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Original Article

A comparative study on quality of life and sexual function after vaginal delivery and Cesarean section

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ABSTRACT

Background & Aim: Many changes occur during and after pregnancy which affect physical, psychological and social health and generally women's quality of life. This study aims to explore the relationship between quality of life and sexual dysfunction after delivery.

Methods & Materials: This cohort study was designed to compare the relation of mode of delivery to quality of life and sexual satisfaction in 330 pregnant women referred to hospitals of Tehran University of Medical Sciences. Sexual function questionnaire including 20 questions and quality of life questionnaire including 26 questions were developed based on Female Sexual Function Index (FSFI) and World Health Organization life quality (WHOQOL- BREF) questionnaire, respectively. Data were analyzed through SPSS version 15 software using descriptive and analytical methods (t-test, X^2 test, Fisher's exact test and analysis of variance).

Results: The mean sexual function score in the vaginal delivery and Cesarean section groups were 45.25±5.59 and 45.50±6.03, respectively, which shows no significant difference. No significant difference was seen regarding the mean score of quality of life between vaginal delivery group (87.8±10.70) and Cesarean section group (88.25±11.29). Also no significant difference was seen between two groups of study, considering different aspects of life (physical, psychological, environmental and social).

Conclusion: Quality of life was similar in both groups of vaginal delivery and Cesarean section. Therefore, authorities in charge of health programs can have a leading role in changing people's concept of delivery and developing a positive attitude towards vaginal delivery. This could be achieved through effective public training schedules.

Introduction

Many biological and physiological changes during pregnancy and after delivery affect general women's quality of life (1, 2). If vaginal delivery is unsafe for either mother or neonate, Cesarean section (C-section) is a choice of consideration. Regarding studies carried out in Iran, more than 70% of pregnant women prefer C-section due to several reasons. About 92% of them point out the fear of pain and complications of vaginal delivery as the most common reasons (3).

Complications such as pain, weakness, prolonged recovery and sexual dysfunction have been reported more in C-section than vaginal delivery (3,4). Also postpartum period is crucial for both mother and neonate. One of the influential factors on quality of life in this period is mode of delivery (5,6).

Among various aspects of quality of life as a general term, sexual health satisfaction and

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sexual function are particularly taken into account (7).

Pregnancy and postpartum are two important stages of life which have a significant psychological, hormonal and sexual influence on sexual function and therefore on quality of life (8).

Sexual dysfunction is one of the most prevalent but curable disorders which has been seen among 30-50% of women in modern societies (6).

Sexual function disorders are defined as loss of libido, stimulation, and orgasm and dyspareunia derived from multifactorial anatomical, physiological, and psychological problems which can not only cause depression but also affect quality of life and interpersonal relations (9).

Hypogastric and back pain, nervousness, lack of concentration and inability to perform normal activities are other consequences of sexual dysfunction whereas in contrast, favorable sexual function is known as an important motivation for having strong family relation and healthy mental status (8).

In this regard, mode of delivery might be an effective factor, since according to several reports C-section cases resumed their sexual function earlier than those of vaginal delivery (10). In one study, Lyndon et al reported that cases of C-section had less satisfactory sexual function compared with those with vaginal delivery (11).

In one study, prevalence of postpartum sexual dysfunction was reported more than 43% (12). Barret et al stated that disorders related to sexual relation during the first three months of delivery are more than other periods (13).

Also Signorelli et al stated that perineal trauma and assisted vaginal delivery led to sexual dysfunctions (14). Whereas, in another study carried out by Baytur et al, stretching of perineal muscles and mode of delivery had no effect on sexual function (18). Although it has been known that vaginal delivery causes injury to perineal muscles and sexual dysfunction (14-18).

Nevertheless, further studies are required to explain effect of endocrinology of milk production due to the fact that increase in prolactin secretion level as a result of breastfeeding causes decrease in sexual hormones (19).

One of the crucial goals of public health in the 21st century is improvement of quality of life. According to many studies, sexual dysfunction affects the quality of life. Therefore it should be considered as an influential factor in quality of life (12,20). Quality of life in all stages of life including pregnancy (21) and postpartum period (22) should be studied. Such studies have an important role in providing healthcare services and developing closer relationship between physicians, health care providers and patients and in general, can lead to promotion of health care programs (23).

