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The Effect of Early Skin-to-Skin Contact on the Mental Health of Mothers in Traumatic Childbirths

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Abstract

Background: *Providing and sustaining the mental health of mothers who have experienced a traumatic childbirth have significant impact on the health of the mother, family and society. This study aimed to evaluate the effect of early skin-to-skin contact in the first hour of birth on the mental health of mothers with traumatic childbirth.*

Methods: *This randomized clinical trial was conducted in 2015 on 82 mothers who, based on Diagnostic and Statistical Manual of Mental Disorders (DSM-V-TR) criteria, had experienced a traumatic childbirth. After randomly assigning mothers into groups, the intervention group received early skin-to-skin contact in the first hour after birth, and the control group received the routine procedures. The mental health as an outcome of this study was evaluated using the Persian version of General Health Questionnaire (GHQ-28).*

Results: *The results showed that the mean score of mental health of mothers in the intervention and control groups was significantly different ($P < 0.001$) and with the passage of time, the mental health status in the intervention group appeared better than that of the control group ($P < 0.001$).*

Conclusions: *Early skin contact in the first hour of birth not only in normal deliveries but also in traumatic births can have an important and effective role in improving the mental health of the mother.*

Keywords: Early skin-to-skin contact, Mental health, Traumatic childbirth.
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Introduction

Childbirth is among the most intense and emotional experiences in a woman's life, which arouses feelings and emotions and brings about mental trauma symptoms.[1-3] For this reason, childbirth could potentially be a traumatic event.[4] For some women, traumatic events which occur during labor remain deep in their psyche and could disturb their mental health.[5] On the other hand, women's mental health has an important role in the dynamism and efficiency of any society[6] and if women's mental health is disturbed, their social functioning and emotional performance are reduced.[7] Although mental health problems of mothers can jeopardize effective communication with children and friends,[8] traumatic childbirth can aggravate the problem.

Traumatic childbirth causes serious consequences, leads to many emotional problems and seriously damages the communication between mother and the child, and poses problems in social compatibility.[9-12] As a result, mother's cooperation and effective communication with her spouse is disrupted[13, 14] and it negatively affects future decisions, such as having more children.[15-17] About one-third of women with traumatic childbirth experience post-traumatic stress; of these 10 percent are associated with severe reactions during the first week after birth[18] or they experience postpartum depression.[19] Thirty-four percent of mothers who have given birth recently report a traumatic childbirth experience. Since mothers are exposed to stressful labor events, the prevalence of traumatic childbirth is increasing.[20]

Since the best time to start breastfeeding is the early hours after birth,[21-25] interventions have shown that skin-to-skin contact between mother and the baby can improve the general health of the mother in the postpartum period.[26] There is sound evidence that if a term baby has immediate skin-to-skin contact with its mother, the transition from fetal to neonatal period is associated with better breathing, higher temperature, more stable blood sugar, and less crying and stress, and the negative effects of separation from the mother are prevented, the baby enjoys better brain development and breastfeeding starts more appropriately.[27,28] In childbirths where the mother emotionally experiences a traumatic event, her self-esteem is degraded and makes her fail to begin breastfeeding successfully.[29] Some studies have evaluated the impact of early skin-to-skin contact and breastfeeding on the incidence of mental health problems, including postpartum depression.[30] But few have studied the impact of early skin-to-skin contact on preventing mental health problems in traumatic childbirths. It is recommended that due to the effects of traumatic childbirth, more preventive interventions be taken to combat the consequences of birth trauma and to prevent the disruption of mother's mental health.[29]

Given the increase in number of traumatic childbirths in recent years,[31] followed by consequences such as a delay in the start of breastfeeding and disorder in the bonding between the mother and fetus,[32] benefits can be derived from the positive effects of the baby's nine instinctive stages on the health of the baby and the psychological and mental health of the mother.[33, 34] In response to the emphasis on further research to identify the best clinical practice for the prevention, treatment and mental health care of mothers during prenatal and postpartum periods,[35] this study aimed to investigate the effect of early skin-to-skin contact in the first hour of birth on mother's mental health in a traumatic childbirth.

Materials and Methods

This study was a randomized clinical trial conducted in 2015 in Nohom Dey Hospital in Torbate Heydariye, to

determine the effect of early skin-to-skin contact on a mother's mental health after a traumatic childbirth. The study was registered and approved by the Committee of Ethics at Shahroud University of Medical Sciences (Code: IR-SHMU.REC.1394.50) and registered in the Iranian Center for Registration of Trials (Code: IRCT2015052422396N1).

The study population was mothers who had experienced a traumatic childbirth immediately after birth. Inclusion criteria included birth to a term baby without problems, having no mental illness, not using psychiatric drugs, and having a traumatic childbirth. Exclusion criteria included mothers or infants who required intensive care.

