

## The Effect of Early Maternal Newborn Skin to Skin Contact after Birth on the Third Stage of Labor and Breast Feeding Status

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### Abstract

**Background** an essential practice for safe and healthy birth is to keep mothers and babies together and ensure unlimited opportunities for skin-to-skin care and breastfeeding. **Aim:** To assess the effect of mother and newborn early skin-to-skin contact (SSC) on the third stage of labor and breast feeding status. **Subjects & Methods:** A randomized controlled clinical trial was used, and a purposive sample of 100 parturient women was recruited who equally divided into two groups. Early mother and newborn SSC was applied to the study group, while no intervention was done to the control group. The study has been conducted in the delivery room of maternity hospital at Zagazig university hospital. **Tools** of data collection include; an assessment sheet to elicit information about women characteristics, their condition during the third stage of labor, the infant breast-feeding assessment tool (IBFAT), and maternal satisfaction tool. **Results:** Women in the SSC group were significantly more likely to have shorter duration of the third stage of labor, hard and contracted uterus, less amount of blood loss as well as early initiation of breast feeding and group more satisfaction of the parturient women than the control ( $p < 0.05$ ). **Conclusion.** Early maternal and newborn SSC leads to the reduction of the duration of placental delivery, followed by hard and contracted uterus as well as less amount of blood loss after delivery. It also lead to early initiation and successful breast feeding as well as promoting mother's satisfaction. **Recommendation.** Maternity nurses have a responsibility to support this physiologic need through education, advocacy, and implementation of evidence-based maternity practices

**Keywords:** Early maternal- newborn skin contact, third stage of labor and breast feeding status.

### Introduction

Mothers and babies have a physiologic need to be together during the moments, hours, and days following birth, and this time together significantly improves maternal and newborn outcomes. Routine separation of healthy mothers and babies can be harmful and can negatively influence short and long-term health outcomes and breastfeeding success (Crenshaw, 2014). Skin-to-skin care is placing dried, undressed newborns on their mother's bare chest, with warmed light blankets or towels covering the newborn's back. Routine procedures such as; maternal and newborn assessments are carried out during SSC or can be delayed until after the sensitive period immediately after birth (Szucs, 2011).

The sensitive period "golden hour," during the first hour or more following birth of the baby is significantly influenced by elevated levels of the maternal reproductive hormone, oxytocin, which crosses the placenta to mother's baby (Bigelow et al., 2014). Oxytocin, which increases significantly during SSC,

promotes maternal/newborn attachment, influence the delivery of the placenta, and enhance self-attachment and successful breastfeeding, reduces maternal and newborn stress, and helps the newborn transition to postnatal life by stabilizing their physical and emotional state (Gabriel et al., 2010 & Moore et al., 2016). Initiation of successful breastfeeding through SSC is a basic step recommended in the ten steps to successful breastfeeding.

In other words when the newborn is placed SSC with the mother, this intense response stimulates behaviors that help to meet the newborn's basic biological needs, activates neuro-protective mechanisms, enables early neurobehavioral self-regulation and reduces stress (Widström et al., 2010). Compared with newborns who did not have SSC, newborns who had SSC cried less; had enhanced cardio-respiratory stability, including oxygen saturation levels; more stable blood glucose levels; and, enhanced thermal regulation (Moore et al., 2016). Moreover, salivary cortisol levels (a biochemical marker for stress)

significantly decreased as the duration of SSC increased beyond 60 minutes indicating a dose-response effect (Takahashi et al.,2011).

The first two hours following birth is the most suitable time for the newborn to start breastfeeding showing behaviors like mouthing, lip smacking movements, hand to mouth activity, vocal cues, etc... This period gives good opportunity for mothers and newborns to develop a mutual relationship when kept together in direct SSC. Maximum benefit of this period for successful breastfeeding can be achieved by applying skin to skin care method (Suplee et al.,2016) . Furthermore, babies who had early skin-to-skin care were more likely to exclusively breastfeed at hospital discharge, to be exclusively breastfed after discharge, and to breastfeed for longer durations (Bramson et al.,2010 & Gabriel et al.,2010 ).

