

Effectiveness of Breast Crawl Technique to Initiate Breast Feeding in Newborn and to Find out Its Impact on Newborn and Maternal Outcome during Early Postpartum Period – An Experimental Study

Rajni Sharma¹

Abstract

Background: Breast crawl technique is keeping the newborn directly on the mother's abdomen (nose in the midline of the mother's chest, eyes at the level of the nipples) soon after birth and allowed to crawl on their own up to the breast and then latch on. The aim of this study was to evaluate the effectiveness of breast crawl technique to initiate breast feeding in newborn and to find out its impact on newborn and maternal outcome during early postpartum period

Methods: The mothers admitted in labor room were selected by purposive sampling technique and random assignment to experimental and control groups was done. The breast crawl technique was introduced to the experimental group after normal labor outcome. Effectiveness of breast crawl technique was assessed by the modified LATCH breast feeding assessment tool and a structured proforma was used to observe time of initiation of breast feeding in newborn. The newborn outcome, temperature and heart rate were assessed at zero, 1 and 2 hours after birth. Blood glucose of newborn was monitored at 2 hours after birth. The maternal outcome, establishment of lactation and maternal infant attachment was assessed by an observation checklist administered 12 hours after delivery. The statistical analysis was done using descriptive and inferential statistics.

Results: The newborn with breast crawl technique had early initiation of breast feeding than the newborn in the control group. The results were statistically better in experimental group and breast crawl technique made a difference in early metabolic adaptation of newborn and promoted early establishment of lactation and maternal infant attachment.

Conclusion: Breast crawl technique was effective to initiate breast feeding in newborn and had positive impact on newborn and maternal outcome in early postpartum period.

Keywords: Breast crawl, Initiation of breast feeding, Normal labor outcome

Introduction

Breast feeding is nature's best way of nurturing the child. Breast feeding is so much more than food alone; breastfed infants are much less likely to die from diarrhea, acute respiratory infections and other diseases. Breast feeding supports infants' immune system and helps to protect from chronic conditions later in life such as obesity and diabetes.¹

¹Vice Principal, School of Nursing, Kasturba Hospital, New Delhi.

E-mail Id: rajni.sharma8940@gmail.com

Orcid Id: <http://orcid.org/0000-0003-0560-3719>

How to cite this article: Sharma R. Effectiveness of Breast Crawl Technique to Initiate Breast Feeding in Newborn and to Find out Its Impact on Newborn and Maternal Outcome during Early Postpartum Period – An Experimental Study. *Int J Nurs Midwif Res* 2017; 4(3): 55-60.

Digital Object Identifier (DOI): <https://doi.org/10.24321/2455.9318.201733>

ISSN: 2455-9318

The Global Criteria for the WHO/UNICEF Baby Friendly Hospital Initiative recommended *“Help mothers initiate breast feeding within a half-hour of birth.”* The method of *“Breast Crawl”* can be adopted for early initiation of breast feeding. Every newborn, when placed on the mother’s abdomen soon after birth, has the ability to find her mother’s breast all on her own and to decide when to take the first breast feed. This is called the *“Breast Crawl”*.²

Breast crawl is the natural instinctive behavior of the human newborn. It is the simplest method that provides prolonged skin to skin contact and culminates in the first breast feed. The mother and the newborn are mutually responsive in the most sensitive period of first half to one hour following delivery. This period is crucial for laying the foundation for successful breast feeding.³

The description of breast crawl suggested an organized predictable feeding behavior of the newborn placed on the mother’s chest immediately after birth. Initially there are spontaneous sucking and rooting movements, soon followed by hand to mouth activity together with intense sucking and rooting activity, culminating in sucking at the breast. The whole activity takes about 35–50 minutes.⁴

Especially important now is to provide the information to parents and birth attendants so they can create the quiet, calm unobtrusive environment to allow this event of the *“breast crawl”* to occur. Mothers need to be prepared through counseling regarding the initiation of breast feeding through breast crawl in order to empower them to explore these abilities for the benefit of the mother and baby. Thus success of breast feeding within a half-hour of birth ultimately reduces neonatal, infant and under-fives morbidity and mortality.⁴

The aim of this study was to evaluate the effectiveness of breast crawl technique to initiate breast feeding in newborn and to find out its impact on newborn and maternal outcome during early postpartum period.

