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Effect of Mode of Delivery on Postpartum Sexual Function: A Cross-Sectional Study

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ABSTRACT

Several studies have explored how the type of delivery affects postpartum sexual function.Therefore, the aim of the study was to assess the relationship between type of delivery and postpartum sexual function.
This cross-sectional study was carried out on postpartum women gave birth at a tertiary hospital from June to December 2019. Clinical and demographic information,along with the Female Sexual Function Index (FSFI) questionnaire, were collected from each woman through face-to-face interviews by a trained nurse.Postpartum mothers were categorized into three groups: vaginal birth, vaginal birth with episiotomy, and cesarean section.
A total of 240 postpartum women, with a mean age of 28.03 ± 6.02 years were included. Desire, arousal, lubrication, orgasm, and satisfaction were significantly lower in the vaginal birth group compared to the other groups. The mean pain score of 2.26±1.11 was significantly lower in those who had a cesarean section (p=0.001).
The findings of our study suggest that cesarean section was associated with higher scores in sexual functioning compared to other delivery modes at three months postpartum.

Keywords: Sexual function, mode of delivery, vaginal birth, cesarean section, episiotomy, FSFI

Introduction

The concept of sexuality for women encompasses emotional, intellectual, and sociocultural aspects, as well as desirability, childbearing ability, and body image (1,2). Sexual function may vary during different life stages, with pregnancy and the postpartum period being the most sexually inactive period for women, surpassing puberty and menopause (3).

The resumption of postpartum sexual intercourse depends on the physical recovery of the woman and the psychological readiness of both partners. Cultural differences also play a role in determining when sexual activity can resume. Research has shown that some women may not engage in sexual intercourse for up to 2-3 months postpartum (4). Although most women resume sexual activity within 6-8 weeks postpartum, it may take up to a year to reach pre-pregnancy levels (5). Sexual problems may persist for an average of three months (ranging from 1 to 11 months) postpartum. Common issues include dyspareunia, lack of lubrication, reduced orgasmic capacity, vaginal laxity, loss of libido, postcoital bleeding, discomfort, and decreased frequency of sexual intercourse (6).

In countries where traditional customs and practices are highly valued, discussing sexuality, even after marriage, can be challenging, resulting in limited sexual health assistance for women in the postpartum period. Additionally, few studies explore how the type of delivery affects postpartum sexual function. Thus, the purpose of this study was to investigate the association between the type of delivery and postpartum sexual function.

Materials and Methods

This study was conducted on postpartum mothers who gave birth at a tertiary Training and Research Hospital. After receiving ethical approval from the ethics committee, women who had given birth between June and December 2019 were contacted via telephone and invited to participate in the

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study (Approval date: 22.05.2019, number: 106). Those who met the study criteria and agreed to take part were enrolled. All women were briefed on the purpose of the study, the voluntary nature of the participation, and the assurance of anonymity. Written and verbal consent were obtained before conducting the interviews. A trained nurse conducted in-person interviews with each woman to collect clinical and demographic information and administer the Female Sexual Function Index (FSFI) questionnaire. The database management adhered to the privacy legislation, and the study followed the ethical principles outlined in the Declaration of Helsinki.

Postpartum mothers were divided into three groups: the vaginal birth group, a vaginal birth with episiotomy group, and a cesarean section group.

Postpartum mothers with systemic diseases, a history of vaginismus, premature birth, sexual dysfunction, a baby with fetal abnormalities, previous pelvic surgery, multiple marriage histories, infertility history, a body mass index (BMI) over 40, use of any medication affecting sexual function, under 18 years old, had physical or mental problems, relationship problems, and loss of loved ones in the last six months were excluded.

Female Sexual Function Index (FSFI) is a 19-item Likert-type scale used to assess sexual dysfunction in women. Rosen et al. conducted a study on the validity and reliability of the study, revealing a Cronbach's alpha coefficient of 0.82 and a test-retest reliability of 0.79-0.86 (7). The scale consists of six subdimensions and has been validated by Aygin and Aslan (8). Scale scores range from 2 to 36, with higher scores indicating better sexual function.