The third stage of labor starts with the delivery of the newborn and completes with the expulsion of the placenta. It is considered to be the most important part of childbirth as it is the period during which the first complete newborn separation from the mother and beginning care of the mother occur and the relationship between both is developed (Roos ,2011) .A surge of oxytocin causes the mother's uterus to contract, stimulating uterine contractions which help enhance and decrease duration of placental separation and expulsion and decreases bleeding which is a significant complication during this period that is a leading cause of maternal mortality. Placental separation typically occurs within a few minutes after delivery. As the fetus is born, the uterus spontaneously contracts around its diminishing contents. The sudden decrease in the uterine size is accompanied by a decrease in the area of placental implantation. This results in the decidua layer separating from the uterine wall. Once the placenta separates from the wall of the uterus, the uterus continues to contract until the placenta is expelled. This process typically takes 5 to 20 minutes after delivery of the baby and occurs spontaneously. Skin-to-skin contact should be started during the first minute after birth and throughout the third stage of labor, to produce elevated levels of oxytocin aiding in separation and expulsion

of the placenta (Chapman and Durham ,2009) .

#### Significance of the study:

Skin to skin contact at birth along with early initiation of breastfeeding and good contraction of the uterus may be protective against both the incidence and severity of postpartum hemorrhage (PPH). Lower rates of PPH have the potential to decrease maternity morbidity and mortality (Say et al.,2014) . Childbirth educators and other health-care professionals have a responsibility to support this physiologic need through education, advocacy, and implementation of evidence-based maternity practices. There is no researches address this practice and its effect at Zagazig so this study was conducted to explore this problem and avoid the routine separation of healthy mothers and babies which can be harmful and can negatively influence short- and long-term health outcomes and breastfeeding success.

#### Aim of work:

The aim of the current study was to assess the effect of early maternal- newborn skin contact between mother and newborn on the third stage of labor and breast feeding status.

**Hypothesis:** women exposed to early maternal-newborn skin contact during third stage of labor experience shorter duration of third stage of labor, less blood loss, more satisfaction, early initiation and successful breastfeeding than those who won't.

#### Subjects and Methods

**Study design:** A randomized controlled trial (RCT) was used for this study.

**Study setting:** the study was conducted in the labor and post-delivery unit of maternity hospital at Zagazig university hospital.

#### Sample

Assuming the percent of first successful breastfeeding was 58.8% for early SSC group and 32.5% for the control group (Say et al.,2014 ) ,at 80% power and 95% confidence level. The estimated sample size was 100 parturient women. A total of 50 parturient women were randomly assigned alternatively

into control and study groups. A purposive sampling technique was used in recruiting subjects in the two groups according to the following inclusion and exclusion criteria.

### The inclusion criteria

- 1- Primigravida.
- 2- Had normal pregnancy.
- 3- Full-term (38 to 42 weeks of gestation).
- 4- Single viable fetus in vertex presentation.
- 5- Anticipated normal vaginal delivery.
- 6- Healthy newborn

### Exclusion criteria:

Women who had multiple pregnancy, pre-existing medical or obstetrical complications, underwent cesarean section (CS), had severely retracted/inverted nipples, and were excluded from the study.

### Tools of data collection

**Tool (I): Maternal assessment sheet;** include the general characteristics of parturient woman, woman status during the third stage of labor i.e the duration of the third stage of labor, the characteristics of the uterus after expulsion of the placenta, mode of delivery of the placenta, as well as the amount of blood loss.

**Tool (II): Likert Scale for Assessment of Maternal Satisfaction** (Likert ,1932). This scale was used to assess maternal satisfaction with early maternal SSC during third stage of labor. It consisted of three points responses. Total score ranged from 1 to 3. Satisfied scored 3, to some degree scored 2 and not satisfied scored 1. The higher score indicates higher level of women satisfaction. Maternal preference for the same post-delivery care in future was rated as next certain, quiet certain and not certain.

### Tool (III): Breastfeeding Assessment Tool: It included two parts:

**Part 1:** The Infant Breastfeeding Assessment Tool (IBFAT) that was developed by (Mathews ,1988) The IBFAT include; four parameters of infant suckling competence including readiness to feed, rooting reflex, fixing (Latch on), and suckling pattern. The range of scores for each of the four components is ranged between 0-3 for a maximum total score of 12. A final score of 10 or higher for IBFAT tool is associated with successful first feeding. Scores less than 10 represented difficulty in first breast-feeding.