At the beginning, a traumatic childbirth was defined based on standard A of post-traumatic stress disorder on the basis of DSM-V-TR. The standard defines the psychological features of a trauma. It has four questions for determining traumatic childbirth: the first two ask about threats, and the last two questions ask about the mother's emotional response. A positive answer to any of questions 1 and 2, or to one of questions 3 and 4, indicates traumatic childbirth.[36,37] Validity of this scale has been confirmed in various studies.[37,38] The four questions were: 1) Did you perceive in labor, you or your baby were exposed to actual or threatened death? 2) Did you perceive in labor, you or your baby were exposed to serious injuries? 3) Did you perceive your labor was a hard and upsetting experience? 4) Did you feel frightened or helpless during your labor?

Eighty-two eligible mothers after obtaining informed consent were randomly assigned into the intervention and control groups, based on the pattern of blocks of four. Immediately after birth, and as soon as it became clear that her birth was traumatic, the patient was assigned to one of two groups of control and intervention. To ensure the complete implementation of the nine instinctive stages, and while the decision was being made on the group to which the patient should be assigned, the baby was laid on the mother's belly. Then, if the mother was in the intervention group, the nine stages were fully implemented and if the mother was in the control group, skin-to-skin contact was actualized, based on routine care procedures. The nine instinctive stages include 1) the birth cry, 2) relaxation, 3) awakening, 4) activity, 5) resting, 6) crawling, 7) familiarization, 8) suckling, and 9) sleeping.

Data on demographic characteristics and risk factors of pregnancy were completed using information contained in the medical records and interviews with patients. GHQ mental health questionnaire was also completed for the patients, in months 2 and 3 after birth. In addition to extracting a total score of mental health, the questionnaire is composed of four sub-scales, each measured by seven items. Items for each sub-scale are presented together so that item 1 to 7 measure physical symptoms, 8–14 measure anxiety, 15–21 measure social dysfunction, and 22–28 measure depression. The questionnaire is scored based on a four Likert scale. A higher score on each scale indicates the undesirable status of the individual. The reliability and validity of the original version[39,40] and the Persian version[41] have been confirmed in other studies. The evaluation of GHQ-28 in Iran showed a cut-off point of 24 for mental disorders. The mothers with scales lower than 24 were categorized as favorable status in terms of mental health.[41]

To blind the study, the follow-up and completion of the questionnaire was conducted on phone by another interviewer. Two of the mothers withdrew from the control group, and one also left because her baby was hospitalized. Two mothers were also excluded from the intervention group because it was not possible to contact them through phone.

A generalized estimation equation (GEE) and repeated measure ANOVA were used to assess the effect of intervention on outcome in two consecutive measurements using Stata software. Significant level for statistical tests was 0.05.

Results

In this randomized clinical trial, out of 78 mothers who signed a written informed consent and fulfilled the study follow-up, 39 were in the intervention group and 39 were in the control group. In Table 1, demographic and obstetric characteristics of the two groups after random allocation were compared. Table 1 showed no statistically significant difference between the two groups in terms of the average age, mother's education, parity, gestational age at the moment of birth, baby's gender and satisfaction with gender, pregnancy acceptance and complications of pregnancy (P> 0.05).

Table 1: Comparison of demographic and pregnancy characteristics of the two groups

Variable		Intervention Group	Control Group	Test
Mother's age (Mean±SD)		25.2±6.0	27.1±6.3	t = −1.3 P.V = 0.17
Mother's education (year) (Mean±SD)		8.6±3.4	7.9±4.1	t = 0.7 P.V = 0.44
Number of pregnancies (Mean±SD)		1.9±1.1	2.2±1.1	t = −1.06 P.V = 0.28
Gestational age (Mean±SD)		38±1	39±1	t = 1 P.V = 0.30
Baby's gender(%)	- Girl	21(53.8)	19(48.7)	χ^2 = 0.2
	- Boy	18(46.2)	20(51.3)	P.V = 0.6
Pregnancy acceptance(%)	- Wanted	2(5.1)	6(15.4)	χ2 = 2.2
	- Unwanted	37(94.9)	33(84.6)	P.V = 0.26
Satisfaction with gender(%)	- No	4(10.3)	5(12.8)	χ^2 = 0.12
	- Yes	35(89.7)	34(87.2)	P.V = 0.99
Pregnancy complications(%)	- No	25(64.1)	24(61.5)	χ^2 =0.05
	- Yes	14(35.9)	15(38.5)	P.V = 0.99

Table 2: Comparison of the mental health scores and sub-scales of the two groups at two-time intervals

