

Research Article

A Comparative Study of Female Sexual Function before Pregnancy, First Sexual Activity Postpartum and One Year Postpartum with Respect to Mode of Delivery in Primiparae

Abd El-Sattar Sakna N^{1*}, Abd El Hameed SM¹, Alfiky MR² and Fawzy NR¹

¹Department of Obstetrics and Gynecology, Ain Shams University, Abbasyia, Egypt

²Department of Neuropsychiatry, Faculty of Medicine, Ain Shams University, Abbasyia, Egypt

*Corresponding author: Noha Abd El-Sattar Sakna, Department of Obstetrics and Gynecology, Faculty of Medicine, Ain Shams University, Abbasyia, Egypt

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Abstract

Background: The definition of female sexual dysfunction has evolved over the past years. After giving birth, women often struggle with reduced sexual desire and arousal, but how they delivered - by CS or vaginally - is not to blame. Aim of the Work: Is to compare the female sexual function before pregnancy, first sexual activity after delivery and one year postpartum in relation to mode of delivery.

Patients and Methods: The current study was carried out as a cross sectional observational study included women attending outpatient contraception clinic and pediatric outpatient clinic in El Demerdash hospital.

Results: A total of 146 (45%) of these women had experienced vaginal delivery with episiotomy (VD/epi) and 178 (55%) individuals had a Caesarean Section (CS) delivery. Comparison between before pregnancy, first sexual activity after delivery and one year after delivery according to total FSFI score shows no statistically significant difference between before pregnancy, first sexual activity after delivery and one year after delivery according to FSFI score.

Conclusion: Based on the current findings of this study, Postpartum sexual problems are common but delivery method has no long-term effect on female sexual Function where VD/epi has no impact on the sexual function of the women one year after delivery. Hence, undergoing CS in order to preserve sexual function is not a prophylactic measure. There was no statistically significant difference between VD/epi and cesarean section according to FSFI score in the three periods of participants' life; before pregnancy, first sexual activity after delivery, and one year after delivery.

Recommendations: Health providers should educate women about the appropriate delivery type and the advantages and disadvantages of both procedures. Sexual problems are common in early months after delivery; which is not persistent, or related to mode of delivery. Health providers are suggested to develop a positive attitude towards VD, and change pregnant women misbelief of demanding CS to protect them against sexual dysfunction. Further study is required to evaluate the postpartum sexual dysfunction and its associated factors.

Keywords: Female Sexual Function; Pregnancy; Delivery; Primiparae

Introduction

Female sexual dysfunction is known as being unable to reach or enjoy orgasm [1]. Sexual dysfunction can influence physical, social, and mental aspects of women's life; hence, nowadays more attention is given to the sexual health [2]. Still, the major part of available studies is not sufficient to separate the data among the variant modes of deliveries [3]. Over the first 3 months postpartum, many women experience some problems related to sexual function, such as dyspareunia, decrease libido, difficulty achieving orgasm, or vaginal dryness [4]. Typically these problems sort out one year postpartum. There are three mechanisms which may subscribe to

sexual dysfunction after delivery, dyspareunia, birth canal injury "pudendal neuropathy", and overall general health of the mother [5].

The pudendal nerve that innervate the clitoris, vulva, and perineum, may be damaged during VD by infants head pressure and/or forceps [6]. Furthermore, weak vaginal muscle due to vaginal prolapse can result in diminished ability to reach orgasm [7]. Undesired effect of VD on sexual function has been already recorded [6,7]. These studies have established that performing Cesarean Section (CS) keeps vaginal healthiness, maintains normal sexual function, and preserves anatomical and arrangement of the pelvic floor and intra pelvic organs [8]. Accordingly, CS has increased popularity

Table 1: Main socio-demographic characteristics of the female studied group.

Characteristics	No.	%
Age group		
18-30	220	67.90%
>30-40	104	32.10%
Residence		
Rural	16	4.90%
Urban	308	95.10%
Education		
Illiterate	66	20.40%
Primary school	39	12.00%
Secondary school	68	21.00%
University	151	46.60%
Work		
Yes	194	59.90%
No	130	40.10%
Sports		
Yes	55	17.00%
No	269	83.00%
Smokers		
Yes	6	1.90%
No	318	98.10%
Your husband is a smoker		
Yes	275	84.90%
No	49	15.10%

and attitudes of women, midwives, and obstetricians have changed towards CS Safarinejad et al.,

Aim of the Work

Is to compare the female sexual function before pregnancy, first sexual activity after delivery and one year postpartum in relation to mode of delivery.