Score	3	2	1	0
Readiness to feed	Placed the baby on the breast as no effort was needed.	Used mild stimulation such as unbundling, patting or burping.	Unbundled baby, sat baby back and forward, rubbed baby's body or limbs vigorously at beginning and during feeding.	Could not be aroused.
Rooting	Rooted effectively at once.	Needed coaxing, prompting or encouragement.	Rooted poorly even with coaxing.	Did not root.
fixing (Latch on)	0 – 3 minutes.	3 – 10 minutes.	Over 10 minutes.	Did not feed.
Sucking pattern	Sucked well throughout on one or both breasts.	Sucked on & off but needed encouragement.	Sucked poorly, weak sucking; sucking efforts for short periods.	Did not suck.

### Part 2: Outcome assessment of first breastfeeding:

Including assessment of the newborn attachment to the nipple without help, the time in minutes between delivery and first breastfeeding, did the newborn end the first breastfeeding by himself and the duration (minutes) of first breastfeeding, as well as

estimation of first breastfeeding experience and success of subsequent breastfeeding before discharge.

### Validity and reliability

Tools were reviewed by a panel of five experts in the field of Obstetrics and Gynecological Nursing to test its content validity, modifications were done accordingly

based on their judgment. Reliability was done by Cronbach's Alpha Coefficient Test which revealed that each item of the utilized tools consisted relatively homogeneous items.

### **Ethical considerations:**

An official letter from the Faculty of Nursing, Zagazig University was directed to the responsible authorities to obtain their permission to conduct the study after explaining its purpose. The aim of the study was explained to every parturient women and an oral agreement for participation in the study was gained. Those who agreed to participate were assured about confidentiality, privacy and their right to leave the study at any time.

### **A pilot study**

A pilot study was carried out on 10% of the sample (who were excluded from the study sample) to ascertain the clarity and the applicability of the tools.

### **Field of the work:**

The researcher attended the study setting three days weekly in the hot days (Sunday, Tuesday and Thursday) during the morning and afternoon shift until the calculated sample size was obtained. The current study was done during the period from October 2017 to June 2018. The researcher introduced herself to every parturient woman, checked her legibility for the study and obtained her consent to participate in the study after explaining the aim. The first 50 parturient women attended labor and delivery room were assigned to control group and the second 50 parturient women were allotted as the study group. Assessment of women condition during the third stage of labor was done and recorded. Newborns of the SSC group received the immediate care while being in direct skin contact with their mothers immediately after cutting the umbilical cord. They were placed undressed in a prone position between the mother's chest and abdomen immediately after birth, before placental delivery and suturing of tears or episiotomy. The newborn was covered with light linen over both the mother and the newborn and the baby's head was covered with a dry cap to prevent heat loss. Then he was allowed to suck the mother's breast. In the control group the immediate and routine care

were done under warmer device then newborn was dressed. The mother's placental delivery was done at the same time. Finally, newborn was transferred to the postnatal room.

### **Statistical Analysis**

All data were collected, tabulated and statistically analyzed using SPSS 20.0 for windows (SPSS Inc., Chicago, IL, USA). Quantitative data were expressed as the mean  $\pm$  SD (minimum- maximum), and qualitative data were expressed as absolute frequencies (number) & relative frequencies (percentage). Continuous data were checked for normality by using Shapiro Walk test. Independent samples Student's t-test was used to compare between two groups of normally distributed variables. Percent of categorical variables were compared using Chi-square test. All tests were two sided. P-value  $< 0.05$  was considered statistically significant and p-value  $\geq 0.05$  was considered statistically insignificant.

### **Results**

Table 1 shows that, there was no statistical significant differences regarding the general characteristics between both groups ( $p > 0.05$ ). Women age ranged between 20 and 38 years of age with a mean of  $25.8 \pm 4.3$  and  $26.76 \pm 4.2$  in the study and control groups respectively. As for women education, they mostly have secondary school education and most of them were housewives, rural dwellers and their income was just meeting their life expenses,

Table 2 revealed that women in the SSC group were more likely to have shorter duration (Less than 5 minutes) of placental delivery (80.0% vs 30.0% respectively). Meanwhile, they had harder and well contracted uterus as well as less mean amount of blood loss (88.0% &  $244.6 \pm 27.4$  vs. 66.6% &  $315.1 \pm 45.3$  respectively). Differences observed are statistically significant ( $p < 0.001$ ).

