İstanbul Med J 2017; 18: 62-7
DOI: 10.5152/imj.2017.15013

Original Article

Has Delivery Method any Influence on the Postpartum Mood of the Mother? Postpartum SCL-90-R

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Abstract

Objective: This study investigated the influence of the birth type to mothers earlypostpartum emotional emotional status

Methods: SCL-90-R psychological test was performed in 50 patients who had cesarean section and 50 patients who had vaginal delivery. SCL- 90- R consist of ten sub-scales: somatization, obsessive-compulsive disorder, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, psychoticism, and a category of additional items. The subscale scores of the scale are obtained by dividing the score values of the answers given to the relevant items by the number of items forming the subscale. The points of all 90 items (0–4 points per item) were added and divided by 90 to obtain the general score. Patients with scores above 1 were considered to have a psychological problem. All test subtitles and total test values were statistically compared with the Student's-t test and Mann–Whitney U test.

Results: The average age of patients who had cesarean section was higher than that of those who had vaginal delivery (25.68±5.02 years versus 28.26±6.20 years). There were no statistical differences in terms of habits, social security, obstetric history, number of pregnancies, gestational age, labor findings, first- and fifth-minute Apgar scores, findings in newborns, and postpartum complications. The score of all subdivisions and the general score of SCL90-R were significantly higher in mothers who had cesarean section ($p<0.001$ in all). Average age, longer hospitalization period and less hemoglobin levels were higher in mother who had cesarean section ($p=0.024$, $p<0.001$, and $p<0.001$, respectively).

Conclusion: In studies to reduce high cesarean rates , the psychological status of the mother as well as the medical conditions should be taken into consideration.

Keywords: SCL-90-R, early postpartum emotional state method of delivery, vaginal delivery, cesarean section

Introduction

Pregnancy and labor are stress factors for every woman. A high majority of mothers can encounter difficulty in accommodating themselves to their new lives post child birth. Since knowing about their pregnancy, they have some worries and fears regarding themselves, the newborns, and the course of this period (1).

Vaginal delivery and cesarean delivery are the two different ways and experience of childbirth. Mothers can have concerns and preferences related to the type of delivery due to their prior knowledge gained from health staff or their environment.

According to the 2014 health statistics, the rate of cesarean delivery in Turkey is 51%, which is quite high. However, the rate recommended by the World Health Organization is 15% (2). The Turkish Ministry of Health is continually attempting to reduce the rate of cesarean delivery. Voluntary cesarean delivery was legally prohibited. As a part of these attempts, an education on obstetrical emergencies is provided to gynecologists and pregnancy schools aiming to prepare parturients for labor and inform expectant mothers on this issue (3-5).

The rate of cesarean delivery, which affects a mothers physical and mental health states, without any compulsory medical indication, is increasing due to reasons, such as fear of giving birth; demand for not feeling pain; notion that perineal floor will be protected against trauma and the possibility of urinary incontinence will decrease correspondingly; prejudice that cesarean delivery is more healthy for the newborn; physician's preference and direction; being able to plan the time of labor; avoiding legal and social problems that can occur as a result of complicated labor; and lack of experience in interventional vaginal delivery (3-9).

The physical results of cesarean delivery are the requirement of cesarean in subsequent pregnancies, placental adherence anomalies, cesarean scar pregnancy, anesthetic and surgical complications, more blood loss, neonatal prematurity and related problems, and respiratory problems (7, 8, 10).

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Received: 05.11.2016

Accepted: 24.02.2017

How does the way of labor affect the mother's emotional and psychological state? Which one is a stronger stress factor for the mother, vaginal birth or cesarean delivery? This is another aspect of the issue.

This study aimed to investigate whether emergency cesarean delivery and normal vaginal delivery created different emotional and mental changes in a mother.

After receiving ethical approval from the Ethics Committee of Istanbul Education and Research Hospital, the study was conducted on 100 mothers who gave birth via cesarean delivery and normal vaginal delivery and accepted to participate in the study between November 2013 and February 2014.

