

## THE EFFECT OF “BREAST CRAWL” ON BIRTH WEIGHT OF THE BABY AMONG PRIMI PARTURIENT MOTHERS ADMITTED IN LABOUR ROOM.

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**Abstract:** Breast crawl is the considered best way to improve skin-to-skin contact. Reviews also show that it has potential to improve the baby’s weight. **Methodology:** The study aimed at evaluating effect of “breast crawl on Birth Weight of the Baby. Setting was Krishna Hospital Karad. The Experimental – Post test only research design used in this study. With convenient sampling technique 371 mothers who delivered at full term in labour ward, without maternal or fetal complications were selected for study. Breast crawl technique was performed and observed with the routine hospital procedure. Ensured prevention of baby fall throughout the breast crawl procedure. Weights of the babies were calculated for three consecutive. **Results:** 344 (93%) babies have succeeded in the breast crawl techniques with positive outcome and 27 (7%) babies were observed for unsuccessful breast crawl. among successful breast crawl there was increase in number of babies weighing from 2.5 to 3.0 kg, 3.01 kg to 3.5 kg and above 3.6kg from first day to 3<sup>rd</sup> day. **Conclusion:** Breast crawl techniques would be effect in improving weight of the baby and well being.

**Key words:** Effect, Breast Crawl, Birth Weight, Primi Parturient Mothers

### Introduction:

The need of the mother after delivery of the baby is unlimited skin-to-skin contact and baby’s need is breastfeeding. Immediate skin-to-skin is important in regulating the newborn temperature and exposing the baby to beneficial bacteria from their mother’s skin. Breast crawl is the considered best way to improve skin-to-skin contact. Every neonate has an inner instinct to find their mother’s breast on her own and decides when to take breastfeeding<sup>1</sup>. Breast crawl is mainly because of a baby’s inborn instinctive ability which is similar to other mammals, who know how to find their mother’s breast. Breast crawl is associated with a variety of sensory-motor, and neuro-endocrine components all directly and indirectly help the child to move around and facilitate his survival<sup>2</sup>. Breast crawl has tremendous potential to change initial practice hence it becomes excitement and motivation for maternity faculty. This method is considered the easiest and best method to implement early breastfeeding as recommended by the WHO<sup>3</sup>. In many maternity health care setting staffs are not familiar with breastfeeding as well as early initiation of breastfeeding, hospital

routines, and procedure, heavy patient workload, and less staff and policy of hospitals also interfere with impairment in implementing perfectly this breast crawl technique. As a result of this initiation of breastfeeding is delayed. Even maternity staff does not get a chance to give awareness on breast crawl to mothers and their family members. Most of the time mothers are given a baby wrapped up in a cloth for feeding in the sleeping position either turned on one side<sup>4</sup>. Reviews also show that it has potential to improve the baby's weight. Hence, this study is conducted to assess the effectiveness of breast crawl on birth weight of baby.

### Methodology:

The present study aimed at evaluating effect of "breast crawl on Birth Weight of the Baby of primi parturient mothers admitted in labour room. This study was conducted in the Krishna Hospital Karad. The Experimental – Post test only research design used in this study. With convenient sampling technique 371 mothers who delivered at full term in labour ward, without maternal or fetal complications were selected for study. Mothers who delivered by forceps, ventouse and caesarean section were excluded. The study was initiated after approval of the Institutional Ethics Committee of Krishna Institute of Medical Sciences Deemed University's. Permission was obtained from Head of the Department in Obstetrics and Gynaecology and Medical director. Breast crawl technique was performed and observed with the routine hospital procedure. Ensured prevention of baby fall throughout the breast crawl procedure. Those babies were not crawled and crossed 60 minutes were considered as unsuccessful breast crawl. Weights of the babies were calculated for three consecutive days. Then the results were analysed and compared with each other. Data were analysed using descriptive and inferential statistics. In this study, frequency and percentage distribution mean, standard deviation, chi square test and unpaired "t" test were used.

