducted among 30 consented working lactating mothers, with maternity leave <6 months, from a tertiary level private hospital and pediatric clinic. The data from each mother was collected during their postnatal maternity leave period and after resuming to work. The data regarding their knowledge, attitude, skill and practice of breastfeeding were collected through semi structured questionnaire, rating scale, observation checklist and phone interview respectively. Education on EBF technique was given with video teaching and demonstration.

**Results:** Video assisted teaching found to be an effective method by the increase in mean exclusive breast feeding duration from 3.05 months to 4.2 months and improvement in the mother's knowledge, attitude and skill. The mothers perceived poor milk secretion (41%) and long working hours (24%) as major difficulties in practicing EBF.

**Conclusion:** Providing support, encouragement and proper education are the best way to motivate working lactating mothers. Thorough knowledge, favorable attitude and adequate skills improves the EBF practice and reduce breast feeding difficulties.

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#### **INTRODUCTION**

Direct breast feeding was the obligatory way to feed the young ones since mammals evolved. Artificial feeding came into play with industrial revolution and dairy business, in the 19<sup>th</sup> century and changed the natural feeding pattern (Hill, 1968). Scientific researches during the last three decades has clearly proved that exclusive breastfeeding provides the most sufficient nutrition to the baby, protects from health problems like otitis media, respiratory tract infection, diarrhea and early childhood obesity (American Academy of Pediatrics, 1997). It has been accepted as the most vital intervention for reducing infant mortality rate. The sub-optimal breastfeeding in the first 6 months of life, results in 1.4 million deaths and 10% of the disease burden in children younger than 5 years of age

(World Health Organization, 2010). Optimal breastfeeding of infants under two years of age prevents over 8, 00,000 deaths (13 % of all deaths) in the developing countries (Henry Abbott, 2013). Insufficient prenatal education about breastfeeding; lack of timely routine follow-up care and postpartum home health visits; maternal employment, especially absence of workplace facilities and; lack of family and societal support; commercial promotion of infant formula and feeding bottles are the main obstacles to initiate and continue breastfeeding (American Academy of Pediatrics, 2005). The statistics shows early initiation of breast feeding accounts for 40.5 % and EBF under 6 months is about 46.4 %; at the age of 2 years is 76.8 % (UNICEF, 2013). However, rates of EBF at 3 and 6 months remain stagnant and low. The increase in technology and opportunities, increases the percent of mothers that work out of home (61% from 40 %). Of the major cities in India, Coimbatore has 25% of working women and Chennai has 20% (The New Indian Express, 2013). The National Family Health Survey, 2008 has reported the rank of states for EBF -

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Chhattisgarh (82%), Assam (63.1%) and Andhra Pradesh (62.7%) holds the first 3 places. The surrounding states of Tamil Nadu -Karnataka with 58%, Kerala with 56.2 % occupies 7<sup>th</sup> place and 9<sup>th</sup> place, the Tamil Nadu with 33.3 % occupies 20<sup>th</sup> place among 29 states. The total percentage of EBF in India is 46.4%. These findings emphasizes the need for educating the working lactating mothers on safe techniques of exclusive breast feeding.

## MATERIALS AND METHODS

A quantitative approach with time series design was used in the study. The study settings were a tertiary NABH Accredited multi specialty hospital with high volume pediatric outpatient population (2500 - 2750 per month) and a private pediatric consultation clinic with extensive outpatient services, immunization and well baby clinic services with census 500 - 700 children per week.

### Participants

Thirty primi or multi paraous working mothers with feeding infants under 6 months of age, visiting the OPD for well baby clinic and immunization, who face difficulty in extending leave for infant care during first six months, were selected purposively as samples.

