

### **Fetomaternal outcome of skin to skin contact of mother and baby**

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#### **Abstract**

**Background:** Out of the entire process of labour, the third stage is the most important, especially due to complications like retention of placenta, haemorrhage and uterine inversion. This can present after an otherwise uneventful initial stages of labour, thereby leading to unforeseen complications. Both breastfeeding and early skin contact between the mother and the newborn pose as protective mechanisms against PPH, especially in severity. The aim of this study was to assess the effectiveness of this early contact and its beneficial outcomes, both for the mother and the newborn.

**Materials and Methods:** The main goal of this study was to determine the benefit of an early skin to skin contact between mothers and their newborn infants and to study the outcomes, both neonatal and maternal. An experimental research approach was used for the study. A total of 70 parturients admitted at labour room, Dhiraj Hospital, Vadodara (35 each in control and experimental group) were selected for the study by purposive sampling

technique. Data collection was carried out by socio – personal and clinical data sheet, observation checklist during third stage of labour, APGAR newborn scoring chart, LATCH scale ,infant breastfeeding assessment tool (IBFAT) and modified maternal breastfeeding satisfaction evaluation scale (MBFES). Post normal vaginal delivery, skin to skin contact was carried out in the experimental group immediately post-delivery for 30 minutes. Following this, post-test for duration of third stage of labour, blood loss during third stage of labour, initiation of breast feeding, quality of first breast feeding and maternal satisfaction were performed within 80 minutes after normal vaginal delivery in both groups. The collective data were studied and statistical inference was applied.

**Results:** The results of the study clearly show that early skin to skin contact post-delivery had statistically significant effect on both maternal outcomes (3<sup>rd</sup> stage blood loss, duration (3<sup>rd</sup> stage labour) and maternal satisfaction) and neonatal outcomes (mainly on initiation of 1<sup>st</sup> feed and quality of breastfeeding) ( $p < 0.05$ ).

**Conclusions:** The result of this study highlighted that early maternal and neonatal skin contact post delivery had multiple advantages including shorter third stage of labour with reduced blood loss, better maternal satisfaction, initiation of breastfeeding, quality of first breastfeeding and time of initiation of first breastfeeding

**Keywords:** SSC, PPH, LATCH, IBFAT, LATCH

## Introduction

Early separation of mother and newborn has been very frequently seen in routine practice. Usually post birth, the child is shifted away to a crib or a warmer, depriving both the child and the mother of the benefits of early skin to skin contact. The main aim of a healthy pregnancy should be a physically safe and emotionally fulfilling outcome for mother, infant, and the family. Out of the entire process of labour, the third stage is the most important, especially due to complications like retention of placenta, haemorrhage and uterine inversion. This can present after an otherwise uneventful initial stages of labour, thereby leading to unforeseen complications. Globally, PPH was a leading cause of maternal mortality with a worldwide prevalence of 6%. This may result in increased mortality and morbidity rate. PPH is one of the major causes of maternal mortality around the world with a reported incidence of 2–11% and 8% in Asia. <sup>(2)</sup> This can be prevented by early initiation of feeding as early suckling promotes bonding between mother and baby, involution of the uterus to pre-pregnant state, reduces the risk of primary post-partum haemorrhage and act as natural contraceptive. Skin to skin contact (SSC) is basically placing the naked baby on the mother's bare abdomen or chest as soon as possible after delivery. This contact along with the hormonal surge improves the bond between mother and her baby at the moment of birth, mainly oxytocin, the hormone that causes the uterus to contract

and stimulates the natural attachment after birth like touches, gazes at, and passion to breastfeeds her newborn.<sup>[3]</sup> Along with this, SSC also results in a reduction in both incidence and severity of PPH, thereby decreasing maternity morbidity. <sup>3</sup> This study was done with the prime aim of determining the advantages of skin to skin contact for both the newborn and the mother in tertiary care hospitals.

## Materials and Methods

### Aims and Objectives

To determine the effect of early skin to skin contact of mother and baby after delivery on duration of third stage of labour, successful and early breast feeding.

### Methodology

This study was conducted in labour room of Dhiraj general hospital in 6 months time period between October 2019 to march 2020. It is a quantitative quasi experimental type of study. Total 70 full term pregnant women coming to labour room were taken as sample by Non- probability purposive sampling technique out of which 35 were taken as cases and other 35 were taken as controls who had undergone normal vaginal delivery with episiotomy in this study.

Ethical clearance was obtained from Institutional ethics committee,

### Inclusion criteria

1. Pregnant females willing to participate in this study after giving consent.
2. Full term normal delivery between 37 – 40 weeks of gestation
3. More than or equal to 18 years age
4. Singleton pregnancy with a live fetus.
5. Neonates with APGAR score more than 7.