Accordingly, the researcher of present study decided to investigate the relation of two different modes of delivery with quality of life and sexual dysfunction in postpartum period.

Methods

This cohort study was conducted to compare the effect of mode of delivery on quality of life and sexual dysfunction in 330 pregnant women, aged 20-40 years, with basic level of literacy and experience of at most 2 deliveries referred to Mirza-Kuchak-Khan Hospital, affiliated to Tehran University of Medical Sciences. These cases were studied 3 to 6 months after elective C-section or vaginal delivery in 2006 and 2007.

Exclusion criteria included cases with sexual dysfunction, pelvis surgery (apart from Cesarean), history of anti-depressive drug therapy, history of pelvic prolapse, history of medical diseases, loss of family member experience, divorce experience, family problems and cases who were not interested in participation. The questionnaires were distributed among sequential sampled pregnant women referred for delivery to the selected hospital. Questionnaires were sent off in stamped envelopes to participants and also they were followed up by reminder calls 3 to 6 months later. Exposure was delivery and the outcome was quality of life and sexual function.

The questionnaire consisted of three different sections:

a) Questionnaire of demographics and pregnancy-related variables included age, husband's age, level of education, duration of marriage, method of contraception, the first intercourse after delivery, mode of delivery and neonate's birth weight.

b) Sexual function questionnaire consisted of 20 questions based on Female Sexual Function Index (FSFI) questionnaire. Questions covered different aspects of sexual function and satisfaction. Variables of sexual function were

Table 1: Background Variables studied in vaginal delivery and C-section groups

group Variable	Vaginal delivery N (%)	Cesarean section N (%)	p-value
Level of education			
Under diploma	49(37)	65(33)	
Diploma	62(47)	87(44)	0.26*
Above diploma	21(16)	46(23)	
Complications			
No Complications	117(88.6)	171(86)	
Bleeding	10(7.6)	10(5.5)	0.4*
Inflection	3(2.3)	8(4)	
Others	2(1.5)	9(4.5)	
Breast feeding			
Yes	110(83.4)	163(82.3)	0.8*
No	22(16.6)	35(17.7)	
Maternal age (year) Mean ± SD	25.22 ± 4.09	25.24 ± 4.07	0.51**
Time of the first intercourse (week) Mean ± SD	7.03 ± 3.12	6.95 ± 3.38	0.44**

*Chi-square test
**t test

categorized into 7 independent parts including libido (4qs), psychological stimulation (3qs), moisture and orgasm (5qs), satisfaction (4qs), pain and fear (3qs), spotting (1q) and physical attraction (1q) [24]; Each item was rated on a 5-point Likert scale ranging from 0 to 4 (Not at all, a little, some, much, very much).

c) Life quality questionnaire consisted of 26 questions based on standard World Health Organization life quality (WHOQOL- BREF) questionnaire which focused on physical, psychological, social and environmental aspects as well as individual's general view of life and personal health (25). Each aspect was separately scored ranging from 1 to 5 based on Likert-type scale (possible range: 26 to 130), where higher scores indicated better condition.

Content validity of life quality questionnaire was approved by WHO in 1996 (25). Reliability and validity of life quality questionnaire also were confirmed in a study performed in Iran (26).

Validity of sexual function questionnaire was checked in a study conducted by Mohammadi et al for the first time in Iran, in 2008 (Cronbach α=80%) (24).

Data were analyzed through SPSS version 15 using t-test and X^2 test. P value of <0.05 was considered statistically significant.

Results

In this study, of 330 pregnant women 198 (60%) underwent C-section while only 132 (40%) had vaginal delivery. Among them, 275 cases (more than 90%) breastfed their neonates. The average maternal age in vaginal delivery and C-section group was 25.22± 4.09 and 25.24±4.07, respectively, which statistically indicated no significant difference (Table.1).

