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Original Research Article

Effect of Peer Counselling on Breast Feeding Practices in the Rural Community: Randomized Control Trial

Durgappa[1], Bellara Raghavendra[2*], Parimala[3], Satish D[4], Sudhakar Hegade[5], Mahanth Shetti N.S.[6]

[1]Associate Professor, Dept of Pediatrics, VIMS, Bellary.
[2]Assistant Professor, Dept of Community Medicine, VIMS, Bellary.
[3]Assistant Professor, Dept of Anaesthesia, VIMS, Bellary.
[4]Associate Professor, Dept of Biochemistry, VIMS, Bellary.
[5]Assistant Professor, Dept of Pediatrics, VIMS, Bellary.
[6]Professor, Dept of Pediatrics, JNMC, Belgaum.

[*]Correspondence Email: bellararaghu@gmail.com

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ABSTRACT

Background: Given the recognized benefits of breastfeeding for the health of the mother and infants, the World Health Organization (WHO) recommends exclusive breastfeeding (EBF) for the first six months of life. However, the prevalence of EBF is low globally in many of the developing and developed countries around the world. The present study was undertaken to know the effect of peer counselling in promoting optimal breast feeding practices in the interventional group and to measure the impact of programme on weight of the infant at 6 months.

Methodology: A randomized control trial was conducted in one of the PHC of Belgaum district during the period from 2002 to 2004, where in 108 pregnant women who have completed 32 weeks of gestation were enrolled and randomly allocated them into interventional and non interventional equally. In the intervention group, 10 home-based counselling visits were scheduled, with one visit in the last trimester for antenatal priming, three early postpartum visits (first day of delivery and third and seventh day after delivery) and monthly visits thereafter until the infant was 6 months old. During the visits peer counsellors counselled the mothers regarding optimal breast feeding practices like early initiation, colostrum feeding, exclusive breast feeding, duration of breast feeding and techniques of breast feeding. This support was in addition to the existing support given by the health care provider. An independent blinded external evaluator was appointed to assess the breast feeding practices and baby weight in both the study groups. The data was analysed using Epi-info software.

Results: In the interventional group, the proportion of mothers practicing early initiation of breast feeding (43%), colostrum feeding (94.4%), exclusive breast feeding (83.3%) was significantly high ($p<0.05$) when compared to 14.2%, 61% and 20.3% in the non interventional group respectively. The proportion of mothers giving prelacteal feeds (55.5) in the non interventional group was significantly high when compared to the interventional group (18.5%).

Conclusions: Continuous assistance and support to mothers though home based peer counselling definitely help in improving the breast feeding practices in the community there by help in maintaining optimal baby weight.

Key words: Exclusive breast feeding, Prelacteal feeding, Colostrum feeding, Early initiation, Randomization

INTRODUCTION

Every woman wants to breast feed her babies but exclusive breast feeding for optimal duration is rarely being practiced in many parts of the world. Breast Feeding And Lactational Management Committee Of Indian Academy Of Pediatrics conducted a National Survey on infant feeding practices in the year June-2001 by taking 2500 cases form all district branches attached to Indian academy of paediatrics. It was found that delayed initiation is widely prevalent and exclusive breast feeding was practiced only in 16% of the cases and the same was evident from the data from multiple cluster 2000 from UNICEF India showed that exclusive breast feeding is practiced in 15% only. [1]

The promotion and support of breast feeding is a global priority. A vast scientific literature demonstrates substantial health, social and economic benefits associated with appropriate breast feeding, including lower infant morbidity and mortality from diarrhoea and other infectious diseases. To improve breast feeding practices, global initiatives have concentrated on hospital policies and procedures. Although hospital based programmes have shown significant impact on breast feeding outcomes, community model for community based feeding promotion is peer counselling, which involves training of lay community members to contact and advice peers from the same community. Peer counselling is being used worldwide for various purposes, including the social and informational support that mothers need for successful initiation and maintenance of breast feeding. Although peer counselling is a promising method of outreach, well designed, controlled studies are needed to assess the efficacy of this approach for the promotion of exclusive breast feeding.

Hence this community based peer counselling on promotion of breast feeding was carried out in two subcentres of one primary health centre, with the objectives to test the hypothesis that peer counselling will significantly increase exclusive breast feeding from 16% to 50% at 6 months and to measure the impact of programme on weight of the infant at the end of 6 months.

