

Impact of Early Skin-To-Skin Contact among Cesarean Section Mother on Breastfeeding, Neonatal Adaptation and Maternal Satisfaction

Aditi Bose, M.Sc Nursing, 2nd year student, Kalinga Institute of Nursing Sciences, KIIT Deemed to be University, Bhubaneswar, Odisha, India¹

Kalyani Rath, Associate Professor, Department of Obstetrics and Gynaecological Nursing, Kalinga Institute Of Nursing Sciences, KIIT Deemed to be University, Bhubaneswar, Odisha, India²

Niharibala Nayak, Tutor, Department of Obstetrics and Gynaecological Nursing, Kalinga Institute Of Nursing Sciences, KIIT Deemed to be University, Bhubaneswar, Odisha, India³

Corresponding author : Kalyani Rath, Associate Professor, Department of Obstetrics and Gynaecological Nursing, Kalinga Institute Of Nursing Sciences, KIIT Deemed to be University, Bhubaneswar, Odisha, India, E-mail Id: rathkalyani78@gmail.com

Abstract: Background- Early skin-to-skin contact (SSC) after birth is a physiological practice that is internationally recommended and has well documented importance for the baby and for the mother. **Objectives –** to investigate the impact of early skin-to-skin contact among cesarean section mother on breastfeeding, neonatal adaptation and maternal satisfaction. **Material & Method-** This quasi-experimental study was conducted in selected nursing homes in West Midnapore, West Bengal. The sample consisted of 80 antenatal mothers with their baby. The tool used was a self-structured questionnaire including rating scale used for data collection. The samples were grouped into experimental groups and control groups with 40 samples in each group. The sampling technique used was the non-probability purposive sampling technique. Among all study samples it was assessed by using t-test or chi-square statistical analysis, and analysis was done by the use of SPSS software version 20 and Microsoft Excel, 2007. It was found that the mean breastfeeding score was 23.4 ± 2.1 and 13.7 ± 2.9 in the experimental and control group. The maternal satisfactions mean score in the experimental and control group was 47.7 ± 3.0 and 30.7 ± 2.4 . **Results-** The study shows that the early skin-to-skin contact has significant impact on the breastfeeding status and maternal satisfaction level. Early skin-to-skin contact does not have significant impact on neonatal adaptation. **Keywords:** Early skin-to-skin contact, breast feeding, neonatal adaptation, maternal satisfaction.

Introduction

Bonding between mother and child is mainly achieved by early skin-to-skin contact (SSC) starting ideally straight after birth, thus representing the normal behavior from an evolutionary perspective. However, medical or local conditions may hinder this practice leading to delayed initiation of skin-to-skin contact (SSC), which is particularly the case for cesarean deliveries¹.

Breast milk is the best gift that a mother can give to her newborn baby. In ancient India, early and exclusive breastfeeding was the custom and so was proximity between the mother and her baby².

One of the research study found that the mean neonatal core temperature decreases without active warming from beginning of the surgical procedure until the end of the bonding period. Active skin-surface warming decreases the incidence of hypothermia³. A randomized controlled trial study was conducted by Elizabeth R Moore, Gene Cranston Anderson among healthy primiparous mother through out the 1 month duration. The study was done to evaluate effects of maternal- infant skin to skin contact during the first 2 hours post birth. Total 20 mother-infant dyads were evaluated with the help of Infant Breastfeeding Assessment Tool. These infant, compared to swaddled infants, had higher mean sucking competency during first breastfeeding (8.7+/-2.1 vs 6.3+/- 2.6; $p < 0.02$) and achieved effective breastfeeding sooner (935+/- 721mins. vs 1737+/-1001; $p < 0.04$). Sucking competency was also related to maternal nipple protractility ($r = .48$; $p < 0.03$). The end the study was showing that there is no significant differences were found at 1 month⁴.

Sheau-Huey Chiu, Gene Cranston Anderson did a study to examine the temperature during a study of mothers and infants who were having breastfeeding difficulties during early postpartum. Forty-eight full-term infants were investigated using a pretest-test-posttest study design. As a result the study showed that during skin-to-skin contact, most infants reached and maintained temperatures between 36.5 and 37.6 degrees C, the thermo-neutral range⁵.

A randomized controlled interventional study was conducted by Rebecka Dalbye, Marie Berg to evaluate the impact of skin-to-skin contact of infants by mother immediately after caesarean on the satisfaction of the mothers and to study the experience of mothers who received the care. 105 participants were randomly divided into the experiment and control groups using randomized blocks method. A questionnaire, previously was approved, was applied to assess the maternal satisfaction. The result showed that mean satisfaction of mothers in the experiment group was significantly higher than the control group ($P < 0.001$)⁶.

