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Effectiveness of Breast Crawl on Bio-Physiological Parameters of Neonates and Breast-Feeding Outcome

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ABSTRACT

Breast-feeding is the natural and optimal source of nutrition for babies. It is well-documented in numerous studies that the first feed from the mother provide essential nutrients that support the baby's growth and development. Immediately after birth, when a newborn is placed on the mother's abdomen, the baby instinctively moves toward the breast and initiates feeding on their own, a behavior known as the breast crawl. This method promotes early initiation of breastfeeding. The present study aims to evaluate the effectiveness of the breast crawl on the bio-physiological parameters of neonates and breastfeeding outcomes. The primary objectives are to assess the impact of the breast crawl on neonatal bio-physiological parameters and on the success of breastfeeding initiation.

A quantitative research approach with a two-group post-test only design was adopted for this study. To prevent contamination between groups, data from 30 participants in the control group were collected first, followed by 32 participants in the experimental group, making a total sample of 62 mothers with their live neonates. Data collection tools included a socio-demographic data sheet, clinical data of the mothers, and birth-related data of the neonates.

Non-invasive blood pressure (NIBP) monitor, digital thermometer and digital baby weighing scale were used to assess the bio-physiological parameters of neonates while the LATCH breast feeding assessment tool was utilized to evaluate breast-feeding outcomes. The study result indicated that a significant difference was observed in heart rate ($p<.0001$), SPO_2 ($p<0.001$), temperature ($p < 0.001$) while no significant difference found in neonatal weight ($p<0.35$). Based on this finding, it was concluded that breast crawl was effective in stabilizing heart rate, SPO_2 and temperature of neonates. The mean LATCH Score in the control group was 8.47±0.50 compared to 9.69±0.47 in the experimental group. The calculated 't' value was 9.42 at $p <0.0001$ which revealed that there was significant difference of breastfeeding outcomes between the groups, demonstrating a positive impact on breast-feeding outcome. The findings suggest that promoting the breast crawl immediately after birth can enhance neonatal stability and improve breastfeeding outcomes.

KEYWORDS: Breast Crawl, Bio Physiological Parameters, Breastfeeding Outcome

Introduction:

Feeding of a baby soon after the birth is a natural phenomenon; however, many of the mothers are unable to do so due to certain circumstances. It is well known that breastfeeding is the best source of nutrition for infants, as it provides all the essential nutrients required for their growth and development. Unfortunately, some mothers are still unaware of the benefits of breastfeeding. According to the UNICEF Levels and Trends in Child Mortality Report (2023), approximately 2.6 million infants die within the first 28 days of life worldwide, with around 7,000 newborn deaths occurring every day. In India, as reported by the National Family Health Survey (NFHS-5, 2019–21) and the Sample Registration System (2020), the neonatal mortality rate is 25.4 deaths per 1,000 live births nationally, 10 per 1,000 in Kerala and Goa, and 44 per 1,000 in Uttarakhand. If a woman breastfeeds her baby

within the first hour of life, it can significantly reduce the risk of infections in the newborn. Studies have shown that breastfed babies experience fewer infections and hospitalizations than formula-fed infants. During breastfeeding, antibodies and other germ-fighting factors are transferred from the mother to the baby, thereby strengthening the infant's immune system and lowering the risk of various infections. Several studies have demonstrated that breastfed infants have fewer infections, lower hospitalization rates, and better immune responses compared to formula-fed infants. During breastfeeding, essential antibodies, immunoglobulins, and other protective bioactive factors are transferred from the mother to the infant, strengthening the newborn's immune system. This transfer of maternal immunity helps protect the baby from respiratory infections, diarrheal diseases, ear infections, and other common neonatal illnesses. A study conducted by Tiwari V. reported that the breast crawl technique helps newborns achieve feeding skills more quickly and effectively, and also plays a significant role in preventing hypothermia by maintaining body warmth through continuous skin-to-skin contact. Similarly, research by Linthoi K. found that newborns who experienced the breast crawl established breastfeeding earlier than those who were conventionally assisted. These findings strongly support the inclusion of the breast crawl in routine delivery room protocols, as it promotes early and successful breastfeeding initiation, enhances neonatal physiological stability, and strengthens maternal-infant bonding.

