



## TO IDENTIFY THE PREVALENCE AND FACTORS ASSOCIATED WITH THE OCCURRENCE OF SKIN-TO-SKIN CONTACT AND THE EARLY INITIATION OF BREASTFEEDING IN A TERTIARY CARE TEACHING HOSPITAL

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### ABSTRACT

**Background:** Early essential newborn care has been implemented in countries regardless high or low neonatal mortality. This study aims to investigate the current practice of skin-to-skin contact (SSC) and its effect on exclusive breastfeeding during the hospital stay. **Material & Method:** This is a cross-sectional study composed of 150 pregnant women who delivered at SAIMS hospital, Indore. Data were collected via forms containing socio demographic variables, obstetric history and data on the delivery and birth of newborn. The variables were on women's data (age, parity, ANC visit and type of delivery); and neonatal data (gender of the child, Apgar score at 1, 2 and 5 minutes, SSC with breastfeeding in the first hour of life, birth weight, exclusive breast feeding in the first and third month of life). **Results:** Among the 150 pregnant women, skin-to-skin contact occurred in 62% and early initiation of breastfeeding in 69.3%. Full term, birth weight  $\geq 2500$  gm, Apgar score  $>7$  in the first minute, vaginal delivery, 6 or more prenatal consultations, maternal age were the factors associated with the practice of skin-to-skin contact. In the skin-to-skin contact group, the median interscapular temperature of infant increased from 35.5°C (range 34.6-37.0°C) at 5 minutes observation to 36.4° (range 35.7-37.2°C) at 60 minutes observations. The median temperature of mother's breast increased from 36.5°C (range 35.6-37.6°C) at 5 minutes observation to 37.2° (range 36.6-37.4°C) at 60 minutes observations. Correlation between skin-to-skin contact and early initiation of breast feeding found to be by Pearson correlation coefficient: .044 and by spearman correlation: 0.46. **Conclusion:** Our results demonstrate a strong dose-response relationship between duration of SSC and exclusive breastfeeding in hospital. Interventions that support exclusive breastfeeding during hospital stay, especially achieving prolonged uninterrupted SSC, could improve the duration of breastfeeding.

**KEYWORDS :** Skin to skin contact, Breastfeeding, Early Essential Newborn Care, Risk factors,

### INTRODUCTION

The term skin-to-skin contact (SSC) is defined as the placement of a naked infant, occasionally with a diaper or a cap on, on its mother's bare skin, and the exposed side/back of the infant in direct skin-to-skin contact covered by a blanket or a towel.<sup>[1]</sup>

Placing a newborn baby on its mother's bare chest immediately after birth first an hour or till their first feed (skin-to-skin contact), is classified as an early essential newborn care by the World health Organization (WHO). It is also a part of the WHO's 'Ten steps to successful breastfeeding 'found in the 'baby -Friendly Hospital Initiative' (BGHI) launched in India in 1993 to encourage healthier breastfeeding practices. Early skin - to - skin contact was defined as beginning any time from delivery to 23 hours after birth. Skin - to - skin contact should be uninterrupted for at least 60 minutes.<sup>[2-4]</sup>

It is also known that SSC after birth enhance breastfeeding behaviours, better temperature control and better glucose homeostasis. The movements of the infant's hands over the mother breasts during SSC leads to increased secretion of oxytocin, which results in increased secretion of breast milk. At birth, the newborn has a reduced capacity to generate heat, which results to a decline in body temperature. Hence, the maintenance of body temperature is paramount to the newborn at delivery.<sup>[5,6]</sup> Being in skin - to - skin contact with the mother after birth elicits the newborn infant's internal process to go through what could be called 9 instinctive stages: birth cry, relaxation, awakening, activity, rest, crawling, familiarization, suckling and sleeping. This process is suggested to contribute to an early coordination of infant's five senses: sight, hearing, touch, taste and smell as well as movement.<sup>[7,8]</sup>

### MATERIALS AND METHOD

A Cross sectional study, composed of 150 pregnant women, in which delivery occurred at SAIMS hospital. Data were collected between April 2021 and September 2022 through forms containing socio demographic variables, obstetric history and data on the delivery and birth of newborn. The variables were on women's data (age, parity, ANC visit and type of delivery); and neonatal data (gender of the child, Apgar score at 1, 2 and 5 minutes, SSC with breastfeeding in the first hour of life, birth weight, exclusive breast feeding in the first and third month of life).