METHODOLOGY

We conducted a prospective interventional randomized control trial at Belgaum district which comprises of 121 primary health centres. By randomization, two sub-centres of one PHC were randomized as interventional area and other being non-interventional area. To increase from the then incidence of exclusive breast feeding of 15% to 50%, the computed sample size required for this controlled trial with $\alpha = 0.5$ and power of test to detect this difference in 90% of this study (i.e. $1-\beta = 0.9$) with a dropout rate of 20% was worked out to be 50 in each group.

After taking informed consent, pregnant mothers who have completed 32 weeks of gestation and delivered normal term baby and who can adequately breast feed their babies were selected for the study. HIV positive mother, mother with prolonged illness which can interfere with breast feeding and mothers of preterm babies were not included in the study. The pregnant mothers were enrolled from November 1st 2002 to 30th April 2003.

In the interventional group, Women having breast feeding experience, with minimum background of 5th standard education, volunteering to help other mothers to breast feed, residing in identified

areas and who were socially acceptable, well known by the community, were selected as peer counsellors. Peer counsellors identified from the community were trained regarding the optimal breast feeding practices. One day workshop in the local language based on the WHO, UNICEF, BPNI breast feeding counselling guidelines was conducted where in mothers were trained on art of breast feeding techniques, advantages of early initiation, colostrum feeding, exclusive breast feeding, hazards of top feeds and identification of breast feeding problems.

Training component also included the demonstration of breast feeding skills like good attachment and suckling position, role play demonstration and building the confidence to breast feed the baby. Pre-post training evaluation of participants was done. This training programme was conducted by trainers certified by National Task Force.

In the intervention group, 10 home-based counselling visits were scheduled, with one visit in the last trimester for antenatal priming, three early postpartum visits (first day of delivery and third and seventh day after delivery) and monthly visits thereafter until the infant was 6 months old.

In the interventional group, each peer counsellor provided support to 5 to 10 mothers at the scheduled intervals. During the visits peer counsellors counselled the mothers regarding optimal breast feeding practices like early initiation, exclusive breast feeding, duration of breast feeding and techniques of breast feeding. This support was in addition to the existing support given by the health care provider. At the control area the existing health care provider counselled the mothers as a part of routine reproductive child health care.

A social worker selected from the local area was recruited to monitor the peer mother's visits regularly. If any lacunae found in the study, was brought to the notice of field research officer. Overall supervision and peer mother's knowledge levels regarding benefits of breast feeding were reinforced by the field research officer every fort nightly.

An independent external evaluator who was blinded was appointed to assess the breast feeding practices in both the study areas. The assessor looked for initiation of breast feeding, prelacteal feeding, colostrum feeding, exclusive breast feeding and baby weight.

Exclusive breast feeding implies giving newborn infants no food or drink other than breast milk (including milk expressed or from wet nurse). It allows the infant to receive drops, syrups (vitamins and minerals, medicines). It does not allow the infant to receive anything else. [2] Prelacteal feeds refers to any fluid or food given before colostrum.

Statistical analysis was done using Epi-info software and appropriate descriptive statistics were used to analyse the findings and to draw the inferences.

RESULTS

A total of 108 pregnant women (54 pregnant women each in both the groups) who have completed 32 weeks of gestation participated in the study. Pregnant women both in the interventional and non interventional group were comparable with respect to the socio demographic variables like age, religion, type of family, socio-economic status, education and occupation,(Table no: 01) as we did not find any statistical significant difference between the two study groups. Study participants in both the groups had similar obstetric background and were comparable (Table no: 02).

Table 01: Socio-demographic profile of the study participants in both the study groups.