Materials and Methods

The study included 50 mothers who had a history of cesarean delivery with pain or were selected for cesarean operation due to indication developing during labor and 50 mothers giving birth through normal vaginal delivery.

Patients' data on age, gravida, parity, indications for cesarean delivery, general health insurances, smoking status, day of pregnancy, obstetric history, length of hospitalization, previous operations, condition of the amniotic membrane, presence of meconium in the amniotic fluid, Apgar scores, presence of any postpartum complications in the newborn, presence of any postpartum complications in the mother, and hemoglobin and hematocrit values were obtained from patient files.

In the study, the Symptom Checklist-90-Revised (SCL-90R) was used for assessing psychological symptoms. During the 24-hour hospitalization after the labor, patients were informed about the test for their consent and were requested to self-complete the forms.

Each of symptoms stated in the 90 items of the scale was assessed using a Likert-type rating system as "not at all," "little," "some," "very," and "severe," and scored between 0 and 4. The scale consists of 10 different subscales: (1) somatization, (2) obsessive-compulsive disorder, (3) interpersonal sensitivity, (4) depression, (5) anxiety, (6) hostility, (7) phobic anxiety, (8) paranoid ideation, (9) psychoticism, and (10) additional items. The subscale scores were calculated as the sum of the response scores given to the related items to the number of total items in that subscale. The average global severity index (GSI) is calculated as the sum of the ratings of each item (0-4 points; 90 items) to 90. The scores >1 indicate the existence of a psychological problem; scores between 0.5 and 1 indicate a moderate level of problem. However, the values <0.5 indicate presence of no problem. SCL-90R is a test that was developed for assessing psychological symptoms. It is not used for diagnosing any disease. It was revised by Dağ considering our country (11).

Statistical Analysis

Data were analyzed using the Statistical Package for the Social Sciences (SPSS) software version 15.0 for Windows. For descriptive statistics, categorical variables were presented as number and percentage, and numerical variables were presented as mean and standard deviation. Comparisons of two independent groups were performed using Student's T-test for normally distributed numerical variables and using Mann-Whitney U test for non-normally distributed variables. The rates of categorical variables in the independent groups were compared using Chi-square test. Statistical significance alpha level was accepted to be $p<0.05$.

Results

The mean age of patients having cesarean delivery (28.26±6.20 years) was found to be significantly higher compared to normal vaginal delivery (25.68±5.02 years; p=0.024). All patients had general health insurance. The rate of smoking was 12% in patients having normal vaginal birth and 8% in those undergoing cesarean delivery. No statistically significant difference was found between the groups in terms of smoking rates (p=0.505).

There was no statistically significant difference between the groups with regard to abortus, abortion, number of pregnancies, and mean gestational day (p=0,584 p=0,384, p=0,452, and p=0,052, respectively). The rates of intervention at labor were similar in both groups, which was 36%. No statistically significant difference was found in terms of the existence of pouch and the rates of meconium (p=0.372 and p=0.749, respectively). The mean discharge day was significantly higher in the cesarean delivery group (3.20±0.73 days) compared to vaginal delivery (2.68±1.28 days; p<0.001).

The rate of the development of problems in the newborn was 8% for normal vaginal delivery, while it was 4% in cesarean delivery. This difference was not statistically significant (p=0.678). Moreover, no statistically significant difference was detected in the mean first and fifth minute Apgar scores of the infants in both the groups (p=0.329 and p=0.263, respectively).

No postpartum complication was found in mothers of both the groups. The rate of having a previous operation was significantly higher in mothers having cesarean delivery than in those having normal birth (18% vs. 46%, p=0.003). The patients who had undergone cesarean delivery previously increased this rate (Table 1).

The most common indication for cesarean delivery was previous painful cesarean delivery and cephalo-pelvic disproportion (Table 2).