### Exclusion criteria

1. History of psychiatric disorder

2. Severe pregnancy induced hypertension
3. Gestational diabetes mellitus
4. Placenta previa
5. Meconium stained amniotic fluid

### Description of the tool

Tool 1: Socio-personal clinical data sheet It was designed by the researcher based on reviewing the related scientific literature, opinion from experts and consisted of four parts.

Tool 1.1: Personal data of women such as age, occupation, education status and previous knowledge of mother on skin to skin contact at birth.

Tool 1.2: Obstetrical data of women such as parity, gestational age and duration of second stage of labour.

Tool 1.3: Newborn assessment data including APGAR score, weight of the baby and time of initiation of first breastfeeding after birth.

Tool 1.4: APGAR newborn scoring chart; In the present study APGAR scoring is taken as screening tool for intervention. Maximum score is 10 and least available score is 0.

**Tool 2:** Observation checklist during third stage of labour. It was designed by the researcher for assessment and evaluation of duration of third stage of labour (in minutes), assessment of blood loss during third stage of labour (in millilitre) by weighing perineal towels pre and post use in delivery field (1gram = 1ml).

Tool 3: Infant breast-feeding assessment tool (IBFAT) It was adopted from Infant breastfeeding assessment tool by Matthews 1988, for assessment and evaluation of initiation of breastfeeding. In order to get the baby feed, rooting, how long from placing baby on breast to latch, or suck and sucking pattern of newborn. Maximum score is 12 and minimum score is 0.

Tool 4: LATCH. Scale It was adopted from LATCH assessment tool by Jenson, Wallace & Kelsa. which is a composite. score of 0- 10 is possible, depending upon the identified criteria met in each of the key areas of breast-feeding for assessing quality of first breast-feeding by the latch, audible swallowing, type of nipple, comfort and hold. Maximum score calculated is 10 and minimum score is 0.

Tool 5: Modified maternal breast-feeding satisfaction evaluation scale (MBFES) This scale is used to assess maternal satisfaction with first breast-feeding. It consists of 9 items scored according to 5 response categories. The response scale has a range of 1 – 5 points. Total score is 45, minimum score is 9.

**Data collection. Procedure:** After obtaining clearance from institutional ethical committee, 70 samples who fulfilled the inclusion criteria were considered in the study.

They were selected as first 35 parturients. And next 35 parturients respectively.

The purpose of the study was explained to parturients and consent was obtained from the participants prior to the data collection.

Normal care provided to the control group and skin-to-skin contact between mother and baby at birth had provided to the experimental group for 30 minutes after delivery.

In order to achieve the objectives of the study, post test only control group design was used.

Post-test was performed by using socio-personal clinical data sheet, APGAR newborn score, observation checklist during third stage of labour, infant breastfeeding assessment tool (IBFAT), LATCH scale and modified maternal breast-feeding satisfaction evaluation scale (MBFES) within 80 minutes after normal vaginal delivery.

**Results**

Descriptive statistics, frequency distribution and percentage were used to describe sample characteristics and Mann-Whitney U test was used to determine the effectiveness of skin to skin contact between mother and baby at birth on maternal and neonatal outcomes. Table 1 describes the sample characteristics of both the group. Majority of parturients in the control (48.6%) and experimental group (54.3%) were in the age group of 23– 31 years.

Majority (60%) of the parturients in both groups were primigravida. Only 8.6% in the experimental group were grand.multipara.

42.9% of control group and 54.3% of experimental group were in the gestational age of 39 completed weeks. 57.1% in the control group and 42.9% in experimental group had the duration of second stage of labour in between 31 – 60 minutes.

Table 1: Frequency distribution and percentage of parturients based on age of the mother, parity, gestational age in completed weeks, duration of second stage of labour in minutes and weight of he newborn (N= 70)

AGE (in years)	Control Group (n=35)		Case Group (n=35)		Df	X <sup>2</sup>
	No	Percentage	No.	Percentage		
17- 22.	11	34.2	10	28.6		
23- 31	18	48.6	19	54.3	3	0.63
32-35.	3	8.6	4	11.4		
35-40	3	8.6	2	5.7		
Total	35	100%	35	100%		

Parity	Control Group (n=35)		Case Group (n=35)		df	X <sup>2</sup>
	No.	Percentage	No.	Percentage		
Primipara	20	60	21	60		
Multipara	15	40	11	31.4	2	4.38
Grandmultipara.	0	0	3	8.6		
TOTAL	35	100%	35	100%		

Most. of the newborns. (68.6%) in control group and (74.3%) experimental group had birth weight of 2.5 – 3.5 kg.