In control group, infants were shifted to the radiant warmer immediately after cutting the cords; then infants were handed to their

mothers in a blanket. Selection and measurement of variables

### Outcomes

a) Early initiation of breastfeeding: In this study, Early initiation of breastfeeding was defined as children who were put to breast within 1 hr of birth. We coded as "after half an hour" if a child was put to breast early and "no" if a child was put to breast after 1 hr of birth.

b) Exclusive breastfeeding (EBF): We defined EBF as infants aged 0-6 months who were fed exclusively with breast milk. We coded as "yes" if a child was exclusively breastfed and "no" if otherwise.

c) Skin-to-skin contact (SSC): We defined SSC as when a child was put on mother's chest and bare skin immediately after birth. We coded as "yes" if a child had SSC and "no" if otherwise

d) Temperature measured between the baby's axillary at 5 and 60 minutes after birth. The temperature on the wall 1 m above the infant's head, and the temperature of the mother's breast were measured at the same time intervals. The temperature measurement was conducted using a non-contact thermometer. Infants who received skin-to-skin contact were significantly warmer at 5 minutes and remained so at 60 minutes.

### RESULTS:

Among the 150 pregnant women, skin-to-skin contact occurred in 62% and early initiation of breastfeeding in 69.3%. Full term, birth weight  $\geq 2500$  gm, Apgar score  $>7$  in the first minute, vaginal delivery, 6 or more prenatal consultations, maternal age were the factors associated with the practice of skin-to-skin contact. The Apgar score between 8 and 10 in the first minute of life and the higher birth weight of the newborn were protective factors of contact with early breastfeeding; lower maternal age and cesarean delivery were risk factors for this practice.

In the skin-to-skin contact group, the median interscapular temperature of infant increased from 35.5°C (range 34.6-37.0°C) at 5 minutes observation to 36.4° (range 35.7-37.2°C) at 60 minutes observations. The median temperature of mother's breast increased from 36.5°C (range 35.6-37.6°C) at 5 minutes observation to 37.2° (range 36.6-37.4°C) at 60 minutes observations. The skin temperature between the infant's scapulae was measured and found that infant's skin-to-skin contact had a higher temperature at 60 minutes after birth

and similar results reported in maternal breast temperature increased at 60 minutes. The mother's breast temperature was higher than the interscapular temperature of infant. It was found that putting the newborn in uninterrupted skin-to-skin contact immediately after birth resulted in stable skin temperature and prevented heat loss.

Correlation between skin-to-skin contact and early initiation of breast feeding found to be by Pearson correlation coefficient: .044 and by spearman correlation: 0.46. The associated factors were analyzed through the chi-square test, adopting the significance level of 0.05.

**Table 1. Demographic variables**

| Variable                            | No.     | Percentage | P Value  |
|-------------------------------------|---------|------------|----------|
| <b>Birth Weight</b>                 |         |            |          |
| < 2.0 Kg                            | 31      | 20.7       | .015724  |
| 2.0-2.5Kg                           | 27      | 18         |          |
| > 2.5 Kg                            | 92      | 61.3       |          |
| Total                               | 150     | 100        |          |
| <b>Mother's age</b>                 |         |            |          |
|                                     | .046731 |            |          |
| <20                                 | 06      | 4          | .046731  |
| 21-30                               | 125     | 83.3       |          |
| >30                                 | 19      | 12.7       |          |
| Total                               | 150     | 100        |          |
| <b>Mode of delivery</b>             |         |            |          |
| LSCS                                | 27      | 18         | .045685  |
| NVD                                 | 123     | 82         |          |
| <b>No. of consultation &lt;6</b>    |         |            |          |
| Yes                                 | 53      | 35.3       | < .00001 |
| No                                  | 97      | 64.7       |          |
| <b>No of consultation 6 or &gt;</b> |         |            |          |
| Yes                                 | 98      | 65.3       |          |
| No                                  | 52      | 34.7       |          |
| Total                               | 150     | 100        |          |

**Table 2. Prevalence and correlation of exclusive breast feeding and discharge**

|  | No. | Percentage | P Value |
|--|-----|------------|---------|
| <b>Before discharge exclusive breast feeding</b>   |     |            |         |
| Yes  | 127 | 84.7       | .360122 |
| No   | 23  | 15.3       |         |
| <b>Continued exclusive breast feeding @1 month</b> |     |            |         |
| Yes  | 121 | 80.7       |         |
| No   | 29  | 19.3       |         |
| <b>Continued exclusive breast feeding @3 month</b> |     |            |         |
| Yes  | 121 | 80.7       |         |
| No   | 29  | 19.3       |         |
| Total  | 150 | 100        |         |

**Table 3. Prevalence and correlation of skin-to-skin contact**

| SKIN TO SKIN CONTACT | No. | Percentage | P Value |
|----------------------|-----|------------|---------|
| Yes                  | 93  | 62         | .06426  |
| No                   | 57  | 38         |         |
| Total                | 150 | 100        |         |

\*The chi-square statistic is 3.4239. The p-value is .06426. The result is not significant at p < .05.

