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BRIEF REPORT

Effect of Brief Cognitive Behavioral Counseling and Debriefing on the Prevention of Post-traumatic Stress Disorder in Traumatic Birth: A Randomized Clinical Trial

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Abstract

Objective Planning to promote the health of mothers in postpartum is important in all countries. This study aimed to determine the effectiveness of two counseling method on prevention of post-traumatic stress after childbirth.

Methods In this clinical trial, 193 of mothers who had experienced a traumatic birth were randomly assigned to three groups. Participants were assessed using IES_R questionnaire at 4–6 weeks and 3 months after delivery.

Results Debriefing and brief cognitive behavioral counseling (CBC) significantly improved the symptoms of postpartum traumatic stress disorder. After 3 months, CBC had a significant effect on the symptoms.

Conclusion Screening of traumatic childbirth, implementation of supportive care, and early counseling prior to the initiation of post-traumatic stress are recommended.

Trial Registration Number IRCT2015072522396N2. http://en.search.irct.ir/view/24735.

Keywords Brief cognitive behavioral counseling · Debriefing · PTSD · Traumatic birth

Introduction

Childbirth is a complex event in the life of every woman that leads to positive or negative psychological reactions and can affect mothers' emotions. If childbirth is associated with a negative memory in mind, this event could disturb the mother's mental health during the postpartum period (Bastos et al. 2015). Traumatic childbirth is defined as "an event occurring during the labor and delivery process that involves actual person having at least one traumatic life event" (Beck 2004). Recent studies show that a large number of women can develop post-traumatic stress disorder (PTSD) (Schwab et al. 2012). PTSD is often accompanied by fear, helplessness, flashbacks, nightmares and irritability which a person feels she or her relatives are threatened by death or serious harmful physical injuries (Boorman et al. 2014; Paul 2008). Mothers with PTSD symptoms tend to have higher symptoms of intrusive thoughts and lower symptoms of behavioral avoidance than other medical patients with PTSD(Tedstone and Tarrier 2003).

Approximately 34–47% (Abdollahpour et al. 2017; Alcorn et al. 2010; Beck et al. 2013) of women report traumatic birth, but the prevalence of PTSD after 4–6 weeks of pregnancy is about 1–6% (Creedy et al. 2000; Soderquist et al. 2006). According to the results of a recent meta-analysis, 3.17% of women develop PTSD following childbirth and this increases to 15.7% of women at high-risk (Grekin and O'Hara 2014). There is little or no evidence to support either a positive or adverse effect of psychological counseling the prevention of psychological trauma in women following childbirth (Bastos 2015). Debriefing is one of the counseling methods which can be helpful for the prevention of PTSD (Dyregrov 1989). Debriefing is a semi-structured interpersonal conversation with a mother who

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has recently experienced a stressful or traumatic event; it is carried out with the aim of preventing early acute complications caused by trauma (Dyregrov 1989; Rose et al. 2002). Cognitive behavioral counseling (CBC) is the other method used to reduce stress after birth trauma (Ayers et al. 2015), which aims at reducing symptoms by targeting and modifying the negative modes of thinking, thought and behavior (Andrews 1991). ognitive behavioral counseling is different from debriefing because it is not based on emotions, rather it focuses on thoughts and tries to identify non-constructive and dysfunctional thoughts (Lapp et al. 2010).

Previous studies have recommended using a combination of cognitive behavioral counseling and debriefing to prevent PTSD in mothers who are at risk of post-traumatic stress after birth (Ayers et al. 2007). To the best of our knowledge, no study has been conducted in Iran to exclusively assess the effect of counseling intervention on the prevention of traumatic responses after childbirth. This study was aimed to compare the effectiveness of the two methods of brief cognitive behavioral counseling and debriefing on the prevention of post-traumatic stress after traumatic birth in Iranian mothers.

Methods

The present study was conducted as a randomized clinical trial (parallel design with three arms). In this study we evaluated the effectiveness of the two counseling methods used for the prevention of PTSD following a traumatic birth at the Nohom-e-Dey Hospital (Eastern of Iran) in 2015. The current study has been approved and registered in the Research Ethics Committee at Shahroud University of Medical Sciences (IR-SHMU.REC.1394.42); it was also registered in the Iranian Registry of Clinical Trials (IRCT2015072522396N2).

