

## Effect of Post Birth Mother - Newborn Skin to Skin Contact on Maternal Satisfaction & Success of First Breast Feeding

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### Abstract

*Background:* Mother and newborn SSC is a low-cost intervention that would be accessible, simple, and feasible for most mothers in developing countries. Keeping the newborns in their natural habitat immediately after their birth initiates successful adaptation to extrauterine life. Skin - skin contact at birth is a profound intervention which increases the physical, mental, social stability and well being of the baby. The early mother newborn contact will help to initiate breast feeding at an early time, foster the newborn attachments process at the earliest and there by enhancing the bond between mother and her newborn. The present study was conducted in order to assess the effects of post birth mother newborn skin to skin contact on maternal satisfaction & success of first breastfeeding. *Methods:* A quazi experimental two group post test only design was used for the study. Conceptual framework was based on Ramona. T. Mercer's Maternal Role Attainment theory. Study was conducted in the Labor room of District Hospital, Thrissur from March - May 2102. 60 samples were selected using purposive sampling. (30 mother newborn dyads in the intervention group who received skin to skin contact immediately after birth and 30 mother newborn dyads in the routine care (RC) group)

After delivery, immediate skin-skin contact (SSC) was given to the intervention group. Success of First Breast Feeding was observed in both the groups by using First Breast Feeding Assessment tool. Maternal satisfaction on first Breast Feeding was assessed by using a Maternal Breast Feeding Satisfaction Assessment Scale. The data was compared by using t-test. Significant p-value was taken as  $< 0.05$ . *Results:* Twenty one (70%) infants in SSC group had score of 11-20 (successful first breast feeding) on First Breast Feeding Assessment tool compared to sixteen infants (53%) in RC Group during the first breastfeed. Maternal levels of satisfaction were high as 90% in SSC group as compared to 60% in RC Group. Newborns who experienced SSC initiated breastfeeding  $10.41 \pm 3.38$  minutes after delivery, while newborns in the routine care group started breastfeeding  $16.48 \pm 2.70$  minutes following their birth ( $p < 0.05$ ). Duration of the first breastfeed in mothers with SSC versus RC Group was  $17.22 \pm 3.04$  minutes and  $15.98 \pm 3.66$  respectively ( $p < 0.05$ ). *Conclusion:* Maternal-infant early skin-to-skin contact significantly enhanced the success of first breastfeeding. It reduced the time to initiate first breast feeding and improved the time span of first feeding.

**Keywords:** Skin-to-skin contact; Success of first breast feed; Maternal satisfaction.

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## Introduction

Breastfeeding is the healthiest and most natural way of infant feeding and successful lactation mainly depends on early initiation of breastfeeding. The first 2 hours post birth, called the 'sensitive period', is the optimal time for infant to initiate breastfeeding [1,2]. Healthy newborns placed skin-to-skin on their mothers immediately after birth stay warm, cry less, have lower levels of stress hormones, are more likely to breastfeed, and breastfeed sooner than newborns who are separated from their mother [3]. Babies on skin-skin contact latches on well and initiate breast feeding at an early pace. Interrupting, delaying, or limiting the time that a mother and her baby spend together may have a harmful effect on breastfeeding success [4,5]. Immediate post birth period gives excellent opportunity for mothers and infants to develop a reciprocal relationship when kept together in an intimate (skin-to-skin) contact. Maximum benefit of this period for successful breastfeeding can be achieved by applying skin-to-skin care (SSC) method. 'SSC method' - a contact immediately afterbirth by holding the naked baby against the mother's skin, between the breasts, lasting until the first feed or for as long as the mother wishes. Skin-to skin contact makes full-term infant able to move towards the mother's nipples and latch correctly. On the other hand, separation of infant from mother in immediate post-natal period causes failure of early initiation and effective breastfeeding.

Worldwide almost 40 per cent of under five deaths occur in the neonatal period, i.e. within the first 28 days of life. Neonatal period has a nearly 30-fold higher average daily mortality rate than the post-neonatal period [6]. Approximately three-quarters of neonatal deaths occur within the first week of life, with the most dangerous period being the first 24 hours. According to Census 2011, infant mortality rate is still high in our country and is about 47/1000 live births. Neonatal mortality rate in Kerala is 10 per thousand births, while the national rate is 39. In India, out of 11 lakhs of newborn deaths, 250000 lives can be saved annually by just one act of beginning breast feeding within one hour of birth. Immediate delivery period is the optimal time for the initiation of breast feeding, as the newborns are most responsive to thermal, tactile and odour cues from mothers at this span of life [7].