Table 3 shows statistically significant differences between the SSC and control groups pertaining to all the variables related to breast feeding status. Thus women in SSC group were more likely to have shorter duration in the initiation of breast feeding ( $91.20 \pm 30$  vs.  $106.5 \pm 20$  respectively), longer period of breast feeding as well as successful breast feeding

experience whether immediately following the delivery of the placenta or later on before woman discharge

Table 4 shows that women in the SSC group were significantly (0.0001) \*more satisfied by this experience than the control group (56.0% vs. 18.0% respectively).

Meanwhile, they mostly were willingly certain to repeat this experience in the future.

Figure 1 illustrates that women in SSC group were more likely to have shorter duration of the third stage of labor in comparison with the control group

**Table (1):** Number and Percent Distribution of the Study and Control groups according to Socio-demographic Characteristics (n=100)

	Studied groups				$\chi^2$	p
	SSC group		Control group			
	No	(%)	No	(%)		
<b>Age (Years)</b>						
▪ <25	17	34.0	22	44.0		
▪ 25-	20	40.0	20	40.0		
▪ 30+	13	26.0	8	16.0		
mean $\pm$ SD	25.8 $\pm$ 4.3		26.76 $\pm$ 4.2			
Minimum-maximum	20-38		20-35		t=1.1	0.27
<b>Education level:</b>						
Illiterate	14	28.0	17	34.0		
Primary school	6	12.0	2	4.0	2.9	0.4
Secondary school	24	48.0	27	54.0		
University	6	12.0	4	8.0		
<b>Occupation:</b>						
House wife	34	68.0	39	78.0	1.3	0.26
working	16	32.0	11	22.0		
<b>Residence:</b>						
Rural	32	64.0	36	72.0	0.7	0.39
Urban	18	36.0	14	28.0		
<b>Income:</b>						
Inept	10	20.0	5	10.0		
Just meet life expenses	24	48.0	26	52.0	2	0.36
Insufficient	16	32.0	19	36.0		

**Table (2):** Number and Percent Distribution of the Study and Control groups according to the Third Stage of Labor Status (n=100)

	Studied groups				$\chi^2$	p
	SSC group		Control group			
	No	(%)	No	(%)		
<b>Duration of third stage of labor</b>						
Less than 5 minutes	40	80.0	15	30.0	25.5	(0.0001) * (S)
5-	6	12.0	17	34.0		
10-15	4	8.0	18	36.0		
<b>Uterus hard and contracted</b>						
Yes	44	88.0	33	66.0	6.8	(0.009)* (S)
No	6	12.0	17	34.0		
<b>Spontaneous delivery of the placenta:</b>						
Yes	42	84.0	39	78.0	0.6	0.4 (NS)
No	8	16.0	11	22.0		
<b>Mean Amount of Blood Loss immediately after delivery</b>	244.6 $\pm$ 27.4		315.1 $\pm$ 45.3		T: 12.642*	<0.001

