

Long term effect of vaginal delivery and cesarean section on female sexual function in primipara mothersFereshteh Ghorat¹, Reza Jafarzadeh Esfehiani², Masoumeh Sharifzadeh³, Yaser Tabarraei⁴, Shima Sadat Aghahosseini⁵

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Type of article: Original**Abstract**

Introduction: Pregnancy and birth giving are two of the most important and common effective factors influencing female sexual function. Sexual dysfunction can affect women's quality of life and marriage. This research tried to determine the relation between labor type and long term sexual function in primipara women of Sabzevar, Iran.

Methods: This cross-sectional study took place in Sabzevar healthcare system in 2014. Study population was chosen by random sampling from every primipara woman who had delivered 2 years ago, in Sabzevar Hospitals. A total number of 177 primipara women were enrolled in this study after signing an informed consent. Sexual function of mothers was determined by validated Persian version of female sexual function index (FSFI). SPSS statistical software version 19 and descriptive and inferential statistics such as percentage, mean, standard deviation, Chi square, student t-test and fisher exact test were used to analyze data.

Results: Among the study population, 69.5% had natural vaginal delivery (NVD) and 30.5% had caesarean section (C/S). The overall FSFI score was not significantly different in women undergoing NVD or C/S ($p=0.23$). Also, no significant relation was found between delivery method and urinary ($p=0.07$) and fecal incontinence ($p=0.6$). Female sexual function was prominent in women with urinary ($p=0.015$) and fecal incontinence ($p=0.018$).

Conclusion: The results of present study showed that delivery method has no long-term effect on female sexual function and appropriate education about the sexual issues after delivery and effect of birth giving on sexual function are necessary for this group of society.

Keywords: Primiparity; Obstetric Delivery; Sexual Dysfunctions, Cesarean Section

1. Introduction

Sexual dysfunction is defined as continuous or repetitive decrease of sexual desire, arousal and pain during intercourse and failure in achieving sexual orgasm (1, 2). This common problem is thought to be age related and progressive (3, 4). Regarding the prevalence of female sexual dysfunction is variable in different cultures, age groups or health conditions such as cardiovascular or psychological disease, every study about this issue from different parts of the world seem unique in nature, and their findings cannot be particularly compared with each other (5). Studies have shown that sexual dysfunction has an important effect on women's life quality as well as life

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after marriage (6). In a most recent study in our region, the prevalence of female sexual dysfunction was reported to be approximately 62% in healthy women (7). Various factors can affect sexual function. Pregnancy and child birth are two important and common factors which are reported to have controversial effects on sexual function (8-11). Sexual function fluctuates within 6 months after delivery and will gradually improve (12). Both pregnancy and delivery are known risk factors of pelvic floor dysfunction. Pelvic floor dysfunction can be manifested as urinary or fecal incontinence, female reproductive organ prolapse, and pleasure and sexuality disturbances. Hormonal changes, as well as mechanical forces during pregnancy and also the pressure of labor process on pelvic floor muscles, can provide neural and muscular damage to pelvic floor organs; leading to further sexual dysfunction (13). In our country, the rate of Cesarean Section (C/S) with no medical indication is growing, and women show tendency toward C/S because of personal beliefs including fear of pain and injury during child birth, and complications of Normal Vaginal Delivery (NVD) (14). According to the rise in tendency toward C/S and because of antithesis about the long-term effects of type of delivery on female sexual function, we decided to evaluate the long-term effect of delivery type on female sexual function in an Iranian population.