The sample size for this study was informed by a prior published article (9). It was calculated using an effect size (Cohen's d) of 0.5, an alpha level of 0.05, and a power of 0.80. Using G*Power, we determined that approximately 64 participants per group were required, resulting in a total sample size of around 128 participants to achieve sufficient statistical power and significance.

Statistical Analysis: The statistical analyses were conducted using IBM SPSS Statistics, version 22 (IBM SPSS, Turkey). Descriptive statistics were employed to summarize the baseline characteristics. Both t-tests and ANOVA were used to compare the means of the continuous variables across the different groups. Bonferroni post-hoc tests were conducted to identify any significant pairwise differences. The level of statistical significance was set at $p < 0.05$.

Results

The study included 240 postpartum women with a median age of 28 years (range: 18–45) and a median BMI of 26.5 kg/m² (range: 19.33–40.51). Participants had one to eight pregnancies (median: two) and zero to five deliveries (median: one). The median marriage duration was 5 years (range: 1–20). Of the participants, 10.0% completed primary education (n=24), 24.2% completed secondary education (n=58), 50.8% completed high school (n=122), and 15.0% obtained a university degree or higher (n=36). Most respondents (90.0%, n=216) were unemployed, while 10.0% (n=24) were employed. Income levels showed that 30.4% were low income, 58.3% were middle income, and 11.3% were high income (Table 1).

The mean sexual desire scores were 3.78 (SD ± 1.34) for normal spontaneous vaginal delivery (NSD), 4.09 (SD ± 1.29) for NSD with episiotomy, and 4.34 (SD ± 1.24) for cesarean section (CS), with an overall mean of 4.07 (SD ± 1.31), showing a significant difference ($p = 0.025$).

Mean scores for arousal were 3.48 (SD ± 1.50) for NSD, 3.93 (SD ± 1.29) for NSD with episiotomy, and 4.17 (SD ± 1.42) for CS, yielding an overall mean of 3.86 (SD ± 1.43) with a significant difference ($p = 0.008$).

Mean lubrication scores were 3.70 (SD ± 1.35) for NSD, 4.00 (SD ± 1.11) for NSD with episiotomy, and 4.29 (SD ± 1.37) for CS, resulting in an overall mean of 3.99 (SD ± 1.30), with a significant difference ($p = 0.015$).

Mean scores for orgasm were 3.92 (SD ± 1.49) for normal spontaneous delivery (NSD), 4.27 (SD ± 1.22) for NSD with episiotomy, and 4.60 (SD ± 1.40) for cesarean section (CS), resulting in a total mean of 4.26 (SD ± 1.40) and a significant difference ($p = 0.008$).

Satisfaction scores were 3.74 (SD ± 1.49) for NSD, 4.26 (SD ± 1.36) for NSD with episiotomy, and 4.33 (SD ± 1.61) for CS, resulting in an overall mean of 4.11 (SD ± 1.51) and a significant difference ($p = 0.025$).

The pain analysis showed mean scores of 2.83 (SD ± 1.55) for normal spontaneous delivery (NSD), 3.04 (SD ± 1.39) for NSD with episiotomy, and 2.26 (SD ± 1.11) for cesarean section (CS), with an overall mean of 2.71 (SD ± 1.40). The differences were statistically significant ($p = 0.001$) (Table 2).