### Materials

A semi structured questionnaire on knowledge about EBF, five point likert scale on attitude towards EBF and observation checklist on expression of breast milk, was prepared and was validated. The questionnaire evaluates the mother's knowledge on five aspects: basics of breast feeding, EBF technique, expression technique, storage and thawing of EBM. The likert scale assesses the mother's attitude on EBF, expression, storage and thawing technique. The attitudes were expressed as strongly agree, agree, uncertain, disagree, and strongly disagree. The breast feeding pattern and feeding difficulties were assessed through phone interview questionnaires. Same materials were used for both pre test and post test.

### Preparation of video

A Tamil lingual video was developed with the guidelines of BPNI, focusing on enriching the mother's knowledge on benefits of EBF, pre preparation of self and articles, techniques of hand expression and pump expression, guidelines on storing, thawing and safe administration of expressed milk.

### Procedure

After obtaining informed consent, pre assessment of knowledge, attitude and skill on EBM were assessed, followed by video assisted teaching with oral explanation and demonstration. One copy of video content was given as CDs to 28 mothers and through Whatsapp for 2 mothers. As, the study was conducted in an outpatient department and considering inconvenience of mothers for revisit for attending post test, post assessment of skill was done on the same day of intervention with the same observation checklist. The

knowledge and attitude post assessment questionnaire and rating scale were sent to all mothers through mail or post according to their accessibility after two weeks of intervention. Regular reminders were sent through SMS and calls for delayed replies. The mothers responded through mail (11), letter (8), phone (6) and revisit to hospital (5). The impact of gained knowledge and change in attitude on their infant feeding pattern and practice / their feeding difficulties were obtained through scheduled phone follow up at one week prior of rejoining work, one week after rejoining work, two weeks after rejoining work. Except one mother, all others were able to attend all the three phone follow ups. Need based support were also provided through phone.

### Statistical analysis

Paired 't' test was used to assess the video effectiveness. Chi-Square test for finding the association between selected demographic data and dependent variables like age, education status, parity and previous education of the mother. The p value <0.01 and <0.001 are considered as statistically significant.

## RESULTS

Majority of the mothers in the study were primi mothers and aged between 26-30 years (63%). Most of them (56.7%) had family income <Rs. 40,000, emphasizes the need for rejoining to work irrespective of the work duration, break hours, maternity leave, distance they travel, mode of transport for travelling. About 46.7% had long working hours (upto 10 hours) with one hour break or less (86.6%). Almost all the mothers were having 90 days of sanctioned maternity leave but might extend for two more weeks (Table 1).

### Knowledge, attitude and skill levels

Knowledge and attitude have influence over breastfeeding duration. The pre assessment of knowledge shows that most of the mothers were having inadequate knowledge on basics of breast feeding and EBF technique. Most of the primi mothers are unaware of expression (63%), storage (56%) and thawing technique (70%). The attitude scale has found out that, many of the mothers have negative belief like cow's milk is good for infant feeding; expression of breast milk may reduce the milk secretion and is painful; expressed and stored breast milk rates poor quality and unhealthy; administration of thawed milk is unhealthy.

The mothers also showed inadequate skill in expression of breast milk. The study shows improvement in the post test scores with mean difference of 8.77, 3.83 and 9.33 for knowledge, attitude and skill respectively. The paired 't' test was found to have significance between the pre test and post test scores ( $t = 9.31, 8.294; p < 0.001$  for knowledge and skill respectively,  $t = 3.18; p < 0.01$ , for attitude) (Table 2). There was a strong association between age of the mother with knowledge, attitude and skill. Mother with 31-35 years had more knowledge score ( $\chi^2 = 47.433$ ), positive attitude ( $\chi^2 = 55.113$ ) and skill level ( $\chi^2 = 42.08$ ) with  $p < 0.001$ .