Sample Description

In this study, all pregnant mothers who were transferred from maternity to postpartum ward during June until September 2015 were enrolled in the study. In the first stage, 400 mothers were screened for traumatic childbirth during the first 48 h after delivery. Of these, 193 mothers who had experienced traumatic birth met the inclusion criteria. Then these mothers signed a written informed consent and were randomly allocated to control and intervention groups. Given the sample size, an adjusted block randomization with a block size of six was used for random allocation with the computer. The assignment types were placed in separate, opaque envelopes. Then, for each sample, an envelope was selected, and, according to the assignment type, mothers was assigned to either of the groups A (debriefing; n = 54), B (cognitive behavioral counseling; n = 53), or C (control; n = 86). The intervention groups were offered their respective counseling methods while the control group received only routine postpartum care without any counseling and psychological intervention. At the first stage of follow-up, from among 193 mothers who had a traumatic birth, five mothers in the control group, six in the cognitive–behavioral group, and three in the debriefing group were dropped out from the study.

Inclusion and Exclusion Criteria

The inclusion criteria were traumatic childbirth after 22 weeks of pregnancy, mother's ability to talk, being Iranian, not having any mental illness, not taking psychiatric drugs, no history of infertility, no history of depression, stress, and anxiety during pregnancy. The exclusion criteria were the followings: being in need of intensive care, substance abuse, undergoing elective caesarean, receiving counseling from a source other than the present study, experiencing stressful life events during the past year like divorce and first relative death, having a positive history of PTSD infant mortality and unwillingness to participate in the study.

Data Collection

For all the participating mothers, Moss and Billings' Stress Coping Strategy Scale as well as Depression Anxiety Stress Scale (DASS_21) were completed; these procedures were performed in order to ensure that all the mothers met the inclusion criteria. In all the three groups, 4–6 weeks and 3 months after childbirth, the Impact of Event Scale-Revised (IES-R) was completed via telephone in order to examine the symptoms of the PTSD. To avoid the information bias, the follow up measurements were carried out by another researcher that was blind to the interventions.

Measures

Traumatic birth was defined as the criterion A of diagnosis of DSM_V_TR criteria. (Association 2013). The questions have been validated by several studies by 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? (Abdollahpour et al. 2017; Gamble et al. 2005; Taghizadeh et al. 2007).

DASS_21 is a 21-item questionnaire that measures the negative emotional states of depression, anxiety, and stress. The Cronbach's alpha values for depression, anxiety, and

stress subscales have been reported to be 0.91, 0.84, and 0.90, respectively (Lovibond and Lovibond 1995).

Moss and Billings' Stress Coping Strategy Scale includes 19 items with a four-point Likert scale (ranging from 0 to 3) with the total score ranging from 0 to 57 (Billings and Moos 1981).

The IES-R, which was used for examining the PTSD, was developed by Weiss and Marmar in 1997. The scale includes 22 items and measures different aspects of mental distress caused by specific life events (avoidance, intrusive thoughts, and hyperarousal). The response scale is of Likert type ranging from 0 to 4. The minimum and maximum possible scores are 0 and 88, respectively (Weiss and Marmar 2004). The Persian version of the scale provides an acceptable level of internal consistency (with a Cronbach's alpha value between 0.67 and 0.87) and a good test–retest reliability; the scale has been validated in several countries (Creamer et al. 2003; Panaghi and Mogadam 2006; Taghizadeh et al. 2007). The 22-item IES-R measures intrusion (8 items), avoidance (8 items), and hyperarousal (6 items) (Weiss and Marmar 2004). In our study we categorized mothers as high risk (scoring 45 or higher), medium risk (scoring between 30 and 44) and low risk (scoring lower than 30).