Methods: A quasi-experimental, two-group post-test only research design was adopted to determine the effectiveness of the breast crawl on the bio-physiological parameters of neonates and breastfeeding outcomes. The study was conducted in the labor room of a selected hospital in Uttarakhand. Ethical approval was obtained from the Institutional Ethics Committee, and written informed consent was secured from each participant prior to data collection. Participants were assured of anonymity and confidentiality throughout the study. A total of sixty-two mothers with their neonates were enrolled using a purposive sampling technique, with 32 participants in the experimental group and 30 in the control group. Participants were screened according to inclusion criteria and were considered eligible if they were expected to have a spontaneous vaginal delivery, had no pre-existing medical illness, and experienced no complications during labor. Only neonates with an Apgar score of 7 or above were included in the study.No randomization was performed. Initially, thirty eligible mothers were enrolled in the control group, who received routine care provided by the labor room nurses. One hour after delivery, the bio-physiological parameters of the neonates heart rate, SpO_2, temperature, and weight were measured using selected instruments. In the experimental group, the breast crawl was implemented as an intervention immediately after delivery. Newborns who cried immediately after birth and had an Apgar score of 7 or above were placed in a prone position on their mother's abdomen. The infants were gently dried with a soft cotton cloth, leaving the hands and feet unwashed to preserve the natural odor that guides them to the breast. Both the mother's chest and the baby's body were kept bare to allow direct skin-to-skin contact. The pair was then covered with a cloth to maintain warmth and prevent hypothermia during the intervention.

The newborns were observed for their natural responses and allowed to crawl toward the breast to initiate their first feed with minimal assistance. This process typically took 45 to 60 minutes, during which the babies reached the breast and consumed the highly nutritious colostrum. One hour after delivery, the bio-physiological parameters of the neonates were again measured using the same instruments in the labor room. Breastfeeding outcomes were subsequently assessed using the LATCH Breastfeeding Assessment Tool.

Analysis and Interpretation

Table no. 1: Frequency and Percentage distribution and Homogeneity test of Socio-demographic variables of mothers **[n=62]**

S.No	Socio- demographic Variables	Control (n=30)		Experimental (n=32)		Homogeneity	
		(f)	(%)	(f)	(%)	χ^2	P value
1	Mother age in years a) 21-26 b) 27-32	 21 09	 70 30	 18 14	 56.3 43.8	1.25	.26
2	Education Status a) Primary & Secondary b) Graduation and above	 23 07	 77 23	 21 11	 66 34	0.91	.33
3	Occupation a) Working b) Non-working	 05 25	 16.7 83.3	 08 24	 25 75	0.64	.42
4	Type of Family a) Nuclear b) Joint	 11 19	 36.7 63.3	 14 18	 43.8 56.3	0.32	.56

5	Family income per month in rupees a) 6000-20000 b) 20001-35000	 25 05	 83.3 16.7	 23 09	 71.9 28.1	1.16	.28
6	Place of residence a) Rural b) Urban	 19 11	 63.3 36.7	 18 14	 56.3 43.8	0.32	.56

df_1= 3.84 at p< 0.05 level of significance

The above table shows the groups are homogeneous in terms of age, educational status, occupation, type of family, family income and place of residence with p>0.05

Table no. 1.2: Frequency and Percentage distribution and homogeneity test of mothers clinical data [n=62]

S.No	Clinical data of Mother	Control (n=30)		Experimental (n=32)		Homogeneity	
		f	%	f	%	χ^2	P value
1.	Gravida a) Primi b) Multi	 20 10	 66.7 33.3	 21 11	 65.6 34.4	0.007	.93
2.	Gestational age (in weeks) a) 37-38 b) 39-40	 15 15	 50 50	 16 16	 50 50	0	1
3.	History of illness a) No b) Yes	 29 01	 96.7 3.3	 31 01	 96.9 3.1	0.45	.50
4.	History of taking medication a) No b) Yes	 16 14	 53.3 46.7	 20 12	 62.5 37.5	0.53	.46
5.	Expulsion of Placenta in minutes a) 4-11 b) 12-19	 10 20	 33.3 66.7	 27 05	 84.4 15.6	16.7	0.001*

df_1= 3.84 at p< 0.05 level of significance * significant

The above table shows that both the groups are homogenous in terms of gravida, gestational age, history of illness, history of medication at p>0.5 except expulsion of placenta p< 0.001.

