Original Article

Effect of counseling on breast feeding practices

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Abstract

Background: National Family Health Survey-3 data show that the initiation of breastfeeding within 1 h is only 24.5%, whereas the exclusive breastfeeding rates in children <6 month is only 46.4%. **Objective:** The present study was planned to assess the effect of counseling on breast feeding practices, especially early initiation and sustained exclusive breast feeding (EBF). **Method:** Cases were pregnant mothers attending antenatal clinic of Kamla Raja Hospital (KRH) (n = 154). Control group comprises of mothers who delivered at government maternity hospital other than KRH (n = 140). The cases were enrolled using structured proforma with written consent. All mothers in case group were counseled antenataly for advantages of early initiation of breastfeeding and helped to initiate breast feeding immediately after birth and again counseled at discharge, on follow-up at the end of 1st month and 3rd month for EBF. The effect was evaluated at end of 1st, 3rd and 6th month in terms of breast feeding practices. Counseling skills used were according to infant and young child feeding practice guidelines. At the end of 3rd month, group and individual counseling was done in case group. In control group, the breast feeding practices were recorded at 1, 3 and 6 month after delivery without any counseling. **Results:** There was significant increase in early initiation and EBF since birth in case group than in control group with odds ratio of 26. On follow-up at the end of 1st month, 83% (p = 0.001) mothers were practicing EBF in case group, which increased to 86% (p = 0.01) and to 97% (p = 0.006) at the end of 3rd and 6th month, respectively. Effect of counseling in case group for EBF was more in primiparous (78%, 81%, 91%) than in multiparous (48%, 55%, 61%) (p = 0.001, 0.006 and 0.0004 at end of 1st, 3rd and 6th month respectively). On comparing group and individual counseling given at end of 3rd month, the effect evident at 6th month shows, respectively; group counseling was more effective (99%) than individual counseling (95%, p = 0.002). **Conclusion:** Counseling before delivery and at regular intervals was of utmost importance for early initiation and sustained exclusive breastfeeding. This influenced primiparous mothers more. Group counseling had more impact than individual counseling.

Key words: *Counseling, Early initiation, Exclusive breastfeeding*

Infants constitute the most vulnerable segment of population subjected to the cultural influences of the community. This is also the period when maximum mental and physical growth and development occurs and this is intimately related to feeding and nutrition of the baby. Early initiation and successful breastfeeding is sine-qua non of healthy survival. Human breast milk is the healthiest form of milk for human babies. Early breastfeeding within 1 h and exclusive breastfeeding for the first 6 months are the key interventions to achieve millennium development goal 1 (MDG 1) and MDG 4, which deal with reduction in child malnutrition and mortality, respectively. In India, effective implementation of these interventions is yet to be achieved. National Family Health Survey-3 data show that the initiation of breastfeeding within 1 h is only 24.5% while the exclusive breastfeeding rates in children <6 month is only 46.4% [1]. It has been estimated that initiation of breastfeeding within an hour of birth can save

1 million babies [2]. Promotion of early initiation of breastfeeding has potential to make a major contribution in achievement of healthy child survival MDG. About 16% of neonatal lives could be saved if all infants were breastfed from day 1 and 22% if breastfeeding started within the 1st h [3]. This has particular relevance in our country, where neonatal and infant morbidity and mortality rates are high. Counseling has an inevitable role in successful and sustained exclusive breastfeeding along with early initiation of breastfeeding. Therefore, this study was planned to assess the effect of counseling on breast feeding practices, especially early initiation and sustained exclusive breast feeding (EBF).

METHODS

This study was a prospective case–control study conducted in Department of Pediatrics, Kamla Raja Hospital (KRH), Gwalior, and other government maternity hospital for a period of 1 year. A sample size of 294 was obtained with 95% confidence interval [4]. Cases (n = 154) included pregnant women attending antenatal clinic at KRH and they were first counseled for advantages of early and EBF. Control group (n = 140) included mothers of term babies born at Government Maternity Hospital other than KRH without any counseling regarding breast feeding. Exclusion criteria were mothers with lower segment caesarean section delivery, preterm delivery, babies with medical or surgical problems, and who cannot come for follow-up. Ethical clearance was obtained from Ethical Committee, Gajra Raja Medical College, Gwalior. Informed and written consent of parents or guardian was taken prior to enrollment in the study. The babies in both groups were enrolled using pre structured proforma and details of socio-demographic characteristics according to modified kuppuswamy scale, parity, education of mother (above high school, high school, below high school and illiterate- not able to read or write or both), initiation of breastfeeding and breastfeeding practices was recorded at birth, 1 month, 3 month and 6 months of age.

