



# Effectiveness of Lactation Counseling on Lactation Outcome among Primipara Mothers: A Pilot Study

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## Abstract

**Introduction** The World Health Organization encourages initiation of breastfeeding soon after birth, exclusive breastfeeding (EBF) for the first 6 months, and continued breastfeeding up to 2 years of age.

**Material and Methods** This pilot study was done on 30 primiparous women between 37 and 40 weeks of gestation. Mothers of intervention group were given lactation counseling using a module and a demo before delivery and face-to-face counseling for 3 days, whereas mothers of control group received routine care. Immediate initiation of breastfeeding and lactation outcome was measured using structured validated tools.

**Results** Significant difference was found at the initiation of breastfeeding between the groups ( $t = 8.529$ ;  $p < 0.001$ ) and in the lactation outcome, which was observed by the infant breastfeeding observation tool on the third day ( $Z = -4.269$ ), fourth day ( $Z = -4.681$ ), and fifth day ( $Z = -4.667$ ) at  $p < 0.001$  level. None of the babies of mothers who received lactation counseling and immediate initiation of breastfeeding had exaggerated jaundice whereas 53.33% of infants in the control group (group 1) developed exaggerated jaundice within the first 48 hours. All the babies of the intervention group were on EBF up to 6 months whereas only 46.66% of infants of the control group had EBF for the first 3 months and 40% in the 4th month and 20% in 5th and 6th month.

**Conclusion** Our research supports the need of lactation counseling for better initiation of breastfeeding and lactation.

## Keywords

- ▶ exclusive breastfeeding
- ▶ lactation counseling
- ▶ lactation outcome

## Introduction

Breast milk is the ideal milk and breastfeeding is the standard feeding recommended for a newborn.<sup>1,2</sup> Despite the many advantages the duration and practice of breastfeeding

is not satisfactory all over the world.<sup>3,4</sup> The World Health Organization encourages initiation of breastfeeding soon after birth, exclusive breastfeeding (EBF) for the first 6 months, and continued breastfeeding up to 2 years of age.<sup>5</sup> One of the common hurdles and challenges to adhere to this

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recommendation is lack of knowledge on breastfeeding and the importance of immediate initiation of breastfeeding.<sup>6</sup>

Studies reveal that 58.3% of infants are exclusively breastfed up to 4 months of age and 46.4% of babies are exclusively breastfed up to 6 months.<sup>7</sup> Poor adherence to the EBF recommendations leads to malnutrition, increased morbidity, and mortality of children and infants.<sup>8,9</sup> Globally, only 50% of the newborns get initiated breastfeeding during the first hour, 41% are exclusively breastfed up to 6 months, two-thirds of mothers breastfed up to 1 year, and 45% continue breastfeeding up to 2 years.<sup>10</sup> EBF will drastically bring down the infant mortality rate which accounted for 27.695 deaths per 1,000 live births in 2022.<sup>11,12</sup>

The present study was conducted with an aim to assess the effectiveness of lactation counseling on lactation outcome which include immediate initiation of breastfeeding, production of milk in terms of neonatal outcome such as proper latching, passing of urine, meconium, activity level, absence of exaggerated physiological jaundice within 48 hours after delivery, and EBF up to 6 months of age.

## Materials and Methods

Quasi-experimental time series design was used to conduct this pilot study in a tertiary care center of South Canara district. After obtaining the ethical clearance from the institution, the university, and permission from the hospital authority, the investigator selected 30 primigravid mothers with single ton pregnancy, who were between 37 and 40 weeks of gestation and were admitted for safe confinement, using purposive sampling. The purpose of the study was explained and an informed consent was obtained from the participants who were ready to participate. Data collection was done using four structured tools. The first tool consisted of two parts, namely, baseline pro forma of the mother and baseline pro forma of the baby, and the second tool, a structured knowledge questionnaire to assess the knowledge of mothers on lactation, were administered prior to delivery. Third tool was an observation checklist to assess the immediate initiation of breastfeeding and the fourth tool was a modified infant breastfeeding observation tool to check the lactation outcome. Knowledge of the subjects was assessed only to provide lactation counseling. All the subjects who scored satisfactory (40–60%) or poor (< 40%) knowledge in the intervention group were given lactation counseling using a structured lactation module and a demonstration on various positions and correct latching with a model, whereas the control group received the routine care which included few instructions by the doctors and minimal assistance by the nurses based on the need. Soon after delivery mothers and their babies were observed for initiation of breastfeeding using an observation checklist which consisted of five subheadings such as initiation of breastfeeding, duration of breastfeeding, latch, sucking, and swallowing, and mothers' behavior. The mothers of the intervention groups were given face-to-face counseling in the morning and evening for the consecutive 3 days after delivery and the breastfeeding was assessed using a validated modified infant breastfeeding observation tool on the 3rd, 4th, and 5th day after delivery. This tool consisted of observations on seven areas such as readiness to start breastfeed, rooting, latch, sucking pattern, swallowing, infant's behavior, and elimination. Number of babies

who received phototherapy too were assessed and noted. Mothers who remained in the hospital for a minimum of 5 days were included for the study and were followed up. EBF was assessed monthly through telephonic interview for 6 months. The descriptive statistics such as frequency, percentage, mean, median, and standard deviation were used to analyze the sample characteristics and inferential statistics such as paired *t*-test and Mann-Whitney *U* test were used to find the differences between the group regarding immediate initiation and lactation outcome.