The scores of SCL-90R psychological symptoms scanning test were significantly higher in mothers undergoing cesarean delivery compared to normal birth in terms of all subscales, including somatization (0.73±0.30/1.43±0.68), obsessive-compulsive disorder (0.80±0.34/1.64±0.91), interpersonal sensitivity (0.80±038/1,41±0.62), depression (0.75±0.35/1.49±0.71), anxiety (0.74±0.32/1.42±0.65), hostility (0.83±0.38/1.39±0.61), phobic anxiety (0.75±0.37/1.46±0.69), paranoid ideation (0.71±0.39/1.21±0.66), psychoticism (0.77±0.30/1.23±0.68), additional items (0.73±0.28/1.41±0.59), and the general score (0.77±028/1.41±0.59; all comparisons p<0.001; Table 3; Figure 1).

Discussion

Pregnancy is a period involving many neuro–endocrine, molecular, and physiological changes. Studies have shown increased levels of Dhsulphate, progesterone, testosterone, and cortisol during pregnancy and postpartum period and changes in sequential serotonergic and noradrenergic activity; changed levels of zinc, vitamin D, vitamin B12, homocysteine, and biopterin; and pro-

Table 1. Findings of mothers giving normal birth and undergoing emergency cesarean delivery

	Vaginal delivery	Cesarean delivery	p value
Age M±SD	25.68±5.02	28.26±6.20	0.024
General health insurance n (%)	50 (100)	50 (100)	-
Smoking n (%)	6 (12)	4 (8)	0.505
Abortus M±SD	0.20±0.49	0.28±0.64	0.584
Abortion M±SD	0.04±0.20	0.12±0.44	0.384
Number of pregnancy M±SD	2.64±1.45	2.40±1.32	0.452
Gestational day M±SD	274.60±12.39	270.66±6.76	0.052
Any intervention at labor n (%)	18 (36)	18 (36)	1.000
Presence of pouch n (%)	45 (90)	42 (84)	0.372
Meconium (%)	5 (10)	6 (12)	0.749
Day of discharge M±SD	2.68±1.28	3.20±0.73	<0,001
Any complication in the newborn n (%)	4 (8)	2 (4)	0.678
Apgar first min M±SD	8.34±0.56	8.20±0.67	0.329
Apgar fifth min M±SD	9.40±0.53	9.26±0.60	0.263
Hemoglobin M±SD	11.57±1.25	10.58±1.52	0.001
Hematocrit M±SD	34.18±3.02	31.44±4.23	<0.001
Postpartum complication n (%)	0 (0)	0 (0)	-
Maternal operations n (%)	9 (18)	23 (46)	0.003

M±SD: mean+standard deviation

Table 2. Indications for cesarean delivery in mothers

	Reason for cesarean delivery	
	n	%
Previous painful cesarean delivery*	16	32
Cephalo-pelvic disproportion	10	20
Fetal distress	5	10
Nonprogressing labor	4	8
Large baby	6	12
Pre-eclampsia	2	4
Breech presentation	2	4
Cord presentation	1	2
Transverse presentation	1	2
Forehead presentation	1	2
Face presentation	1	2
Placenta previa	1	2

*5 patients had repeat cesarean delivery

Table 3. SCL-90 test results of both groups

	Normal delivery	Cesarean delivery	p value
	M±SD	M±SD	
Somatization	0.73±0.30	1.43±0.68	<0.001
Anxiety	0.74±0.32	1.42±0.65	<0.001
Obsession	0.80±0.34	1.64±0.91	<0.001
Depression	0.75±0.35	1.49±0.71	<0.001
Sensitivity	0.80±0.38	1.41±0.62	<0.001
Psychotic	0.77±0.30	1.23±0.68	<0.001
Paranoid	0.71±0.39	1.21±0.66	<0.001
Anger	0.83±0.38	1.39±0.61	<0.001
Phobic	0.75±0.37	1.46±0.69	<0.001
Additional	0.73±0.43	1.37±0.70	<0.001
General score	0.77±0.28	1.41±0.59	<0.001

M±SD: mean+standard deviation

longed and excessive proinflammatory immune system activation (interleukin [IL]-1, IL-6, and tumor necrosis factor [TNF]-α) were found to be associated with postpartum depression (12-15). All these changes cause reactivation of the hypothalamic pituitary axis and thus help mothers to adapt themselves to the postpartum period and to perform maternal behaviors toward the newborns. Although many women adapt easily to the changes related to pregnancy and labor, some have moderate psychiatric complaints and some develop severe psychiatric disorders that require hospitalization.