Materials and Methods

After obtaining administrative permission from the concerned authorities, the study was conducted at Kasturba Hospital, New Delhi. The mothers admitted in labor room, full-term pregnancy (37–42 weeks) with cephalic presentation, normal pregnancy, cervical dilatation of 4 to 8 cm and who were willing to participate in the study were randomly assigned to experimental and control groups. The sample size was 60 mothers with normal labor outcome, 30 in each experimental and control groups. The purpose of the study was explained, confidentiality was assured and written informed consent was obtained. The sample characteristics were obtained by record analysis and interviewing the mother and data was recorded on predesigned and pretested tools. When there was no contraction, every mother in the experimental

group was counseled for early initiation of breast feeding by breast crawl.

The independent variable (breast crawl technique) was introduced to the experimental group after normal labor outcome. Soon after delivery and after the baby had cried and started breathing well, baby was thoroughly dried (except for the hands) with soft cotton cloth. The mothers in the experimental group were assisted for breast crawl. The baby was placed on mother’s abdomen, and the baby was allowed to crawl in order to identify the nipple for rooting, sucking, and suckling and assistance provided, if needed. Maximum 60 minutes was given to each baby for initiation of breast feeding.

Effectiveness of breast crawl technique was assessed by the modified LATCH breast feeding assessment tool and a structured proforma was used to observe time of initiation of breast feeding in newborn after birth. The newborn and maternal outcome was assessed through a structured proforma in both groups. Temperature and heart rate were assessed at 0, 1 and 2 hours after birth. Blood glucose of newborn was monitored at 2 hours after birth in both groups.

The establishment of lactation was assessed by a breast feeding observation checklist administered after 12 hours of delivery. The maternal infant attachment was assessed by the observation checklist administered during breast feeding at the time of initiation of breast feeding in newborn and after 12 hours of delivery.

The data collected was organized, tabulated, analyzed and interpreted using descriptive and inferential statistics. The background data of sample subjects was analyzed in terms of frequency and percentage distribution. For assessing the initiation of breast feeding in newborn and to test the significance of difference in time of initiation of breast feeding in newborn after birth in both the groups mean, standard deviation and ‘t’ value were computed. To determine the significant mean difference of selected newborn outcome scores (temperature and heart rate), analysis of variance (ANOVA) test was computed.

The ‘t’ value was calculated to find out the statistical significance of difference of mean in selected newborn outcome (blood glucose level) and maternal outcome (establishment of lactation and maternal infant attachment) scores. The Chi-square values were computed to find out the association between breast feeding assessment (LATCH) scores of newborn in the experimental group with selected maternal variables.

Results

The newborn with breast crawl technique had early initiation of breast feeding than the newborn in control group. Mean

computed from breast feeding assessment (LATCH) scores of newborn in the experiment group was significantly higher [*t*' value for *df* (58)=9.94] than that of control group. Mean time of initiation of breast feeding in newborn after birth in experimental group (32.67) was lower than

that of control group (114.8). In the experimental group, majority of newborn (93.33%) had early initiation, whereas in control group, only 10% of newborn had early initiation. Majority of newborn (80%) in the experimental group demonstrated crawl.