Table 2 depicts the effectiveness of skin to skin contact at birth on maternal outcomes. among parturients. It shows that skin to skin contact between mother and baby at birth has effect on reducing duration of third stage of labour (U= 405), reducing amount of blood loss during third stage of labour (U = 264.5) and increasing maternal satisfaction (U=11.5) among parturients in the experimental group (p value.> 0.05 level).

Table 3 depicts the effectiveness of skin to skin contact at birth on neonatal outcomes among parturients. It shows that skin to skin contact between mother and baby at birth has effect on improving initiation of breastfeeding (U = 20) and improving quality of first breastfeeding (U = 87) among parturients in the experimental group(p value > 0.05 level).

Gestational Age (in .completed weeks)	Control Group (n=35)		Case Group (n=35)			
	No.	Percentage	No.	Percentage		
38	13.	34.2	10	28.6		
39.	14.	42.90.	19	54.3	2	0.9
40	8	22.9	6.	17.1		
TOTAL	35	100%	35	100%		

Duration of 2 <sup>nd</sup> Stage of Labour. (in min)	Control Group (n=35)		Case Group (n=35)			
	No.	Percentage	No.	Percentage		
15-30	2	5.8	0	0		
31-60	19	57.1	15.	42.9	2	4.19
61-90.	14	37.1	20.	57.1.		
TOTAL	35	100%	35	100%		

Weight of Newborn (in Kg)	Control Group (n=35)		Case Group (n=35)			
	No.	Percentage	No.	Percentage		
<2.5	8	25.7	3	8.6		
2.5- 3.5	25	68.6	26	74.3.	2.	5.08
>3.5	2	5.7	6	17.1.		
TOTAL	35	100%	35	100%		

Table 2: Mean rank, sum of ranks and U value of. post test score of maternal outcomes among parturients (N= 70)

Group.	Mean Rank	Sum of Ranks	U . Value
Duration of 3 <sup>rd</sup> stage. of Labour			
Control (n= 35)	41.43	1450.00	
Experimental (n=35)	29.57	1035.00	405.
Amount of Blood Loss in 3 <sup>rd</sup> stage of Labour.			
Control (n= 35)	45.44	1590.50	
Experimental (n=35)	25.56	894.50	264.5
Maternal Satisfaction			
Control (n= 35)	18.33	641.50	
Experimental (n=35)	52.67	1843.50	11.5

Table 3: Mean rank, sum of ranks and U value of posttest score. of neonatal outcomes among parturients (N= 70)

Group.	Mean Rank.	Sum of Ranks	U Value
Initiation of breast feeding			
Control (n=35)	18.57.	650.00	
Experimental (n=35)	52.43	1835.00	20
Quality of 1 <sup>st</sup> breastfeeding.			
Control (n=35)	20.49	717.00	
Experimental (n=35)	50.51..	1768.00	87

**Discussion**

This. study .reveals that there is a significant difference in post test scores of maternal outcomes after skin to skin contact between mother and baby at birth among parturients .between.control group and case group.

The duration.of third stage of labour were consistent with the findings of. a similar. randomized controlled clinical .trial .conducted in the delivery room at Dhiraj Hospital Pipariya and results demonstrated a significant positive effect of early SSC in shortening the duration. of the placental delivery.<sup>(4)</sup>

A quasi experimental study was conducted at Government Ranees Hospital, Pudukkottai have similar result that early .suckling was effective in reducing the duration of third stage of labour and blood loss.<sup>(5)</sup>

A randomized control trial observed that SSC led to. higher maternal satisfaction rates than the study group<sup>(6)</sup>

The present study observes that there is a significant. difference in post test scores of neonatal outcomes after skin to skin contact between mother. and baby at birth among parturients between control and experimental group.

Similar findings from a randomized control trial reveals that. Breast feeding was initiated within 30 minutes. of birth in 96% women in the study group compared to 41% in the control group<sup>(7)</sup>

A quasi experimental study result shows that based on the LATCH scores, 48% of mothers who received SSC .and 46% with routine care had successful breastfeeding. <sup>(8)</sup>

**Conclusion**

The results. of. this experimental trial depicts that the skin to skin contact between mother and baby at birth had effect on reducing duration of third stage of labour, blood loss during.third stage of labour, improving maternal satisfaction, initiation of breastfeeding, quality of first breastfeeding and time of initiation of first breastfeeding.among parturients in experimental group.

Further studies should be of sufficient.power to assess maternal outcome like episiotomy pain perception and neonatal outcomes such as blood glucose level and prevention of hypothermia. Similar study can be done.among mothers who underwent caesarean section.

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