"Exclusive breastfeeding" denoted diets consisting of breast milk only, without other solids or liquids. Any addition of solids or liquids to breastfeeding was considered "partial breastfeeding." "Early initiation" of breastfeeding referred to breastfeeding that started within 1 h of birth on the day of birth. Late initiation indicated breastfeeding that began after the 1st h of birth.

Cases were counseled by investigator in antenatal period for advantage of exclusive breastfeeding along with emphasis on early initiation. This group was helped in starting breastfeeding within 1 h after delivery and during their stay at hospital and counseled at discharge. Counseling skills used were according to infant and young child feeding (IYCF) practice guidelines [5]. Follow-up was carried out in newborn Follow-up clinic at the end of 1st, 3rd, and 6th month and breast feeding practices recorded. Mothers in the case group were counseled individually at the end of 1st month for sustained exclusive breastfeeding for 6 months of life and breast feeding practices evaluated in both groups. At the end of 3rd month group counseling and individual counseling was given in sub groups of 15 members in each sub group within case group and results evaluated at end of 6th month. Effect of counseling was also compared in primiparous and multiparous mothers enrolled in case group.

Control group received all the information about breast feeding as per the standard protocol of the hospital and received no counseling by the investigator at any time during the study. Support for breastfeeding in the control group included the usual verbal encouragement provided by the maternity ward staff members, a general health assessment and an evaluation for evidence of successful breastfeeding behavior by the pediatrician. They were also followed at the end of 1st, 3rd, and 6th month and breast feeding practices recorded.

Software used in data analysis was EpiCalc 2000 v.1 2 (Brixton Books, London). Means and proportions were compared using Student's *t*-test and the Chi-square test. Odds ratio calculated. $p < 0.05$ was considered to be significant.

RESULTS

In case group out of 154 enrolled, 46 were excluded based on exclusion criteria leaving 108 mothers. Out of 108, on follow-up at 1 month, 7 did not come (6.48%) and 101 (93.5%) attended follow-up clinic, while dropout rate was 7 (6.93%) at 3 months, and 0 at 6 month with 94 (93.07%) cases attended follow-up clinic at 6 months. In control group, out of 140

enrolled mothers, 32 were excluded. Out of remaining 108, 10 (9.26%) did not come for follow-up at 1 month, and 98 (90.74%) attended follow-up clinic. There were 8 (8.16%) dropouts at the end of 3rd month, and 3 (3.33%) dropouts at the end of 6th month and 87 (96.67%) mothers attended follow-up clinic at 6 months (Fig. 1).

Analysis of socio-demographic characteristics showed that literacy rate in mothers in case group was more (68.52%) when compared to those in control group (44.44%). There was 78% (n = 84) early initiation in case group when compared to 12% (n = 13) in control group with odds ratio of 26. On follow-up at 1 month, there were 83 % (p = 0.01) mothers practicing EBF in case group against only 63% in control group with odds ratio of 3. At 3 month, the EBF in case group increased to 86% (p = 0.01) than in control group (55%) with odds ratio of 5, which increased to 97% (p = 0.002) at 6th month of follow-up (odds ratio of 31). Exclusive breastfeeding declined to 49% in control group at the end of 6 months (Table 1).

Effect of group counseling was much more pronounced than individual counseling. 99% mothers were practicing EBF in group counseled batch (p = 0.0002) against 95% mothers who were counseled individually (p = 0.001) (Fig. 2). Effect of counseling in case group for EBF was more in primiparous mothers (77.55%, 80.43%, and 91.30% at 1, 3, and 6 months, respectively) than in multiparous (49.12%, 54.17%, and 60.41% at 1, 3, and 6 months, respectively) (p = 0.01, 0.006 and 0.04) (Fig. 3).

DISCUSSION

In this study, 2 groups were enrolled, and impact of counseling on early initiation and sustained EBF practices was studied. Mothers in the case group had 78% early initiation with odds ratio of 26 i.e., 26 times