Table 1. Mean, Mean Difference, Standard Deviation, Standard Error of Difference and 'T' Value of Breastfeeding Assessment (LATCH) Scores in the Experimental and Control Group

Group	Mean	Mean Difference	SD	SE _D	't'
Experimental group	9.1	3.3	1.28	0.33	9.94*
Control group	5.8				

N=60

*Significant at 0.05 level, *t*' value of *df* (58)=2.00

Table 2. Mean, Mean difference, Standard Deviation, Standard Error of Difference and 't' value of Time of Initiation (minutes) of Breastfeeding in Newborn after Birth in Experimental and Control groups

Group	Mean	Mean Difference	SD	SE _D	't'
Experimental group (n=30)	32.67	82.14	28.53	7.36	11.16*
Control group (n=30)	114.8				

N=60

*Significant at 0.05 level, *t*' value of *df* 58=2.00

Comparison of mean temperature and heart rate in experimental group and in the control group at 0 hour, 1 hour and 2 hours after birth was also plotted in the form of a line graph (Fig. 1). It shows that mean temperature and heart rate at different observations in experimental and control group fall close to each other, which shows

the effectiveness of breast crawl technique to maintain temperature and heart rate in the newborn. The mean newborn outcome (blood glucose level at 2 hours after birth) score in the experimental group was significantly higher (*t*' value for *df* (58)=9.84) than that of control group.

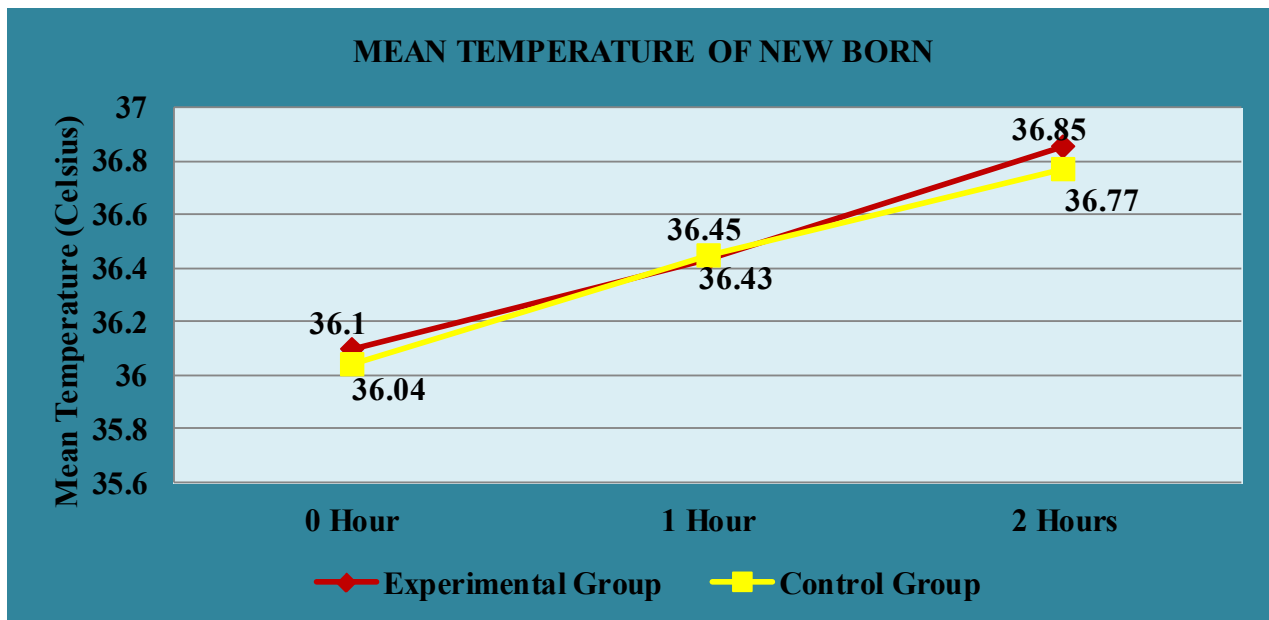


Figure 1. Line Graph Showing Mean Temperature of Newborn at 0 hour, 1 hour and 2 hours after Birth in Experimental and Control Groups

