



## Original Article

# Effect of the Sacred Hour on Postnatal Depression in Traumatic Childbirth: a Randomized Controlled Trial

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Khosravi2000us@yahoo.com**ABSTRACT****Introduction:** the implementation of the baby's nine instinctive stages as a sacred hour after birth is very effective in starting breastfeeding. About half of newly delivered mothers have reported a traumatic childbirth experience often associated with mental health problems. The present study aimed to examine the effect of the sacred hour on the depression in traumatic childbirths.**Methods:** In this clinical trial, 84 mothers who had experienced a traumatic childbirth were randomly allocated into the intervention (n = 42) and control (n = 42) groups. The intervention group received sacred hour (baby's nine instinctive responses), but the control group received only the routine care. Postnatal depression was evaluated as primary outcome at 2 week, 4-6 week and 3 month intervals after the delivery. The data were analyzed using t test, chi-square test and the repeated measures analysis of variance.**Results:** The results showed that the marginal total mean (SD: standard deviation) scores of depression in the intervention and control groups were 7.5 (2.6) and 9.6 (2.6); therefore, the mean difference (95% CI) between the groups (-2.1, (-3.2,-0.95)) was significant.**Conclusion:** The implementation of the sacred hour is recommended as a preventive approach to reduce the postnatal depression in women with a traumatic childbirth experience.**Citation:** Abdollahpour S, Bolbolhaghghi N, Khosravi A. Effect of the sacred hour on postnatal depression in traumatic childbirth: a randomized controlled trial. J Caring Sci 2019; 8 (2): 69-74. doi:10.15171/jcs.2019.010**Introduction**

The birth of a newborn is a complex and memorable event in the life of every woman, which can lead to positive, as well as, negative psychological responses and reflections. Traumatic childbirth with disturbing memories can have negative impacts on the mental health of postpartum mothers.<sup>1</sup> Traumatic childbirth is often ignored, and health care professionals' information on this case is still very limited.<sup>2</sup> Birth trauma is an event or series of events that occur in some phases of pregnancy when the dignity of women is undermined or the mother feels a serious harm or threat to herself or to the baby and hence she feels helpless and frightened.<sup>3</sup> In Iran, about half of newly delivered mothers have reported a traumatic childbirth experience and the prevalence of maternal exposure to stressful labor events is increasing.<sup>4</sup> For some women during-labor traumatic events remain in the psyche and will have a negative effects on their life and their relationships with their husbands and children.<sup>5</sup> Postnatal depression is a common complication of traumatic childbirth which increases the vulnerability of the mother.<sup>6</sup>

In a traumatic childbirth, the patient may have symptoms of post-traumatic stress or suffer postnatal depression, and her loss of self-confidence may lead to her failure in breastfeeding.<sup>7</sup> Moreover, the management of the newborn in the first hour after birth can have short and long term consequences and benefits for the baby. There is good evidence that if a term baby has skin to skin contact with its mother immediately after birth, the

transition from fetal to neonatal period occurs with better breathing, higher temperature, more stable blood sugar and less crying and stress; and negative effects of the separation of mother are prevented and brain development improves and the ability to locate the breast increases.<sup>8</sup> A baby who is out of the womb for the first time can have different immediate understandings of life such as easy or difficult, hostile or safe, painful or comforting, frightening or reassuring, cold or lonely or warm and welcoming. The mother can also feel more confident and will have longer lactation.<sup>8</sup>

The nine stages of the baby's instinctive responses are evident in the sacred hour. These include: 1) Birth cry which occurs immediately after birth. 2) Relaxation which is when the baby stops crying and opens its eyes, and it happens 2-3 minutes after birth. 3) Awakening: in addition to opening its eyes, the baby slightly moves upward and exhibits a little rotation, which occurs 3 minutes after birth. 4) Activity stage when the baby exhibits more movement and tries to find the breast, and this step is essential to having a successful breastfeeding and occurs 8 minutes after birth. 5) Rest 6) Crawling is when the baby moves forward to the mother's breast and it occurs 35 minutes after birth. 7) Familiarization: During this stage the baby becomes acquainted with the mother and licks the nipple and touches and massages the breast. This stage occurs 45 minutes after birth. 8) Suckling when the baby takes the nipple and starts suckling. 9) The ninth stage is sleep stage when the baby sleeps for a long time and it occurs 1 to 1.5 hours after birth. These nine stages are called the sacred hour.<sup>8,9</sup> Since the nine instinctive