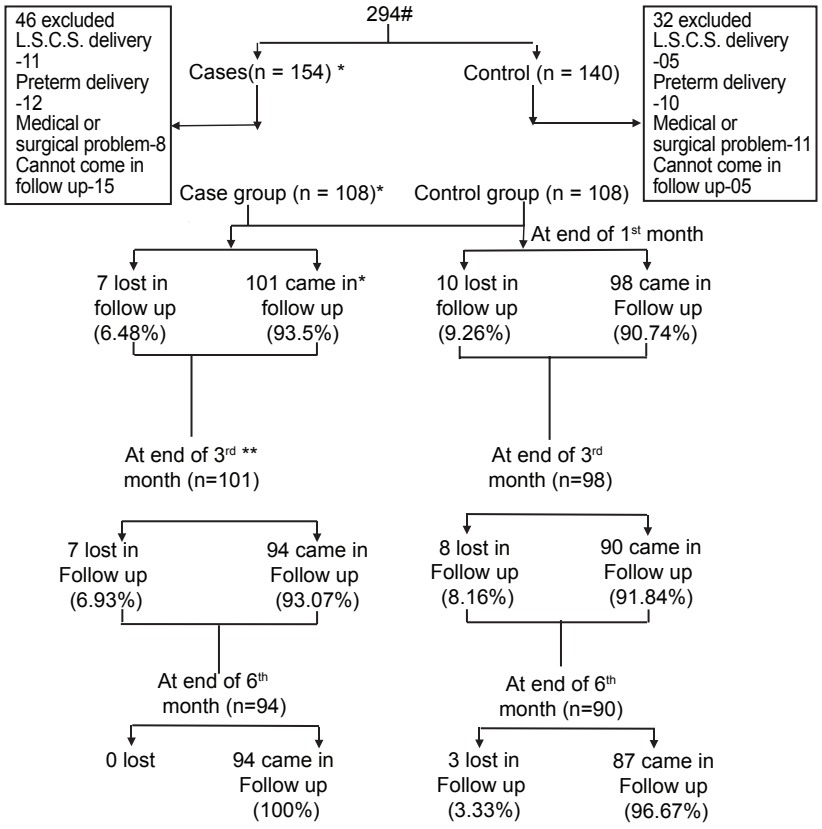

Figure 1: Participant flow diagram. *Individual mothers counseled for exclusive breast feeding. **Group and individual counseling is given to mothers in subgroups for exclusive breast feeding. #294 (calculated by $n = z^2_{1-@/2} p (1-p)/d^2$ where p = prevalence of morbidity=19%: Standard error: 5%: confidence level: b/w 90% to 95%: 1-@/2:- on std. error: $z_{1-@/2}$ &z (1-@) are function of confidence level. (3)

more than in control group as they were counseled antenataly and helped to initiate early while in control group early initiation was very poor. Similar results on timing of initiation of breast feeding were seen by other authors also [6,7]. On follow-up for breast feeding practices in later life i.e., at 1, 3 and 6 month, there was statistically significant increase in EBF in case group than in the control group. The percentages of mothers practicing EBF persistently increased in case group as mothers received motivation on each follow-up through counseling to practice and sustain EBF and the same declined in control group as they had no motivation. Other studies reported earlier, focused more on EBF than the early initiation of breastfeeding. Similar results were obtained from various studies conducted in Ghana and rural Egypt [3]. A study shows that effective counseling is required prior to delivery for early initiation of breast feeding and regular

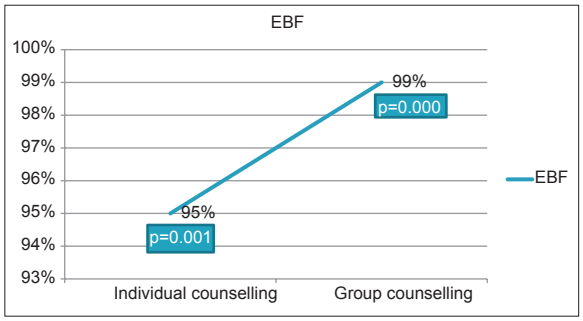

Figure 2: Individual versus group counseling in case group. EBF: Exclusive breast feeding

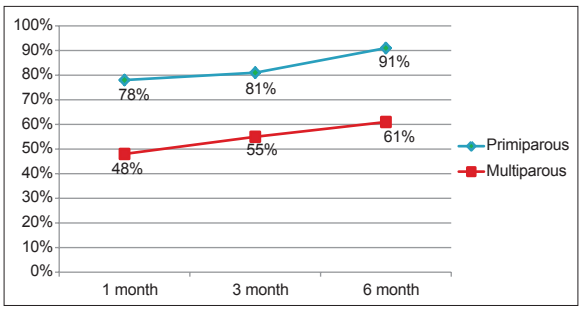

Figure 3: Effect of counseling on exclusive breast feeding in primiparous and multiparous mothers in case group

Table 1: Characteristics of study groups

Characteristics	Case group (n=108) (%)	Control group (n=108) (%)	p value	Odds ratio
Early initiation	84 (78)	13 (12)		26
Late Initiation	24 (22)	95 (88)		
Education of mothers				
Above high school	18 (24.32)	10 (20.83)	0.001	
High school	23 (31)	22 (45.83)	0.002	
Below high school	33 (44.59)	16 (33.33)	0.001	
Total literate mothers	74 (68.52)	48 (44.44)		
Illiterate	34 (31.48)	60 (55.56)		
Socio-economic status				
Upper (I)	6 (5.56)	5 (4.63)	0.632	
Upper middle (II)	20 (18.52)	22 (20.37)	0.03	
Lower middle (III)	38 (35.19)	29 (26.85)	0.0002	
Upper lower (IV)	29 (26.85)	38 (35.19)	0.0001	
Lower (V)	15 (12.96)	14 (12.96)	0.001	
Parity - primiparous	57 (53)	46 (43)		
Multiparous	51 (47)	62 (57)		
EBF				
1 month	83 (84)	63 (62)	0.01	3
3 month	86 (81)	55 (50)	0.001	5
6 month	97 (91)	49 (43)	0.002	31