2. Material and Methods

This cross-sectional study took place in healthcare facilities of Sabzevar University of Medical Sciences in 2014. The study protocol was approved by Sabzevar University of Medical Science Ethic Committee (Research code: 90008). Study population was chosen by random sampling from every primipara woman who had delivered 2 years ago, in Sabzevar Hospitals. None of the study participants had any previous mental or physical illness within 2 years after delivery and also did not take any medication for longer than a month within this 2-year period. Women who had preterm or post term labor, non-elective Cesarean Section (C/S) and instrumental vaginal delivery, or those who were multi partner were excluded. Also, illiterate women were not considered for enrollment in this study. Eligible women filled the informed consent, and were given two separate questionnaires for assessing sexual function and demographic data. Female sexual function was assessed by Female Sexual Function Index (FSFI). FSFI questionnaire consisting of 19 items. This questionnaire evaluates six main domains of sexual functions including sexual desire, lubrication, sexual satisfaction, sexual arousal, orgasm and sexual pain over the previous month (7, 15). FSFI score is obtained by summing up the scores achieved in each domain. Persian translate of FSFI questionnaire has been previously validated in an Iranian study (16). In this study, cut-off points used for sexual dysfunction were similar to previous study in Sabzevar University of Medical Sciences with the same questionnaire (7). Score cut off points were as follow: sexual pain: 3.8, Sexual desire: 3.3, sexual arousal: 3.4, lubrication: 3.7, orgasm: 3.4 and sexual satisfaction: 3.8 (7, 17). Sensitivity analysis for Persian version of FSFI reported the score of 28 as the best cut-off point (sensitivity: 83%, specificity: 82%) (17). Demographic questionnaire included questions about participant's age, marriage duration, type of delivery and educational status. Urinary and fecal incontinency were documented according to patients' medical record, which was completed by their gynecologist. Participants who were diagnosed with sexual dysfunction in the study were advised to consult a gynecologist. Study data was analyzed by the statistical package for social sciences (SPSS) software version 19. Demographic data was assessed by descriptive statistical tests. Chi square, student t-test and fisher exact test were used for comparing groups. Confidence limit was set at 0.95, and P-value lesser than 0.05 was considered as statistically significant.

3. Results

One hundred and seventy-seven women were eligible to enroll in this study. Mean age of participants was 31.81 ± 6.31 years and mean age of marriage was 11.7 ± 6.15 years. Most of the study population had NVD (69.5%). Approximately 50% of participants had primary education. Participants in both NVD and C/S groups were similar in terms of demographic data. Mean score of sexual function was not statistically significant between the study groups ($p=0.23$). However, participants in C/S group showed significantly higher sexual arousal score than NVD group ($p=0.04$) (Table 1). Urinary and fecal incontinence were observed in 22.6% and 0.6% of study population respectively. No significant relation was observed between urinary and fecal incontinence and labor type ($p=0.07$ and $p=0.6$ respectively). Participants with both types of incontinency had weaker sexual function (Table 2). Out of a total of 123 NVD participants, 56 had sutured lacerations; however, statistical analysis did not reveal significant difference in study variables in comparison with labor with intact perineum ($p=0.1$).

Table 1. Comparison scores of FSFI and its sub groups in C/S and NVD women

Variable	Delivery type	Mean (SD)	p-value
Total FSFI score*	C/S	23.6 (6.45)	0.23
	NVD	22.45 (5.85)	
Desire	C/S	3.51 (0.83)	0.26
	NVD	3.35 (0.85)	
Arousal	C/S	3.76 (1.1)	0.04
	NVD	3.39 (1.11)	
Lubrication	C/S	4.14 (1.55)	0.2
	NVD	3.85 (1.31)	
Orgasm	C/S	4.0 (1.84)	0.31
	NVD	3.73 (1.45)	
Satisfaction	C/S	4.19 (1.70)	0.84
	NVD	4.24 (1.55)	
Pain	C/S	4.07 (1.49)	0.42
	NVD	3.89 (1.34)	

*Female sexual function index

Table 2. Comparison scores of FSFI in C/S and NVD women with incontinency

Incontinency type	Mean FSFI score	SD	p-value
With urinary incontinence	20.65	6.29	0.015
Without urinary incontinence	23.43	5.60	
With fecal incontinence	9.0	-	0.018
Without fecal incontinence	22.88	-	