Table 1: Baseline Characteristics of Groups (n=240)

Variables		Minimum	Maximum	Mean±SD
Age		18.00	45.00	28.03+6.02
Body mass index (kg/m2)		19.33	40.51	26.65+2.85
Gravidity		1.00	8.00	2.44+1.35
Parity		.00	5.00	1.20+1.15
Duration of marriage (years)		1.00	20.00	5.99+3.71
			n	%
Educational Level	Primary		24	10.0
	Secondary		58	24.2
	High School		122	50.8
	University and above		36	15.0
Employment status	Employed		24	10
	Unemployed		216	90
Income	Low		73	30.4
	Middle		140	58.3
	High		27	11.3

Abbreviation: IQR: Interquartile Range. Data are expressed as median (Q1-Q3), mean±SD, or number (percentage) where appropriate. A p-value of <0.05 indicates a significant difference.

Discussion

The findings of our study suggest that women who underwent cesarean section exhibited higher scores in pain, arousal, lubrication, orgasm, and satisfaction compared to those who had vaginal birth with episiotomy and vaginal birth three months after childbirth.

There is currently a lack of consensus regarding the impact of episiotomy on sexual dysfunction. While some studies have indicated an association between episiotomy and perineal problems such as dyspareunia and perineal pain (10), some found no significant relationship between episiotomy and sexual dysfunction in both primiparous and multiparous women (11). In addition, a systematic review found no evidence that episiotomy improved impaired sexual function, as pain during intercourse was more likely to occur among women with episiotomy (12). The present study demonstrated that women with episiotomy had worse pain scores but better sexual function scores for desire, arousal, lubrication, orgasm, and satisfaction compared to those who had a vaginal birth three months postpartum.

The relationship between the type of delivery and sexual function is still not well understood. Our study results align with previous findings by Baksu et al. (13) and Song et al. (14), indicating that cesarean section was associated with higher sexual functioning scores. In contrast, Rogers et al. (15) reported that vaginal birth was linked to better sexual functioning scores compared to cesarean section. However, a recent review suggested that the mode of delivery did not have a significant impact on the sexual function of postpartum women (16).

This study holds significant importance in investigating the impact of delivery mode on postpartum sexual function within our geographical region. While the study has notable strengths, it is essential to acknowledge certain limitations. Firstly, the study did not explore various factors that could potentially influence sexual function, including postpartum stress, social support, stressful life events, breastfeeding, previous birth experiences, history of intimate partner violence, and pre-birth sexual dysfunction. The omission of these variables may lead to a misrepresentation of any existing associations. Secondly, the cross-sectional design of the study hinders the generalizability of the findings to some extent, as the cause-effect relationship may be influenced by unpredictable factors. Incorporating these factors into future research endeavors will enhance the comprehension of the relationship between delivery mode and sexual function.

This study reveals that women who underwent cesarean section had higher sexual functioning scores compared to those who had vaginal birth with episiotomy and those who had vaginal birth three months after giving birth.

Table 2: Comparison of mode of delivery and Female Sexual Function Index (FSFI) Scores

		Mean±SD	P-value
Desire	NSD	3.78+1.34	.025
	NSD+episiotomy	4.09+1.29	
	CS	4.34+1.24	
	Total	4.07+1.31	
Arousal	NSD	3.48+1.50	.008
	NSD+episiotomy	3.93+1.29	
	CS	4.17+1.42	
	Total	3.86+1.43	
Lubrication	NSD	3.70+1.35	.015
	NSD+episiotomy	4.00+1.11	
	CS	4.29+1.37	
	Total	3.99+1.30	
Orgasm	NSD	3.92+1.49	.008
	NSD+episiotomy	4.27+1.22	
	CS	4.60+1.40	
	Total	4.26+1.40	
Satisfaction	NSD	3.74+1.49	.025
	NSD+episiotomy	4.26+1.36	
	CS	4.33+1.61	
	Total	4.11+1.51	
Pain	NSD	2.83+1.55	.001
	NSD+episiotomy	3.04+1.39	
	CS	2.26+1.11	
	Total	2.71+1.40	

Abbreviation: NSD: Normal Spontan vaginal Delivery; CS: Cesarean section; SD: Standard Deviation. A p-value of <0.05 indicates a significant difference.

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