Shiraz E-Med J. 2021 October; 22(10):e111216. doi: 10.5812/semj.111216.

Published online 2021 July 26. **Brief Report**

Prevalence of Post-traumatic Stress Disorder in Women with Normal Vaginal Delivery and Those with Caesarian Section

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Received 2020 November 23; **Revised** 2021 February 11; **Accepted** 2021 February 19.

Abstract

Childbirth causes intense emotional arousal that may cause traumatic psychological symptoms in some women. This study investigated the prevalence of post-traumatic stress disorder (PTSD) in women with normal vaginal delivery and those with caesarian section. This was a cross-sectional study conducted in selected health centers affiliated to Shiraz University of Medical Sciences in 2018. The samples included 714 patients (328 vaginal deliveries and 386 cesarean deliveries). Sampling was performed using the convenience sampling method in two cluster stages after selecting the clinic. Mothers were determined to be traumatic in their delivery according to criterion A in the Diagnostic and Statistical Manual of Mental Disorders Version DSM-IV (with four questions). Then, a demographics checklist and a stress disorder questionnaire were filled out for all the mothers after a traumatic delivery through interviews. The prevalence of postpartum stress disorder was higher in the cesarean section group (10.8%) than in the normal vaginal delivery group (10%), but this difference was not significant (P = 0.275). Although the prevalence of PTSD between the two groups was not significant, the prevalence of PTSD was significantly higher in this study than in reports from other countries. This highlights the need for targeted interventions to reduce this disorder.

Keywords: Post-traumatic Stress, Disorder, Women, Vaginal, Caesarian, Delivery

1. Background

About one-third of women consider pregnancy and childbirth as traumatic. Between 2 and 6% of women experience symptoms of post-traumatic stress disorder (PTSD) and are eligible for a clinical diagnosis (1). The prevalence of these symptoms is usually measured in the first six months after delivery, but there is evidence indicating a potential persistence of PTSD responses in some women (2). Higher levels of PTSD are associated with an increased likelihood of not having more children or delaying subsequent pregnancies (3, 4). In addition, it has been suggested that a new pregnancy has the potential to reactivate post-traumatic stress symptoms (1). Therefore, it is important to be aware of the possible occurrence of this disorder after delivery and the prevalence of postpartum stress; it may help identify mothers who may need intervention. In the studies of risk factors for post-traumatic stress disorder after childbirth, individual personality traits, the rate of midwifery interventions, severe emotional reactions around childbirth, negative interactions with hospital staff, lack of social support, prenatal distress, and life-threatening feelings have been addressed (5). However, studies comparing the frequency of PTSD in women with vaginal delivery and cesarean section are very limited.

2. Objectives

This study was aimed at comparing the frequency of PTSD in different women with normal vaginal delivery and cesarean section who visited the selected health centers affiliated to Shiraz University of Medical Sciences during 2017 - 2018.

3. Methods

This was a cross-sectional study conducted during 2017 - 2018, and the research community was selected from health centers affiliated to Shiraz University of Medical Sciences. The sample size was determined according to the objectives and type of study and citing previous studies in

this field and considering the assumptions of the first type of error 0.05, the prevalence of this disorder is 0.28 in the vaginal delivery group and the prevalence of 0.40 in the cesarean delivery group; thus, the total number of samples was 714 in the vaginal delivery group, and the sample number in the cesarean delivery group was calculated to be 386 people. In the first stage of sampling, clinics were designated as clusters. From north, south, east, and west of Shiraz, two clinics in each division were randomly selected. Convenience sampling was used after selecting the clinics. Mothers were determined to be traumatic in their delivery according to the criterion A in the textbook of diagnostic and statistical disorders of the fourth version (with four questions). The first two questions examined the risk factors and the second two questions examined the mother's emotional response. If one of the first two questions and one of the second two questions were answered positively, it was considered traumatic. The scientific validity of the four questions has been established in various studies (6, 7). For all mothers, a demographics checklist and the stress disorder questionnaire were completed after a traumatic delivery through interviews.

Post-traumatic stress symptom scale I includes 17 questions that cover all the criteria of the fourth diagnostic and statistical manual of mental disorders (DSM-IV) for the diagnosis of PTSD and use the Likert scale to determine its severity. The total score of the questionnaire ranges from 0 to 68. Using the Likert scale, it scores the severity of each symptom. Symptoms of this disorder include symptoms related to re-experience (4 questions), symptoms related to avoidance (7 questions), and symptoms related to motivational reactions (6 questions). If having one or more re-experience symptoms, three or more avoidance symptoms, two or more of the symptoms related to motivational reactions, PTSD is diagnosed. In Iran, the reliability of the scale, as reported by Mirzamani et al., was 74% based on test-retest and 88% by Cronbach's alpha test (8), which was the criterion of our study. Data were analyzed using SPSS version 21. Descriptive statistics, such as mean and standard deviation, and Mann-Whitney nonparametric test were used. The significance level was set at 0.05.