Socio-demographic factors		Interventional group n(%)	Non interventional group n(%)	P value
Age in completed years				
	< 21	10(18.5%)	8(14.8%)	0.344
	21-25	32(59.2%)	28(51.8%)	
	26-30	11(20.3%)	13(24.0%)	
	>30	1(1.8%)	5(9.2%)	
Religion				
	Hindus	50(92.5%)	49(90.7%)	0.727
	Muslim	4(7.4%)	5(9.2%)	
Type of family				
	Nuclear	15(27.7%)	21(38.8%)	0.22
	Joint	39(72.2%)	33(61.1%)	
Monthly Family income				
	< 1000	5(9.2%)	6(11.1%)	0.959
	1000-3000	27(50.0%)	27(50.0%)	
	3000-5000	16(29.6%)	14(25.9%)	
	> 5000	6(11.1%)	7(12.9%)	
Mother's education				
	Illiterate	14(25.9%)	7(12.9%)	0.246
	Primary	2(3.7%)	3(5.5%)	
	High school	37(68.5%)	44(81.4%)	
	Graduate	1(1.8%)	0(0.0%)	
Mother's occupation				
	Skilled	0(0.0%)	2(3.7%)	0.206
	Unskilled	1(1.8%)	3(5.5%)	
	Housewife	53(98.1%)	49(90.7%)	

Table 02: Obstetric profile of the study participants in both the study groups.

Obstetric profile		Interventional group n(%)	Non interventional group n(%)	P value
Para				
	1	16(29.6%)	14(25.9%)	0.942
	2	18(33.3%)	22(40.7%)	
	3	14(25.5%)	13(24.0%)	
	4	3(5.5%)	3(5.5%)	
	5	3(5.5%)	2(3.7%)	
Place of delivery				
	Home	20(37.0%)	16(29.6%)	0.677
	Govt. hospital	12(22.2%)	12(22.2%)	
	Pvt.Hospital	22(40.7%)	26(48.1%)	

The breast feeding practices (outcome variables) were assessed in both the groups. Early initiation of breast feeding was seen in 43% of mothers in the interventional group when compared to 14.2% in the non interventional group and this difference was found to be statistically significant (Table no: 03, Fig: 01).

Table 03: Breast feeding practices in both the study groups.

Outcome variables	Intervention group n(%)	Non intervention group n(%)	P value
Initiation of Breast feeding			
FTNVD			
Early initiation (<30 min)	22(43.1%)	7(14.2%)	0.001
Late initiation (>30 min)	29(56.8%)	42(85.7%)	
Caessaerean Section			
Early initiation (< 4hrs)	2(66.6%)	1(20.0%)	0.286
Late initiation (> 4hrs)	1(33.3%)	4(80.0%)	
Prelacteal feeding			
Yes	10(18.5%)	30(55.5%)	0.000
No	44(81.4%)	24(44.4%)	
Colostrum feeding			
Yes	51(94.4%)	33(61.1%)	0.000
No	3(5.5%)	21(38.8%)	
Exclusive breast feeding			
1st month	52(96.2%)	53(98.1%)	0.558
2nd month	51(94.4%)	50(92.5%)	0.695
3rd month	50(92.5%)	46(85.1%)	0.220
4th month	48(88.8%)	38(70.3%)	0.016
5th month	47(87.0%)	21(38.8%)	0.000
6th month	45(83.3%)	11(20.3%)	0.000
Baby weight after 6 months			
Mean Baby weight ± SD	7.08 ± 0.800	6.66 ± 0.774	0.006

The prelacteal feeding to the newborn infants was seen in only 18.5% of infants in interventional group when compared to 55.5% in the non interventional group which was found to be statistically significant (Table no: 03, Fig: 01). A statistically significant difference was seen with respect to colostrum feeding practice where in about 95% of the new born infants were fed with colostrum in the interventional group when compared to 61% in the non interventional group (Table no: 03, Fig: 01). Majority of the mothers in both the groups practiced exclusive breast feeding for the first three months. However from the fourth month onwards there was appreciable decline in the rates of exclusive breast feeding in the non interventional group from 85% in the third month to only 20% during the sixth month. But in the interventional group the rates of exclusive breast feeding did not decline appreciably

where in 83.3% of mothers were exclusively breast feeding their babies at six month and this difference in the rates of exclusive breast feeding between the interventional and non interventional group was found to be statistically significant (Table no: 03, Fig: 01, Fig: 02).