$\chi^2$ =chi square test of significant

s= significant

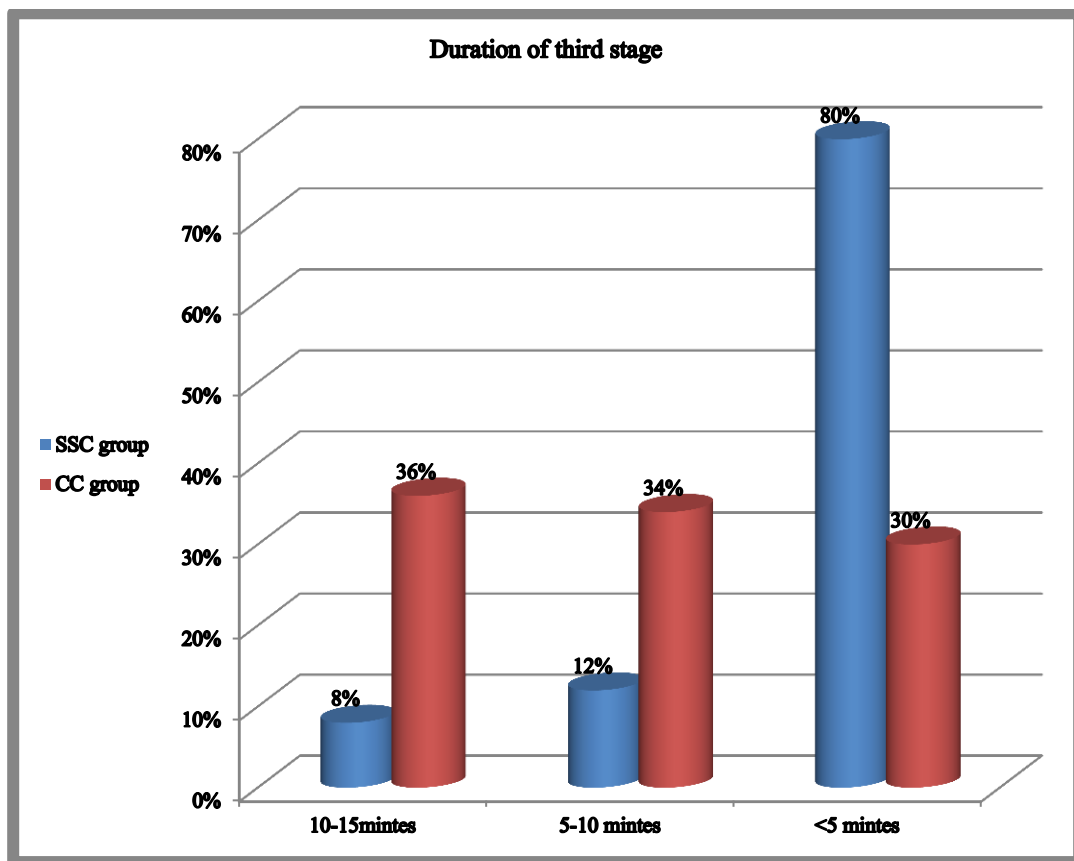
**Table 3:** Number and Percent Distribution of the Study and Control groups according to Breast Feeding Status (n=100)

Variables	Studied groups		$\chi^2$	p
	SSC group No (%)	Control group No (%)		
<b>Assessment Tool (IBFAT):</b> mean $\pm$ SD Minimum-maximum	10.2 $\pm$ 1.6 (7.14)	7.9 $\pm$ 2 (3-11)	6.2	(0.00001) *
<b>Newborn attach nipple by his/her self:</b> Yes No	32 64.0 18 36.0	17 34.0 33 66.0	9	(0.003) *
<b>Time (minutes) between delivery and first breastfeeding:</b> mean $\pm$ SD Minimum-maximum	91.20 $\pm$ 30 30-120	106.5 $\pm$ 20 90-180	3	(0.004) *
<b>Newborn end first breast feeding by his/her self:</b> Yes No	32 64.0 18 36.0	22 44.0 28 56.0	4	0.045
<b>Duration (minutes) of first breastfeeding:</b> mean $\pm$ SD Minimum-maximum	8.40 $\pm$ 1.9 6-11	7.56 $\pm$ 1.6 5-10	2.4	(0.02) *
<b>Rating first breast feeding:</b> • Good	30 60.0	17 34.0	9.4	(0.009) *
• Fairly good	16 32.0	19 38.0		
• Bad	4 8.0	14 28.0		
<b>Success of subsequent breastfeeds before discharge:</b> • Successful • Not successful	40 80.0 10 20.0	29 58.0 21 42.0	5.4	(0.02) *

**Table 4:** Number and Percent Distribution of the Study and Control groups according to Women Satisfaction (n=100)

Variables	Studied groups		$\chi^2$	p
	SSC group No (%)	Control group No (%)		
<b>Women satisfaction:</b> • Satisfied	28 56.0	9 18.0		
• Fairly satisfied	18 36.0	17 34.0	24	(0.0001) *
• Unsatisfied	4 8.0	24 48.0		
<b>Preference same post-delivery care in future</b> • Certain	30 60.0	22 44.0		
• Quite certain	16 32.0	17 34.0	4.5	0.1(NS)
• Not certain	4 8.0	11 22.0		

