

## Role of female birth attendants to enhance breastfeeding rates and essential newborn care

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### ABSTRACT

**Background:** Women who received support during labor are more likely to give birth “spontaneously.” The role of the female birth attendant (FBA) has not been very well established; hence, this study was planned. **Objective:** The objective of the study was to train, educate, assess, and evaluate the role of FBA before, during and after labor in terms of mother’s satisfaction, early initiation and continuation of breastfeeding and providing essential newborn care. **Methods:** In this prospective cohort study, 400 pregnant women, 200 cases and 200 controls in their third trimester were enrolled. FBAs were given training using flipchart. These newborns were followed up at 1½ month at an immunization clinic. Data were collected and analyzed. **Results:** 88% (176) of cases initiated breastfeeding in the 1<sup>st</sup> h of birth compared to 14.5% (29) in controls. 57 (28.5%) of controls had given prelacteal feeds to newborns compared to 7% (14) of cases. 108 (59%) of cases put the baby skin-to-skin contact following delivery compared to none in controls. There was more number of hospital visits in neonates of controls 26.25% (52) compared to cases 12.5% (25). **Conclusion:** The presence of FBAs improves early initiation of breastfeeding, decreases prelacteal feeds, improves skin-to-skin contact indirectly preventing hypothermia, and decreases the number of hospital visits.

**Key words:** *Baby-friendly hospital initiative, Breastfeeding, Breastfeeding benefits, Breastfeeding initiation, Essential newborn care, Female birth attendant*

Women have been attended and supported by other women during labor in earlier days. However, in recent decades, continuous support during labor has decreased. There are concerns about the consequent dehumanization of women’s birth experiences. This has led to call for a return to support during labor by women, for women. Supportive care during labor includes both physical and emotional. Such care usually improves normal labor processes and thus, reduces the need for surgical intervention. Women who received labor support are less likely to use pain medications. They are more satisfied and to give birth “spontaneously [1]”. In general, labor support is more effective when it is given by women who are not part of the medical staff. This, in turn, decreases prolonged hospitalization of mother-infant dyad, helps in “early initiation of breastfeeding” and improves the neonatal outcome.

Neonatal mortality now accounts for 36% of mortality among children below 5 years of age [2]. If “the millennium development goal for child mortality” is to be met, neonatal mortality to be decreased [3,4]. The enhancement of breastfeeding is a very important component of child survival. 22% and 16% of neonatal deaths could be saved if all infants were breastfed within the 1<sup>st</sup> h and day 1 of life, respectively [3,5]. Since the role of the female birth attendant (FBA) helps the mother in the delivery of the child, initiation of breastfeeding and improving neonatal outcome

has not been very well established. Therefore, we conducted this study with aims, to train, assess and evaluate the role of FBA before, during and after labor in terms of early initiation and continuation of breastfeeding, providing essential newborn care and mother’s satisfaction.

### METHODS

This is a hospital based prospective cohort study conducted at mother and children’s Hospital, from November 2012 to October 2014. It is a 536-bedded tertiary care hospital with annual deliveries of 10,000–12,000 catering to middle and low socioeconomic class. Ethical clearance was obtained from the Institutional Ethical Committee. As per a pilot analysis, the percentage of breastfeeding within 1 hr in the FBA group and control group was 65% and 50%, respectively. To confirm this in a big sample with a two-sided CI of 95%, and a power of 80% with 1:1 ratio and a dropout rate of 10%, and a sample size of 400 were selected.

Pregnant women in their third trimester and their female relative, accompanying her while attending antenatal clinic from Monday to Saturday, were included in the study. Following high-risk pregnant women, as per the WHO criteria (1978), were excluded from the study: Elderly primi ( $\geq 30$  years),

short-statured primi ( $\leq 140$  cm), threatened abortion and antepartum hemorrhage, malpresentations, pre-eclampsia and eclampsia, elderly grand multipara, twins and hydramnios, previous stillbirth, prolonged pregnancy, history of previous cesarean section, and instrumental delivery and pregnancy associated with medical diseases. Women having premature rupture of membranes, prolonged labor, and placenta retained more than half an hour, postpartum hemorrhage, puerperal fever, and sepsis were also excluded.