Table no. 1.3: Frequency and Percentage distribution and test of homogeneity of selected birth related data of neonates [n=62]

S.No	Birth related data	Control (n=30)		Experimental (n=32)		Homogeneity	
		(f)	(%)	(f)	(%)	χ^2	P value
1.	Sex of Baby a) Male b) Female	 20 10	 66.7 33.3	 18 14	 56.3 43.8	0.70	.40
2.	Birth Weight (in Kg) a) 2.5-3.0 b) 3.1-3.5	 15 15	 50 50	 21 11	 65.6 34.4	1.55	.21
3.	APGAR Score a) 7-8 b) 9-10	 29 01	 96.7 3.3	 06 26	 18.8 81.3	35.1	<0.001*

df_1= 3.84 at p< 0.05 level of significance * significant

The above table shows majority of the neonates were male with birth weight of 2.5-3.0 Kg, APGAR score shows majority of the baby 81.3% in experimental group were scored a range of 9-10 whereas 96.7% in control group were 7-8. Homogeneity test was done and found that there was no significant difference found in gender, birth weight at p>0.05 except Apgar score with p< 0.001.

Table No. 2.1 Comparison of Biophysiological parameters in terms of Weight, Heartrate, Spo2 and Temperature of neonates in both groups. [n=62]

S.No.	Bio-Physiological Parameters	Control (n=30)	Experimental (n=32)	't' value	P value
		Mean ± SD	Mean ± SD		
1.	Weight	2.89±.24	2.92± .34	0.36	.35
2.	Heart rate	124.0±11.0	139.0±8.28	6.06	.00001**
3.	Spo2	95.9±1.09	96.06±1.69	4.48	.00001**
4.	Temperature	97.2 ±0.71	98.0±0.51	4.54	.0001**

p<0.05 level of significance **highly significant

The above table shows that mean and SD of weight of the neonates on third day was 2.92± .348 in experimental and 2.89±.240 in control group. Similarly, the mean heart rate was 139.0±8.28 in experimental group and 124.0±11.0 in control group. Mean SPO2 was 96.06±1.69 in experimental group and 95.9±1.09 in control group and the mean temperature was 98.0±0.51 in experimental group and 97.2 ±0.71 in control group. The 't' test computed and established no significant difference in weights of neonates in both the groups but significant difference found in heart rates, SPO_2, temperature of neonates. Thus, it was concluded that breast crawl was effective in the stability of the heart rate, Spo2 and temperature maintenance of neonates.

Table No. 3.1 Comparison of LATCH breast-feeding Score of third day in experimental and control group. [n=62]

Breast Feeding Outcome	Control (30)	Experimental (32)	't' value	P value
	Mean ± SD	Mean ± SD		
LATCH Score	8.47±0.50	9.69±0.47	9.42	<0.0001**

Min score: 0 and Max score: 10 t_{61}= 2.00 at 0.05 level of significance **highly significant

The above table shows the mean and SD LATCH Score was 8.47±0.50 in control group whereas 9.69±0.47 in experimental group. The obtained 't' value was 9.42 at p <0.0001. The 't' test revealed that there was significant difference between breastfeeding outcomes in both groups. So, the breast crawl was effective in improving breast feeding outcomes.

Table no. 3.2 Frequency and Percentage distribution of Passage of urine & stool frequency of neonates for 3 days [n=62]

Variables		Day 1				Day 2				Day 3			
	Frequency	Control		Exp.		Control		Exp.		Control		Exp.	
		F	%	f	%	f	%	f	%	f	%	f	%
URINE	➢ Nil	03	10	-	-	-	-	-	-	-	-	-	-
	➢ 1-4 times per day	27	90	21	65.6	22	75.9	18	56.3	22	73.3	06	18.8
	➢ 5-8 times per day	-	-	11	34.4	08	24.1	14	43.8	08	26.7	26	81.3
STOOL	➢ Nil	10	33.3	-	-	02	6.7	-	-	-	-	-	-
	➢ 1-4 times per day	20	66.7	28	87.5	25	83.3	22	68.8	25	83.3	12	37.5
	➢ 5-8 times per day	-	-	04	12.5	03	10	10	31.3	05	16.7	20	62.5

The above table shows there was no single neonates passed urine 5-8 times a day in control group whereas 34.4% neonates in experimental group passed urine 5-8 times on the very first day itself. On the second day

24.1% in control and 43.8 % in experimental group of neonates passed urine 5-8 times a day. On the third day 26.7% in non-intervention and 81.3 % in intervention group of neonates passed urine 5-8 times a day. Simultaneously there was 12.5 % neonates passed stool 5-8 times a day in intervention group but no single neonates in other group on the very first day. On the second day more neonates passed stools 5-8 times a day 31.3 % in experimental group of neonates passed stools 10 % in control and. On the third day 16.7% in control and 62.5 % in experimental group of neonates passed stools 5-8 times a day.