### Results:

Out of 371 babies, 344 (93%) babies have succeeded in the breast crawl techniques with positive outcome and 27 (7%) babies were observed for unsuccessful breast crawl. This proves that 93% of success was observed in breast crawl intervention and taken breast feeding on its own.

**Table 1: Effect of breast crawl on Birth Weight of the Baby**

**N= 371**

Average birth weight of the baby	Successful breast crawl Number of babies (%)			Unsuccessful breast crawl Number of babies (%)		
	1 <sup>st</sup> day	2 <sup>nd</sup> day	3 <sup>rd</sup> day	1 <sup>st</sup> day	2 <sup>nd</sup> day	3 <sup>rd</sup> day
2.5 to 3.0 kg	234 (68%)	229 (67%)	207 (60%)	16 (59%)	16 (59%)	15 (56%)
3.01 – 3.5 kg	96 (28%)	94 (27%)	101 (29%)	9 (33%)	8 (30%)	9 (33%)

Above 3.6 kg	13 (4%)	21 (6%)	36 (10%)	2 (7%)	3 (11%)	3 (11%)
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Among successful breast crawl, on the day of delivery soon after breast crawl weight was taken, majority 234 (68%) babies were weighing in between 2.5 to 3 kg, 96 (28 %) were in between 3 to 3.5 kg and 13 (4%) were above 3.6 kg weight. On the second day there were 229 (67%) babies weight was in between 2.5 to 3 kg, 94 (27%) were between 3 to 3.5 kg and 21 (6%) were above 3.6kg. On the third day there were 207 (60%) babies weight was in between 2.5 to 3 kg, 101 (29%) were between 3 to 3.5 kg and only 36 (10%) were above 3.6kg. Among unsuccessful breast crawl, maximum 16 (59%) babies were weighed in between 2.5 to 3.0 kg on first day and second day 15 (56%) babies on 3<sup>rd</sup> day. On the first day 9 (33%) babies were weighed 3.01 – 3.5 kg on the 2<sup>nd</sup> day 8 (30%) babies had same weight. It shows that, among successful breast crawl there was increase in number of babies weighing from 2.5 to 3.0 kg, 3.01 kg to 3.5 kg and above 3.6kg from first day to 3<sup>rd</sup> day.

**Table 2: Comparison of Birth Weight of babies in successful and unsuccessful of breast crawl**

Group	Days	Mean	±SD	F test	p value
Successful Breast Crawl	Day 1	2.89	0.29	5.78	<0.001
	Day 2	2.96	0.50		
	Day 3	3.01	0.52		
Unsuccessful Breast Crawl	Day 1	3.02	0.44	8.85	<0.001
	Day 2	3.03	0.45		
	Day 3	3.09	0.44		

Repeated measures ANOVA was done to compare day wise birth weight. It was found that, there was significant difference found between day wise birth weight in successful and unsuccessful of breast crawl.

Among successful breast crawl group, it was found that, birth weight of babies at day 1 (2.89) was significantly lower than birth weight of babies at day 2(2.96) followed by birth weight of babies at day 3 (3.01) ( $p < 0.001$ ). Tukey post hoc test was done to find out difference between which days there was a significant difference in birth weight. It revealed that there was significant difference between: Day 1 and Day 2, ( $P < 0.05$ ), Day 1 and Day 3, ( $P < 0.001$ )

Among unsuccessful breast crawl group, it was found that, birth weight of babies at day 1 (3.02) was significantly lower than birth weight of babies at day 2(3.03) followed by birth weight of babies at day 3 (3.09) ( $p < 0.001$ ). Tukey post hoc test revealed that there was significant difference between, birth weight of babies Day 1 and Day 3, ( $P < 0.001$ ) Day 2 and Day 3, ( $P < 0.01$ ).

