

Original Research Article

Effectiveness of baby friendly hospital initiative implementation on timely initiation of breast feeding - a comparative study

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ABSTRACT

Background: Breast milk is unquestionably the best milk for new born baby. As per UNICEF and WHO, immediate initiation and exclusive breast feeding for six months are essential for reducing infant and neonatal mortality and malnutrition and improving young child survival. In a study conducted by Indian Association of Pediatrics (IAP) in 2009 showed that there has been an alarming decline in breast feeding practices over years. This created great concern and Ministry of Health and Family Welfare decided to revive the BFHI programme, a global movement that aims to give every baby the best start in life by creating a health care environment where breast feeding is the norm. We, the Department of Obstetrics and Gynaecology, Sree Avittom Thirunal Hospital, Government Medical College, Trivandrum, Kerala conducted a study to compare the breast-feeding practices prior to and after implementation of BFHI programme.

Methods: This was a comparative study done in 2013 -14 among 320 post-natal mothers delivered at SAT hospital before and after BFHI implementation to study the improvement in Breast feeding practices.

Results: The revamping programme of BFHI brought significant change in timely initiation of breast feeding within one hour of delivery. Knowledge of mothers increased in the post implementation group. Proactive approach from the part of health workers also showed significant improvement.

Conclusions: The campaign has initiated a positive response highlighting the benefits of breast feeding and dangers of bottle or animal milk feeding. A well-organized community awareness programme involving obstetrician, pediatrician and other health personnel will help in promotion of breast feeding through periodic review of the status and progress of the programme.

Keywords: Breast feeding, Initiation, Benefits, Exclusive breast feeding

INTRODUCTION

Baby friendly hospital initiative (BFHI) is a programme jointly launched by UNICEF and WHO in the year 1991. It stands for Promotion, Protection and Exclusive Breast Feeding practices. In Kerala, this programme was launched on 10th March 1993. The programme was very successful after implementation and 31 hospitals became

BFHI accredited and by 2002 the entire state was declared as 'BFHI State'.

In fact, Kerala was the first Baby Friendly State to be declared in India. A district level household and facility survey was conducted by Ministry of Health and Family Welfare covering 14,711 household across the state (11,329 in rural areas and 3382 in urban areas).¹

In this survey only 69.1% of infants in 0-5 months were given exclusive breast feeding and nearly 35% of infants did not enjoy breast milk in the first hour of their birth. In fact India's 10th plan goal for early initiation of breast feeding was to reach 80% in the state of Kerala. Another study conducted by the Indian Academy of Pediatrics in 1992 showed initiation of BF in first hour was only 30% and exclusive breast feeding for six months only 20%.¹ A repeat study conducted in 2002 following BFHI implementation showed a dramatic increase in initiation of BF in first hour to be 90% and exclusive BF for six months 85%. As per the directions of UNICEF and WHO, exclusive BF in first six months is essential for young child survival and reduces infant and neonatal mortality and malnutrition. It has been suggested that additional 1.3 million children could be saved annually if the rate increased to 90% and the neonatal mortality would be reduced by 22% when babies are breastfed within one hour of birth.^{2,3}

Having successfully implemented the programme in the initial years, a subsequent study in 2009 showed a marked decrease in the percentage of implementation. There was an alarming increase in the sale of tin foods and usage of feeding bottles and a decreasing quality services rendered by BFHI hospitals. It was at this situation that a project proposal was submitted at a state level review meeting and we at Sree Avittom Thirunal Hospital, Government Medical College, Trivandrum, a major tertiary referral center in South Kerala and the first BFHI hospital in Kerala conducted a reviving programme in 2013. This study was conducted to assess effectiveness of revamping of BFHI on timely initiation of breast feeding within one hour.

METHODS

This is a comparative study conducted in the Department of Obstetrics and Gynaecology, SAT hospital over a period of one year in 2013-2014. 160 postnatal mothers

delivered in this hospital during the month of February – March 2013, prior to the implementation of the programme served as control group (group I).