Methods

Study design: The study is a quasi-experimental research design aimed at evaluating the impact of early skin-to-skin contact among cesarean mother on breast feeding, neonatal adaptation and maternal satisfaction.

Study setting: For the present study setting was Post Anaesthetic Observation Room of Gyne OT in Roy Nursing Home and Panchanon Maternity cum Nursing Home, West Midnapore, West Bengal.

Sample: The sample size is 80 mothers who have under gone caesarian section. Non-probability purposive sampling technique was used. The total number of the study sample was 80. 40 of them were in the control group and the remaining 40 were in the experimental group.

Data collection

Section A: Demographic data: self-structured interview schedule age, gravid, occupation, level of education, resident, gestational age.

Section B: consisted of Standardized Breastfeeding Assessment Tool for Neonate that includes reaction of baby during feeding, toileting times of baby and mother's breast condition.

Section C: consisted of neonatal adaptation that includes heart rate and temperature measurement of newborns.

Section D: 4 consisted of self structured maternal satisfaction tool that includes feelings of the mother during skin to skin contact.

Demographic data collection was done. The selection of the sample was done by self developed questionnaire including rating scale.

Intervention & measure: Out of 80 samples, 40 samples of experimental group were provided early skin-to-skin contact for at least 45mins and remaining 40 samples of control group were not given any intervention.

Ethical consideration: The permission was obtained from the IEC Committee of KIIT Deemed to be University, Bhubaneswar. Written consent from the participants was obtained.

Statistical analysis: Socio-demographic data and impact of early skin-to-skin was analyzed by using frequency & percentage distribution. Paired t test, chi square, Mann-Whitney test and Kruskal Wallis Test was done to determine the effectiveness of early skin-to-skin contact on breastfeeding, neonatal adaptation and maternal satisfaction and selected demographic variables.

Table 1. Mean, SD and 'p' value of impact of early skin-to-skin contact on breast feeding in the experimental group and control group. (N=40)

Impact of early skin-to-skin contact on breastfeeding		
Descriptive Statistics	Breast feedings score	
	Group 1 (Experimental)	Group 2 (Control)
N	40	40
Mean	23.4	13.7
SD	2.1	2.9
Q1 (1 st Quartile)	22	11
Q2 (Median)	23.5	14
Q3 (3 rd Quartile)	25	15.8
Mann-Whitney U 'p' value	0.000	

Table 2. Percentage (%) Distribution of child heart rate between the experimental group and control group. (N=40)

Comparison of Heart rate between groups							
Heart rate	Group 1 (n=40) (Experimental)		Group 2 (n=40) (Control)		Total (n=80)		χ^2 , p
	No.	%	No.	%	No.	%	
100-120 beats per min	8	20	18	45	26	32.5	$\chi^2=5.705$ p=0.058
120-140 beats per min	20	50	14	35	34	42.5	
140-160 beats per min	12	30	8	20	20	25	

Table 3. Percentage (%) Distribution of child temperature between the experimental group and control group. (N=40)

Comparison of Temperature between groups							
Temperature	Group 1 (n=40) (Experimental)		Group 2 (n=40) (Control)		Total (n=80)		χ^2 χ^2 , p
	No.	%	No.	%	No.	%	
Less than 97.7 degree Fahrenheit	10	25	11	27.5	21	26.3	$\chi^2=0$.631 p=0. 729
97.7 degree- 100 degree Fahrenheit	26	65	23	57.5	49	61.3	
more than 100 degree Fahrenheit	4	10	6	15	10	12.5	

Table 4. Mean, SD and 'p' value of impact of early skin-to-skin contact on maternal satisfaction in the experimental group and control group. (N= 40)

Impact of early skin-to-skin contact on maternal satisfaction score between two groups		
Descriptive Statistics	Maternal satisfaction score	
	Group 1 (Experimental)	Group 2 (Control)
N	40	40
Mean	47.7	30.7
SD	3.0	2.4
Q1 (1 st Quartile)	45.3	29
Q2 (Median)	47	31
Q3 (3 rd Quartile)	50	32.8
Mann-Whitney U 'p' value	0.000	

Results

Table -1 depicted that, in the experimental group was 23.4 ± 2.1 and the median score was 23.5 (IQR: 22 to 25) in group 1 and the corresponding values in group 2 (Control) was 13.7 ± 2.9 with median 14 (IQR: 11 to 15.8). The descriptive statistics values were significantly higher in experimental group than the control group ($p < 0.0001$).