Patients and Methods

The current study was carried out as a cross sectional observational study included women attending outpatient contraception clinic and pediatric outpatient clinic in El Demerdash hospital.

Inclusion criteria

Sexually active, women in childbearing age (18-40) years old, delivered VD with episiotomy or caesarean section one year ago or more, giving alive full term birth.

Exclusion criteria

Pregnant ladies, Husband with sexual dysfunction, women with chronic medical illness affecting sexual desire or performance (multiple sclerosis - cardiac disease - liver disease - renal disease - autoimmune disease - psychological disorder), women with previous gynecological perineal surgical procedures or infected episiotomy or instrumental VD.

Table 2: Data on marriage and childbirth distribution of the female studied group.

Data on marriage and childbirth	No.	%
Circumcision percentage among participants	292	90.10%
Problems in marital relation due to circumcision	117/292	40%
Mode of delivery (VD with episiotomy)	146	45.10%
Problems in marital relation	95/146	65%
Pain in marital relation	75/95	78.90%
Healing duration of episiotomy		
<=1 week	123/146	84.20%
>1 week	23/146	15.80%
Mode of delivery (Caesarean section)	178	55%
Removal of surgical stitches or wound dressing		
≤1 week	147/178	83%
>1weeks	31/178	17%
Duration of puerperium		
≤40 days	291	90%
>40 days	33	10%
Breastfeeding percentage	282	87%
Use of contraceptive method		
Yes	279	86.10%
No	45	13.90%
Problems in marital relation		
Yes	34/279	12.20%
No	245/279	87.80%
Time of resumption of sexual intercourse after delivery		
Fifth week or less	29/324	8.90%
Sixth week	249/324	76.90%
Seventh week or more	46/324	14.20%
Genital tract infection	38	11.70%
Problems in marital relation	32/38	84.20%
Women treated from infection	10-38	26.30%
Improved marital relation after treatment	10-06	60.00%

Consent

All the candidates were asked to give an oral consent before participating in the study, the consent informs about the aim of this study, all the participants were informed that all the filled information was confidential and private.

Study design

Women attending outpatient contraception clinic and pediatric outpatient clinic in El Demerdash hospital were requested to participate in this study according to inclusion and exclusion criteria with explanation of all information about the study content, value, and privacy. Only women, who approved to participate in the study and give their informed consent, were enrolled. The participants were divided into two groups; those who experienced VD with episiotomy and those who performed CS. Each candidate was interviewed by a female investigator in a private area to answer two questionnaires.

Table 3: Comparison between VD with episiotomy and cesarean section according to FSFI score in before pregnancy.

FSFI domains	VD with episiotomy		Cesarean Section		Independent sample t-test	
	Mean	±SD	Mean	±SD	t	p-value
Desire	4.21	0.54	4.09	0.61	1.8545	0.0646
Arousal	4.11	0.66	4.1	0.4	0.168	0.8667
Lubrication	4.15	0.79	4.18	0.74	0.3522	0.7249
Orgasm	3.37	0.76	3.45	0.71	0.9775	0.329
Satisfaction	3.92	0.61	3.87	0.56	0.768	0.443
Pain	3.73	0.73	3.65	0.68	1.0192	0.3089

Table 4: Comparison between VD with episiotomy and cesarean section according to FSFI score in first sexual activity after delivery.

FSFI domains	VD with episiotomy		Cesarean Section		Independent sample t-test	
	Mean	±SD	Mean	±SD	t	p-value
Desire	4.05	0.73	3.96	0.54	1.274	0.2036
Arousal	4.06	0.73	4.07	0.68	0.1272	0.8987
Lubrication	3.96	0.84	4.12	0.7	1.8702	0.0624
Orgasm	3.28	0.69	3.35	0.69	0.9086	0.3643
Satisfaction	3.75	0.71	3.71	0.73	0.4968	0.6197
Pain	3.94	0.71	3.8	0.73	1.7389	0.083

The demographic characteristics and social data included Age, Residence, Education, Work, Sports, husband is a smoker, and Smokers. Data on marriage and child birth included circumcision, mode of delivery (Normal VD with episiotomy), and healing duration of episiotomy. Mode of delivery (Caesarean section), duration of puerperium, breastfeeding percentage, use of contraceptive method, time of resumption of sexual intercourse after delivery,