The development of psychiatric disorders during the postpartum period was first suggested by Victor Luis Marce in 1858, but this issue was considered for a long time (16).

Today, postpartum psychiatric disorders are defined as "postpartum anxiety," "postpartum blues-baby blues syndrome," "postpartum hypomania-baby pinks," "postpartum depression," and psychosis. While postpartum blues is a more frequently encountered condition that develops in the first week and decreases gradually, only 10%-15% of patients have affective disorders that will help to

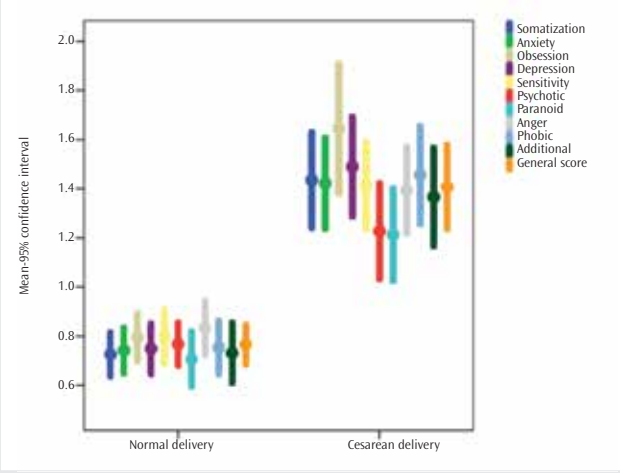

Figure 1. Comparison of SCL-90R scores in both groups

establish the diagnosis of postpartum depression and this condition can recur at the rate of 20%-25% (17-19).

The factors affecting these defined pathologies, particularly postpartum depression, have been discussed in many studies. The above-mentioned biomarkers have been investigated in this regard.

However, etiological factors related to the issue include psychic disorders in the mothers medical history and her familial history, self-confidence and psychic problems and traumas in childhood, being younger than 18 years, psychic disorders during pregnancy, low socio-economic status, lack of social support, gender of baby, being single, concerns related to work and marriage, lactation problems, birth of premature baby requiring intensive care, traumatic labor, and severe obstetric complications (20-26).

It was observed that the babies of mothers having depression during pregnancy and postpartum period also had various psychological and mental development problems, and the value of screening tests that could provide early diagnosis was emphasized in this respect (27, 28).

Various scales were used in the studies investigating postpartum depression and anxiety.

The most important of these scales, including the Postpartum Depression Screening Scale (PDSS), Beck Depression Inventory-II (BDI-II), and Edinburgh Postnatal Depression Scale (EPDS), were evaluated to be the tests having equal values compared to each other (29-31).

Moreover, the Parenting Stress Index -Short Form (PSI-SF) and attitudes towards Motherhood Scale (AtoM) were used for evaluating general cognitive prejudices about parenting (28, 32).

In our study, SCL-90R was used for investigating the psychological symptoms. This test was developed by Derogatis et al. (1973) as a "psychiatric symptom screening tool" for determining the levels of psychological symptoms in individuals who are "seemingly normal," and it was used in various studies also including women in the postpartum phase (33-37). It was revised by Dağ (11) considering our country. There are many studies conducted in Turkey on its use in non-pregnancy related pathologies (38-40). Two studies were published on its use for the assessment of patients diagnosed with hyperemesis gravidarum in the first trimester of pregnancy from our country (41, 42).

SCL-90R was first used for postpartum parturients in our study. Our study was performed in the early postpartum period - 24 hours after the delivery before patient was discharged from hospital. It was mostly aimed to determine the mood state rather than depression. Therefore, we considered SCL-90R suitable for our study.

No statistically significant difference was found between 50 mothers giving normal vaginal birth and 50 mothers undergoing cesarean delivery in terms of social insurance, habits, obstetric history, number of pregnancies, gestational week, labor findings, neonatal findings, and postpartum complications (Table 1).