As recommended by the Baby Friendly Hospital Initiative (BFHI), newborn infants should be placed in skin-to-skin contact with their mothers immediately after their birth for at least one

hour, and mothers should be helped to initiate breastfeeding within the first half-hour following the birth of their infants [8]. Although WHO/UNICEF and American Academy of Pediatrics encourage skin-to-skin contact at birth, yet this advocacy needs a body of evidence and acceptance of this intervention in our set-up [9,10]. In Indian settings, where the birth rate is very high and neonatal mortality rate remains still high, researcher felt the need of trying out immediate post birth mother new born skin-skin contact, which is a feasible and easy intervention that has numerous benefits for the mother newborn dyad. But, in Indian scenario, the initiation of breast feeding takes hours and hours after birth, since the newborn is being taken away from the mother for routine procedures. This study was conducted to assess the effect of early SSC on maternal satisfaction and success of first breast feeding.

## Methodology

A quazi experimental study was conducted from March - May 2102 in the Labour Room of District Hospital, Thrissur after approval of institutional ethical committee. Eligible participants included healthy, full term mothers anticipating spontaneous vaginal delivery with intention to initiate breast feeding immediately after birth. Mothers were excluded if they had multiple pregnancy, pre-existing medical complications, severe postpartum hemorrhage, caesarean section, severely retracted/inverted nipples, or passage of meconium during labor. Infants with gestation < 37 weeks, weight < 2500 grams, signs of respiratory distress after birth, major congenital anomalies, floppiness or birth trauma were also excluded. After an informed written consent, eligible mothers were randomly assigned to either of the two groups i.e. SSC/RC Group). Total 60 samples were included in the study. 30 samples in each group Demographic proforma was administered to the samples to collect baseline information. Investigator monitored the women throughout the first stage of labour and observed the second stage of labour. SSC samples were prepared for initiating post birth mother newborn skin-skin contact. Immediately after birth, the cord of the newborn is ligated and is then cut off. Apgar score and birth weight of the newborn was checked and immediate newborn care was given. For the SSC samples, skin-skin contact between mother and baby was initiated within 5 minutes. The baby was kept naked on mother's chest, with head in between the breasts and hands of the baby underneath the mother's breast and

legs on her abdomen, covered with a single layer of cotton cloth. Their heads were covered with dry caps and backs with prewarm sheets to prevent heat loss. The mothers were helped to keep their infants in skin-to-skin contact uninterrupted. Skin-to-skin contact was ended at any time when infant had taken first feed and at least 45 minutes had passed. It was also designed to terminate skin-to-skin contact, if infant did not take feed within 120 minutes. Mother was advised to hold the baby close to her. For the conventional care group, intervention was not given. Infants were shifted to the radiant warmer immediately after cutting the cords. They were cleaned and wrapped with pre-warm sheets. They were transferred to the postnatal ward with mothers and first feed was started when mothers were ready. They went through routine hospital practices. In both groups, time from birth to start of first feed & duration of first breast feeding was noted. Success of First Breast Feeding was observed in both the groups by using First Breast Feeding Assessment tool which had a total 10 items. This tool is prepared by incorporating items from two standardized tools - Breast Feeding LATCH score and Infant Breast Feeding Assessment Tool (IBFAT) [11,12] Out of these 5 components of LATCH score - Latch, Audible Sucking and Hold are included in the tool which is prepared. All the items of Infant Breast Feeding Assessment Tool are included in the tool prepared. They were readiness to feed, rooting, fixing and sucking pattern. Three new items were added up to the tool. They were comfort of the mother, comfort of the baby and after feeding. Each item has three responses. Each response is scored as 0, 1, and 2. Maximum Score is 20. A score of 0-10 indicates unsuccessful 1<sup>st</sup> breast feeding experience. A score of 11-20 indicates successful breast feeding experience. In each group, maternal satisfaction with first breast feeding was also assessed. Maternal satisfaction on first Breast Feeding was assessed by using a Maternal Breast Feeding Satisfaction Assessment Scale. This tool was designed by the researcher including 14 items, to measure mother's satisfaction on her first breast feeding experience. Total score is 14. A Score of 0-4 indicates no satisfaction scores of 5-10 indicate satisfaction to certain extend and 11-14 indicates full satisfaction on first breast feeding.

Data were analyzed using SPSS version 16. The differences between the groups were calculated using independent-samples t-test for continuous data and Pearson chi-square test for categorical data. Level of significance in terms of p-value was compared with 0.05.