Revamping of BFHI was conducted as a training programme in the Department of obstetrics and Gynaecology in association with Department of Pediatrics in April 2013. The programme included lecture classes about BFHI on various aspects of Breast feeding such as benefits of breast feeding and dangers of bottle feeding, need for timely initiation and role of exclusive breast feeding, Video demonstration on technique of BF and problems of breast feeding like retracted or cracked nipples, breast engorgement, mastitis and their management principles. The orientation was given to obstetricians, pediatricians, nurses and other health care providers in the field. Another 160 postnatal mothers delivered one year after the implementation in March – April 2014, served as case group (group II). The effectiveness of the programme was measured as difference in proportion of timely initiation of BF within one hour irrespective of mode of delivery. Mothers for whom breast feeding was contraindicated and whose babies were admitted in new born nursery were excluded from the study. Study population was selected by consecutive sampling and data collection was done with the help of a structured questionnaire. Demographic variables like age, education, occupation, income and place of residence were compared by mean and percentage and assessment of effectiveness studied by chi square and P value. P value of <0.05 was considered statistically significant.

RESULTS

Table 1 shows that Pre-and Post BFHI implementation groups (group I and II respectively) are comparable about socio demographic variables such as age, education, occupation, income and place of residence.

Table 1: Distribution per socio-demographic variables.

Characteristics	Category	Category				χ^2	df	p
		Group I		Group II				
		N	%	N	%			
Age in years	<20	41	25.6	47	29.4	2.604	2	.272
	20-29	84	52.5	89	55.6			
	>30	35	21.9	24	15.0			
Education	Above SSLC	146	91.3	149	93.1	0.391	1	0.532
	Below SSLC	14	8.8	11	6.9			
Occupation	Government Service	8	5.0	3	1.9	2.553	2	0.279
	Private employee	7	4.4	9	5.6			
	Housewife	145	90.6	148	92.5			
Income	<1000	124	77.5	121	75.6	0.390	2	0.823
	1000-5000	31	19.4	35	21.9			
	>5000	5	3.1	4	2.5			
Place of residence	Panchayath	121	75.6	135	84.4	4.020	2	0.134
	Municipality	13	8.1	7	4.4			
	Corporation	26	16.3	18	11.3			

Table 2. Distribution according to parity and mode of delivery.

Obstetric details	Category	Category				χ^2	df	p
		Group I		Group II				
		N	%	N	%			
Parity	Primi	117	73.1	112	70.0	0.384	1	0.536
	Multi	43	26.9	48	30.0			
Mode of delivery	Normal	109	68.1	97	60.6	1.962	1	0.161
	LSCS	51	31.9	63	39.4			

In both pre-and post-implementation groups (I and II) Primis constituted the majority (Group 1 – 73.12% and Group II - 70%) and multis only 1/3 of the study population. SAT hospital, being a tertiary care referral center, majority of deliveries were high risk

primigravidas. Parity is comparable between the pre-and post-implementation groups (P value 0.536). Regarding the mode of delivery, cesarean section constituted only 31.09% in group I while it was higher 39.4% in group II. The difference was not statistically significant.

Table 3. Prior information about timely initiation of breast feeding (TIBF).

	Category	Category				χ^2	df	p
		Group I		Group II				
		N	%	N	%			
Prior information	Yes	63	39.4	146	91.3	95.025	1	<0.001
	No	97	60.6	14	8.8			
Informer	Family member	13	20.6	18	12.3	3.047	3	0.385
	Health care providers	43	68.3	111	76.02			
	Mass media	5	7.9	12	8.2			
	All of above	2	3.2	5	3.41			

Only 39.4% of postnatal mothers knew about TIBF prior to the BFHI counselling session. While majority of mothers (91.3%) conceived the concept and importance of early breast feeding after the programme, which was statistically significant (p <0.001), 8.8% of mothers still were not convinced about the need for early initiation of

BF, indicating the need for continued counselling programme both in hospital and at community levels. There was an increase in the role of health care providers in motivating mothers of TIBF. The rate increased from 68.3 % to 76.02%, though it did not reach statistical significance (P - 0.385). Other sources that provided information included family members and mass media.