stages of the first hour after birth lead to promotion of mother and baby relationship and bring about optimal structural and functional brain development of the baby and since the sacred hour is a good welcome to the baby who enters this world and since it occurs only once in the lifetime of anybody, it is also known as "the sacred hour".<sup>8</sup> Although the benefits of the first hour for babies have been proven, unfortunately, its benefits for mothers, especially for mothers' mental qualities have not received due attention. This is while childbirth is an important and potentially a traumatic event for pregnant women,<sup>10</sup> and it is among the most intense emotional experiences in a woman's life that provokes emotions, excitement and mental symptoms which can be caused by trauma.<sup>11,12</sup>

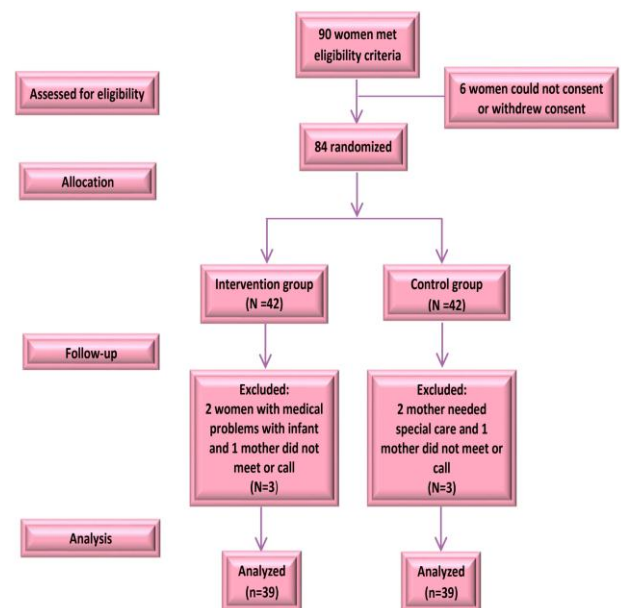
A lot of studies have also been conducted on the impact of postnatal depression on lactation,<sup>13-15</sup> but few studies have been carried out on the impact of early skin to skin contact and breastfeeding on preventing postnatal depression.<sup>16</sup> Recent studies suggest that due to the effects of traumatic childbirth and its relationship with post-traumatic stress and postnatal depression and the subsequent inability of the mother to breastfeed successfully, more preventive measures need to be taken to combat the consequences of birth trauma.<sup>3</sup> In the traumatic childbirth these stages do not occur naturally or are not fully implemented. Therefore, the aim of this study was to determine the effects of full implementation of the nine stages of the sacred hour on postnatal depression in traumatic childbirth.

## Materials and methods

This study is a randomized clinical trial which aimed to determine the impact of the implementation of the nine stages of the sacred hour on postnatal depression following a traumatic childbirth and it was conducted in Nohom-e-Dey Hospital in Torbat Heydariyeh in 2015. In this hospital, nine instinctual stages of the baby ("sacred hour ") are not performed after birth. It normally takes one full hour to carry out this process; therefore, the procedures and duration of skin to skin contact, as routinely done, are not in accordance with the intervention. The study population were all pregnant women who had experienced a traumatic childbirth immediately after childbirth.

The inclusion criteria included having a term apparently healthy infant, the mother's ability to speak, being Iranian, having no mental illnesses, using no psychiatric drugs and having no history of infertility or traumatic childbirth. Mothers or babies who needed special care, or received breastfeeding advice from a source other than this study, and those who had stressful life events during the past year were excluded from the study. After the sample size was estimated according to a formula for detecting a difference between mean of two samples, power of 0.9 and confidence level of 95% by a statistics consultant,<sup>17</sup> and written consents were obtained, the 84 mothers who had traumatic childbirths were randomly divided into intervention and control groups. To this aim and based on the order of entry, the eligible patients received envelopes which included the

codes and based on the codes, they were randomly assigned into intervention or control groups based on a four block design with a computer software. In this method, using the computer rendering, the name of the group is written and determined in packed envelopes. Ninety patients were assessed for eligibility. Six patients were excluded and 84 patients were randomly assigned into the intervention and control groups. To this end, the first subject was allocated into the control group through coin tossing, and then, other subjects were grouped alternately. Finally, six patients declined to participate and 78 subjects (39 in the intervention group and 39 in the control group) remained in the study. Schematic overview Consort flow Diagram of the study is displayed in Figure 1.