Figure 01:

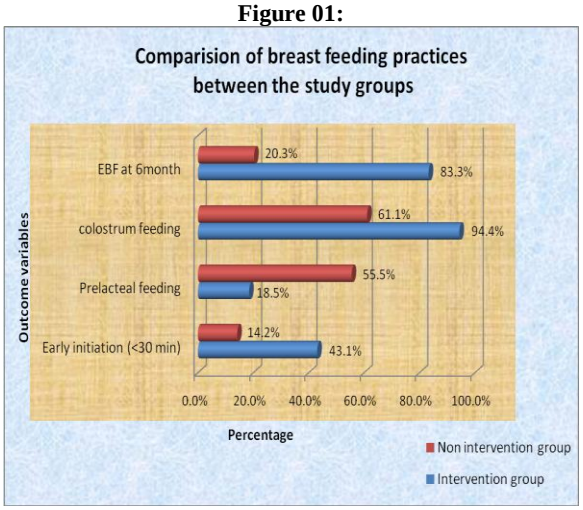


Figure 02:

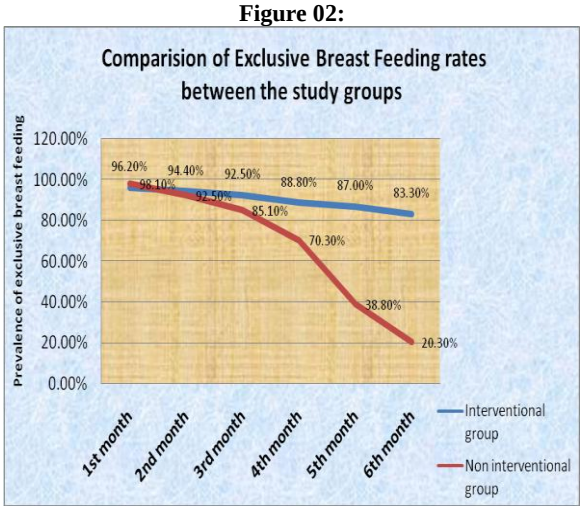
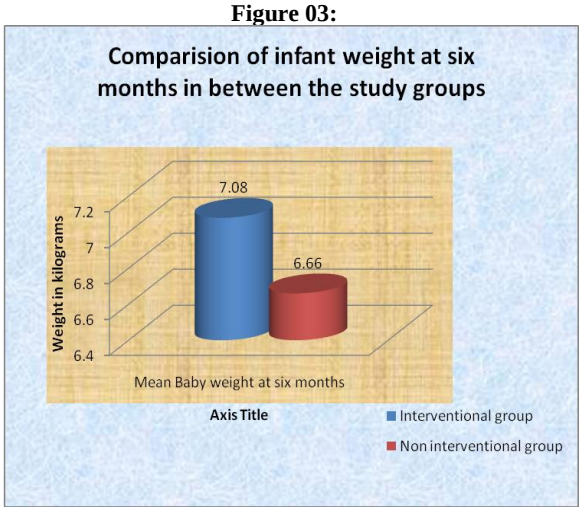


Figure 03:



At the end of six months, the mean weight of the infants belonging to interventional group (7.08±0.8 kg) was significantly higher than those of infants in the non interventional group (6.66/0.7 kg) (Table no: 03, Fig: 03).

DISCUSSION

Breast feeding initiation:

Breastfeeding initiation is delayed across the country because of the belief that mother's milk does not "come" at the time of childbirth; but flows two to three days later. [3] In our study significantly more number of mothers in intervention group than the control group initiated breast feeding within half an hour. (43.1% v/s 14.2%) P = 0.001. This could be because of counselling by the peer mothers in the antenatal period to the intervention group that they were motivated to start breast feeding early when compared to the mothers in the control group, where significant number of mothers felt that there was no milk secretion within 48 hours.

Our study finding on early initiation of breast feeding was in consonance with the similar interventional studies conducted by Haider et al, [4] (64% v/s 15% respectively), Nita B et al [5] (50% v/s 24% respectively) and Davies et al [6] (32% v/s 6% respectively) where in they found that women in the interventional group significantly more likely to initiate breast feeding early than the control group.

A study conducted by Chapman et al, [7] to evaluate peer counselling intervention among low-income, primarily minority women delivering in Hartford, Connecticut, found that women in the intervention group were significantly more likely to initiate breastfeeding as compared to controls (90% vs. 77%, respectively). In a similar study conducted by Anderson et al, [8] where a highly intensive Peer counselling intervention model (3 prenatal, daily perinatal, 9 postpartum home visits) was tried in the community, found similar results, with significantly higher breasting feeding initiation rates in the intervention group compared to controls (90% vs. 76%, respectively).