Out of 371 babies, 344 (93%) babies have succeeded in the breast crawl techniques with positive outcome and 27 (7%) babies were observed for unsuccessful breast crawl. This proves that 93% of success was observed in breast crawl intervention and taken breast feeding on its own. The odds

of successful of breast crawl were significantly higher in respondents with education up to higher secondary as compared to respondents with graduation or post-graduation degree (Crude OR = 2.69, 95% CI = 1.14-7.13,  $p=0.05$ ; adjusted OR = 2.59, 95% CI = 0.86-7.84,  $p=0.09$ ), the educational qualifications of respondents were significantly associated with status of successful of breast crawl. The odds of successful of breast crawl were significantly higher in respondents whose monthly income of family was less than Rs. 15,000 as compared to income is Above Rs. 15,000 (Crude OR = 6.16, 95% CI = 2.59– 14.64,  $p<0.001$ ; adjusted OR = 4.49, 95% CI =1.73-11.69,  $p=0.002$ ), the monthly income of family were significantly associated with status of successful breast crawl. The odds of successful breast crawl were significantly higher in respondents completed weeks of gestation as above 38 weeks as compared to 38 weeks as (Crude OR = 3.35, 95% CI = 1.04– 10.76,  $p=0.03$ ; adjusted OR = 4.98, 95% CI = 1.28-19.35,  $p=0.02$ ). The completed weeks of gestation were significantly associated with status of successful breast crawl. The odds of successful breast crawl were significantly higher in respondents having antenatal visits more than 5 as compared to as up to 5 antenatal visits (Crude OR = 8.52, 95% CI = 3.74– 19.40,  $p<0.001$ ; adjusted OR = 8.14, 95% CI = 3.38-19.57,  $p<0.001$ ). The numbers of antenatal visits were significantly associated with status of successful breast crawl.

Chi square test of independence was done to check association between statuses of breast crawl with socio demographic variables. It was found that there was no significant association was found between age, occupation of mother, habits of mother and gender of baby ( $p>0.05$ ). So these variables were not included in binary logistic regression analysis.

## Discussion

In the present study babies born through vaginal delivery were selected for breast crawl and it was found that, proportion of successful breast crawl was 93% and unsuccessful breast crawl was 7%. Tiwari V<sup>5</sup> shows 83% success rate in breast crawl. Girish, M<sup>6</sup> shown 100 % successful breast crawl.

Heidarzadeh M<sup>7</sup> compared successful breast crawl between neonates born through vaginal delivery and cesarean section and noted that 88.01% versus 11.21%. Another researchers, Bhagat K<sup>8</sup> noted by 73%, Wistorm's<sup>9</sup> 54% and Richard's<sup>10</sup> 63% which shows less percentage of babies breast crawled.

There was no exact cause identified for failure of breast crawl but most probably it could be due to multiple causes. As per as the feasibility of practicing the breast crawl techniques, researcher has experienced that there was no issues with motivating the mothers for breast crawl.

In our study, among 93% successful breast crawl babies, 67% babies crawled without any assistance, 22% babies crawled with partial assistance, and 4% babies were crawled and took feed with full assistance. Among 7% unsuccessful crawl babies 3% babies crawled and not took feed and 4% babies did not crawl. No studies were found to describe detailed parameters on babies with successful or unsuccessful breast crawl. Hence the results are not compared with any studies.

Some studies mentioned that counseling mothers for breast crawl is one of the factors for failure in utilizing the breast crawl effectively (Gupta, A.)<sup>11</sup> but in our study in spite of all mothers has

mentioned that they don't have any initial knowledge of breast crawl still all participants were agreed for the breast crawl and 100% active participation was seen.

Gupta A,<sup>11</sup> and Girish M<sup>12</sup> stated that lack of knowledge, inappropriate staff and patient ratio and lack of interest & involvement of staff nurse in practicing this technique would be the another factors for failure to implement breast crawl and ultimately unsuccessful rate of breast crawl increases.

Association between socio demographic variables and number of successful and unsuccessful babies shows that monthly income and antenatal visits were found statistically significant with  $p < 0.05$ . The study by Heidarzadeh M, et al.<sup>7</sup> noted that maternal educational level, employment, and economical status did not show significant association with breast crawl. He also mentioned that knowledge and support are important factors for a successful breastfeeding.

