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Original Article

Does cesarean section compromise mother's mental health?

Ziba Farajzadegan, Mohammad Arash Ramazani**, Parisa Mirmoghtadaee***, Amir Foroughy****, Mahnaz Kelishadi*****, Maryam Keypour *******

Abstract

BACKGROUND: To assess the effect of method of delivery on women's mental health to improve of health status.

METHODS: Eleven hundred healthy women who had recently either normal vaginal delivery (NVD) or cesarean section (CS) were studied 6 week after delivery in 2005. The data were collected with using the 36-items short-form (SF-36) questionnaire by interviewing method. SPSS software version 15 was used for statistical analysis.

RESULTS: Of 1100 participants, 7 women were missed due to incomplete data. From the rest, 504 (46%) women had normal vaginal delivery and 589 (54%) of them had cesarean section. The mean of age in mothers were 25.5 and 25.9 years old respectively. Mean and standard deviation of mother's mental health score were 62.8 ± 18.6 and 60.4 ± 19.4 in normal delivery and cesarean section group respectively ($t = 2.1$; $p < 0.05$).

CONCLUSION: In comparison to mothers with normal vaginal delivery, mothers who had cesarean section had lower mental health status.

KEY WORDS: Cesarean section, normal vaginal delivery, mental health.

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Women's health promotion is one of the major challenges of health care providers due to its effect on community health. Becoming a mother is a major life event and has great importance not only for the individual family but also for the society and the survival of mankind. Pregnancy and childbirth are complex events, packed with physical and psychological incidents as well as a profound biological, social and emotional transition. Although reactions of anxiety and sadness are common during pregnancy, most women navigate this transition without major psychopathology.[1,2] But Postpartum depression is a common feature that affects both maternal and child well being. It affects 10–20% of all mothers.[3-12] It may have a deleterious effect on the woman's social and personal adjustment, marital relationship, and mother-infant interaction. Pregnancy, miscarriage or fetal death, infertility, and the postpartum period may especially challenge a woman's mental health. The method of delivery is affective in mental health too. Several studies showed that mental and physical health level was lower in cesarean than normal vaginal delivery.[13,14]

In Iran in some studies, the prevalence of postpartum mental disorder was reported about 2-26%.[15] Furthermore the rate of cesarean is increasing in Iran. This study evaluated the

* MD, Associate Professor of Community Medicine, Isfahan University of Medical Sciences, Isfahan, Iran.
** MD, Specialist in Community Medicine, Kerman University of Medical Sciences, Kerman, Iran.
*** MD, Specialist in Community Medicine, Isfahan University of Medical Sciences, Isfahan, Iran.
**** MD, Resident of Community Medicine, Isfahan University of Medical University, Isfahan, Iran.
***** MSc, Isfahan Health Center, Isfahan University of Medical Sciences, Isfahan, Iran.
****** MD, Resident of Psychiatry, Isfahan University of Medical Sciences, Isfahan, Iran.
Correspondence to: Ziba Farajzadegan.
E-mail: farajzadegan@med.mui.ac.ir
Research Article of Isfahan University of Medical Sciences, No: 184107

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effect of method of delivery on mental health quality in Isfahan province, Iran.

Methods

This population-based prospective cohort study was performed in Isfahan public health care centers among 1100 women who had delivery either normal vaginal delivery or cesarean section after 6 weeks from delivery in 2005. Our participants were selected by multistage simple random sampling. The inclusion criteria were primiparous healthy women who admitted in public health centers for their postnatal cares and had either cesarean section or normal vaginal delivery up to 6 weeks ago. The mother's with physical or psychological disease, abnormality in their neonate, still birth and neonatal death excluded from the study. After getting informed consent, the data were collected by SF-36 questionnaire.

SF-36, contains 36 items that, when scored, yield 8 domains. Physical functioning (10 items) assesses limitations in physical activities, such as walking and climbing stairs. The physical role (4 items) and emotional role (3 items) domains measure problems with work or other daily activities as a result of physical health or emotional problems. Body pain (2 items) assesses limitations due to pain, and vitality (4 items) measures energy and tiredness. The social functioning domain (2 items) examines the effect of physical and emotional health on normal social activities, and mental health (5 items) assesses happiness, nervousness and depression. The general health perceptions domain (5 items) evaluates personal health and the expectation of changes in health. All domains are scored on a scale from 0 to 100, with 100 representing the best possible health state.[16] This questionnaire is used for evaluation of women's health after childbirth by Lydon Rochelle and his partners.[13]

The reliability and validity of the SF-36 have been well established by the developers of the instrument.[17-20]

It was translated from English to Persian and some changes were made based on Iranian culture. These changes did not affect their reliability and validity.

