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Original Article

Role of lactation educators in urban India: A comparative study

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ABSTRACT

Objective: To study the impact of postnatal lactation counseling by certified lactation educator on the establishment of breastfeeding in urban areas. **Design:** Retrospective observational study **Setting:** Maternity ward of a multispecialty Private Hospital in Thane City of Maharashtra. **Materials and Methods:** During March 2014 to February 2015, data were collected retrospectively from the hospital records of 283 mothers (study group) who had delivered healthy newborns at full term with birth weight of >2.5 kg and had received structured lactational counseling from the lactation educator. This was compared with the data from March 2013 to February 2014 when 235 mothers (control group) received lactational counseling from the maternity staff after delivery. **Main Outcome Measures:** Reduction in the volume of supplemental formula feed during the hospital stay and number of babies discharged on exclusive breastfeeding (i.e., no supplemental formula feed given in the 24 h before discharge). **Results:** The mean volume of supplemental formula consumed was significantly lesser ($p<0.001$) in the study group (median 50 mL, interquartile range [IQR] 0-130) than control group (median 110 mL, IQR 20-190). The study group had 205 out of 283 babies (72.4%) who were discharged on exclusive breastfeeding as compared to 113 out of 235 babies (48%) in the control group, which was significantly higher ($p<0.001$, relative risk [RR] 1.6, 95% confidence interval - 1.4, 2.0). **Conclusion:** Lactation educators are more effective than maternity staff for the improvement in breastfeeding practices; especially, in the private sector hospitals of urban areas.

Key words: *Breastfeeding, Cesarean section, Formula feeding, Vaginal delivery*

Private sector facilities account for nearly 38% of live births in urban India. Of these, nearly 28% live births are by cesarean section [1]. Breastfeeding rates, especially exclusive breastfeeding, are quite poor in the urban areas (38-54%) with higher rates (55%) of use of formula milk during hospital stay [2]. It is widely acknowledged that cesarean section has a negative impact on early initiation and establishment of breastfeeding. This has a long-term implication as babies born by cesarean section are less likely to be breastfed at 6 months compared to babies born by vaginal delivery [3]. Many studies have demonstrated a beneficial impact of postnatal lactational counseling by the maternity staff, resident doctors, and student nurses on early initiation of breastfeeding; especially, in cesarean delivery [4]. However, there are hardly any studies reported from private sector hospitals in urban areas, where the socioeconomic demography of the mothers is different from that of mothers in the teaching hospitals or public sector hospitals.

Considering the rising number of private institutional deliveries in urban India, there is a specific need to address the concern of poor breastfeeding practices in this area. Hence, this study was undertaken to assess whether support and counseling from trained lactation educators has better impact on breastfeeding practices as compared to that from the maternity staff in our hospital.

MATERIALS AND METHODS

The study data were collected from the maternity ward of a multispecialty private hospital in Thane city of Maharashtra. Data were collected retrospectively from the hospital records of 518 consecutive mothers - infant pairs during the study period of 2 years from March 2013 to February 2015. Only healthy, term newborns rooming in with their mothers were included. NICU admissions, multiple pregnancies, infants of diabetic mothers, and babies with congenital problems were excluded from the study. Mothers who were unwell and could not optimally breastfeed due to any medical or obstetric reasons were also not considered for the study. The hospital stay was for 4 days post-cesarean section delivery and for 2 days post-vaginal delivery. Supplementation with formula milk was done only in those babies where the mothers demanded the same, owing to their perception of inadequate breast milk, and problems with latching including sore nipples.

From March 2013 to February 2014, 235 mothers (control group) received unstructured, informal lactational counseling from the maternity staff. During the period from March 2014 to February 2015, 283 mothers (study group) received structured counseling with the aid of a manikin from a certified lactation

educator. The lactation educator demonstrated the ideal latching and various feeding positions and discussed about benefits of colostrum, feeding cues, stimulation techniques, assessment of suckling, and adequacy of breast milk. On subsequent visits, she checked for establishment of milk output and looked for any problems such as cracked or sore nipples, engorged breasts, and suggested appropriate interventions. As per the standard practice in our hospital, all the 518 participants had initiated breastfeeding within 1 h of birth.

Baseline data included the age and parity of the mother, the mode of delivery and the birth weight of the baby. All the participants were from the upper socioeconomic class as per the modified Kuppuswamy socioeconomic status scale, 2012. The primary outcome measures studied were as follows: Volume of supplemental formula milk consumed during hospital stay and number of babies discharged on exclusive breastfeeding (i.e., no supplemental formula milk offered in the 24 h before discharge).

The data were entered using MS-Excel-2007 and analyzed using SPSS-16 software. Descriptive analysis for numerical data consisted of mean and standard deviation (for normally distributed data) and Median and Interquartile rage (for non-normally distributed data). For categorical data, it consisted of frequencies and percentage for various parameters. In addition, relative risk (RR), 95% confidence interval (CI) for RR, and 95% CI for mean difference was used according to the data. The Kolmogorov–Smirnov test was used to check distribution of data (normal or non-normal). Tests of significance, namely, unpaired t-test (for normally distributed data) and Mann–Whitney U-test (for non-normally distributed) were used to compare mean and Chi-square test was used to compare proportions between two groups. The $p<0.05$ was taken as statistically significant.