## Results

Over a period of 2 months, 120 eligible mothers according to inclusion and exclusion criteria were enrolled for the research. Demographic and clinical characteristics of the participants are shown in Table 1. There is no significant inter-group baseline difference between the two study groups. The mothers between 20-30 years of age were the majority in both the groups. Majority of samples in both the groups more than 80% had primary/secondary level of education and belonged to nuclear families. Prior Information about skin to skin contact between mother and baby was found to be very less in both the groups 7% in the SSC group and 3% in RC group respectively.

Twenty one (70%) infants in SSC group had score of 11-20 (successful first breast feeding) on First Breast Feeding Assessment tool compared to sixteen infants (53%) in RC group during the first breastfeed (Table 2). Nine infants (30%) in SSC group scored 0-10 (unsuccessful first breast feeding) as compared to 14 infants (47%) in RC group. Mean breast feeding score in SSC group was  $15.97 \pm 3.80$  as compared to  $11.33 \pm 5.41$  in RC group. ( $p < 0.05$ ).

Maternal levels of satisfaction were high as 90% in SSC group as compared to 60% in RC group. Mean satisfaction score in SSC group was  $12.09 \pm 2.05$  as compared to  $9.9 \pm 3.36$  in RC group. ( $p < 0.05$ ).

There was an association between mother and newborn SSC and breastfeeding initiation time after birth. Newborns who experienced SSC initiated breastfeeding  $10.41 \pm 3.38$  minutes after delivery, while newborns in the routine care group started breastfeeding  $16.48 \pm 2.70$  minutes following their birth ( $p < 0.05$ ). Twenty eight infants (93%) in the SSC group initiated breast feeding within 20 minutes, whereas in the RC group it was only 21 infants (70%). As shown in Table 2, duration of the first breastfeed in mothers with SSC versus routine care was  $17.22 \pm 3.04$  minutes and  $15.98 \pm 3.66$  respectively ( $p < 0.05$ ).

This study revealed that newborns who experienced SSC achieved successful first breast feeding as compared to newborns who received conventional care. Maternal satisfaction on first breast feeding was more evident in the mothers who received the immediate post birth mother newborn skin to skin contact. Babies who were placed closed to mother's chest as early as possible after delivery initiated breast feeding at an early pace compared to the routine care group and even the duration of first breast feeding was longer in the SSC group.

**Table 1:** Demographic and clinical characteristics of participants

	SSC Group (n=30)		RC Group (n=30)		Chi square
<i>Maternal Age</i>					
<20 years	10	33	8	27	1.35
20-30 years	19	64	21	70	
>30 years	1	3	1	3	
<i>Religion</i>					
Hindu	17	57	22	74	1.85
Christian	6	20	4	13	
Muslim	7	32	4	13	
<i>Education</i>					
Illiterate	0	0	2	7	1.27
Primary/Secondary	20	77	24	80	
Collegiate	10	33	4	13	
<i>Prior information on skin to skin contact</i>					
Yes	7	23	1	3	0.35
No	23	77	29	97	
<i>Gestational Age in weeks</i>					
36-38 weeks	20	77	15	50	3.45
38-40 weeks	10	33	15	50	
<i>Birth Weight</i>					
2-3 kg	14	47	10	33	1.09
3-4 kg	16	53	20	77	
<i>Gender of newborn</i>					
Male	13	43	16	53	0.69
Female	17	57	14	47	

**Table 2:** Results of outcome variables between the two groups.

Variables	SSC Group (n=30)			RC Group (n=30)			t value
	(f)	(%)	Mean $\pm$ SD	(f)	(%)	Mean $\pm$ SD	
<i>Success of first breastfeed</i>							
Successful first breast feeding Score (11-20)	21	70	15.97 $\pm$ 3.80	16	53	11.33 $\pm$ 5.41	3.83*
Unsuccessful first breast feeding (0-10)	9	30		14	47		
<i>Maternal satisfaction of first breast feeding</i>							
Satisfied	27	90	12.09 $\pm$ 2.05	18	60	9.9 $\pm$ 3.36	2.91*
Unsatisfied	3	10		12	40		
<i>Time taken to initiate first sucking</i>							
Within 20 minutes	28	93	10.41 $\pm$ 3.38	21	70	16.48 $\pm$ 2.70	5.63*
After 20 minutes	2	7		9	30		
<i>Duration of first breast feeding</i>							
<20 minutes	20	67	17.22 $\pm$ 3.04	24	80	15.98 $\pm$ 3.66	7.96*
>20 minutes	10	33		6	20		