We explained the objects of study to mothers. At first, the mother's characteristics like age, job, the level of education, parity, insurance condition, family support and income and newborn health condition were gathered in a prepared form with interviewing method. The SF-36 questionnaire was completed in similar method too.

The data were analyzed by SPSS software version 15. Also the interaction between delivery and insurance and delivery and mother's education were tested by two ways ANOVA.
The p value level less than 0.05 was considered significant.

Results

Of 1100 participants 7 women were missed due to incomplete data. From the rest, 504 (46%) women had normal vaginal delivery and 589 (54%) of them had cesarean section.

The mean age in women with vaginal delivery and cesarean section was 25.3 ± 4.6 and 25.9 ± 4.5 years respectively. The difference between them was not significant ($p = 0.08$).

The difference in years after marriage between two groups was not significant ($p = 0.14$). Also considering mother's job, familial and husband's support and newborn's gender, the differences were not significant too. But there were significant differences considering insurance condition ($p = 0.01$) and mother's educational level ($p = 0.04$) between two groups.

The mean and standard deviation of mental health items of SF-36 in women with normal vaginal delivery and cesarean section were revealed in table 1.
The interaction between type of delivery, kinds of insurance and maternal education is shown in figure 1 and figure 2.

Mothers without insurance had the least mental health scores in cesarean section and normal vaginal groups. The mental health score was 57.5 and 60.2 respectively.

Mother with army insurance had the highest scores of mental health in cesarean section and normal vaginal groups (67.31 and 70 respectively).

In general, mothers with normal vaginal delivery with any kind of insurance had higher mental health scores in comparison to cesarean section group.

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Table 1. Mental health status in mothers with normal vaginal delivery and cesarean section

	Delivery	n	Mean	SD	T test
Role limitation of emotional health	NVD	504	64.0212	40.99560	t = 1.499
	CS	589	60.3848	41.65151	p = 0.148
Fatigue/energy	NVD	504	59.5635	19.58333	t = 1.341
	CS	589	57.9881	19.15480	p = 0.18
Emotional well being	NVD	504	56.1032	16.40508	t = 1.771
	CS	589	54.2513	18.15667	p = 0.077
Social functioning	NVD	504	71.8254	20.80551	t = 2.1
	CS	589	69.0365	23.09344	p = 0.036
Total mental health	NVD	504	62.8783	18.60727	t = 2.131
	CS	589	60.4152	19.42316	p = 0.033

NVD: Normal Vaginal Delivery; CS: Cesarean Section

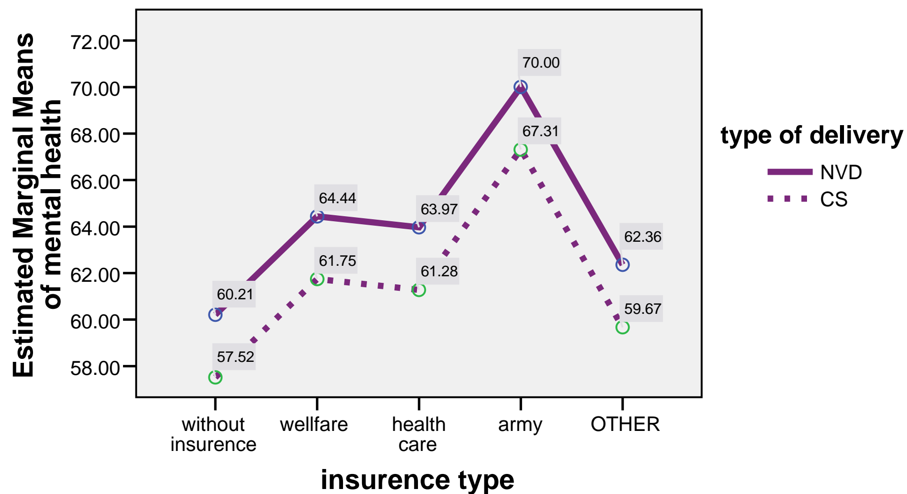

Figure 1. Mental health mean according to type of delivery and kind of isurance
NVD: Normal Vaginal Delivery; CS: Cesarean Section