As a result of SCL-90R psychological symptom screening test, the scores obtained from all subscales and the general score were found to be significantly higher in the cesarean group than those in the normal vaginal delivery group (Table 3). Other differences that draw attention in this group were higher maternal age, longer hospitalization, and lower hemogram values.

Approximately one-third of women consider labor to be traumatic. Although there are studies showing that emergency cesarean delivery causes post-traumatic stress, there are also some studies revealing that most of mothers with post-traumatic stress disorder are those having normal vaginal delivery.

In the study by Garthu Niegel et al. (43), they found that post-traumatic stress was higher in mothers who had normal birth despite their preference for cesarean delivery compared to those who preferred and had vaginal birth; they concluded that their fear of giving birth to a child could be a factor that affected their preference.

In contrast, Adam et al. (44) conducted a study using SCL-8 in the thirtieth gestational week and postpartum sixth month, and they found that the delivery method could not be associated with post-traumatic stress, and the emotional disorders that existed during pregnancy were the main factors.

In the study by Word et al. (45) performed in the sixth postpartum week in Canada, they found that the method of delivery was not a risk factor for the development of postpartum depression. Another remarkable finding of this study was that postpartum stress was more common in mothers who were born in Canada and gave birth through cesarean delivery, but the rate of postpartum stress was higher in those born in other places and having vaginal birth. It was suggested that cultural differences might have caused this finding.

Patel et al. (24) conducted a study on 14663 mothers, and they reported that the type of labor was not a risk factor for postpartum depression.

In a study conducted by Durukan et al. (46) in Turkey for evaluating postpartum depression and quality of life together in the period between postpartum second and eighteenth weeks, they detected that the method of delivery was not a risk factor. Social factors found to be effective were the job of spouse, psychological state during pregnancy, history of previous postpartum depression, presence of familial history, presence of premenstrual syndrome, problems related to marriage and family, and concern about the effect of having a baby in the marriage.

Although the preferences of mothers were questioned before labor in our study, it is known that vaginal delivery is more commonly preferred according to other studies conducted in our society (up to 81%) (5, 8, 9). Hence, it can be suggested that mothers mostly prefer vaginal birth.

In our cesarean group, the mean maternal age was higher. We have not encountered any study showing that advanced maternal age is a risk factor. Besides the studies demonstrating that younger maternal age (<16 years) is a risk factor, there are also other studies suggesting that age is not an effective factor (44, 47, 48). However, low hemogram values were associated with postpartum depression in many studies, and it was mentioned to be an issue that needed attention in postpartum follow-ups and needed to be treated (49).

In our study, emergency cesarean delivery affected the mood state of the mother and contributed to her stress. In addition to the method of labor, a higher maternal age and presence of anemia were other striking findings. Longer hospitalization of mothers undergoing cesarean delivery can increase stress.

The limitations of our study were that it was performed on a few patients, it was conducted in the early postpartum period, a test was not applied during pregnancy, and the preference of patients for labor was not questioned.

Conclusions

We suggest that this study can be used for understanding a mothers preference of labor, determining her mood state through screening tests in pregnancy, and decreasing the rate of cesarean delivery. It can also be used as a part of pregnancy education for preparing a mother for vaginal birth, which seems to be a useful implementation for maternal and child health.

Ethics Committee Approval: Ethics committee approval was received for this study from the ethics committee of İstanbul Tranining and Research Hospital.

Informed Consent: Verbal informed consent was obtained from patient who participated in this study.

Peer-review: Externally peer-reviewed.

Author Contributions: Concept - İ.Ş.Ö.; Design - İ.Ş.Ö., S.S.; Supervision - G.A.; Resources - G.A, B.A.B.; Data Collection and/or Processing - İ.Ş.Ö., S.S.; Analysis and/or Interpretation - G.A.; Literature Search - İ.Ş.Ö., S.S., G.A.; Writing Manuscript - G.A., İ.Ş.Ö.; Critical Review - G.A.; Other - D.S.A., İ.Ş.Ö., S.S., G.A.

Conflict of Interest: No conflict of interest was declared by the authors.

Financial Disclosure: The authors declared that this study has received no financial support.

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