**Table 4. Correlation between skin-to-skin contact & early initiation of breast feeding**

| EARLY INITIATION OF BREAST FEEDING | No. | Percentage | P Value |
|------------------------------------|-----|------------|---------|
| After half an hour.                | 104 | 69.3       | .049613 |
| No                                 | 46  | 30.7       |         |

**Table 5. Interval by Pearson's R& Spearman Correlation Ordinal**

|  | Value | Approx. Sig. | Approx. Tb |
|--|-------|--------------|------------|
| Interval by Pearson's R Ordinal          | .521  | .044         | 7.419      |
| Interval by Spearman Correlation Ordinal | .521  | .046         | 7.419      |
| N of Valid Cases                         | 150   |              |            |

**Table 6. Infant temperature**

|  | Mean    | SD     | Min   | Max   |
|--|---------|--------|-------|-------|
| Infant Temperature (°C) 5 minutes (35.0 to 37.0) | 35.5820 | .49576 | 34.60 | 37.00 |
| Infant Temperature (°C) 60 minutes (35.4-37.20)  | 36.4913 | .39577 | 35.70 | 37.20 |

**Table 7. Breast temperature**

|  | Mean    | SD     | Min   | Max   |
|--|---------|--------|-------|-------|
| Mother breast temperature (°C) 5 minutes (36.6- 37.6°C)  | 36.8653 | .26722 | 35.60 | 37.60 |
| Mother breast temperature (°C) 60 minutes (36.8- 37.6°C) | 37.2100 | .11970 | 36.60 | 37.40 |

**DISCUSSION**

Based on the results of the statistical analysis, it can be determined that skin-to-skin-contact did show significant influence on breastfeeding choice at discharge. Among the 150 pregnant women, skin- to- skin contact occurred in 62% and early initiation of breastfeeding in 69.3%. Our study findings indicated that most newborns who were had successful breastfeeding after SSC. (n=71, 67.6%), whereas only 34 (32.4%) did in the control group.

Analysis showed that a women exposed to cesarean section is almost 2 times more likely to fail to perform SSC with breastfeeding in the first hour of life when compared to women who had a vaginal birth. (chi-square statistic is 0.5555. p-value is .045685, p < .05). Regarding maternal age, younger women were associated with non performing SSC with breastfeeding in the first hour of life. Birth weight greater than 2,500 grams is shown to be a protective factor for breastfeeding in the first hour of life. The data on newborn color and Apgar scores during the initial partum minutes showed that extra-uterine adaptation could have developed more rapidly in newborns that received skin-to-skin contact at birth. Breastfeeding can facilitate rapid adaptation to extra-uterine life for the newborn.

The first postpartum half hour, which is the most important part of the "sensitive period" is the time when the infant is the most awake and active for breastfeeding. Postpartum early breastfeeding solely affects the mother's lactation period, while late initial breastfeeding is a significant obstacle for sufficient and quality breastfeeding. Regarding the initiation of breastfeeding, was statically higher in the group of newborns who underwent SSC with breastfeeding in the first hour of life, when compared to those with children who did not perform this practice.

Contrary to what was identified in this study, SSC with breastfeeding in the first hour of life were associated with longer duration of EBF in the first month of life and at four months of age. The stimulation of breastfeeding in the first hour of life and skin-to-skin with the mother favours the establishment of effective suction, as a positive consequence for continuity in maternity and prolongation of EBF.

It was found that interscapular temperature over the first hour after birth increased in infants in skin- to-skin contact ad infants wrapped in cloth, separated from their mother. The infants in skin-to-skin contact were warmed at 5 minutes and remained so at 60 minutes Uninterrupted skin-to-skin contact is therefore safe in regard to temperature regulation, and low-cost interventions to promote skin-to-skin contact.

**CONCLUSION**

The first hour after birth is a sensitive period for both the infant and the mother. Newborn SSC is a low-cost intervention that would be accessible, simple, and feasible for most mothers in developing countries. During mother-infant- skin-to-skin contact, verbal and tactile interactions between mother and baby are increased, leading to an increased response to maternal body stimuli and development and development of nutritional breastfeeding behavior in newborns.

This study found a prevalence rate of skin to skin contact appropriate and a direct association of this practice with breastfeeding. The intervention increased the practice of skin to skin, which was found to be safe in regard to temperature stabilization and prevent heat loss. Women should know the importance of these practices and be encouraged to practice it.

Pediatricians and other providers have important roles in the

implementation of safe SSC and rooming in practices. It is important to standardize the sequence of events immediately after delivery to promote safe transition, thermoregulation, uninterrupted SSC, and direct breast-feeding session.

It is critical to provide all women in delivery rooms with continuous educational and training in programs and implement SSC for all health. These changes directly support the millennium goals for improved maternal and child health.

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