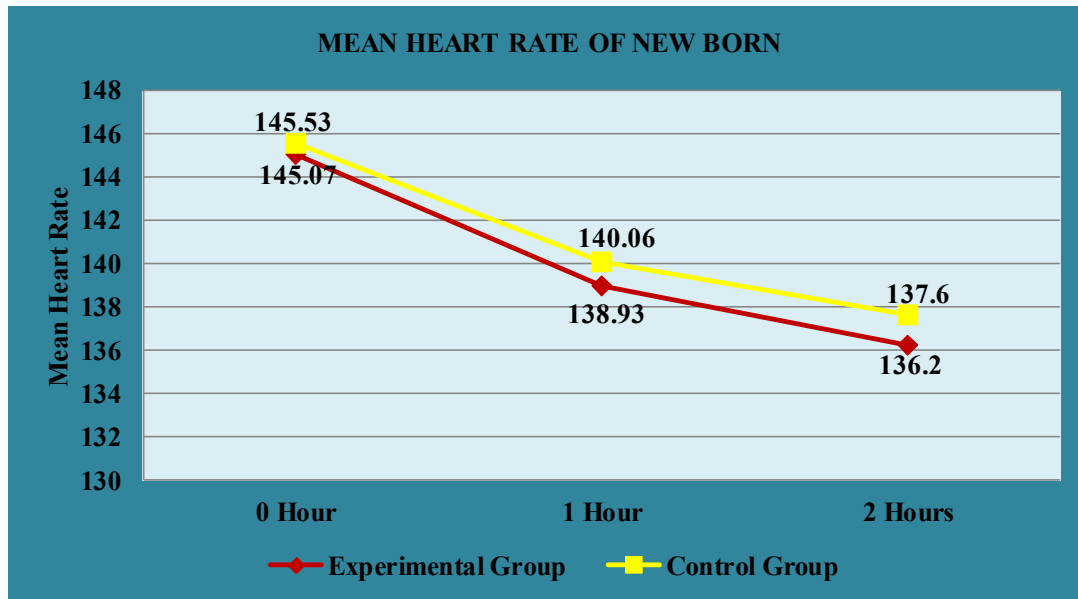


Figure 2. Line Graph Showing Mean Heart Rate of Newborn at 0 hour, 1 hour and 2 hours after Birth in Experimental and Control Groups

Table 3. Mean, Mean Difference, Standard Deviation, Standard Error of Difference and 't' Value of Blood Glucose Level of Newborn at 2 hours after Birth in Experimental and Control Groups

Group	Mean	Mean Difference	SD	SE _D	't'
Experimental Group	74.16	25.73	10.14	2.62	9.84*
Control group	48.43				