$\chi^2$ =chi square test of significant



**Figure (1):** Number and Percent Distribution of the Study and Control groups according to the Duration of the Stage of Labor Status (n=100)

## Discussion

There was a clear evidence that SSC has both physiological and behavioral regulation benefits for both mothers and newborns Linda and Palmer. In a study done in this context, its findings clearly stated that SSC and breastfeeding are with no doubt the most natural cost-efficient means of bonding between the mother and her newborn (Gabriel, Martín, Escobar, Villalba, Blanco, & Po.,2010). Such early contact is one of the basic steps in achieving Millennium Development Goals 4 and 5 of lowering the morbidity and mortality of both the mother and child (Monteiro, Gomes, Nakano, & O'Brien2011).

The results of the present study showed that there is a significant relationship between SSC and the duration of placental delivery (separation and expulsion of placenta). This is

congruent with Gabriel et al(2010) study about randomized controlled trial of early skin-to-skin contact: Effects on the mother and the newborn. They have demonstrated the effect of early SSC between the mother and the newborn on the time to expel placenta. A tendency towards shorter time of placental delivery was found in SSC group. This is also matching with the study of Mejbel, (2012) about the effect of applying skin contact on the duration of the third stage of labor in Baghdad Teaching Hospital who showed decrease in the time of placental separation in favor of the SSC group.

The results of the current study also revealed that women in the SSC group were more likely to have spontaneous expulsion of the placenta and the uterus was harder and contracted after its delivery. This could be attributed to the fact that the increase in the oxytocin release of mothers in the SSC group stimulates uterine contractions which help the

separation and expulsion of the placenta. This correspond well with the study of **Gabriel et al(2010)**.

The current study finding is also in harmony with the study of **Catling-Paull, Coddington, Foureur and Homer.,(2013)** about the postpartum hemorrhage rates in Australia. The study concluded that, when pronurturance (skin to skin contact and breast feeding) had occurred, there is nearly 75% decrease in the risk of primary PPH. Moreover, similar results were reported by the study about home births in Australia: a review of maternal and newborn outcomes over six years **Catling-Paull, et al.,(2013)** and the study about the effects of skin to skin contact and breastfeeding at birth on the incidence of PPH **Saxton, Fahy, and Hastie,(2014)** which revealed that applying SSC could decrease the risk of PPH. They attributed their results to the fact that when the newborn touches his mother's abdomen, the knees and legs press into her abdomen in a massage that stimulates uterine contractions and therefore decreases the risk of postpartum hemorrhage. This is matching with the present study finding which indicate that blood loss after the delivery of the placenta was lesser in the SSC group.

The present study also showed that, the early SSC between mother and her newborn was associated with greater success of the first breastfeeding according to the scores given by IBFAT scale. Meanwhile, women in the SSC group had shorter time between the delivery and first breastfeeding as well as longer duration of the first breast feeding. This may be attributed to the fact that there is increased tactile and verbal stimulation from the mothers to their newborn babies through skin contact. This is in agreement with **Khadvizadeh and Karimi,(2009)** who reported the positive effect of SSC on the initiation of breast feeding. In this regard American College of Nurse – Midwives, indicated that, the newborn can find the nipple through smelling during SSC so the newborn can initiate breastfeeding more rapidly and successfully. Conversely the study of **Redshaw, Hennegan and Kruske, (2014)** in the north of England revealed that the success of the first breast-feeding rate was not statistically different between the SSC and control groups. This discrepancy between the

previously mentioned results could be due to a difference in the scoring system or the study design and sample selection.

As for the assessment of subsequent breastfeeding success before discharge based on IBFAT scores. The majority of newborn in SSC group showed success in subsequent breastfeeds before discharge compared to almost half of the control group. This coincide with the study of **Coutin,(2015)** who emphasized the importance of early contact between mother and her new-born. They reported that women who held their infant within five minutes of birth were more likely to initiate breastfeeding and to be breastfeeding at facility discharge.