RESULTS

Table 1 shows the baseline maternal and infant characteristics of the two groups. The two groups are matched except for the mode of delivery, with the study group having significantly more number of cesarean section deliveries than control group. As shown in Table 2, the mean volume of supplemental formula consumed was significantly lesser ($p<0.001$) in the study group (median 50 mL, interquartile range [IQR] 0-130) than control group (median 110 mL, IQR 20-190). The study group had 205 out of 283 babies (72.4%) who were discharged on exclusive breastfeeding as compared to 113 out of 235 babies (48%) in the control group, which was significantly higher ($p<0.001$, RR 1.6, 95% CI - 1.4-2.0). Table 3 shows the subgroup analysis done to study, the effect of mode of delivery on the outcomes measured. As shown, even in the subgroup of full term vaginal deliveries, the study group has performed better in all the three outcomes than control group. However, this difference was not statistically significant due to the small number (88 out of 518) of vaginal deliveries.

Table 1: Characteristics of the study population

Characteristics	Control group (n=235)	Study group (n=283)	p (<0.05 significant)
Mothers' characteristics			
Parity			
Primigravida (%)	130 (55.3)	141 (49.8)	0.212
Multigravida (%)	105 (44.7)	142 (50.2)	
Age in years	30.2±3.5	29.7±3.7	0.145
Mode of delivery			
Vaginal (%)	59 (25.1)	29 (10.2)	<0.001
Cesarean section (%)	176 (74.9)	254 (89.8)	
Birth weight of newborn (mean±SD)	2.98±0.41	3.01±0.33	0.249

SD: Standard deviation

DISCUSSION

Our study has demonstrated that certified lactation educators perform significantly better than hospital maternity staff in helping to establish breastfeeding early in mothers and reduce the dependence on formula milk; especially, in private hospitals in urban areas with a high number of cesarean deliveries. As this is a retrospective study, we acknowledge that the data reflects only the hospital stay and there is no information about the continuation of benefits on follow-up visits. However, numerous studies have unambiguously shown that building of maternal confidence early in the postnatal period and the establishment of breastfeeding in the early neonatal period results in longer duration of breastfeeding including exclusive breastfeeding [5].

Breastfeeding rates continue to be poor in India, more so in the urban areas [6,7]. As per the National Family Health Survey-3 (2005-2006), with improved standards of living, better education, and wider penetration of medical insurance schemes in all strata of society, increasing number of people are now accessing private healthcare [1]. This is especially true in urban areas. Mothers from urban areas are more likely to rely on formula milk use, due to easy availability as well as peer group pressure and the influence of social media. In the private sector, mothers are likely to be less amenable to advice from general maternity staff. They expect dedicated, professional counseling from experts. This conjecture is strongly supported by the findings of our study.

In areas where the rates of breastfeeding initiation are high, as in our hospital, interventions that offer extra support through face-to-face, scheduled visits by a trained professional are known to positively impact breastfeeding outcomes [8]. Lactation educators are specially trained to impart general breastfeeding support and to anticipate and specifically address women's concerns of nipple pain and low milk supply, the two main issues that result in breastfeeding cessation [9]. Integrating lactation support by a lactation educator into routine hospital practice is necessary as the general maternity staff including the physicians and nurses often cite lack of time and lack of specific breastfeeding knowledge as detriments for providing effective and sustained breastfeeding support [10,11].

Table 2: Outcome measures in the two groups

Outcome measures	Control group n=235	Study group n=283	p (<0.05 significant)	RR (95% CI)
Volume of formula during hospital stay (median, IQR)	110 ml, 20-190	50 ml, 0-130	<0.001	1.6 (1.4-2.0)
Number of babies discharged on exclusive breastfeeding (%)	113 (48)	205 (72.4)	<0.001	

RR: Relative risk, CI: Confidence interval, IQR: Interquartile range

Table 3: Outcome measures as per mode of delivery

Outcome measures	Control group n=235	Study group n=283	p value (<0.05 significant)	RR (95% CI)
Cesarean section	n=176	n=254		
Volume of formula during hospital stay (median, IQR)	135, 52.8-210	55, 0-140	<0.001	1.7 (1.4-2.1)
Number of babies discharged on exclusive breastfeeding (%)	71 (40.3)	180 (70.9)	<0.001	
Vaginal deliveries	n=59	n=29		
Volume of formula during hospital stay (median, IQR)	15, 0-60	0, 0-18.5	0.055	1.6 (0.7-3.7)
Number of babies discharged on exclusive breastfeeding (%)	42 (71.2)	24 (82.8)	0.239	

RR: Relative risk, CI: Confidence interval, IQR: Interquartile range

Pereira et al. have shown the benefits of structured lactational counseling on neonatal weight gain pattern at 28 days [4]. Banapurmath and Selvamuthukumarasamy have demonstrated that there is no negative impact on initiation of breastfeeding early in cesarean section deliveries, provided proper lactational counseling services are in place [3]. Our study complements these studies by demonstrating the positive impact of lactational counseling by lactation educators in health-care settings with significantly higher number of cesarean section deliveries. Restriction of fluid and food intake, restriction of mobility, post-operative pain and discomfort, and inability to assume an optimal breastfeeding position results in poor initiation and establishment of breastfeeding in cesarean section deliveries. Hence, additional support is warranted for these mothers, as is seen from our study.

Many studies have assessed the role of lactation counselors in an outpatient setting [12,13]. By promoting the use of services of certified lactation educators in the hospital during the immediate post-partum period, our study aims at specifically targeting the increasing number of urban, upper-class mothers with a higher frequency of cesarean sections than vaginal deliveries.

CONCLUSION

Private hospitals in the urban areas need to provide dedicated, structured lactation counseling by certified lactation educators rather than relying solely on general maternity staff for optimizing breastfeeding, thereby promoting the Baby Friendly Hospital Initiative.

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