Table 4: TIBF in normal delivery and LSCS.

Nature of delivery	Time of initiation of breast feeding	Category				χ^2	df	p
		Group I		Group II				
		N	%	N	%			
Normal	≤1 hour	47	43.1	87	89.7	48.963	1	<0.001
	>1 hour	62	56.9	10	10.3			
LSCS	≤1 hour	16	31.4	42	66.7	14.048	1	<0.001
	>1 hour	35	68.6	21	33.3			

With regard to timing of initiation of BF in vaginal delivery v/s cesarean section there was an overall increase the percentage of TIBF in both groups which was statistically significant (P < 0.001). But compared to vaginal delivery, cesarean patients showed a lower percentage of acceptance of TIBF (89.7% vs 66.7%) probably related to factors such as post-operative pain,

sedation and delayed rooming in. One third (33.3%) of post cesarean patients still need counselling on importance of TIBF indicating that cesarean patients are the ones who should be specifically focused regarding early breast feeding practices. Overall study results conclude that BFHI implementation has successfully improved breast feeding practices. The percentage of

TIBF has increased from 39.4% to 80.6% after counselling but another 19.4% still remains to be convinced regarding the advantages of early breast feeding indicating the need for ongoing awareness

programmes to be conducted motivating both the health care providers and patients to implement the golden rule of “Timely initiation of breast feeding within one hour and exclusive breast feeding for 6 months”.

Table 5: Comparison of TIBF between group I and group II.

Time of initiation of breast feeding	Category				χ^2	df	p
	Group I		Group II				
	N	%	N	%			
≤1 hour	63	39.4	129	80.6	56.719	1	<0.001
>1 hour	97	60.6	31	19.4			
Total	160	100.0	160	100.0			

DISCUSSION

Breast milk is the most complete form of nutrition for infants with a wide range of benefits related to infant health, immunity, growth and development. Breast milk is a unique nutritional source that cannot adequately be replaced by any other food including formula feeds or animal milk. Studies have demonstrated a number of important health benefits of breast feeding.¹ Breast milk contains adequate calories and provide the right kind of proteins, fat, lactose, vitamins, iron, minerals and enzymes in amounts necessary for the growing infant.

Many studies showed that BF strengthens the immune system.²⁻⁵ During nursing, the mother transfers antibodies to the baby which helps the child resist diseases and improve immune response. In fact Colostrum is considered as ‘first immunization to the neonate’. Respiratory illness is far more common among formula – fed infants. Several research studies reported that infants fed on formula – feeds face a 3 fold greater risks of being hospitalized with severe respiratory infections than breastfed babies.⁶⁻⁸ Allergic disorders like eczema and wheezing and diarrheal diseases are also more common in animal milk fed babies.

A review of 132 studies on Allergy and BF concluded that BF appears to help protect children from developing allergies and that the effect seems to be particularly strong among children whose parents have allergic manifestations. Breast feeding has shown to reduce likelihood of ear infections, dental caries and teeth mal alignment. Necrotizing Enterocolitis is rare in breast fed infants. Researchers have observed a decrease in Sudden Infant Death Syndrome (SIDS) in breast fed babies.^{9,10}

Evidence suggests that mother – infant bonding is better with BF and these children develop fewer psycho social, behavioral and learning problems as they grow older.^{11,12} On follow up, higher IQ is reported in breast fed babies.^{13,14} Studies indicate that BF helps improve mothers’ health as well. Early sucking helps to prevent post-partum hemorrhage and causes and early uterine

involution. Exclusive BF is a natural method of child spacing. Mothers who breast feed have less chance of breast, ovarian and endometrial carcinoma. Mixed feeding often results in lactation failure as bottle fed infants do not suck the breast forcefully thereby reducing milk production. Poor eating habits with low solid food intake is also usual infants on prolonged bottle feeds.