**Figure 1.** Flowchart of the design, groups, and participants in the study

The traumatic childbirth was determined on the basis of DSM\_V\_TR criterion. This criterion defined the psychological specifications of a traumatic event. On this basis, the occurrence of a traumatic event should meet two basic conditions of threat and emotional response.

The scale for determining the traumatic childbirth includes four questions, the first two questions are concerned with threats and the second two questions assess the mother's emotional response. If the questions 1 and 2 are positively answered and one of questions 3 and 4 also receives a positive response, traumatic childbirth is assumed.<sup>18</sup> 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 was 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?

The scientific validity and reliability of these questions have been confirmed by panel of experts in psychiatry and several studies.<sup>19</sup> Immediately after birth in the delivery room, the mothers were asked the four questions to identify the traumatic delivery, and as soon

as it became clear that a mother's childbirth was traumatic, within 5 minutes she would be assigned to one of the two intervention and control groups. In order to prevent incomplete implementation of the nine stages, the baby was laid on the mother's abdomen while the mother was assigned to either intervention or control group. Then, if the person was assigned to the intervention group, in the sacred hour, the nine instinctive stages were fully implemented and if the person was assigned to the control group, the skin to skin contact of the baby and mother was conducted based on routine care procedures. In order to collect data, a researcher-made questionnaire was used, which included items on the demographic characteristics and pregnancy factors. The questionnaire was completed based on the information in hospital records and interviews with the patients. Edinburgh Postnatal Depression Scale was completed at 2-week, 4-6 week and 3-month intervals after birth.

This scale consists of 10 four-point items which ask about the respondent's mental health during the past 7 days and the score of each item ranges from 0 to 3 points. The scores equal to or more than 13 indicate depression and scores less than 13 indicate healthy state. This questionnaire was designed by COX in 1987 to detect postnatal depression.<sup>20</sup> To blind the follow-up studies, the completion of the telephone questionnaire was conducted by another interviewer. Our primary outcome was to measure the depression score in the mothers who had experienced a traumatic delivery. As no variable other than depression was being measured in the present research, there were no associated secondary outcomes.

Then the data were entered into SPSS software and were analyzed, using t test, chi-square test and repeated measure ANOVA (adjusted the baseline values for depression). This project was sponsored by the Deputy of Research and Technology of the Shahroud University of Medical Sciences. The research was approved by the Research Council of Student Research Committee, No. 9418. This study was registered with the code of IR-SHMU.REC.1394.50 by the ethics Committee of Shahroud University for Medical Sciences and it was registered with the code of IRCT2015072522396N2 by Iran Registration Center of Trials. It should be noted that mothers who had depression after three months were referred to the psychiatrist for treatment

## Results

In this clinical trial study, 84 mothers who had traumatic childbirths were studied in two groups of 42 patients. To evaluate the effects of the sacred hour on depression, the two groups were followed up and compared at three intervals of 2 weeks, 4-6 weeks and 3 months after childbirth as shown in Figure 1. Table 1 compares the demographic and obstetrics characteristics of the two groups. The table shows that no significant difference exists between the two groups in terms of the age, mother's education, number of pregnancies, number of living children, abortions, stillbirths, gestational age at the time of delivery, birth weight, mother's occupation,

baby's gender, satisfaction with baby's gender, pregnancy acceptance and pregnancy complications ( $P > 0.05$ ). Table 2 shows that there is a significant difference between the intervention and control groups in postnatal depression scores 4-6 weeks after birth and the same significant difference also exists 3 months after birth ( $P < 0.01$ ). A significant difference was observed between the mean differences of depression scores of the two groups with 95% confidence interval of the difference in two times. The results in Table 3 show that with the passage of time, there were fewer percentages of patients in the intervention group who suffered from postnatal depression, but this difference was not statistically significant ( $P > 0.05$ ).