## Results

The analyzed data are presented as baseline pro forma of the mothers (► **Table 1**), grading of the knowledge scores of groups 1 (control) and 2 (intervention) (► **Table 2**), effectiveness of lactation counseling on initiation of breastfeeding and lactation outcome as measured by the modified infant breastfeeding observation tool (► **Table 3**), and percentage of adherence to EBF (► **Fig. 1**). Most of the mothers in group 1 (73.3%) and group 2 (66.7%) were homemakers. Among the mothers, 40% in group 1 and 53.3% in group 2 were with 39 weeks of gestation; 73.3% in group 1 had some exposure to teaching on breastfeeding and 66.7% of mothers in group 2 had no exposure to teaching on breastfeeding. In both group 1 (66.7%) and group 2 (93.3%) the source of information was their family members and majority of the mothers in group 1 (46.7%) and group 2 (53.3%) had normal delivery. Among babies, 66.7% in group 1 were females and 53.3% in group 2 were males, and 40% of group 1 and 60% of group 2 had a birth weight of 2.5 to 3 kg. All the babies of group 1 (100%) and

**Table 1** Percentage and distribution of baseline pro forma of the mothers,  $n = 15 + 15 = 30$

Variables	Group 1 (control) %	Group 2 (intervention) %
Age in years		
< 20	6.7	26.7
21–25	86.7	26.7
26–30	0.0	6.7
> 30	6.7	40
Education		
Primary	0.0	0.0
High school	13.3	13.3
PUC	60.0	33.3
Graduate/Professional	26.7	53.3
Place of residence		
Rural	53.3	33.3
Urban	33.3	60
Semi-urban	13.3	6.7
Type of family		
Nuclear	66.7	33.3
Joint	33.3	66.7

Abbreviation: PUC, pre-university course.

**Table 2** Percentage of the knowledge score of mothers in group 1 and group 2,  $n = 15 + 15 = 30$ 

	Knowledge score	Group 1, %	Group 2, %
Poor	0–10 (0–40%)	26.7	33.3
Satisfactory	11–15 (41–60%)	73.3	66.7
Good	16–20 (61–80%)	0.0	0.0
Very good	21–25 (81–100%)	0.0	0.0

Note: Maximum score = 25.

**Table 3** Mean, SD, and  $p$ -value of initiation of breastfeeding and infant breastfeeding observations of group 1 and group 2,  $n = 15 + 15 = 30$ 

			Mean $\pm$ SD	$p$ -Value
Initiation of breast feeding		Group 1 (control)	4.87 $\pm$ 1.959	0.001
		Group 2 (intervention)	9.40 $\pm$ 0.632	
Infant breastfeeding observations (IBFO)	Third day	Group 1 (control)	8.80 $\pm$ 3.468	0.001
		Group 2 (intervention)	15.80 $\pm$ 2.111	
	Fourth day	Group 1 (control)	8.93 $\pm$ 3.693	0.001
		Group 2 (intervention)	17.27 $\pm$ 1.668	
	Fifth day	Group 1 (control)	9.47 $\pm$ 4.357	0.001
		Group 2 (intervention)	19.13 $\pm$ 1.685	

Abbreviation: SD, standard deviation.

majority (80%) in group 2 had 8 Apgar score at birth and babies in both groups (93.3%) had an Apgar score of 9 at 5 minutes. Preeducational knowledge revealed that none of the participants had good knowledge and there was no significant difference in the knowledge score between the groups ( $\rightarrow$  Table 2). All the mothers who had received lactation counseling, initiated breastfeeding within 1 hour after normal and instrumental delivery and within 4 hours in case of caesarean delivery. Significant difference in the initiation of breastfeeding scores between the control (group 1) and intervention group (group 2) was assessed ( $t = 8.529$ ) and was found to be significant at the  $p < 0.001$  level. Significant difference of lactation outcome between the groups on the third day, fourth day, and fifth day was assessed using the Mann–Whitney  $U$  test and was found to be significant at the

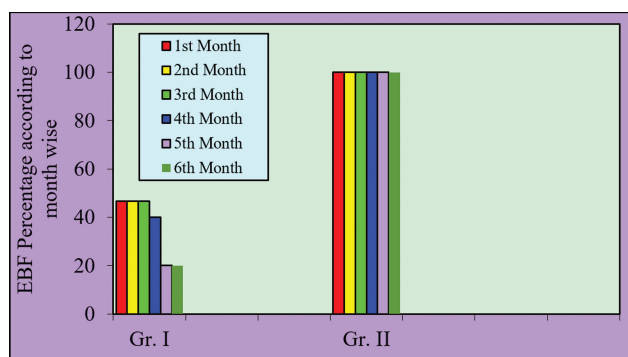
$p < 0.001$  level ( $\rightarrow$  Table 3). None of the babies of mothers who received lactation counseling and immediate initiation of breastfeeding had exaggerated jaundice whereas 53.33% of infants in the control group developed exaggerated jaundice. All the babies of the intervention group were on EBF up to 6 months, whereas only 46.66% of babies of the control group had EBF for the first 3 months and 40% in the 4th month and 20% in 5th and 6th month ( $\rightarrow$  Fig. 1).