Also level of education, early postpartum complications (including no complication, bleeding, infection, etc), the average time of first intercourse after delivery and the average score of quality of life did not indicate significant difference between the two groups. (Table.1)

Majority of them did not encounter postpartum complications (88.6% in vaginal delivery and 86.4% in C-section group). In general, of 330 cases, 5 cases in vaginal delivery group and 12 cases in C-section group did not resumed their sexual function during first 3 to 6 months after delivery (Table.1).

The average time of the first intercourse was 7.03± 3.12 and 6.95±3.38 days in vaginal and C-section group, respectively, which statistically did not indicate significant difference (Table.1).

Table 2: Comparing the score of different aspects of life quality and sexual satisfaction in both groups

Group Variable	Vaginal delivery Average± standard deviation	C-section average± standard deviation	p-value*
Quality of life			
Total score of quality of life	87.80±10.70	88.25±11.29	0.58
Individual's feeling about life	4±0.70	4.40±0.54	0.34
Individual's feeling about health	4.2±0.44	4±0.70	0.60
physical aspect	26.20±2.48	20.40±6.73	0.18
psychological aspect	18.40±3.71	22.40±2.19	0.07
social aspect	11.40±2.19	12.60±2.30	0.42
Environmental aspect	28±4.41	29.60±3.75	0.54
Sexual satisfaction			
Total score of sexual satisfaction	45.25±5.59	45.40±6.03	0.80
Physical attraction	3.79±0.75	3.71±0.70	0.34
Libido	13.19±2.58	13.61±2.89	0.28
Orgasm	17.11±2.94	17.20±3.33	0.5
Husband's satisfaction	15.42±2.36	15.63±2.29	0.53
Sexual phobia	6.30±2.05	6.14±2.30	0.42
Dyspareunia	3.57±1.42	3.59±1.51	0.75
Spotting after the first intercourse (day)	1.30±0.60	1.16±0.43	<0.001

*t test

Also regarding sexual function, the average score of all parts showed no significant difference. However, the average time of spotting after the first intercourse was 1.3±0.60 days in vaginal delivery and 1.16± 0.43 days in C-section group, which statistically was a significant difference. In other words, Spotting after first intercourse in vaginal delivery was more than that in C-section but this factor could not change the total score of sexual satisfaction in both groups (Table.2).

The average score of quality of life in vaginal delivery and C-section group was 87.8±10.70 and 88.25±11.29, respectively, which did not show significant difference. (Table.2)

Regarding variables of sexual function (libido, orgasm, etc) and quality of life, there were no significant differences between two groups. The total score of sexual function for breastfeeding mothers in groups of vaginal delivery and C-section was 45.25±5.12 and 45.40±6.03, respectively, which did not show a significant difference.

Discussion

According to the final results of this study, the total score of women's sexual function was similar in both groups of vaginal delivery and C-section. In the present study, there was no significant relationship between mode of delivery (vaginal or C-section) and resumption of postpartum sexual function. Therefore, women in both groups resumed their sexual function within 7 or 8 weeks after delivery.

Since cases of this study had parity 1 - 2, thus regularly all cases had the experience of delivery by episiotomy or C-section. This is probably why mode of delivery and resumption of sexual function did not have significant association. In one study conducted by Baytur et al in Turkey, no association was found between mode of delivery and resumption of sexual function (15).

In this study, women had the history of mediolateral episiotomy and/or C-section, but not assisted delivery. Also in another study by Byrd, the mode of delivery did not affect the time of sexual function resolution (27).

Despite above studies, von Sydow stated that mode of delivery is an influential factor in resumption of sexual function after delivery (10). Besides, Signorelli's study indicates that weight gain at birth, perineal trauma and assisted delivery increase sexual dysfunction after vaginal delivery (14). Also in another study carried out by Barrette, it has been reported that mode of delivery and perineal trauma, due to increase of dyspareunia, are two strong factors affecting delayed sexual function (13).

In the present study, no perineal trauma was found and other complications in both groups were also not significantly different.

It is noteworthy mentioning that different results regarding mode of delivery and resumption of sexual function were obtained

from various studies. This might probably be due to higher birth weight, perineal trauma or assisted delivery, all of which result in more sexual dysfunction. Also with respect to scientific references and advice given by prenatal health care providers, sexual function has to be avoided within the first 6 weeks of delivery.