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#### **Effect of breast crawl on Birth Weight of the Baby**

The birth weight was significantly increased from day 1 to day 3 in successful group. A significant difference was observed among successful group between Day 1 and Day 3 time point ( $t = -3.1922$ ,  $p = 0.0001$ ) with Birth weight and between Day 2 and Day 3 time point ( $t = -2.8655$ ,  $p = 0.0001$ ) with Birth weight in unsuccessful breast crawl group.

The birth weight was significantly increased from day 1 to day 2 in successful group. A significant difference was observed between Day 1 and Day 2 time point ( $t = -2.7587$ ,  $p = 0.0061$ ) with Birth weight in unsuccessful breast crawl group. But no significant change was observed from Day 1 to Day 3; Day 2 to Day 3 in birth weight in unsuccessful breast crawl group.

Being assess for 3 days for birth weight was quite difficult to generalize the results as many researches compared weight at least for more than one week. However it was found that in our results breast crawl has slight impact on birth weight. At the same time it was noticed that no baby has reduced the weight during these three days. Dude A,<sup>13</sup> shows that mean weight loss on day 3 in non breast crawl was more compared to breast crawl group ( $p$  value 0.01 but  $< 0.05$ ). Author has mentioned the impact of early breast feeding through breast crawl method was effective on weight of the baby. The study conducted by Girish, M<sup>11</sup> noted that neonatal weight loss on day 3, babies who had immediate skin to skin contact were significantly less likely to lose excess weight as compared with those in the control group. On an average, breast feed infants tend to lose 5–7% of their birth weight in the first few days of life. Nanavati, R. N et al<sup>14</sup> compared the weight of babies at 6 months after breast crawl following birth. The mean infant weight at 6 months of age were significantly better in the crawl group [6767  $\pm$  843 grams vs. 6475  $\pm$  843 grams,  $p = 0.018$ ].

Birth weight of the baby also determined not only by early skin to skin contact in the breast crawl process but also due to early initiation of breast feeding was explained by Kalies H et al<sup>15</sup> and Fair FJ et al<sup>16</sup>.

### **Conclusion:**

There are enormous studies which proved the benefits of early initiation of breast feeding but recently new studies are proving proof of breast feeding with the help of breast crawl techniques would interim benefit the maternal and fetal recovery. The study findings revealed that breast crawl is an effective intervention on improving the birth weight. There was a significant association found between the birth weight with their selected demographic variables. Hence breast crawl techniques would be effect in maternity unit for improving and mother and baby well being.

### **Nursing implications:**

As evidence of breast crawl is improving in the literature as well as research, it would be very effective to utilize the evidence of breast crawl for improvement of maternal and fetal outcome and reducing the maternal mortality.

Nursing curriculum lacks the importance of breast crawl techniques. Student nurses require understanding the procedure of breast crawl, its importance and clinical implication. Hence more academic importance must be given during training period for nurses. Similarly clinical nurses are required training for the same. Nurse administer can organize workshops, conference and continuing nursing education program to effective implementation of breast crawl techniques. In community nurse play important role in direct contact with mothers right from the pregnancy. Breast crawl would be the appropriate tool for achieving these goals in community. Nurse can conduct health education program on importance of breast crawl to create awareness among population. During pregnancy the effective interventions are interactive, one to one education, involving mothers and their family members in conversations.

### **Strength of the study:**

This study is evaluated the effectiveness of breast crawl on placental separation with 344 mothers which is huge sample to generalize the results.

### **Recommendation for Further Research:**

As earlier mentioned the effect of breast crawl would be best explained with control group research, further study can be conducted with comparative group. Although, Breast crawl was described 20 years ago, it has failed to reach the beneficiaries (i.e. mothers and infants) at large. Extensive research can be conducted to create awareness to the hospitals and the community regarding the problems and its management by breast crawl technique.

### **Conflict of interest:** None

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