N=60

*Significant at 0.05 level, 't' value of df 58=2.00

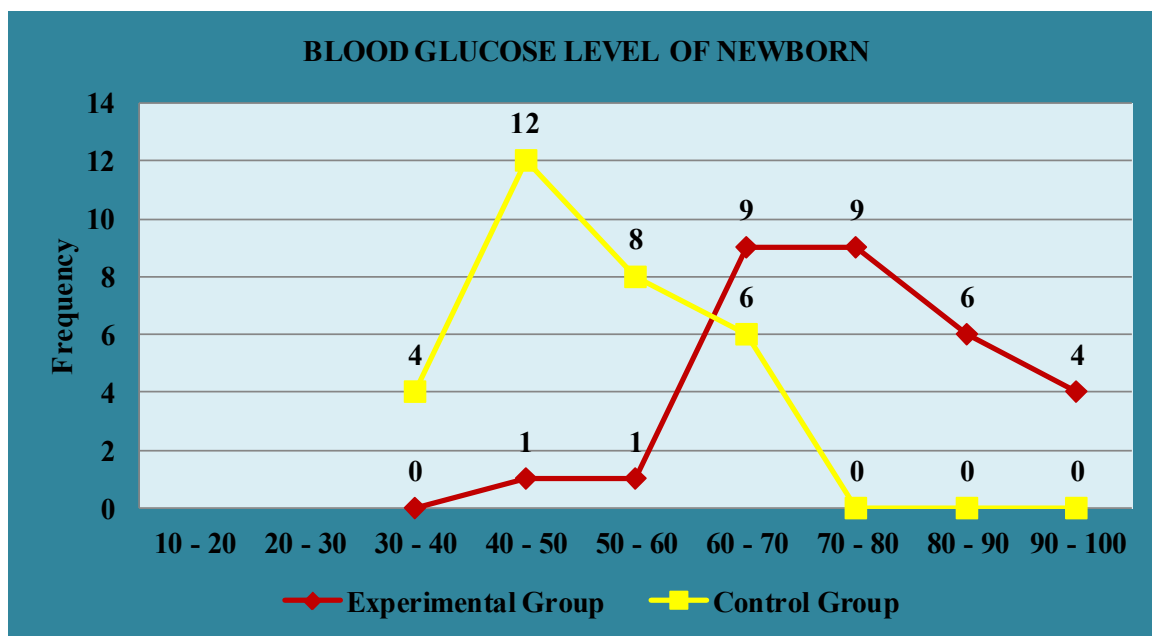


Figure 3. A Frequency Polygon Depicting the Blood Glucose Level of Newborn at 2 hours after Birth in the Experimental and Control Groups

In the experimental group, majority of mothers (73.33%) established lactation whereas in control group, only 3.33% of the mothers established lactation. The establishment of lactation in terms of breast feeding observation scores after 12 hours of delivery were significantly higher ('t' value

for df (58)=8.53) than the control group. Mean maternal infant attachment observation score at initiation of breast feeding and after 12 hours of delivery in experiment group was significantly higher ('t' value for df (58)=11.22 and 't' value for df (58)=10.93) than that of control group. There

was no association between breast feeding assessment (LATCH) scores of newborn in the experimental group with selected maternal variable.

Discussion

Breast feeding is a mother's privilege and a baby's right. Nature has provided both the mother and the baby with the sense of smell, vision, taste, sound and instinct to prepare them for this first breast feed.⁴ Breast feeding must be initiated as early as possible after birth for all normal newborns (including those born by caesarean section), avoiding delay beyond an hour. Skin to skin contact between the mother and the newborn should be encouraged by 'bedding in the mother and baby pair'. The method of breast crawl can be adopted for early initiation.⁵

Breast crawl was first described in 1987 at the Karolinska Institute in Sweden. Human babies like the young ones of other mammalian animals, when kept in skin to skin contact between their mother's breasts, can initiate breast feeding on their own.³ Breast crawl has tremendous potential to change initiation practices. Advantages of early initiation are best achieved by breast crawl than by initiating feeding by other methods. Breast crawl offers proper acclimatization from the intrauterine to the extrauterine environment.⁴

Findings of the present study revealed that newborn with breast crawl technique had early initiation of breast feeding than the newborn in the control group. The time of initiation of breast feeding in newborn after birth with breast crawl technique was found to be lower than the time of initiation of breast feeding in newborn in the control group. Findings of the study also revealed that majority of newborn in the experimental group demonstrated crawl.

The findings of the present study are consistent with the study done by Kulkarni, which revealed that early skin to skin contact of the baby with the mother promotes early initiation of breast feeding and establishment of lactation, and 81.6% of babies in the interventional group demonstrated breast crawl, 93.6% babies in the interventional group could initiate breast feeding within one hour compared to 47.2% in the control group ($p < 0.001$).⁶

In a similar study by Joshi, it was reported that with Birth Kangaroo Care in most of neonates, the initiation of breast feed was achieved within 1 hour and neonates showed breast crawl.⁶ Mahmood et al. found that first breastfeed was more successful in skin to skin contact group as compared to control group; in SSC group, the mean time to initiate first breastfeed was shorter than in control group.⁸

Findings of the present study related to newborn outcome (temperature, heart rate and blood glucose level) revealed that the mean newborn outcome (blood glucose level at 2 hours after birth) scores in the experimental group

were significantly higher. There was no difference in the mean temperature and heart rate of newborn in both the groups. The breast crawl technique was equally effective as compared to the routine care of newborn (newborn kept in the warmer). These findings are consistent with those of Moore et al., who reported that blood glucose 75 to 90 minutes following the birth was significantly higher in skin to skin infants, the intervention benefit cardio-respiratory stability in newborn.⁹