In the present study, variables of sexual function (orgasm, libido, resumption of intercourse) did not affect breastfeeding. The majority of cases in both groups breastfed their babies. Xu also indicated that mode of delivery does not affect sexual dysfunction (28).

Barrett and Udry in another study found that protective role of C-section in sexual function was limited to the first 13 months of delivery which was due to presence of dyspareunia in vaginal delivery group; but after 6 months sexual function was identical in both groups (13, 29).

It has been reported that hormonal contraceptive methods increase sexual function in comparison with barrier contraceptive methods such as condoms (30,31). Nonetheless, in other studies, hormonal contraceptive methods have been reported to have a negative effect on libido and decrease women's sexual function (32,33). One of the limitations of this study is that no question was asked regarding application of contraceptive methods. Hence, further studies are suggested in order to discover the probable effect of contraceptive methods on sexual function.

Study of women's quality of life based on WHOQOL-Bref questionnaire indicated that considering physical, psychological and social aspects of life, the average total score of quality of life in both groups was the same. That is to say, C-section did not alter mother's quality of life.

Clement in his meta-analysis of 4 studies indicated that mothers in vaginal delivery group have higher self-esteem than those of C-section group (34). Also in his other meta-analysis of 5 studies on both modes of delivery, no difference was seen in relations between mothers and neonates between the two groups (34).

In Contrast, another analysis of 2 studies showed that mothers undergoing C-section had a better relation with their neonates. Clements in another meta-analysis of 19 studies found that mothers were generally less satisfied with C-section in comparison with vaginal delivery.

Dimatteo conducted a meta-analysis on 43 studies, considering psychological effects of C-section on postpartum period and found that mothers experiencing C-section were less satisfied than those accepting vaginal delivery (35).

In one study to compare and evaluate psychological effects of elective Cesarean and vaginal delivery on mother's relationship with her child and husband, depression, fatigue and irritating memories, no significant difference was found (36). In Jansen's study, the average scores for physical criteria of quality of life were higher in vaginal delivery group in comparison with C-section group; although regarding psychological criteria, no significant difference was found between two groups (37).

In another study, Abedian showed that Iranian pregnant women mean scores of physical and psychological aspects of quality of life in the first 2 weeks of delivery were higher in vaginal delivery group than C-section group (38). Also in Torkan's study, this difference persisted up to 6-8 weeks after childbirth (39). In a study based on Medical Outcome Study, Short-Form-36 (SF-36) quality of life was known to be higher in the elective C-section group than emergent C-section and vaginal delivery groups (40).

With respect to evaluation of different aspects of quality of life, different results might be obtained due to unequal sample sizes and application of different methods to evaluate the quality of life as well as different economic levels of subjects.

In general, the maternal quality of life in both groups of vaginal delivery and C-section was almost similar. However, due to some issues such as anesthesia, surgery, and related complications as well as more post operation care, the C-section to inevitable emergent cases is undeniable.

However, elective C-section imposes heavy burden of cost not only on the family but also on healthcare system. Instead, these costs could be invested in providing better healthcare services and increasing women's awareness in order to promote family health which ultimately results in having a healthier society.

Regarding sexual function after both modes of delivery, this study showed no difference in all variables of sexual function between the two groups except for more spotting after sexual intercourse in vaginal delivery group.

In the present study, sexual satisfaction was also the same in both groups. In Kelein's study, sexual satisfaction of nullipara in vaginal delivery group was more than that in C-section group, while sexual satisfaction of multiparus was same in both modes of delivery (32). In Gungor's study sexual satisfaction of nullipara was same in vaginal delivery and C-section. Other interfering undeniable factors are such as personal, social and geographical differences, lifestyle, marital condition and elapsed time of delivery (40). Therefore quality of life and sexual satisfaction are interconnected.

Regarding the results of this study, quality of life in both modes of delivery was the same. Thus, authorities in charge of healthcare programs are responsible to take necessary measures in order to provide proper educational programs to change individuals' concepts and develop positive attitude towards vaginal delivery.

Conflicts of interest

The authors declared no conflict of interest.

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