The results of repeated measures of ANOVA show a statistically significant difference between the marginal total mean scores of depression between the two groups, so that the total score of depression in the intervention group is 7.5(2.6) while it is 9.6(2.6) in the control group. Moreover, on the basis of the Greenhouse-Geisser test ( $P = 0.07$ ), the comparison of depression scores at the three intervals show statistically significant differences, that is, with the passage of time, depression scores in the two groups decline. The investigation of the interaction effect of intervention and non-intervention over time shows that with the passage of time, the difference between the scores of the two groups has no interaction. To put it another way, although, the difference between the two groups has increased over time, it is not a significant difference. The results are displayed in Figure 2.

**Table 1.** Comparison of demographic and midwifery Characteristics of the two groups

Variables	Intervention Group Mean (SD)	Control Group Mean (SD)	P
<b>Continuous variables</b>			
Mother's age	25.2 (6.0)	27.1 (6.3)	0.17**
Mother's education (year)	8.6 (3.4)	7.9 (4.1)	0.44**
Number of pregnancies	1.9 (1.1)	2.2 (1.1)	0.28**
Living birth	0.7 (1.0)	1.0 (1.0)	0.16**
Abortion	0.35 (0.87)	0.17 (0.45)	0.25**
Still birth	0.07 (0.26)	0.02 (0.16)	0.3**
Gestational age	38.0 (1.0)	39.0 (1.0)	0.03**
Birth weight	3225 (305)	3176 (568)	0.63**
<b>Categorical variables*</b>			
Occupation			0.30 <sup>ε</sup>
Housewife	36 (92.3)	38 (97.4)	
Working	3 (7.7)	1 (2.6)	
Baby's gender*			0.6 <sup>ε</sup>
Girl	21 (53.8)	19 (48.7)	
Boy	18 (46.2)	20 (51.3)	
Pregnancy acceptance*			0.26 <sup>ε</sup>
Wanted	2(5.1)	6 (15.4)	
Unwanted	37(94.9)	33 (84.6)	
Satisfaction with gender*			0.99 <sup>ε</sup>
No	4 (10.3)	5 (12.8)	
Yes	35 (89.7)	34 (87.2)	
Pregnancy complications*			0.99 <sup>ε</sup>
No	25 (64.1)	24 (61.5)	
Yes	14 (35.9)	15 (38.5)	

\*N (%), \*\*t-test, <sup>ε</sup>χ<sup>2</sup>

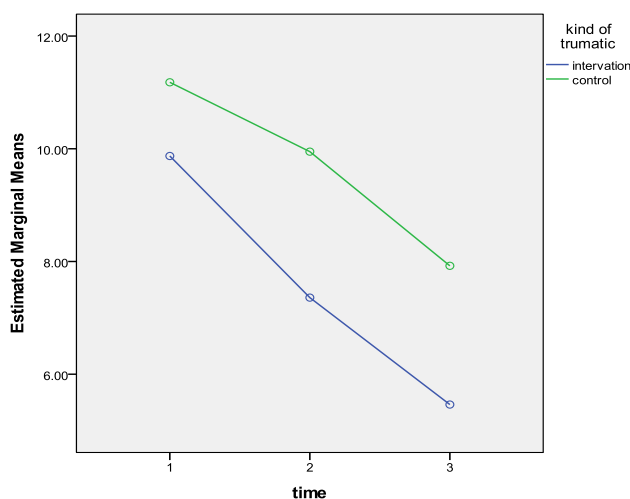
**Table 2.** Comparison of depression scores in two groups at three intervals

Depression scores <sup>a</sup>						
Follow-up time	Intervention (N=39)	Control (N=39)	Mean Difference	95% CI <sup>b</sup>	F	P <sup>c</sup>
After two weeks	9.8 (3.4)	11.1 (3.7)	-1.3 (3.4)	-2.93,0.32	2.5	0.11
After 4-6 weeks	7.3 (2.9)	9.7 (2.6)	-2.5 (2.9)	-3.84,-1.33	16.8	0.001
After three months	5.4 (2.2)	7.9 (2.7)	-2.4 (2.2)	-3.58,-1.34	19.2	0.001

<sup>a</sup>Values are presented as Score (SD), <sup>b</sup>Confidence interval, <sup>c</sup>p-value for post- hoc multiple comparisons using Bonferroni test