In the study done by Walters, kangaroo care beginning within 1 minute of birth and continued until completion of first breast feeding. Skin temperature rose during birth kangaroo care and remained within neutral thermal zone for all infants, blood glucose 60 minutes following birth varied between 43 and 85 mg/dL for infants who had not already been fed and between 43 and 118 mg/dL for those who had been fed. Nurses observed crawling, latching and successful breast feeding of most infants.¹⁰

Findings related to the maternal outcome found positive impact on early establishment of lactation and maternal infant attachment during early postpartum period. These findings are consistent with those of Kulkarni, who reported that mothers in the interventional group felt a sense of bonding with their babies on day one as compared to control group.⁶

The findings are also consistent with the observations of Finigan, who found that uninterrupted skin-to-skin contact in the period that followed birth has significant effect on early mother-baby attachment and in establishing early breastfeeding.¹¹

Conclusion

Breast crawl technique was effective for early initiation of breast feed in newborn after birth. With breast crawl technique 100% newborn could initiate breast feeding within one hour of birth. An organized feeding behavior developed in a predictable way during the first hours of life. Newborn demonstrated crawl, salivation, mouthing which showed readiness to feed. The breast crawl technique had a positive impact on early maintenance of temperature, heart rate and blood glucose level of newborn after birth and promoted early establishment of lactation and maternal infant attachment during early postpartum period.

Conflict of Interest: None

References

1. Ministry of Human Resource Development, Department of Woman and Child Development [Internet]. *India: National Guidelines on Infant and Young Child Feeding 2004*. Available from: <http://wcd.nic.in/sites/default/files/nationalguidelines.pdf>.

2. UNICEF Home [Internet]: *The Baby-Friendly Hospital Initiative* 1991. [about 1 screen] Available from: <http://www.unicef.org/programme/breastfeeding/baby.html>.
3. Chaturvedi P. 'Breast crawl' to initiate breastfeeding within half an hour after birth. *The Journal of Mahatma Gandhi Institute of Medical Sciences* 2008; 13(2): 9-14.
4. Gangal P. Breast Crawl - Initiation of Breastfeeding by Breast Crawl [Internet]. Maharashtra: BPNI. 2007. Available from: [breastcrawl.org http://www.breastcrawl.org/pdf/breastcrawl.pdf](http://www.breastcrawl.org/pdf/breastcrawl.pdf).
5. Indian Academy of Pediatrics [Internet]. *India: Infant and Young Child Feeding Guidelines* 2010; 47: 995-1004. Available from: www.indianpediatrics.net/dec2010/dec-995-1004.html.
6. Kulkarni AL. A randomized controlled trial to know the acceptability and feasibility of early skin to skin contact between the baby and the mother on promotion of early initiation of breast feeding. 2010. Available from: <http://hdl.handle.net/123456789/720>.
7. Joshi S. The Effect of birth kangaroo care on maternal and neonatal outcome. *Sinhgade Journal of Nursing* 2012; 2(2).
8. Mahmood I et al. Effect of mother-infant early skin-to-skin contact on breastfeeding status. *Journal of College Physicians and Surgeon Pakistan* 2011; 21(10): 601-05.
9. Moore ER et al. Early skin-to-skin contact for mothers and their healthy newborn infants. *Cochrane Database Syst Rev. MEDLINE* 2012; (16)5: CD003519.
10. Walters WM, Kim M, Boggs, Susan Ludington et al. Kangaroo care at birth for full term infants: A pilot study. *The American Journal of Maternal/Child Nursing* 2007; 32(6): 375-81.
11. Finigan V. The experiences of women from three diverse population groups of immediate skin-to-skin contact with their newborn baby following birth. PhD [dissertation]. Salford: *University of Salford* 2010. Available from: <http://usir.salford.ac.uk/26677/1/11332484.pdf>.

Date of Submission: 2017-07-28

Date of Acceptance: 2017-10-04