**Table 1. Demographic data and work profile of working lactating mothers**

n=30			
Sl. No	Work Profile	Number of Samples	Percentage (%)
1	Age of the mothers		
	21-25 years	6	20
	26-30 years	19	63
2	31-35 years	5	17
	Mother's education		
	Secondary	1	3.3
3	Diploma	2	6.7
	Graduate	13	43.3
	Post graduate	14	46.7
4	Family income		
	<Rs.10,000	3	10
	Rs.10,000 – Rs.40,000	17	56.7
	Rs. 40,000- Rs.80,000	9	30
5	>Rs. 80,000	1	3.3
	Duration of work		
	1-6 hours	4	13.3
	6-8 hours	11	36.7
	8-10 hours	14	46.7
6	>10 hours	1	3.3
	Duration of break		
	hours	10	33.3
	15 minutes-30 minutes	16	53.3
	30 minutes- 1 hour	4	13.3
6	1 hour-1 ½ hours	0	0
	1 ½ hours- 2 hours		
	Maternity leave	12	40
	<3months	15	50
	3-4 months	3	10
	Upto 6months		

expression and storage. These reasons also expressed as difficulty in breast milk expression. Despite of these difficulties, the mean EBF duration was increased to 4.2 months by the third follow up from 3.05 months in the first follow up.

## DISCUSSION

The International Labor Organization Maternity Protection Convention 191, 2000 recommends provision of paid maternity leave for 6 months. However these benefits are not universally available, for all working lactating mothers. These mothers may perceive multiple feeding difficulties. Several studies have shown the importance of EBF, factors affecting / barriers of EBF and multiple interventions for improving breast feeding in general population (Mohammad J. Chisti1, 2011., Hadia Radwan, 2013., Mona Nabulsi1, 2014). This study focus only on improving the EBF practice among working lactating mothers, by creating awareness about its benefits and developing confidence in skill needed for expression and storage of breast milk. The lactating mothers in home have favorable feeding environment than those who working. Majority of the mothers 93.3% (28) in our study were working in private firms with tight schedules. The determinant of breastfeeding has shown, house wives may two times more likely to provide EBF than the working mothers with limited maternity leave (HadiaRadwan, 2013). The working mothers may perceive stress in work and this stress can be a risk factor for delayed initiation of breastfeeding,

**Table 2. Comparison of pre test and post test scores through paired 't' test.**

Sl. No	Test	Pre test		Post test		't' value	Table value	95% CI	p value
		Mean	SD	Mean	SD				
1	Knowledge on EBF	12.63	4.36	21.4	3.092	9.31	3.65	(-10.95,-6.84)	0.001**
2	Attitude on EBF	51.63	7.004	55.46	5.507	3.186	2.75	(-6.25,-1.41)	0.01*
3	Skill in expressing breast milk	36.033	7.073	45.36	2.774	8.294	3.65	(-11.48,-7.11)	0.001**

Statistically Significant - \*\*p < 0.001; \*p < 0.01

### Phone follow-ups

About 29 mothers attended phone follow ups and was identified, before rejoining, about 68.96% (20) of infants received EBF but was reduced to 44% (13) after mothers rejoined to work and were depending more on formula feed (37.93%) / bottle feeding (55.17%). It was also identified as 55.17 to 62.06% mothers practiced expression of breast milk to store and feed the baby, after resuming to work. The mothers used to express breast milk manually twice or thrice a day according to their break hours and convenience and stored in room temperature or refrigerator. With regard to difficulty in practicing EBF, about 82% mothers perceived poor milk secretion (41%) and more working hours (24%) as a major difficulty in practicing EBF. Mothers also reported the need of adequate facilities in their working area for breast milk

lower milk volume and smaller frequency and duration of feedings (Karolina Doulougeri., *et al.*, 2013). Our study has clearly shown, even with adequate knowledge and favorable attitude on breastfeeding, the mothers perceived poor milk secretion (41%) and more working hours 24% as major difficulties in practicing EBF. About 90% mothers had maternity leave of 3-4 months or less. A study on factors for early discontinuation of breastfeeding shows an association between maternity leave and duration of breast feeding (p<0.001) (Aysu Duyan Camurdan, 2008). Many studies were stressing that, primi mothers need more support and encouragement for EBF (Rajendra Karkee *et al.*, 2014). Our study had 73.3% (22) of primi mothers. Regarding family income and working condition, 56.7% (17) mothers had monthly income between Rs.10,000- Rs.40,000 for long working hours and majority were professional workers with