Variables	Intervention Group (Mean±SD)	Control Group (Mean±SD)	Intervention F	Time F	Intervention X time F
Physical	-	-	67.8*	110.8*	1.6
- Second month	5.3±3.0	10.8±2.6	-	-	-
- Third month	3.2±3.2	8.2±2.9	-	-	-
Anxiety	-	-	63.7*	84.4*	0.42
- Second month	5.4±3.4	11.2±2.8	-	-	-
- Third month	3.6±3.6	9.1±2.9	-	-	-
Social	-	-	65.0*	100.9*	15.0*
- Second month	5.1±3.4	11.5±2.7	-	-	-
- Third month	3.8±3.6	8.6±2.7	-	-	-
Depression	-	-	25.3*	48.0*	0.75
- Second month	4.5±4.2	9.0±4.0	-	-	-
- Third month	3.1±3.6	7.1±3.4	-	-	-
Total	-	-	55.8*	275.2*	8.7*
- Second month	20.5±13.4	42.6±11.0	-	-	-
- Third month	13.8±13.8	33.0±11.0	-	-	-

*Significant at level of 0.05

To investigate the effect of early skin-to-skin contact with the nine instinctive stages within the first hour after birth on the mother's mental health in two-time intervals of 2 and 3 months after childbirth, the two groups were followed and their mental health scores were compared. In Table 2, the t-test showed a significant difference between the mean score of mental health of mothers in the intervention and control groups (P< 0.01). Also, in Table 2, t-test showed that the mental health scores in all sub-scales in the two intervals were also significantly different (P< 0.01).

In Table 3, Chi-square test showed that over time, those in the intervention group have had better mental health scores than those in the control group, and this difference was statistically significant (P< 0.05). The effect of intervention on mental health status using a GEE model showed that in the interventional group the odds of favorite mental health was 17.9 (95% CI: 5.8–54.9) times the odds of control group.

Table 3: Frequency distribution of mental health status in two groups at two-time intervals

Follow-up time	Mental health status	Intervention	Control	Chi-square test
Second month	- Favorable	26 (66.7)	1 (2.6)	χ^2 = 35.4
	- Unfavorable	13 (33.3)	38 (97.4)	P.V = 0.001
Third month	- Favorable	26 (66.7)	6 (15.4)	χ^2 = 21.2
	- Unfavorable	13 (33.3)	33 (84.6)	P.V = 0.001

Discussion

In this study, early skin contact with nine instinctive stages had an impact on mothers' mental health in traumatic childbirths, and the average mental health scores in the two groups were statistically different, which is consistent with the results of the study by Palizvan, who investigated the impact of kangaroo care on mothers' postpartum health status.[26] However, in this study the mental health score two months after the intervention was 20.5±13.4 and in the control group it was 42.6±11, while in the study by Palizvan two months after intervention it was 6.52±2.72 in the intervention group and 28.26±5.3 in the control group. The Palizvan's study showed mental health scores after traumatic childbirths were more unfavorable than mental health scores after normal deliveries.[26] The score of the control group that had no intervention was more in line with the study by Rabiei Poor, who reported a score of 39.13±9.5.[42]

In this study, early skin contact with nine instinctive stages improved the mental health of mothers in traumatic childbirths, which accords with the study by Watkins where successful breastfeeding after two months of childbirth improved the symptoms of postpartum depression.[30] It is also consistent with the findings of Bigelow which showed that skin contact reduced the symptoms of postpartum depression and stress.[43] Moreover, it agrees with the study by Mezzacappa, who found breastfeeding softened the negative mood.[44] Sexton's study showed the role of childhood trauma on the postpartum mental health of mothers and it was found that flexibility of the mothers to stress reduces the psychological problems and improves the well-being of mothers and, as a result, a healthier perinatal period is experienced.[45] Since more than 50% of mothers suffer from postpartum mental health problems,[46] it seems that other factors may have a positive impact on the mental health of the mother, among which is the mother's perceived social support; so that poor social support and younger age reduce mental health, and natural delivery was associated with improved postpartum mental health.[47] Early skin contact, which is among the supports provided by midwives, has beneficial effects on improving the mental health of the mother.[48]

Early skin-to-skin contact with nine instinctive stages in the first hour of birth not only in normal deliveries but also in traumatic childbirths can have important and effective roles in improving the mental health of mothers. However, larger research with more detailed long-term follow-up is needed to explore the impact of skin-to-skin contact on the mental health of women, following traumatic birth. Therefore, it is recommended that in births where, for any reason, the mother is emotionally damaged during the labor, early skin contact between the mother and the baby be established in the first hour after birth. The telephone interview during the follow-up stages is one of limitations of the study.

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Conflict of Interest

The authors declared that they have no conflict of interest.

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