The present study finding revealed that after experiencing the practice of early maternal- newborn SSC, the majority of women were satisfied with this practice and all of women preferred the same post-delivery SSC in the future. This was expected since SSC produces a greater feeling of maternal competence, promotes bonding and physical contact as well as the feelings of being natural between the mother and the newborn **Coutin,(2015 )**; **Cooijmans, Beijers, Rovers and de Weerth, (2017)**. Moreover, the study of **Dalbye, Calais, and Berg, (2011)**, about mothers' experiences of skin-to-skin care of healthy full-term newborns in Sweden showed that both the mother and the baby expressed feelings of wellbeing through SSC. Meanwhile **Aghdas, Talat, and Sepideh,(2014)** studied the effect of skin to skin contact on the self-efficacy of breastfeeding women in Omolbanin obstetrics hospital, Mashhad, Iran. They reported higher levels of maternal satisfaction and mothers' confidence in the SSC group in comparison with the control group. They added that women in the study group showed increased tendency to use SSC in the future compared to the control group.

## Conclusion

The current study enabled the researcher to utilize the benefits of early SSC among the parturient women and proved the hypothesis that SSC leads to the reduction of the duration of placental delivery, spontaneous delivery of the placenta followed by hard and contracted uterus as well as less amount of blood loss after



delivery. It also lead to early initiation and successful breast feeding as well as promote mother's satisfaction and increased their preference for using the same technique in the future.

### Recommendations

Based on the present study findings, the following were recommended early SSC should be a basic part of the protocol of care at labor and delivery unit in all maternity hospitals and it should be an available choice for all parturient women, to promote maternal-newborn bonding. Meanwhile, preventing separation except for compelling medical indications is an essential safe and healthy birth practice and an ethical responsibility of health-care professionals. Continuous educational and training programs for all midwives in delivery rooms as well as the other nurses and assistants about the implementation of SSC method for all mothers is imperative.

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### References

- Chapman, L., & Durham, R. (2009).** Maternal-newborn nursing: The critical components of nursing care. FA Davis.
- Aghdas, K., Talat, K., & Sepideh, B. (2014).** Effect of immediate and continuous mother-infant skin-to-skin contact on breastfeeding self-efficacy of primiparous women: A randomised control trial. *Women and birth*, 27(1), 37-40.
- American College of Nurse –Midwives (2013).** Promoting Skin to Skin Contact. *Journal of Midwifery & Women's Health*; 58 (3): 359 -360.
- Bigelow, A. E., Power, M., Gillis, D. E., Maclellan-Peters, J., Alex, M., & McDonald, C. (2014).** Breastfeeding, Skin-To-Skin Contact, And Mother-Infant Interactions Over Infants'first Three Months. *Infant mental health journal*, 35(1), 51-62.
- Bramson, L., Lee, J. W., Moore, E., Montgomery, S., Neish, C., Bahjri, K., & Melcher, C. L. (2010).** Effect of early skin-to-skin mother—Infant contact during the first 3 hours following birth on exclusive breastfeeding during the maternity hospital stay. *Journal of Human Lactation*, 26(2), 130-137.
- Catling-Paul, C., Coddington, R. L., Foureur, M. J., & Homer, C. S. (2013).** Publicly funded homebirth in Australia: a review of maternal and neonatal outcomes over 6 years. *Medical Journal of Australia*, 198(11), 616-620.
- Cooijmans, K. H., Beijers, R., Rovers, A. C., & de Weerth, C. (2017).** Effectiveness of skin-to-skin contact versus care-as-usual in mothers and their full-term infants: study protocol for a parallel-group randomized controlled trial. *BMC pediatrics*, 17(1), 154.
- Coutin, A. S. (2015).** Essential Obstetric and Newborn Care: Practical Guide for Midwives, Doctors with Obstetrics Training and Health Care Personnel who Deal with Obstetric Emergencies. Médecins Sans Frontières.
- Crenshaw, J. T. (2014).** Healthy birth practice# 6: Keep mother and baby together—It's best for mother, baby, and breastfeeding. *The Journal of perinatal education*, 23(4), 211-217.
- Dalbye, R., Calais, E., & Berg, M. (2011).** Mothers' experiences of skin-to-skin care of healthy full-term newborns—A phenomenology study. *Sexual & Reproductive Healthcare*, 2(3), 107-111.
- Essa, R. M., & Ismail, N. I. A. A. (2015).** Effect of early maternal/newborn skin-to-skin contact after birth on the duration of third stage of labor and initiation of breastfeeding. *Journal of Nursing Education and Practice*, 5(4), 98-107.
- Gabriel, M. M., Martín, I. L., Escobar, A. L., Villalba, E. F., Blanco, I. R., & Pol, P. T. (2010).** Randomized controlled trial of early skin-to-skin contact: effects on the mother and the newborn. *Acta Paediatr*, 99(11), 1630-4.