A total of 400 pregnant women, 200 cases and 200 controls in their third trimester attending the antenatal clinic and later admitted to clean labor ward were enrolled. Informed consent was obtained after explaining about the study in the local language. Those pregnant women attending the antenatal clinic on Monday, Wednesday, and Friday were allowed to choose female family member/friend as FBAs and were considered as cases. Those attending the antenatal clinic on Tuesday, Thursday, and Saturday and without FBAs were considered as controls.

FBAs were given training using flipchart on breastfeeding and audiovisual aids on initiation and establishment of breastfeeding including essential newborn care. FBAs were issued an identity card and allowed inside the labor room before, during and after delivery. FBAs gave appropriate, culturally sensitive mother-friendly care such as supporting pregnant women to climb and un-climb labor cot, allowing women to drink and eat light foods during labor, encouraging them to walk, and move about before delivery. Supportive care during labor involved both physical and emotional. Following delivery, they dried the baby quickly preserving the vernix maintaining euthermia. They place the baby skin-to-skin on mother's chest and abdomen, facing her and cover them together. The mothers were assisted to initiate breastfeed within 1 h of birth by the FBA. They kept the baby skin-to-skin with the mother. They discouraged giving prelacteal feeds. Once mothers got shifted to the ward, the FBAs assisted them in breastfeeding. They helped and accompanied the mother while giving the birth dose of BCG, OPV, and HepB vaccination. Data were collected on pretested, structured interview schedule including satisfaction scale in their own language. These newborns were followed up at 1½ month at immunization clinic to record the status of breastfeeding.

Data collected were compared between cases and control group. Results on continuous measurements are presented on the mean  $\pm$  SD (minimum-maximum) and results on categorical measurements are presented in number (%). The significance is assessed at 5% level of significance. Chi-square/Fisher exact test has been used to find the significance of study parameters on a categorical scale between two and more groups. The null hypothesis was that treatments do not affect outcomes that the two are independent. Reject the null hypothesis if p is "small." The statistical software, namely SAS 9.2, MedCalc 9.0.1, Systat 12.0, and R environment ver.2.11.1 was used for the analysis of the data and Microsoft Word and Excel have been used to generate graphs, tables, etc.

## RESULTS

Two hundred cases and 200 controls were enrolled. Comparison between cases and controls were made to know the outcome between the two groups. Various parameters such as age, level of education of pregnant women and FBA, parity index, time of initiation of breastfeeding, and number of illness hospital visits of neonates were considered. Baseline characteristics, age of the mother, place of residence, education, and occupation of pregnant women and gravid status are comparable and no statistically significant difference (Table 1). The results obtained were analyzed and shown in Table 2. Majority of the pregnant women (83.75%) hailed from Bangalore city. 69% (138) of cases preferred to have their mothers as birth attendants, 21 (10.5%) sister, 20 (10%) mother-in-law, 10 (5%) sister-in-law, and 11 (5.5%) others. 129 (64.5%) of FBAs were uneducated, 41 (20.5%) primary school, 26 (13%) high school, 4 (2%) PUC, and none were graduated. 54% of women were primigravida, and 75.5% of women were not working. 226 (55.25%) deliveries were conducted by postgraduates, 118 by interns, 26 by staff nurses, and 30 by obstetricians.

88% (176) of cases "initiated breastfeeding within the 1<sup>st</sup> h of birth" compared to 14.5% (29) in controls. 57 (28.5%) of controls had given prelacteal feeds to newborns compared to 7% (14) of cases. 118 (59%) of cases put the baby skin-to-skin over abdomen following delivery compared to none in controls. 55% (110) of newborn cases had received birth dose of BCG. OPV and Hep B compared to 49.5% (99) of controls. There was more

**Table 1: Comparison of baseline characteristics of study subjects**

Age in years	n (%)		p value
	Cases	Controls	
20–24	153 (76.5)	159 (79.5)	0.546
25–29	47 (23.5)	41 (20.5)	
Place of residence			
Rural	29 (14.5)	36 (18.0)	0.416
Urban	171 (85.5)	164 (82.0)	
Education of pregnant women			
Primary	67 (33.5)	56 (28.0)	0.307
High school	71 (35.5)	83 (41.5)	
PUC	34 (17.0)	26 (13.0)	
Graduate	7 (3.5)	13 (6.5)	
Postgraduate	-	-	
Uneducated	21 (10.5)	22 (11.0)	
Occupation of pregnant women			
Working	50 (25.0)	48 (24.0)	0.817
Not working	150 (75.0)	152 (76.0)	
Gravida status			
Gravida 1	115 (57.5)	103 (51.5)	0.213
Gravida 2	73 (36.5)	76 (38.0)	
Gravida 3	9 (4.5)	19 (9.5)	
Gravida 4 and above	3 (1.5)	2 (1.0)	