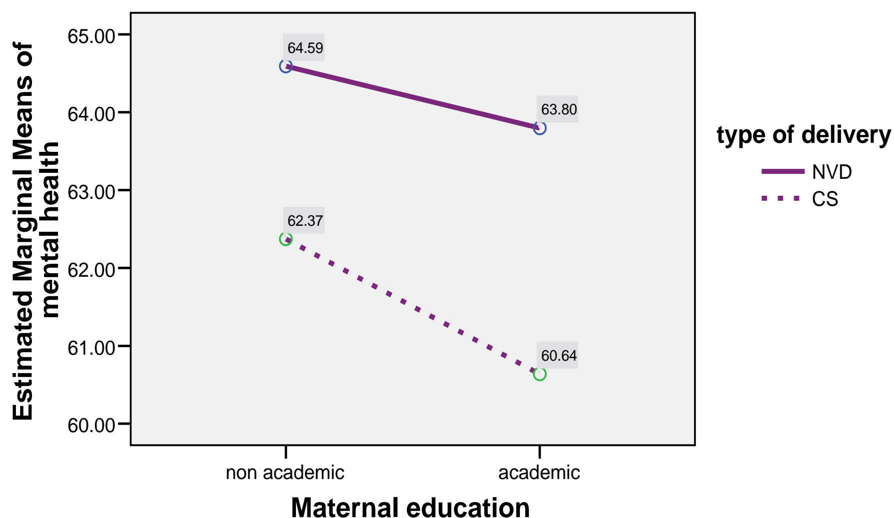

Figure 2. Mental health mean according to type of delivery and matemal education
NVD: Normal Vaginal Delivery; CS: Cesarean Section

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Discussion

In this study, information regarding a wide range of potential risk factors was collected from primiparous women who had normal vaginal delivery or cesarean section.

Our study showed that quality of life related to mental health 6 weeks after delivery is better in women with normal vaginal delivery. It means that women with cesarean section feel more conflict with maternity due to limitation in well being, social function and feeling more fatigue. Gjerdingen et al showed that from pregnancy to the 6th postpartum month, the number of days that mothers were ill because of infections steadily increased. In addition, depressive symptoms for new mothers rose from pregnancy to the 6th week postpartum, and declined after it.[21]

Small et al showed operative birth has been associated with considerable maternal morbidity, including depression, guilt, regret, loss of self esteem, prolonged pain, discomfort, infection, grief reactions, feelings of violation, dissatisfaction with care, and occasionally hostility to hospital staff.[22]

In this study, the level of mother's education was different in cesarean section group compared with normal vaginal group. The mothers with cesarean section had higher level of education. The role of social class for elective cesarean was considered in a study.[14]

In our study the mothers who had social insurance and army insurance had higher rate of cesarean section. It might be attributed to their facilities for their stakeholders.

Our investigation showed that mothers who had normal vaginal delivery had higher total mental health score than cesarean section group. But in details, among the different items of mental health in SF-36 questionnaire including role limitation of emotional health, fatigue/energy, emotional well being and social functioning, the difference considering social functioning was significant according to method of delivery. As mother's education was different in two groups, after justifying it, the mental health level was higher in normal vaginal group too. As Lydon-Rochelle et al showed, seven weeks after giving birth, cesarean mothers had significantly lower scores of physical functioning, mental health, pain, social functioning, and daily activity than women with normal vaginal births. They used SF-36 questionnaire too.[13] In some studies this correlation was revealed.[1,2,23,24] But in other studies any link between cesarean section and postpartum depression has not established.[25-27] It might depend on the context in which cesarean section occurs including the cultural norms, preparedness and the social support available to women.[28] It appears that the potential adverse impact of cesarean section can be mitigated, nullified or reversed in certain contexts.

Murray found that mode of delivery was only associated with postpartum depression if women had a history of depressive disorder. This study grouped together women with forceps and cesarean section.[29] Furthermore in our study women with previous study of depressive disorder were excluded.

One of the strength of our study was collecting other variables that may affect on postpartum mental health like age, job, education, parity, family support and income and post history of psychological and physical disorders.

One of the limitation of the study was that the route of cesarean section was not considered because cesarean may differ according to whether they are planned or unplanned, if they are an emergency or not, if a general anesthetic or epidural anesthetic is administered, if unwanted people are present or not, how adequate the information provided has been, and how much control the woman feels over what is happening to her.[25]

Also we declare that have no conflict of interest in this study and they have surveyed under the research ethics.

Conclusion

According to high rate of cesarean section in this area and its dependency to mental health status, some intensive interventions to promote mother's attitude and knowledge about the risks of cesarean section were recommended.

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