Evaluation of three separate community based models was studied by Caulfield and colleagues, [9] where in out three, two intervention models included a peer counsellor, among African American WIC (Special Supplemental Nutrition Program for Women, Infants, and Children) recipients in the Baltimore, Maryland region. The first intervention model was a breastfeeding motivational video along with usage of posters and WIC staff breastfeeding counselling. The second intervention was a prenatal PC in the WIC clinic. The third intervention was a combination of the first 2, and all were compared to the control group and found that only the second intervention that had prenatal counselling, significantly increased breastfeeding initiation rates as compared to controls (OR: 3.84, 95% CI: 1.44 – 10.21).

A similar study to evaluate the effect of six verses three home based peer counsellor visits on breast feeding initiation was conducted by Morrow et al [10] in a low-income neighbourhood in Mexico City and found that there was no statistically significant difference in breastfeeding initiation rates between study groups (6 visit group: 100%, 3 visit group: 98%, controls: 94%).

The first step towards successful breast feeding is to initiate breast feeding at the earliest for which peer counselling provides the right education and motivation and creates the right ambience and support such that the mothers are well informed and feel comfortable to initiate breast feeding early.

Colostrum feeding:

In our study significantly more number of babies was given colostrum in the intervention group than the control group (94.4% v/s 61.1%). Many socio-cultural barriers may prevent the mothers from giving colostrum to their babies.

In a study done by Akram et al [11] on promotion of breast feeding showed that the colostrum was given by 97% of the mothers in the intervention group when compared to 3% in the control group. In another study conducted by Savina G et al, [12] on the effect of breast feeding education programme on lactational amenorrhoea in Phillippines showed that significantly more experimental mothers reported feeding colostrum to study infants compared to their previous children with no significant difference in the control group.

Baby weight:

In our study the mean weight of the babies at 6 months in interventional group (7.08±0.8 kilograms) was significantly higher than the control group (6.66±0.7 kilograms) implying that breast feeding ensures optimal nutrition, reduces the risk of morbidity and mortality that are associated with infections and malnutrition.

Our study results were in consistant with a study conducted by Froozani M.D. et al [13] on effect of breast feeding education showed that at the end of four month, the mean weight and length of the infants were significantly higher in the study group than the control group. In similar study done by

Borros F. C. et al [14] infants weight for age was significantly better (mean Z score of 0.26 and 0.02 respectively p< 0.01) in the intervention group than the control group. Similar results were also observed by Akram D. S. et al. [11] however a study done Nita B. et al [5] found that there was no significant difference in the weight of the babies in both intervention and control group.

Exclusive breast feeding:

Majority of the mothers in both the groups practiced exclusive breast feeding for the first three months. However from the fourth month onwards there was appreciable decline in the rates of exclusive breast feeding in the control group from 85% in the third month to only 20% during the sixth month when compared to interventional group where in 83.3% of mothers were exclusively breast feeding their babies at six month.

Breastfeeding is extensive in India, however, the exclusive breastfeeding rate was 19% in 1998-1999 at six months [NFHS-2], [15] and in 2005-2006 it was 46.3% at less than six months [UNICEF Global Database]. [16]

A community-based intervention promoting EBF in Haryana State, India, was conducted by Bhandari et al, [17] where they utilized traditional birth attendants, community health workers, community representatives, nurse midwives and other health-care workers, to deliver EBF messages and they found that infants in the interventional group were exclusively breast feed at 3, 4, 5 and 6 months postpartum, compared to controls.

A similar community-based randomized trial was conducted in Dhaka, Bangladesh to assess the effect of PC on EBF rates by Haider et al. [4] where women in the interventional group who were given 15 home based counselling visits were significantly more likely to exclusively breastfeed throughout 5 months postpartum, compared to controls.

In another study conducted by Agrasada et al [18] in Philippines showed significantly higher rates of exclusive breast feeding at 6 months postpartum among mothers in the PC group (44%), compared to the reference (7%) and control groups (0%).

In a similar study done by Anderson et al [8] in Hartford, revealed that women in the interventional group, at 3 months postpartum, were almost 15 times more likely to be exclusively breastfeeding compared to controls.