Describing the Interventions

In this study, face-to face counseling (i.e. debriefing and cognitive behavioral methods) was provided by a well-trained midwife (a MSc. In Midwifery counseling) for 40–60 min in the postpartum ward within the first 48 h after childbirth. The brief cognitive behavioral counseling (interventions1) can help restructure distorted thinking and perceptions, hence changing a person's behaviors for the better such as techniques for managing anxiety, social skills and problem solving, relaxation, cognitive coping. Debriefing counseling (interventions2) is an opportunity to describe and talk about unpleasant experiences and in this way the mother is encouraged to remind and talk about the negative event and express her feelings and emotions (Bastos et al. 2015; Dyregrov 1989). Each of the counseling methods was executed in accordance with the intervention protocol. The counselor phone number was given to mothers so that mothers can be contacted if they need it.

Data Analysis

The data were analyzed using t tests, Chi square test, one way ANOVA, and repeated measures ANOVA. Differential effects of interventions on mean scores for the PTSD symptom were evaluated by using mixed-model repeated-measures ANOVA, with intervention as a between-group factor and IES-R score as a within-group factor. In all tests, the significance level was 0.05.

Results

The mean age of mothers in debriefing, CBC and control groups were 25.8 ± 7.2, 25.5 ± 5.9 and 27.5 ± 6.1 years, respectively. The results showed no statistically significant differences between the groups in terms of the mothers' age, mother's education level, job, number of pregnancy, baby's sex, pregnancy acceptance and gestational age.

The mean PTSD score for control, CBC and debriefing groups in the 4–6 weeks after the intervention were 25.1 ± 9.1, 18.7 ± 7.8 and 17.7 ± 9.2 and also the same scores in the 3 months after intervention were 20.6 ± 7.9, 6.3 ± 5.3 and 14.5 ± 5.9, respectively. Using a mixed ANOVA, the overall interaction of condition and time was significant ($p = 28.0$, $p < 0.001$) indicating different patterns of change of the interventions over time. It means that the cognitive–behavioral counseling had a stronger and more long lasting effect as compared with the debriefing counseling. The results of the one-way ANOVA showed statistically significant differences in the mean scores of post-traumatic stress in traumatic births between the intervention groups and the control group 4–6 weeks and 3 months after the intervention ($p < 0.001$). Subsequently, post hoc analyses, which compared the total mean scores of post-traumatic stress and the differences between pairs of groups, revealed that the total scores of post-traumatic stress 4–6 weeks after the intervention were significantly different between the control group and the intervention groups; however, no significant difference was observed between the two intervention groups as the mean scores of post-traumatic stress were similarly decreased 4–6 weeks after the intervention ($p = 0.56$). Three months after the intervention, not only there was a statistically significant difference between the intervention groups and that of the control group in terms of the total scores of post-traumatic stress, but there was also a significant difference between the debriefing and cognitive–behavioral counseling groups ($p < 0.001$). In the cognitive behavioral counseling group the mean score of post-traumatic stress score was significantly lower than that in the debriefing group (6.3 ± 5.3 vs. 14.5 ± 5.9 respectively).

Taking into consideration the IES-R's total score, we classified the mothers into three risk categories. The results showed that 4–6 weeks after intervention, 25(30.5%), 8(17.0%) and 7(13.7%) of mothers in the control, CBC and debriefing groups had moderate distress and also 6(7.3%), 1(1.2%) and 2(3.9%) had severe distress, respectively. the observed distribution of mothers in term of stress risk categories were significantly different from the expected distribution 4–6 weeks after the intervention. The distribution of distress in 3 months after intervention between three groups was significantly different, so

11(13.6%), 1(2.1%) and 3(5.9%) had moderate distress in control, CBC and debriefing groups and only 3(3.7%) in the debriefing groups had severe distress.