Table 3. Frequency distribution of infant feeding practices and method of administration

		n=29					
Sl No	Base line information	Phone Follow up-I (before starting work)		Follow up-II (one week after resuming to work)		Follow up-III (Two week after resuming to work)	
		f	%	f	%	f	%
1	<b>Type of infant feed</b>						
	Breast milk only	20	68.96	13	44.82	13	44.82
	Formula feed only	0	0	0	0	1	3.44
	Cow's milk only	1	3.44	1	3.44	1	3.44
	Breast milk and formula feed	6	20.68	13	44.82	11	37.93
	Breast milk and cow's milk	2	6.89	2	6.89	2	6.89
	Formula feed and cow's milk	0	0	0	0	1	3.44
2	<b>Method of administering EBM / formula feed</b>						
	Sangu feeding	5	17.24	1	3.44	2	6.89
	Cup and spoon feeding	1	3.44	4	13.49	4	13.79
	Bottle feeding	4	13.49	14	48.27	16	55.17
	Sangu + bottle feeding	1	3.44	1	3.44	0	0

Table 4. Frequency distribution of difficulties in practicing EBF

		n=29					
Sl No	Difficulties faced	Phone Follow up-I (before starting work)		Follow up-II (one week after resuming to work)		Follow up-III (Two week after resuming to work)	
		f	%	f	%	f	%
1	Working hours are more.	1	3.44	7	24.13	7	24.13
2	No facilities for collection and storage of EBM	1	3.44	6	20.6	6	20.6
3	Milk secretion is less	8	27.55	12	41.37	12	41.37
4	Unsatisfied mother and child	1	3.44	3	10.34	3	10.34
5	Difficulty in expressing milk	2	6.89	5	17.24	5	17.24
6	Poor family support	1	3.44	1	3.44	2	6.89
7	Medical complaints	1	3.44	1	3.44	1	3.44
8	Others	0	0	2	6.89	3	10.34

good educational status. Mothers with routine jobs with favorable working conditions were more than four times less likely to exclusively breast-feed their infants compared with women in higher managerial and professional occupations (Kelly, Watt, 2004). In India, higher the socio economic status and education lower the breastfeeding rate (Dilip C Nath, Ggiti Gowsami, 1997).

Even though breastfeeding is a natural process, the mothers need thorough knowledge and positive attitude on technique of breast milk feeding in their absence. Our study had found that video assisted teaching and regular phone follow ups had a positive effect on mothers and their practice of exclusive breast feeding. The Canadian Task Force on preventive health care also stressed the importance of structured teaching

programmes, multiple sessions counseling, in person or phone support for promoting breast feeding (Palda, Valerie, 2004).

## Conclusion

Appropriate feeding practice is an essential component for the survival, growth and development of the child. Feeding the infant with breast milk is healthiest and cheapest way. EBF is the most effective child health promotion intervention that is most available and accessible for a developing country. National Rural Health Mission (NRHM) statistics study shows, the estimated cost for treating ARI: Pneumonia, diarrhea, neonatal sepsis is around 500 million dollars (Dadhich, 2006). The UNICEF pointed out underweight children in India accounts for 57%. Majority of under five health problems are preventable at the primordial level itself. The education and support for lactating mothers shows a great effect on improving the breast feeding duration. The present study also shows video teaching and regular reinforcement was an effective method for educating and developing favorable attitude among working lactating mothers to improve their breast feeding practices.

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## Ethical approval

Ethical approval was obtained from the Institutional Human Ethics Committee of PSG IMSR.

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