Discussions

The present study demonstrated that neonates in the experimental group exhibited greater stability in heart rate, SpO_2, and body temperature compared to those in the control group, although no significant difference was observed in neonatal weight between the two groups. These findings align with the study by Mulupuru S. et al. (2019), which reported that the breast crawl positively influences newborn weight. Similarly, Thomas S., Mohanty N., and Dasila P.K. (2018) found a statistically significant difference in initial weight loss by the third day postpartum in neonates who experienced early initiation of breastfeeding.

In the current study, the mean ± SD of neonatal temperature in the experimental group was 98.0 ± 0.51°F, compared to 97.2 ± 0.71°F in the control group on the third day after birth. Mean ± SD values for weight were 2.92 ± 0.34 kg in the experimental group and 2.89 ± 0.24 kg in the control group. Heart rate averaged 139.0 ± 8.28 bpm in the experimental group versus 124.0 ± 11.0 bpm in the control group, and SpO_2 levels were 96.06 ± 1.69% and 95.9 ± 1.09%, respectively. These results indicate that the bio-physiological parameters of neonates in the experimental group were more stable than those in the control group. This is consistent with Varsha (2015), who reported that neonates undergoing breast crawl maintained better body temperature than those who did not, and Srivastava S. et al. (2009), who found that skin-to-skin contact improved axillary temperatures in new-borns. Breastfeeding outcomes were also superior in the experimental group. The study concluded that the breast crawl method effectively enhanced breastfeeding success and positively influenced neonatal elimination patterns, including the frequency of urine and stool passage. Dr. Lily Podder (2017) similarly reported that the breast crawl positively impacts breastfeeding initiation and outcomes. In the present study, the Modified Infant Breastfeeding Assessment Tool (IBFAT) scores in the interventional group were 28.6 on day one and 28.8 on day two, compared to 25.6 and 26.2 in the routine care group, with t-values of 5.3 and 4.3, respectively, indicating a significant improvement in breastfeeding outcomes. Additional studies support these findings. Christena P. (2018) reported that breast crawl reduces maternal blood loss, shortens the duration of placental separation, and facilitates early initiation of breastfeeding. Mulupuru S. et al. (2019) observed higher breastfeeding rates in the experimental group (94.8%) compared to the control group (95.7%). Thomas S. (2018) reported a significant reduction in the time taken to initiate breastfeeding among neonates who underwent the breast crawl. Furthermore, Khosla P., Tripathy P., and Moharana M. (2017) found that smearing breast milk during the breast crawl enhanced neonatal responsiveness. Overall, these findings highlight the effectiveness of the breast crawl in stabilizing neonatal bio-physiological parameters and improving breastfeeding outcomes, reinforcing the importance of incorporating this practice into routine postnatal care. Another study ne Rawat G et.al. found that the breast crawl intervention significantly improved neonatal temperature at 1 h post-birth, shortened placental expulsion time, reduced episiotomy pain perception, and improved uterine involution. Shah A et.al. reported that a higher proportion of new-borns achieved good latching (60%) after breast crawl in experimental group as compared to controls (5%), and maternal episiotomy pain intensity was lower in the intervention group. Mahmoud NSA et.al. also reported that breast crawl significantly shortened the third stage of labour (placental separation), reduced maternal blood loss, and improved early initiation of breastfeeding relative to a control group.

This study employed a quantitative, post-test only, two-group design, allowing a clear comparison between the control and experimental groups while minimizing contamination bias. Reliable and standardized instruments, including digital thermometers, NIBP monitors, baby weighing scales, and the LATCH Breastfeeding Assessment Tool, were used to ensure accuracy and objectivity in data collection. However, the study had certain limitations. It was conducted in a single setting, which may limit the generalizability of the findings to broader populations or different healthcare contexts. Additionally, long-term follow-up was not included, restricting the ability to assess whether the benefits of breast crawl persist in sustained breastfeeding success or long-term neonatal growth and development. In conclusion, this study establishes that the breast crawl technique positively affects the bio-physiological parameters of neonates and improves breastfeeding outcomes. The intervention facilitates early initiation of breastfeeding and contributes to neonatal stability. This study implies that incorporating the breast crawl technique into postnatal care can enhance neonatal physiological stability and breastfeeding success. It also emphasizes the role of nurses in educating and supporting mothers to adopt evidence-based breastfeeding practices.