Discussion

The results of this trial showed a significant difference in post-traumatic stress scores between the control group and the debriefing counseling and brief cognitive behavioral counseling intervention groups who underwent one session of counseling. The results also showed that both counseling methods had a significant level of effectiveness. It is consistent with the results of Taghizadeh study (Taghizadeh et al. 2007), which confirmed the effectiveness of debriefing counseling method. However, different studies have reported contradictory results about the effectiveness of single session debriefing, for instance according to some studies the method is inefficient (Gamble et al. 2005). A study reported lack of significant improvement (Ryding et al. 1997) and another study had suggested conflicting results about its impact on patients (Priest et al. 2003). In a review study by Cunen et al. (2014), the researcher evaluated the effects of debriefing after delivery in women who had post-traumatic stress; the results showed that although the effectiveness of debriefing was not statistically significant, but it improved the symptoms as it provided an opportunity for women to discuss their experiences and express their feelings and emotions (Cunen et al. 2014). Our findings about debriefing method are different from the findings of other studies; the observed differences might be attributed to the fact that the subjects in our study were counseled by Master counselors who had attended special training courses on counseling and psychotherapy. But in other studies debriefing is done by midwives without specialized counseling and psychotherapy skills (Taghizadeh et al. 2007).

Studies which reported a reduced response to stress after birth trauma can be classified into two categories: The first category includes the studies in which the intervention is performed by gynecologists or people who are trained about mental health intervention; such studies have properly assessed the cognitive aspects and led to a reduction of trauma and PTSD; Although the results of these studies are effective and satisfactory but they require specialized training for counseling (Ryding et al. 1997). The second group of the studies used people with different specialized skills to evaluate the efficiency of reporting and debriefing; such studies do not have side effects, but they are ineffective in reducing traumatic stress disorder, depression, and anxiety (Priest et al. 2003). According to Ayers's study in 2007, cognitive behavioral counseling has helpful in reducing PTSD after birth trauma (Ayers et al. 2007). In this study, single session cognitive behavioral counseling was effective in the prevention of post-traumatic stress in people who were at greater risk of PTSD than others. A study which evaluated the use of CBT for the treatment of traumatic birth showed that brief counseling and a simplified form of CBT were useful in people at risk of PTSD or those at risk of disease recurrence (Gortner et al. 1998; Jacobson et al. 1996). In addition, reducing the number of meetings and providing the counseling service in only one session, instead of several sessions, can be more effective in reducing the symptoms (Ehlers et al. 2014). It is recommended not to use multisession intervention for the preventive purposes in all people at risk (Whealin et al. 2008).

This study showed an evident reduction in the scores of post-traumatic stress after childbirth. Bryant's study results indicated that debriefing counseling was effective in the prevention of PTSD while CBT was effective in reducing PTSD in people with acute stress disorder (ASD), which is consistent with our study results (Bryant 2007). Some studies have shown that cognitive behavioral counseling has been more effective than other supportive counseling (Kar 2011; Roberts et al. 2009). In our study, there was no significant difference between the efficiency of the two counseling methods 4–6 weeks after the intervention. However, 3 months after the intervention, there was a significant difference between the two groups in terms of the mean scores of post-traumatic stress. This finding is in line with the results of Ayers's study which reported that CBT and non-specific debriefing consulting are effective treatments for PTSD after childbirth when there is a risk of the recurrence of symptoms (Ayers et al. 2007).

Conclusion

Both the debriefing and cognitive behavioral counseling methods significantly improved the post-traumatic stress scores, but cognitive behavioral counseling had a better effect on PTSD scores. Due to the effectiveness of brief cognitive behavioral counseling, which is easy, feasible, and less costly, it is recommended to provide this service in the postpartum period. This method can prevent post-traumatic stress of birth and unpleasant memories of delivery which are serious obstacles to natural childbirth.

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Author Contribution SA developed and wrote the protocol and was responsible for the interventions, analysis, interpretation of the results, and writing the article. AKh edited the protocol and was responsible for the analysis, interpretation of results, and writing the manuscripts. AK

edited the protocol and was responsible for the interpretation of results and writing the manuscript. ZM was responsible for the interpretation of the results. SAM was responsible for the supervision of interventions and edited the protocol.

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Compliance with Ethical Standards

Conflict of interest The authors declare that they have no conflict of interest.

Ethical Approval Approval for the study was obtained from the Ethics Committee of Shahroud University of Medical Sciences (Central Committee on Research Involving Human Subjects; IR-SHMU. REC.1394.42, Date approved: 2015-06-25).

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