*Female sexual function index

4. Discussion

Our study shows that the overall FSFI score was not significantly different in women undergoing NVD or C/S. However, participants in C/S group showed a significantly higher sexual arousal score than NVD group. Approximately 40% of the female population experience sexual problems in their lifetime, and decrease in sexual desire is the most common disturbance in women of all ages (6). The rate of sexual dysfunction changes during different periods of lifetime. Delivery is an important factor affecting sexuality in women. Total FSFI score in our study is approximately the same as another study which took place in our city a year ago; however, the previous study evaluated all women referring to healthcare centers (7). A recent study in our country, showed that women who experienced child birth had lower marital satisfaction than women without children (18). During the first three months after delivery, women may suffer from sexual dysfunction as decrease in libido, dyspareunia or difficulty achieving orgasm. However, these symptoms may resolve within the first year after delivery. The extent of damage to pelvic and genital organs are varied depending on type of delivery. NVD may result in pudendal nerve damage and also vaginal prolapse due to hypotonic muscle. Both of these conditions will result in orgasmic problems. It is believed that C/S has lesser effect on anatomical and structural arrangement of pelvic floor and organs (19). Eid et al. concluded that vaginal delivery had significant effect on reducing desire, arousal and lubrication within the first 3 months after delivery. Also, elective C/S was found to be associated with decrease in desire (10). Episiotomy and lacerations are important physical damages during vaginal delivery process. Although episiotomy is associated with dyspareunia, long term studies reported that the role of this issue on sexual function is inconclusive (12). Amiri et al. study showed that there is no difference between NVD with through midiolateral episiotomy and C/S in primipara women in terms of sexual dysfunction. Their study assessed sexual function at two different stages; once before pregnancy and the other time within 3 to 6 months postpartum. While the overall FSFI score in groups was not significantly different, desire, orgasm, arousal and satisfaction were lower than that of before pregnancy period. They also mentioned that regarding to preserving normal sexual function, C/S is not preferred to NVD (20). De Souza et al. also evaluated sexual function in two stages (6 and 12 months after delivery), and reported a significant effect of episiotomy on orgasm score. Furthermore, episiotomy had greater effect on lowering orgasm score than first and third degree tears. They found arousal improved in women with perineal tear or episiotomy within first year postpartum (8). We could not find any study assessing perineal injury 2 years after delivery, however; our results were in line with short term studies, indicating that episiotomy does not have negative effect on female sexual function 1 year after delivery. Another finding of our study was that no significant relation was found between

delivery method and urinary and fecal incontinency. Participants with both types of incontinency had weaker sexual function. Fecal and urinary incontinence are two other effective factors on female sexual function. Vaginal delivery and BMI are two important well known factors for urinary incontinence. The risk of urinary incontinence will increase by 67% 20 years after delivery (21). Also, pelvic floor dysfunction is two times more common in women with urinary incontinence during pregnancy and shortly after delivery (22). Chan et al. stated that prevalence of stress urinary incontinence, urge urinary incontinence and fecal incontinence were 25.9%, 8.2% and 4.0% respectively after one year of delivery (23). There is a scarcity of data available about the effect of urinary and fecal incontinence following pregnancy on female sexual function. One reason could be lack of validated questionnaires till recent years. Despite this weakness in literature, women with fecal incontinence are as likely to engage sexual relation as healthy women; however, they show poorer sexual function than healthy women (24). Similar to the findings of our study, a cross sectional study by Imhoff et al. also showed a greater risk for having poor sexual life in women with fecal incontinence compared to normal women (25). Despite structural disturbances and traumas, pregnancy may have a hormonal effect on sexual function within a few months after delivery, which could be due to lactation, relational and emotional changes (20). Although not sufficient, we tried to minimize possible bias about hormonal effect on sexual function by evaluating women who have 2 year-old children and do not breast feed them. Furthermore, we relied on gynecological diagnosis regarding urinary and fecal incontinence, instead of using questionnaires. It is possible that some of the participants had received non-medical treatment for their incontinence and thus, their sexual functions were affected by exercises and not by medication or surgery. The results of this study can be used by healthcare professionals, especially midwives, to design and develop effective counseling programs and appropriate education about sexual function after delivery, and the effect of delivery on sexual function. Because midwives are responsible for the health of mothers in health centers, and provide correct information and real help for mothers. The limitations of this study include lack of determining sexual satisfaction of spouses, lack of examining the sexual function of multipara women compared with nullipara women and self-completion of the questionnaire are among the limitations in this study.

5. Conclusions

Present study did not find any relation between type of delivery and female sexual dysfunction. This could be a document to prove the fallacy of the common belief in our region that C/S could prevent sexual problems. Despite this, we concluded that there was an association between urinary and fecal incontinency in primipara women. According to these results, we suggest that health providers educate women about the best delivery type and possible sexual dysfunction in early months after delivery which is not going to be persistent or affect their sexual life.

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Conflict of Interest:

There is no conflict of interest to be declared.

Authors' contributions:

All authors contributed to this project and article equally. All authors read and approved the final manuscript.

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