3.1. Ethical Considerations

The Ethics Committee of Shiraz University of Medical Sciences approved the study protocol (code of ethics: IR.SUMS.REC.1397.359, proposal No.: 1396-01-08-16557). Written informed consent was obtained from all the participants. The confidentiality of all participants' personal information was assured.

4. Results

In the present study, 331 women had a normal delivery, and 389 had a cesarean section. The mean age of the group with normal delivery was 29.12 $\pm$ 5.13 years, which was significantly lower than that of the cesarean section group, which was 30.94 $\pm$ 4.6 years ($P < 0.05$). Independent *t*-test was used to compare the age of the two groups. In terms of education, 34.02% had a diploma, and 56.52% had a university degree. In addition, 81.12% were housewives, and the rest were employed (Table 1). According to Mann-Whitney non-parametric test, the frequency of PTSD was higher in the cesarean section group than in the normal delivery group, but this difference was not significant ($P = 0.275$; Table 2).

5. Discussion

The results of the study carried out by Modaress et al. showed that the risk of PTSD after delivery in people who had an emergency cesarean delivery was 3.5 times higher than in those with a normal delivery. Also, if the duration of normal delivery was less than three hours, the risk of developing PTSD after delivery was reduced (9). The reasons for the difference in the results can be the difference in the sample size in the two communities and the type of delivery. In our study, the cesarean section group was examined regardless of whether the cesarean section was elective or emergency, while in the study mentioned above, only emergency cesarean section was compared with normal delivery. In emergency cesarean section, because the person does not have the necessary and sufficient preparation in advance, we expect higher scores of the disorder than the selected cesarean section, so the heterogeneity of cesarean sections in the two studies can be an primary reason for differences in results. However, Soderquist et al. surveyed 1,550 women and found that women with normal delivery had more stress than cesarean delivery (10). In another study, Mahmoodi et al. examined postpartum stress in 240 women in Tehran. The results of their study showed that although the stress level in the cesarean delivery group was 2.2% higher than the normal delivery group, there was no significant difference between the two groups in this regard. In addition, postpartum stress was more common among women who underwent emergency cesarean section than women who underwent elective cesarean section. These results are consistent with our study findings, which states that no significant difference was observed between normal delivery and cesarean section (11). It can be concluded that the occurrence of PTSD after childbirth is likely to be influenced by the culture of each community (12). Also, in the developed countries where

Table 1. Demographic Characteristics of the Research Community [a]

Variables	Cesarean	Vaginal	P-Value [b]
Education			0.752
Primary school	6 (1.5)	9 (2.7)	
High school	35 (9)	18 (5.4)	
Diploma	129 (33)	116 (35)	
University	219 (56.4)	188 (56.8)	
Occupation			0.088
Housewife	318 (81.7)	286 (86.4)	
Employed	71 (18.3)	45 (13.6)	

[a] Values are indicated as No. (%).
[b] Independent *t*-test.

Table 2. Evaluation and Comparison of Stress Status in the Two Groups [a]

Variables	Cesarean	Vaginal	P-Value [b]
With stress	42 (10.8)	33 (10)	0.275
Without stress	347 (89.2)	298 (90)	
Total	398 (100)	331 (100)	

[a] Values are indicated as No. (%).
[b] Chi-square

childbirth is performed in a healthy manner, the prevalence of trauma during pregnancy and childbirth is lower, and as a result, the subsequent stress disorder is seen less frequently. It is important to identify the factors that affect women's emotional responses after childbirth (13).

5.1. Conclusions

There was no significant association between PTSD and type of delivery. Of course, in terms of etiology and risk factors for PTSD, it should be noted that factors such as duration of labor, the experience of severe labor pain during delivery, inappropriate treatment by the staff, medical interventions, and the type of statistical community are among the factors associated with this complication. The combination of the above factors can ultimately affect the prevalence.

Acknowledgments

The authors would like to thank Shiraz University of Medical Sciences, Shiraz, Iran, and the Center for Development of Clinical Research of Nemazee Hospital, and Dr. Nasrin Shokrpour for editorial assistance.

Footnotes

Authors' Contribution: MA and FR prepared the first draft of the manuscript, and MA made critical revisions to the paper and responded to the reviewers. NS helped in data analysis, and AM guided the sections related to stress and choosing a questionnaire.

Conflict of Interests: None declared.

Ethical Approval: Project number, 1396-01-08-16557; Code of ethics, IR.SUMS.REC.1397.359.

Funding/Support: This study was funded by the Vice-Chancellor of Research Affairs of Shiraz University of Medical Sciences.

Informed Consent: Written informed consent was obtained from the participants before the study.

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