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Ethical Approval: Ethical Approval was obtained from Ethics Committee of SRHU (SRHU/HIMS/ETHICS/2020/108)
Informed Consent: Informed written consent was obtained from the participants

References

1. Neonatal Mortality https://data.unicef.org/topic/child-survival/neonatal-mortality/, Jan 2023
2. Prashant Gangal. Breast Crawl an initiation of breastfeeding. UNICEF Maharashtra. https://acp.it/assets/media/breastcrawl07.pdf
3. V Tiwari V, A Purohit A, M Verma M. A recent advance in first hour feeding- breast crawl. Journal of Paediatric Research. 2017 Aug; 4(8): 537-543.
4. Linthoi K and Dr. Podder L. The impact of breast crawl on breastfeeding among new-borns in selected hospitals of Pune city. International Journal of Applied Research. 2017; 3(6): 156-162.
5. Christena.P. Effectiveness of breast crawl techniques on physiological outcome during the third stage of labour and immediate initiation of breast feeding among post-natal mothers. International Journal of Advance Research, Ideas & Innovations in Technology. 2018; 4(3): 460-465.
6. Fernandes.VR. Effectiveness of breast crawl on the intensity of episiotomy pain and behavioural response among women during episiotomy suturing. Muller Journal of Medical Sciences and Research. 2017; 8(1): 24-30.
7. Mulupuru S, Siddu A, Murki S, Saikiran D, Reddy A. Breast crawl at birth, effect on breast feeding rate and infant growth in infants delivery at an urban tertiary care public hospital: a randomized controlled trial. Journal of Neonatal Nursing. 2019; 25(5): 236-239
8. Thomas S, Mohanty N, Dasila PK. Effect of breast crawl on initiation of breastfeeding and initial weight loss among new-born. Manipal Journal of Nursing and Health Sciences. 2018 July; 4(2): 1-5.
9. Srivastava S, Gupta A, Bhatnagar A and Dutta S. Effect of very early skin to skin contact on success at breastfeeding and preventing early hypothermia in neonates Faridabad, Haryana, India. Indian Journal of Public Health. 2014; 58(1): 22-26.
10. 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. International Journal of Nursing & Midwifery Research. 2017; 4(3): 55-60.
11. Chiejina EN, Anieche JE, Odira CC. Breastfeeding Practices of Postnatal Mothers: Exclusivity, Frequency and Duration, Nigeria. International Journal of Environment, Agriculture and Biotechnology. 2017 july-Aug; 2(4).
12. Vyas S., Sharma P., Kandpal S.D., Semwal J., Srivastava A., and Nautiyal V. A community based study on breastfeeding practices in a rural area of uttarakhand. National Journal of Community Medicine. 2012 April-June; 3(2): 283- 287.
13. Mohammed E S, Ghazawy E R, Hassaan EE. Knowledge, Attitude, Practice of breast feeding and weaning among mother of children up to 2 year. Journal of Family Medicine and Primary Care. 2014; 3(2): 136-140.
14. Vijayalaxmi P, SusheelaT, Mythili D. knowledge, attitude, and breast feeding practice of postnatal mother: A cross sectional survey. Europe PMC. 2015; 9(4): 364-374.
15. Safari K, Saeed A.A, Hasan S.S, Banaem L.M, The effect of mother and new-born early skin-to-skin contact on initiation of breastfeeding, new-born temperature and duration of third stage of labour. International Breastfeeding Journal. 2018; 13(32): 2-8.
16. Rawat G, Balusamy P. Effectiveness of breast crawl method on selected new-born and maternal outcomes. International Journal of Health Sciences. 2022;6(S1):1721-1729. doi:10.53730/ijhs.v6nS1.4930.
17. Shah A, Sabitha P, Kaur H, Rajiv S. Effectiveness of breast crawl technique on initiation of breastfeeding and intensity of episiotomy suturing pain among primipara mothers. African Journal of Biomedical Research. 2024;27(1S):288-295. doi:10.53555/AJBR.v27i1S.1238.
18. Mahmoud NSA, Elrefaey S, Abd elglil A. Effect of the standard breast crawl technique on initiation of breastfeeding and maternal outcomes. Egyptian Journal of Health Care. 2024;15(2):1326-1339. doi:10.21608/ejhc.2024.368905.