Genital tract infection

The Arabic version of Female Sexual Function Index (FSFI) questionnaire was designed and validated in epidemiological studies as an assessment tool of the female sexual function among Egyptian women [9]. This assessment instrument is brief, easy to administer, and multidimensional. The FSFI, 19-item self-report, measures female sexual function as six main domains as follow; two questions to evaluate sexual desire, four questions to evaluate lubrication, three questions to evaluate orgasm, three questions to evaluate pain, and four questions to evaluate arousal, three questions to evaluate satisfaction, scored by factor analysis. Then each question is given a score starting from 0 or 1 to 5; within each domain Scores obtained for each question are summed up and then multiplied by a constant factor giving individual domain scores.

Primary outcome

Was to compare the magnitude of female sexual dysfunction in VD with episiotomy versus caesarean section.

Ethical committee approval

This study was done after the approval of the Ethical committee in Ain Shams University Maternity Hospital.

Sample size justification

Sample size was calculated using PASS 11.0 sample size calculation program and based on a correlational study carried out by [10], who found that sexual function had an inverse association with

the influencing factors involved with the effect of delivery on sexual relations ($P < 0.001$, $r = 0.344$), the estimated sample size for this study is 324 primiparous women who were divided into two groups of VD and cesarean section; the calculated sample size achieves 80% power to detect a difference of 0.15600 between the null hypothesis correlation of 0.50000 and the alternative hypothesis correlation of 0.34400 using a two-sided hypothesis test with a significance level of 0.01000.

Statistical analysis methods

Data analysis was performed in SPSS version 20 using Pearson correlation coefficient and independent sample t-test. In addition, ANOVA test was used for comparison of means in more than two independent groups. Moreover, general linear model was used to control confounding variables, and P-value of less than 0.05 was considered statistically significant. Quantitative data were expressed as mean and standard deviation while qualitative data were expressed as number and percent.

Statistical analysis

Data were analyzed using Statistical Program for Social Science (SPSS) version 20.0. Quantitative data were expressed as mean ± Standard Deviation (SD). Qualitative data were expressed as frequency and percentage.

Results

Table 1 shows main socio-demographic characteristics of the female studied group.

Table 2 Shows data on marriage and childbirth distribution of the female studied group.

Table 3 shows no statistically significant difference between VD with episiotomy and cesarean section according to FSFI score in before pregnancy.

Table 5: Comparison between VD with episiotomy and cesarean section according to FSFI score in after one year.

FSFI domains	VD with episiotomy		Cesarean Section		Independent sample t-test	
	Mean	±SD	Mean	±SD	t	p-value
Desire	4.09	0.66	4.05	0.62	0.5612	0.575
Arousal	3.98	0.73	4.06	0.68	1.0192	0.3089
Lubrication	4.11	0.81	4.17	0.72	0.7053	0.4811
Orgasm	3.36	0.72	3.4	0.7	0.5052	0.6137
Satisfaction	3.82	0.71	3.79	0.73	0.3726	0.7097
Pain	3.75	0.68	3.72	0.71	0.3857	0.7

Table 6: Comparison between before pregnancy, first sexual activity after delivery and one year after delivery according to total FSFI score.

Mode of delivery	Before pregnancy		First sexual activity after delivery		One year after delivery		ANOVA test	
	Mean	±SD	Mean	±SD	Mean	±SD	F	p-value
VD with episiotomy	23.49	4.09	23.04	4.41	23.11	4.31	0.904	0.3667
Cesarean section	23.34	3.7	23.01	4.07	23.19	4.16	0.88	0.4028

*Significant difference between first sexual activity after delivery and other periods

Table 4 shows no statistically significant difference between VD with episiotomy and cesarean section according to FSFI score in first sexual activity after delivery.

Table 5 shows no statistically significant difference between VD with episiotomy and cesarean section according to FSFI score in after one year.

Table 6 shows no statistically significant difference between before pregnancy, first sexual activity after delivery and one year after delivery according to FSFI score.

Discussion

The rate of Caesarean Section (CS) is growing aggressively without obvious obstetric indication, and women show tendency toward CS because of personal beliefs including fear of pain, perineal damage, injury during childbirth, sexual dysfunction, and complications of Spontaneous VD [5].