**Table 2: Outcome of breastfeeding initiation and newborn care in cases and controls**

Breastfeeding initiated	n (%)		p value
	Cases	Controls	
<1 h	176 (88.0)	29 (14.5)	0.001
More than 1 h	24 (12.0)	171 (85.5)	
Pre-lacteal feed			
Given	14 (7.0)	57 (28.5)	0.001
Not given	186 (93.0)	143 (71.5)	
Method of keeping the baby warm immediately after delivery			
On mothers abdomen	118 (59.0)	0 (0.0)	0.001
Keeping with attendees	82 (41.0)	200 (100.0)	
Birth dose of vaccination			
Vaccinated	110 (55.0)	99 (49.5)	0.317
Not vaccinated	90 (45.0)	101 (50.5)	
Hospital visits - both outpatient and admission			
Yes	27 (13.5)	57 (28.5)	0.001
No	173 (86.5)	143 (71.5)	

number of hospital visits in neonates of controls 26.25% (52) compared to cases 12.5% (25). 25 babies in cases and 52 babies in controls groups were admitted. Among admissions, two neonates of cases developed pneumonia, whereas in control Group 3 had pneumonia, one diarrhea, and one refusal of feeds. In mothers with FBAs, they were very satisfactory in 13 (10.8%), satisfactory in 104 (86.7%) and do not make a difference in 3 (2.5%).

## DISCUSSION

The present study was conducted in tertiary care government hospital. Government runs maternity hospitals are overburdened and understaffed in India. To deliver quality care services with the existing staff is difficult. To employ more staff is rather difficult as posts have to be created; salaries have to be paid by the already overburdened exchequer. Similar studies have not been done in the past. Hence, there is a need for help among the family members. The nurses, who were interviewed, frankly admitted that they were unable to provide the assistance requested by the mothers. They were very pleased to have an additional help among the family members if the hospital could do so, so that they can concentrate on quality care. Hence, the concept of having a "birth attendant" among the family member of the pregnant woman was envisaged to overcome this gap in the delivery of healthcare services. Invariably pregnant women are accompanied by family members who wait in the corridors of the hospitals. Health policymakers might not be able to provide satisfactory health care without a proper understanding of women's preferences. In this study, they were utilized to serve as birthing attendants.

Madi *et al.* and Rosen compared the supportive role of females in labor and showed that number of vaginal delivery was more (71% vs. 19%) than with the standard care, and vacuum

extraction (4% vs. 16%), cesarean delivery (6% vs. 13%), requirement of analgesia (53% vs. 73%), amniotomy (30% vs. 54%), and oxytocin use (13 vs. 30%) was lesser with use [6,7]. These studies clearly showed that the support of untrained female relative versus standard care was advantageous. Continuous support for women during childbirth was less likely: To have intrapartum analgesia, to have an operative birth, and to report dissatisfaction with their childbirth experiences.

All the 200 controls were alone in the labor suite as most of them did not know that a female attendee was allowed inside. Enkin and colleagues wrote, "A woman's feelings of isolation can be compounded by the intermittent appearance and disappearance of unknown people, including obstetricians: Midwives: nurses; and medical, nursing or midwifery students [8]." Studies have demonstrated that labor nurses in some institutions spend as little as 6.1% of their time performing supportive activities for the laboring women in their care [9-11]. It was unfortunate to note that once women are on the labor cot, they find it very difficult to move around and hence requested for assistance; 76.7% to allay their fears, 63.3% of women wanted someone to hold their hands, 55.6% to go to the toilet and 53.3% to talk to, and 53.3% to give them a drink. The majority of the women are scared of labor and delivery.