- Khadivzadeh, T., & Karimi, A. (2009).** The effects of post-birth mother-infant skin to skin contact on first breastfeeding. *...*, 14(3).
- Likert, R. (1932).** A technique for the measurement of attitudes. *Archives of psychology*.
- Linda F, Palmer DC (2002):** Attachment parenting international news. [[www.thebabybond.com](http://www.thebabybond.com)].
- Mahmood, I., Jamal, M., & Khan, N. (2011).** Effect of mother-infant early skin-to-skin contact on breastfeeding status: a randomized controlled trial. *J Coll Physicians Surg Pak*, 21(10), 601-5.
- Matthews, M. K. (1988).** Developing an instrument to assess infant breastfeeding behaviour in the early neonatal period. *Midwifery*, 4(4), 154-165.
- Mejbel, M. K. (2012).** Effectiveness of Skin-to-Skin Contact on duration of third stage of labor in Baghdad Teaching Hospital: Comparative Study. *kufa Journal for Nursing sciences*, 2(3), 21-29.
- Monteiro, J. C. D. S., Gomes, F. A., Nakano, A. M. S., & O'Brien, B. (2011).** Women's feelings about early contact with their infants on the labour ward. *Midwifery*, 27(4), 484-488.
- Moore, E. R., Bergman, N., Anderson, G. C., & Medley, N. (2016).** Early skin-to-skin contact for mothers and their healthy newborn infants. *Cochrane database of systematic Reviews*, (11).
- Redshaw, M., Hennegan, J., & Kruske, S. (2014).** Holding the baby: early mother-infant contact after childbirth and outcomes. *Midwifery*, 30(5), e177-e187.
- Roos N (2011)** How bonding effects hormones in kangaroo mother care. [[ezinearticles.com/?How-Bonding-Effects-Hormones-in-Kangaroo-Mother-Care&id=5759073](http://ezinearticles.com/?How-Bonding-Effects-Hormones-in-Kangaroo-Mother-Care&id=5759073)]. Accessed on: 30 October 2018.
- Saxton, A., Fahy, K., & Hastie, C. (2014).** Effects of skin-to-skin contact and breastfeeding at birth on the incidence of PPH: a physiologically based theory. *Women and Birth*, 27(4), 250-253.
- Say, L., Chou, D., Gemmill, A., Tunçalp, Ö., Moller, A. B., Daniels, J., ... & Alkema, L. (2014).** Global causes of maternal death: a WHO systematic analysis. *The Lancet Global Health*, 2(6), e323-e333.
- Suplee, P. D., Kleppel, L., & Bingham, D. (2016).** Discharge education on maternal morbidity and mortality provided by nurses to women in the postpartum period. *Journal of Obstetric, Gynecologic & Neonatal Nursing*, 45(6), 894-904.
- Szucs, K. A. (2011).** American Academy of Pediatrics section on breastfeeding. *Journal of Human Lactation*, 27(4), 378-379.
- Takahashi, Y., Tamakoshi, K., Matsushima, M., & Kawabe, T. (2011).** Comparison of salivary cortisol, heart rate, and oxygen saturation between early skin-to-skin contact with different initiation and duration times in healthy, full-term infants. *Early human development*, 87(3), 151-157.
- Widström, A. M., Lilja, G., Aaltomaa-Michalias, P., Dahllöf, A., Lintula, M., & Nissen, E. (2011).** Newborn behaviour to locate the breast when skin-to-skin: a possible method for enabling early self-regulation. *Acta paediatrica*, 100(1), 79-85.