**Table 3.** Frequency distribution of depression scores in the two groups at three intervals

	Intervention N (%)	Control N (%)	Test
After two weeks			$\chi^2=0.89$ , P=0.3
Healthy	27 (69.2)	23 (59)	
Depressed	12 (30.8)	16 (41)	
After 4-6 weeks			$\chi^2=1.2$ , P=0.26
Healthy	33 (84.6)	29 (74.4)	
Depressed	6 (15.4)	10 (25.6)	
After three months			$\chi^2=1.4$ , P=0.2
Healthy	37 (94.9)	34 (87.2)	
Depressed	2 (5.1)	5 (12.8)	



**Figure 2.** Comparison of marginal means of depression between two groups

**Discussion**

Consistent with Phillips and colleagues and Brimdyr and colleagues, who showed the importance of the sacred hour,<sup>8,9</sup> this study showed that not only can the start of breastfeeding and skin to skin contact routinely be performed in all childbirths, but also it can prevent postnatal depression or help to increase the speed of recovery score in traumatic childbirths. Bergman and colleagues at Loma Linda University in California stated that the effect of the baby’s nine instinctive stages of the sacred hour is important on the psychological aspects of maternal and infant health, maternal attachment behaviors, protection of children from the negative effects of separation of mother and infant brain

development and increase in the frequency and duration of breastfeeding.<sup>21</sup> Unfortunately, the skin to skin contact between the mother and baby is either delayed at present or it is not being employed with a sacred hour time requirement, or sometimes the intervention for primary care leads to terminating the process before the nine instinctive stages are complete. So far, no study has been carried out to investigate the impact of the implementation of skin to skin contact based on the baby’s nine instinctive on postnatal depression in traumatic childbirths, and this study is the first one to try to achieve such an aim. The results showed that the mean score of maternal depression declined over time so that a significant difference (P<0.05) is observed between the 4-6 weeks and 3 months follow-ups, and the earlier depression score. But according to the cutoff points of Edinburgh scale, scores higher than 13 indicate depression, therefore, as the results show, the intervention brought about a greater reduction in the depression in the intervention group, though this difference is not significant. This could either be due to traumatic childbirths’ need for more time to see the effect of the intervention, or it is because postnatal depression is a symptom of a traumatic childbirth, and therefore the implemented intervention has displayed less impact than other non-traumatic childbirth.<sup>6</sup> It is also possible that problems of effective bonding between the baby and the mother, which are among the complications of traumatic childbirth,<sup>22</sup> have reduced the effect of the intervention. The results showed that the implementation of the sacred hour has improved the mother’s health, which is consistent with Feldman and his colleagues’ study in which daily skin contact had a positive effect on reducing stress and postnatal depression.<sup>23</sup> De Alencar found that KMC could reduce postnatal depression and improve the sense of wellbeing and happiness and agility in mothers<sup>24</sup> The results of this study are also consistent with other studies, including the impact of kangaroo care on improving the mental health of the mothers,<sup>25</sup> the reduction of postnatal stress and depression through skin contact<sup>26</sup> and postnatal depression treatment through skin contact.<sup>27</sup>

In the present study, the influence of the sacred hour in traumatic childbirth significantly decreased the mean depression scores at 4-6-week and 3- month intervals in the intervention group, which accords with the finding of Bigelow who studied the effect of skin to skin contact on reducing postnatal depression and stress three months after the childbirth.<sup>26</sup> Breastfeeding can also reduce negative mood in mothers who feed their babies through

their milk<sup>28</sup> and mothers who have difficulty, breastfeeding and lactation should be examined for signs of postnatal depression.<sup>16</sup> One of the most important strengths of this study is the prevention of postpartum depression. Second, mothers can benefit from early breastfeeding. It is recommended that future studies provide training and support for mothers with traumatic childbirth. Among the limitations that can be mentioned in this article is the follow up of mothers by telephone and the lack of cooperation of maternity employees to complete the nine instinctual stages of the infant.

## Conclusion

The implementation of the nine instinctive stages of the sacred hour to start breastfeeding, not only in non-traumatic childbirth but also in traumatic childbirth can prevent and improve postnatal depression. Therefore, due to side benefits and no cost of early breastfeeding, this intervention can be used as a treatment strategy in traumatic childbirths by midwives or attendants in the delivery room.

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## Ethical issues

None to be declared.

## Conflict of interest

The authors declare no conflict of interest in this study.

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