In the present study, 14.5% (29) of controls initiated breastfeeding within 1<sup>st</sup> h of birth compared to 88% (176) of cases. Early initiation of breastfeeding was significant in cases compared to controls ( $p < 0.001$ ). Mothers need support before and at birth for achieving skin-to-skin contact and establishing early breastfeeding, both of which are so closely interrelated. The FBA's who were inside the labor room before and during labor assisted mothers in breastfeeding following labor. FBA supported mothers developed a relationship with their newborns quickly and established breastfeeding early than did controls. Of the 29 (14.5%) controls, who breastfed within 1<sup>st</sup> h, 19 were being helped by family members whereas 6 by ayahs and remaining 4 by nurses.

Edmond *et al.* [5] from Ghana found that 22% of deaths among newborns were prevented when all newborns started "breastfeeding within 1 h of birth." Even if later they were exclusively breastfed later or not. Further analysis by the researchers now suggests that up to 31% of deaths in newborns in developing countries can be prevented. India can save its 2, 50, 000 babies per year by just one action, i.e., by initiating breastfeeding within 1 h of birth [12]. This survival benefit has not dependent on exclusive breastfeeding. Initiation of breastfeeding immediately after delivery must be considered the "fourth stage of labor." The National Family Health Survey (NFHS-4- India; 2015-16) data reveal that only 41.6% of newborns across India are given breast milk within the "1<sup>st</sup> h of birth [13]."

Survey in India has indicated that many women do not know what colostrum is and a large percentage of women either throw away colostrum because of its yellow color believing it to be pus or poison (stale milk or witches' milk). They also think that it is too thick and difficult to digest, causes constipation and may even

make the child dull [14]. Since FBAs knew the importance of the colostrum, they encouraged and assisted mothers in breastfeeding at the earliest. Medications could directly interfere with the “initiation and establishment of breastfeeding [14].” Medications usage can be overcome by the presence of the birthing attendant which circumvents the use of medication, as proved in various trials.

In the present study, 28.5% (57) of controls had given prelacteal feeds to newborns compared to 7% (14) of cases ( $p < 0.001$ ). It is now known that prelacteal feeds are harmful, as they make the baby ill and interfere with breastfeeding [15]. The baby may not want to suckle from the breast after the prelacteal feed because it stops him/her from feeling hungry or thirsty. Breast milk flow is also delayed because the baby does not suckle enough. Even two prelacteal feeds can cause failure of breastfeeding. Well informed FBA's discouraged mothers from giving prelacteal feeds.

This study showed that 59% (118) of cases put the baby skin-to-skin over abdomen immediately after delivery compared to none in controls ( $p \leq 0.001$ ). FBA's facilitated this method of keeping the baby warm following delivery. According to the World Health Organization, close contact between mother and infant should be facilitated immediately following birth to improve the neonatal care [15]. In this study, 55% of cases had received birth dose of BCG, OPV, and Hep B compared to 49.5% controls ( $p = 0.317$ ). There was not much difference in the birth dose of vaccination status in the two groups studied as most knew that the same can be received in the health centers close by to their home.

In this study, 28.5% controls had hospital visits compared to 13.5% cases ( $p < 0.001$ ). There are a number of factors attributed to this: Avoiding prelacteal feeds, “early initiation of breastfeeding,” keeping the baby warm, continuation of “exclusive breastfeeding,” cord care, eye care, not visiting the physician for minor ailments such as nasal discharge, discharge from eyes, noisy breathing, and assumed decreased milk production.

The influence of FBAs supported deliveries continues long after birth. 97.5% (117) felt satisfied by the presence of FBAs. Among the 3 (2.5%), one felt that it does not make any difference probably because the child had clubfoot, other two felt that it depends on the overall environment of the hospital including skill of the doctor. Hence, the presence of FBAs goes a long way in improving the quality of care given by the hospital. The limitation of the study was that we included only normal deliveries, so it may not be applicable to all high-risk pregnancies and deliveries. We also did not compare the role of FBAs versus medical personal to enhance breastfeeding rates and essential newborn care versus.

## CONCLUSION

The majority of mothers were satisfied with the presence of FBAs. The presence of FBAs improves early initiation of breastfeeding, decreases prelacteal feeds, improves skin-to-skin contact indirectly preventing hypothermia and decreases the number of hospital visits. We recommend that trained “female birthing attendant” from the family members can be used at no additional cost to the hospital and workforce shortage of the hospital can be reduced.

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