## Discussion

Routine lactation counseling is provided in most of the hospitals. But predelivery and postdelivery face-to-face counseling has a better effect on immediate initiation of breastfeeding. Continued support after delivery and clarifying their doubts through social media also play an important role in EBF. This study was undertaken with the first objective to assess the effect of lactation counseling on immediate initiation of breastfeeding. All the mothers who received predelivery lactation counseling initiated breastfeeding soon after birth for a duration of more than 10 minutes each on each breast. Significant difference ( $t = 8.529$ ) was seen in the mean score of initiation between the control (group 1) and intervention group (group 2) at the  $p < 0.001$  level.

The present study is also supported by a hospital-based study to identify antenatal counseling on breastfeeding outcomes in terms of early initiation. Mean hours taken for adequately establishing breastfeeding was also lower in subjects who received immediate counseling prior to delivery.<sup>13–15</sup>

The second objective of the study was to assess the effect of lactation counseling on lactation outcome in terms of



**Fig. 1** Bar diagram showing percentage of newborns who had exclusive breastfeeding (EBF) at different months in the control group and intervention group.

neonatal outcome measured by the modified infant breastfeeding observation scale. Significant difference was found in lactation outcome in all the areas of the tool such as babies' readiness to start breastfeeding, rooting, latch, sucking pattern, swallowing, infant's behavior, and elimination. The overall score of these areas on the third day ( $Z = -4.269$ ), fourth day ( $Z = -4.681$ ), and fifth day ( $Z = -4.667$ ) was very significant ( $p < 0.001$ ), which indicated that the baby was getting adequate milk and the mother was producing the needed milk.

The current study is supported by an integrated review which was done among 33 fully randomized controlled, cohort, and semiexperimental studies with a purpose to evaluate the effectiveness of breastfeeding education for 5 years. Breastfeeding education and support had positive impact on the initiation, duration of breastfeeding, and EBF. This review also stressed the importance of educating and counseling the mothers regarding breastfeeding by nurses and midwives which has a paramount effect on the continuation of breastfeeding and EBF.<sup>16,17</sup>

The present study also assessed the effect of lactation counseling on lactation outcome in terms of absence of exaggerated jaundice within 48 hours. Lactation counseling enhances initiation of breastfeeding, thereby enhances lactation in terms of increased breast milk production. In addition to this, attaching the baby immediately to the breast also stimulates the production of milk and ejection of colostrum. This in turn produces adequate milk for the baby. Babies in the intervention group were getting adequate milk throughout the stay in the hospital and had proper passing of stool and urine. So, none of the babies in the intervention group developed exaggerated jaundice within the first 48 hours, whereas 53.33% of babies in the control group had exaggerated jaundice and received phototherapy. Investigator has only taken count of number of babies who received phototherapy. Bilirubin level was not taken as a criterion. The findings of the study are supported by the review article, which stresses to encourage all the mothers to breastfeed their newborn a minimum of 10 to 12 times per day to prevent exaggerated physiological jaundice.<sup>18</sup>

The present study also revealed that lactation counseling enhances EBF. The babies of the intervention group were exclusively breastfed up to 6 months of age, whereas only 46.66% of infants had EBF for the first 3 months and 40% in the 4th month and 20% each in the 5th and 6th month. The present findings are supported by several studies conducted in different parts, which state significant difference among women who received prenatal counseling on breastfeeding and women who have not received the education with regard to early initiation of breastfeeding and EBF.<sup>19–21</sup>

## Conclusion

The study concludes that lactation counseling is effective in enhancing lactation outcome among primipara mothers. In addition to the routine lactation counseling given during the antenatal period, lactation counseling before delivery and face-to-face counseling during the first 3 days have an added

benefit of achieving full cooperation and support from mothers and their caregivers in immediate initiation of breastfeeding, enhanced lactation which can be observed in the production and ejection of milk which was observed in babies' behavior, and elimination pattern, absence of exaggerated jaundice, and EBF for the first 6 months. Child birth education unit in an outpatient department is an ideal solution to promote EBF. Baby Friendly Hospital Initiatives (BFHI) policy also stresses on the promotion of breastfeeding. Routine lactation counseling prior to delivery and face-to-face counseling during hospital stay by a lactation professional will enhance EBF rates.

## Conflict of Interest

None declared.

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