Obstetricians have a very crucial role in timely initiation of breast feeding and promotion of exclusive breast feeding by emphasizing the benefits of breast feed and dangers of bottle feed. Timely initiation of BF within one hour of birth is described by WHO as “Giving the best chance of life and health”. Babies are more alert during the first 30-60 minutes which should be utilized for initiation of BF. For this, women need to have accurate information and assistance at the time of birth. Health care providers have the responsibility to provide practical help and support for the successful implementation.

A recent study of more than 10,000 new born babies from rural Ghana has shown that if all babies started BF within one hour it would cut 22% of all neonatal deaths. The study estimates that of the 4 million babies who die in the developing world each year in the first month of life, almost one million could be saved.¹ Recent analysis has shown that new born babies with TIBF was less likely to die of neonatal sepsis than those who did not. Each day’s delay in the start of BF led to a significant increase in the risk of infection deaths, the overall late initiation (after day 1) being associated with a 2.6-fold risk. A prospective study by Edmond et al 16 2006 reports that neonatal mortality is four-fold among newborns with increasing delay in initiation beyond one hour.

Several research papers published have strongly supported the health benefits of Colostrum. Dr. E L Palmer et al found that Colostrum has wide range of antiviral factors and viral antibody that act against viral invaders.¹⁷ Dr. Michael Julius of McGill University in his study found that Colostrum stimulated the newborn’s immune system; as Yet unidentified proteins speed up the maturation of cultured B lymphocytes and primes them

for production of antibodies.¹⁸ These immune globulins are able to neutralize most harmful bacteria, viruses and yeasts.

In a community, based cross sectional study by Tesfaya Setegn, Mulesew Gerbaba and Tefera Belachew¹⁹ found that the prevalence of TIBF was 52.4%. Bivariate analysis showed that formal education, urban resident, institutional delivery and antenatal counselling was significantly associated with timely initiation of breast feeding ($p < 0.05$). While factors delaying TIBF were obstetric complications and cesarean delivery. Prohibition of pre-lacteal feeds was yet another advantage of revitalizing the BFHI. A study conducted by A. Patel, A. Banerjee, A Kaletwad on BF in hospital delivered babies found that pre-lacteal feed rates was 15.9%.²⁰ There was a significant association between failure to timely initiate BF and pre lacteal feeds.

Studies have shown that cesarean deliveries are often associated with delay in initiation of BF. A study by Kumaraswami SA, et al reported that only 1.2% of cesarean patients successfully implemented TIBF.²¹ Mathur GP et al in his study revealed that the commonest reason for delay following cesarean delivery are sedation, pain at surgery site, administration of IV fluids, delayed rooming in and less milk secretion. Murray HJ, also reported a significant delay in TIBF, ($P < 0.01$) among cesarean patients.^{22,23}

Role of health providers in initiation of BF is also crucial for implementation of TIBF. A study by Bear K reported the need for adequate support, guidance and information by health workers. Ingram et al also emphasizes the need for teaching good positioning of baby by midwives to enable the mothers to attach their babies for successful feeding.^{24,25} The present study was conducted to assess the effectiveness of revamping of BFHI programme on timely initiation of BF in a tertiary care center like SAT hospital Trivandrum. Comparison of rate of initiation of BF in pre-and post-implementation group revealed significant difference in the breast-feeding practices following BFHI implementation.

CONCLUSION

BFHI provides an excellent basis for supporting breast feeding as part of comprehensive new born care. The PHC re-engineering process provides the opportunity to ensure that all mothers are supported to breast feed their infants as a key component of package of NMCH health and nutritional services.

The role of health care providers is most important factor in TIBF. Knowledge of mothers is also equally important. Preparation for BF should start right from the antenatal period itself. Problems that delay the episiotomy repair should be handled appropriately. Cesarean section can often become a barrier for early initiation of BF, has to be overcome by proper assistance from the part of health

workers. In a large scale, community level behavioral change has to be achieved through mass media programmes designed to improve breast feeding practices. Action and commitment from many stake holders will be required and is necessary to make BF promotion and support a universal phenomenon.

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