EBF: Exclusive breast feeding

counseling at different time intervals enhances the sustained EBF in later life, which helps in curtailing persistent or recurrent diarrhea and respiratory tract infections [8,9]. This is also in accordance with a study done in Nepal, which reported that early initiation of breast feeding had powerful influence over the duration of EBF up to 6 months [10]. A study carried out at Dhaka also concluded that effective counseling is required for EBF to continue up to 6 months [11].

Early initiation and EBF was strikingly more in primiparous, which showed that these mothers could be easily motivated when approached during antenatal and immediate postnatal period to emphasize and teach them the importance of early initiation and sustained EBF along with technique of breast feeding. Multiparous mothers, due to their previous experience in breast feeding, are difficult candidates for counseling for early initiation of breast feeding and also for sustained EBF in later life. A previous study also reported same results [12]. Similarly, a study of selected Mexican hospitals showed that counseling combined with babies staying with their mothers, significantly increased full breastfeeding among primiparous mothers [13]. Similar results were obtained in study done by Agre et al. and Holmes et al. [14,15]. However, Ekström et al. concluded that parity had no significant influence [16].

Group counseled mothers had significantly sustained level of motivation than individually counseled mothers with odds ratio of 31 i.e. 31 times more than in control group. A study by Haroon et al. [17] also concludes that both individual and group counseling markedly increased the rates of EBF, with combined individual and group counseling having the greatest effect from 1-5 months of age with a 101% increase. Combined individual and group counseling also led to a greater decrease in no breastfeeding rates, of 34% until 1 month and 32% for 1-5 months, than individual or group counseling alone. Receiving the combination of one-on-one educational sessions with group sessions may be the ideal combination for women as a motivating strategy to continue breastfeeding. The WHO multicenter growth reference study (MGRS) in India successfully enhanced breastfeeding and complementary feeding practices [18]. A metaanalysis of 53 studies, including a cluster randomized controlled trial from India has demonstrated that prenatal and postnatal counseling increased EBF manifold and skilled "one to one" counseling (as opposed to group counseling) enhanced rates of EBF [19]. Positive effects of training have been well-demonstrated by field experience from Uttar Pradesh [20]. Other studies also showed similar results regarding efficacy of counseling in promotion of breastfeeding by home visits and in groups [11,21].

The study of impact of educational status on early initiation of breast feeding and later breast feeding practices in this series revealed that more mothers in case group were literate. The higher literacy rate of mothers in the case group may be attributed to their better understanding of advantages of early initiation of breast feeding and sustained EBF for healthy survival and growth and development of their infant. A previous study concluded that a higher maternal educational level was observed to favor EBF significantly ($p < 0.05$) when compared to illiterate mothers [22]. This is supported by findings of study by Ogbonna et al. [23] and Kumar et al. [24]. In contrast to this, a study concluded that "the EBF rate in our environment was very low despite a high level of knowledge among mothers. Efforts must be intensified to reiterate the benefits of EBF and address the identified hindrances, through health education of the broader community to enlist family support for breastfeeding mothers [25]."

The foregoing discussion of the finding of present study stresses the significance of counseling on timely and early initiation of breast feeding along with promotion and sustenance of EBF. This study also emphasizes early initiation and prolonged duration of breast feeding and calls for health educative efforts along with the training of health care workers in this field to introduce early initiation of breast feeding and every opportunity of periodic counseling should be availed by health care workers to promote sustained and prolonged duration of EBF throughout initial 6 months. It has been found that to promote and maintain early and exclusive breastfeeding all three elements of comprehensive IYCF i.e. policy, services, and community action should be implemented stressing more on pre service and in service skill training, supportive supervision along with training and supervision of counseling network [26]. Therefore, institutionalization of appropriate training programs and systems to ensure that all functionaries at facility and the community

level, acquire requisite IYCF counseling skills is essential [27]. These observations provide us useful clues for scientific and rational methods of infant feeding during infancy and advancing towards achievement of MDG of reducing child mortality and morbidity.

CONCLUSIONS

This study concludes that counseling before delivery of baby for early initiation of breast feeding and also counseling at periodic intervals helped in sustaining EBF. Therefore, training of health care workers is necessary in IYCF practices for effective early initiation in all deliveries as well as for sustained EBF for first 6 months of life and beyond.

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