In a randomized control trial conducted by Morrow et al [10] in Mexico found that exclusive breast feeding rates from birth to 3 months were highest in the group receiving six home visits, followed by those receiving three home-visits, and lowest in the control group. The EBF rate of the intervention groups (combined) was significantly greater than that of controls.

To promote breast feeding in the community, Davies-Adetugbo et al [6] conducted a study in Nigeria among mothers of young infants suffering from acute diarrhoea, where the intervention group received 3 breastfeeding peer counselor contacts along with advice for diarrhoea management while controls only received the latter. They found that the proportion of mothers exclusively breastfeeding was significantly ($p<0.0001$) higher in the intervention group than in controls at day 7 (49% vs. 6%) and day 21 (46% vs. 8%).

In Brazil, Leite et al [19] conducted a home based peer counselling trial to promote initiation and duration of breast feeding among mothers of low birth weight infants, found that significantly higher rates of EBF at 4 months postpartum in the intervention when compared to control group. Similarly, in the telephone-based PC intervention evaluated by Dennis et al [20] EBF rates were significantly higher

throughout the study in the intervention (vs control) group. These studies suggest that, in some settings, PC programs, which are designed to promote initiation or duration, may actually improve breastfeeding exclusivity as well.

In a study done by Froozani M. D. et al [13] on effect of breast feeding education on the feeding pattern and health of infants in their 4th month in Islamic Republic Iran showed that exclusive breast feeding rates were significantly higher in the study group (54%) than the control group (6.5%).

Majority of the studies evaluating the effect of peer counselling on breast feeding practices found to have a positive impact on the exclusive breast feeding practices. This was evident in some of the systematic review conducted by Aamer Imdad et al [21] to identify all studies that evaluated the impact of breastfeeding promotional strategies on any breastfeeding and EBF rates at 4-6 weeks and at 6 months. They concluded that breastfeeding promotion interventions increased exclusive and any breastfeeding rates at 4-6 weeks and at 6 months. A relatively greater impact of these interventions was seen in developing countries with 1.89 and 6 folds increase in EBF rates at 4-6 weeks and at 6 months respectively. Similarly another systematic review was done by Donna J. C et al [22] where they systematically reviewed a) the randomized trials assessing the effectiveness of breastfeeding PC in improving rates of breastfeeding initiation, duration, exclusivity and maternal and child health outcomes; and b) scientific literature describing the scale-up of breastfeeding PC programs and concluded that peer counsellors effectively improve rates of breastfeeding initiation, duration and exclusivity. In addition to improving breastfeeding outcomes, peer counselling programs significantly decreased rates of infant diarrhoea and lengthened the duration of maternal amenorrhea.

The high rates of premature cessation of breast feeding are due to the inadequate assistance to mothers who are willing to breast feed their infants. [23] Therefore education and support plays a pivotal role in shaping the frame work of lactation and breast feeding. [24] In a country like India, where 3/4th of the population resides in rural areas, a continual, comprehensive and culturally appropriate breastfeeding education support through counselors (be they doctors, nurses, midwives, lactation consultants or peer counselors) during the prenatal period, intranatal and postnatal period both at hospital and at home may be critical for facilitating breastfeeding among mothers, especially those belonging to the low-income groups.

The incidence of breastfeeding is primarily affected by prenatal education, whereas the duration and exclusivity of breastfeeding is affected by both prenatal and postpartum management. [25,26] Apart from increasing the incidence of exclusive breast feeding, the continued social education support has also beneficial effects on health of the mothers during pregnancy and labor. [27,28,29]

CONCLUSIONS

In our study, peer counselling proved to be an effective strategy for promotion of optimal breast feeding practices in the rural community where the messages on optimal breast feeding practices are not reachable effectively. Despite strong cultural and traditional factors, peer counselling had a striking effect on exclusive breast feeding practices in our study.

RECOMMENDATIONS

These studies suggest that it is important to include both antenatal and

perinatal PC within interventions designed to increase breastfeeding initiation rates, with the majority of contact being in person. Peer counsellors can effectively increase the initiation and duration of exclusive breastfeeding. We recommend incorporation of peer counsellors in mother and child health programmes in developing countries.

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