Table -2 showed that, In the experimental group 20% had heart rate in the 100 -120 beats per minute, 50% in the 120 -140 beats per minute and 30% in the 140-160 beats per minute range. The corresponding proportion in the control group was 32.5%, 42.5% and 25% respectively. It appears that higher proportion of babies in the experimental group have heart rate in the 120 – 140 beats per minute and 140 – 160 beats per minute. However, this difference is not statistically significant ($p=0.058$).

Table-3 revealed that, Out of 80 babies, 26.3% had temperature below 97.7° Fahrenheit, 61.3%, 97.7 – 100° Fahrenheit and 12.5% more than 100° Fahrenheit. There was no significant difference in the distribution of babies according to the temperature between the two groups ($p=0.729$).

Table 4 depicted that, The mean maternal satisfaction score in the treatment group was 47.7 ± 3.0 and that in the control group 30.7 ± 2.4 . The median maternal score in the experimental group 45.3 (IQR: 47 – 50). The median score in the control group was 31 (IQR: 29–32.8). It was found that the measures of central tendency like mean and median score of maternal satisfaction score was significantly higher in experimental group than the control group ($p=0.000$).

Discussion

The present study findings shows that early skin-to-skin contact has significant impact on breastfeeding which is almost similar with the findings of a quality improvement study was conducted by Arti Maria, Amlin Shukla among healthy term and late preterm babies born by caesarean sections in India 2008. During the study period, 64 babies were born through caesarean section, of which 60 were eligible to receive SSC. There was a full positive impact of early skin-to-skin contact on breastfeeding⁷.

The study revealed that the mean maternal satisfaction score in the experimental group was 47.7 ± 3.0 . Present study finding is also congruent with the finding of a randomized controlled interventional study was carried out by Mahnaz Jabraeili¹, Aleheh Seyedrasouli among 105 mothers in Iran, 2017. According to the findings of the present study, the mean satisfaction of the mothers under the intervention was significantly higher than the control group in all 9 item of questionnaire. The majority of mothers in the experiment group were very satisfied with skin-to-skin contact and only 5% were dissatisfied. 95% confidence interval for the P value (1.14, 0.14) which was statistically significant with mothers' satisfaction ($P = 0.013$)⁸.

Conclusion

Based upon the study findings it can be inferred that that the results of the present study support its hypothesis and revealed that early skin-to-skin contact among cesarean mother results in effective for the cesarean mother by significant impact on breastfeeding, neonatal adaptation, and maternal satisfaction.

Funding: The authors have no sources of funding to declare.

Ethical Permission: Approved

Conflict of Interests: None

References

1. [Martina Kollmann](#), Lisa Aldrian, "Early skin-to-skin contact after cesarean section", PLoS ONE 12(2): e0168783. doi:10.1371/journal.pone.0168783, Austria, 2017.
2. Smita Srivastava, Amit Gupta, "Effect of Very Early Skin to Skin Contact on Success at Breastfeeding and Preventing Early Hypothermia in Neonates", Indian Journal of Public Health, Volume 58, Issue 1, 2014.
3. [Martina Kollmann](#), Lisa Aldrian, "Early skin-to-skin contact after cesarean section", PLoS ONE 12(2): e0168783. doi:10.1371/journal.pone.0168783, Austria, 2017.
4. Elizabeth R Moore, Gene Cranston Anderson, "Randomized Controlled trial of very early mother- infant skin-to-skin contact and breastfeeding status", Pub Med, PMID: 17336817, DOI: 10.1016/j.jmwh.2006.12.002.
5. Sheau-Huey Chiu, Gene Cranston Anderson, "Newborn temperature during skin-to-skin breastfeeding in couples having breastfeeding difficulties", Pub Med, PMID: 15918868, DOI: [10.1111/j.0730-7659.2005.00354.x](#)

6. Rebecka Dalbye, Marie Berg, “ Mother’s experiences of skin-to-skin care of healthy full term newborn- A phenomenology study”, Sexual & Reproductive Healthcare, volume 2, issue 3, August 2011.
7. Arti Maria¹, Amlin Shukla¹, “Achieving Early Mother-baby Skin-to-skin Contact in Caesarean Section: A Quality Improvement Initiative”, INDIAN PEDIATRICS, volume 55:India, September 15, 2018.
8. Mahnaz Jabraeili¹ , Aleheh Seyedrasouli, “Impact of skin-to-skin care on satisfaction and experience of cesarean mothers: A randomized, double-blinded clinical trial”, Annals of Tropical Medicine and Public Health, DOI: 10.4103/ATMPH.ATMPH_642_17, Iran, 2017.