## Discussion

A recent Cochrane systemic review showed significant positive effects of early and longer skin-to-skin contact on exclusive breastfeeding [13]. A randomized control trial showed that SSC has significant positive effect on success of first breastfeed 26% more infants in SSC group had successful first breastfeed as compared to those in RC Group which is comparable with a trial by Moore that showed almost similar results [14]. It was observed that mean score of first breast feeding experience of mothers in the experimental group was 15.97  $\pm$  3.80 which was comparatively higher than the mothers in the control group, who

has a mean score of 11.33  $\pm$  5.41. Statistical analysis confirmed this difference of scores, which was significant at 0.05 level. This finding correlates with the results of a recent randomized controlled study, which found out that infants who were placed in early skin to-skin contact with their mother starting in the first minute post-birth and remaining in contact for on average one and a half hours, had significantly more successful breastfeeding scores for the first latch ( $p = 0.02$ ) and a shorter time to begin effective breastfeeding ( $p=0.04$ ) than infants who had been swaddled in blankets and held by their mother following standard hospital care procedures [15]. Another study was conducted in Sweden to determine the effect of delivery room routines on success of first breast feeding. 72 infants

delivered normally were observed for 2 hours after birth. In the separation group (n=34), the infant was placed on the mother's abdomen immediately after birth but removed after about 20 min for measuring and dressing. In the contact group (n = 38) contact between mother and infant was uninterrupted for at least 1 hour. After about 20 min the infants began to make crawling movements towards the breast; the rooting reflex soon came into play, and at an average of 50 min after birth most of the infants were sucking at the breast. More infants in the contact group than in the separation group showed the correct sucking technique (24/38 vs 7/34.) Thus the results of this study pointed to the fact that first breast feeding experience of mothers and newborns who had skin-skin contact immediately after birth is significantly higher than the group without the intervention [16]. Present study findings can be correlated with this study results. In the study by Essa et al., using the Infant Breastfeeding Assessment Tool (IBFAT), found that the SSC and control groups were statistically different in terms of the success of the first breastfeed rate [17].

During skin-to-skin contact, mothers are excited to provide tactile and verbal communication to their infants, which is not possible if they are separated. This study results by Mahamood et al. showed very high levels of maternal satisfaction (97.5%) with SSC as compared to CC (85%), which is comparable to the North England trial [18,19]. An explorative study was conducted to determine the importance of immediate contact and its effect on satisfaction of breast feeding. 15-20 minutes duration of skin-skin contact was given to the mother-infant dyads in the study group, immediately after birth. The mothers in this study seemed satisfied, contented, happy or excited with the experience [20]. In the current study also mothers who received SSC had a higher level of satisfaction related to first breast feeding (90%) compared to mothers who received routine care (60%) (p< 0.05).

The results of the studies carried out by Moore and Anderson in USA, Khadivzadeh and Karimi in Iran and Mahmood et al. in Pakistan showed that early contact improved breastfeeding initiation and prolonged the duration of breastfeeding in infants [18,21,22]. Early initiation of breastfeeding stimulates breast milk production, produces antibody protection for the newborn and its practice determines the successful establishment, longer duration of breastfeeding, and lower risk of neonatal mortality. When SSC is initiated immediately after birth, the physiological changes helps the full term infant to crawl unaided towards the mother's nipple

and latch correctly within about 60 minutes [23,24]. The American College of Nurse-Midwives state that SSC helps infants smell and find the nipple so that breastfeeding will be initiated by them more rapidly and successfully [25]. In the current study, newborns who experienced SSC initiated breastfeeding 10.41 ± 3.38 minutes after delivery, while newborns in the routine care group started breastfeeding 16.48 ± 2.70 minutes following their birth (p< 0.05).

## Conclusion

The present study proves that early initiation of skin-skin contact between the mother and her newborn is found to have a positive effect in increasing the success of first breast feeding. Post birth mother newborn skin – skin contact is found to be useful in fostering the formation of a close bond between the mother and her newborn and in improving the satisfaction level on first breast feeding. To reduce the current prevalence of high neonatal morbidity and mortality rates, there is a dire need for simple and cost-effective prevention and (complementary) intervention methods that are easily accessible to mothers and can be applied immediately after birth. Mother and newborn SSC is a low-cost intervention that would be accessible, simple, and feasible for most mothers in developing countries. The findings of the present study have implications on health care delivery system. Health team members can take up the responsibility in implementing these practices that is beneficial for the mother newborn dyad. Unlimited opportunities for SSC and breastfeeding promote optimal maternal and child outcomes. It is critical to provide all midwives in delivery rooms with continuous educational and training programs on how to implement SSC for all mothers. These changes directly support the millennium goals of improved maternal and child health.

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