After giving birth, women often struggle with reduced sexual desire and arousal, but how they delivered - by CS or vaginally - is not to blame, a small study suggests. Female sexual activity will be resumed during postpartum period when normal vaginal discharge is restored but the desire to start regular sexual activity differs very much among females according to the healing of episiotomy in women who delivered vaginally [11].

According to traditions, discussions about sexual issues even after getting married is still taboo. Many women can ask for contraceptive methods but only few women can ask for help in problems related to their sexual health [12,13].

Generally, sexual dysfunction can be defined as abnormality in response to sexual activity, in other words a problem during any phase of the sexual response cycle, with inability to enjoy satisfactory sexual intercourse, which was classified as four main disorders: Hypoactive sexual desire disorder, sexual arousal disorder, orgasmic disorder and sexual pain disorder [14,15]. In a most recent study, the prevalence of female sexual dysfunction was reported to be approximately 62% in healthy women [16]. Many factors can affect sexual function. Pregnancy and childbirth are two important and common factors,

which are reported to have controversial effects on sexual function [17]. Sexual function fluctuates within 6 months after delivery and will gradually improve. 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 [18].

The current study included 324 primiparous women who delivered alive full-term baby in one-year period. A female investigator interviewed each candidate in a private place to answer two questionnaires. First about socio-demographic data. Second about female sexual function index in three periods of her life retrospectively. The Arabic FSFI was applied which is a validated, reliable, and locally accepted tool for use in the assessment of FSD in the Egyptian population [9].

The data included women between the ages of 18 and 40. A total of 146 (45%) of these women had experienced vaginal delivery with episiotomy (VD/epi) and 178 (55%) individuals had a Caesarean Section (CS) delivery. The percentage of circumcision among participants was 90.1% from which 40% had problems in marital relation due to circumcision. This data is consistent with the Egypt Demographic and Health Survey (EDHS/ 2014) that reported the prevalence of FGM/C was 92% in married women between the ages of 15 and 49 years despite the total ban of this practice by the Egyptian government.

The presence of postpartum sexual dysfunction in women may be attributed to prolactin, a hypo estrogenic state and reduced progesterone that can happen due to breast feeding; where 282 (87%) were breastfeeding their babies in the current study, fatigue due to the baby's needs, emotional changes such as the altering body image; and the quality of the relation with her partner. It is also reported that the fear of women after VD results in increasing frustration, pain, and decreasing sexual desire and vaginal lubrication, which usually disappear within one year after childbirth [13].

It was shown in this study that 249 (76.9%) of the women restarted intercourse in the sixth week after delivery. While 29 (8.9 %) of the women resumed intercourse at the fifth week postpartum or less, and

46 (14.2%) of them resumed it at the seventh week or more. Similarly, through other studies; after the second postpartum week ladies can resume sexual intercourse depending on physical improvement [19]. Sexual intercourse starts mainly from the fifth week postpartum [20]. At 6 weeks, postpartum 53% of women resume sexual activity while 41% resume vaginal intercourse. Women who delivered vaginally with episiotomy have delayed vaginal intercourse to later than 6 weeks. 67.6% of women resumed sexual intercourse 8 weeks after childbirth, and then 62.6% of those women suffer different sexual morbidities. At 3 months postpartum 78% of women attempted vaginal intercourse [21]. Increasing to 94% by 6 months postpartum [22].

Many studies reported an association between postpartum sexual dysfunction and mode of delivery where women who have cesarean delivery have better subsequent sexual function as compared with women who have a VD and Other studies reported increased perineal pain, dyspareunia and sexual problems with assisted VD [23,24]; Hipp et al., 2012). However, women who do not have any perineal injury or lacerations during delivery resume normal sexual activities earlier than women with episiotomy [25,26]. Williams et al., reported that sexual dysfunction was more common in the women with spontaneous laceration or episiotomy compared with the women with intact perineum. In their study, [25] observed no difference in reports of dyspareunia between women with perineal tear and midline episiotomy.

The current study revealed absence of any statistically significant difference between VD/epi and CS according to FSFI score in the three periods of participants' life; before pregnancy, first sexual activity after delivery, and one year after delivery. These results in the current study are in agreement with the following studies.

A comparative descriptive study done by [27] on 277 primiparous women 3-6 months after childbirth. concluded that there were no statistically significant differences between VD and CS groups as regard to postpartum sexual function and sexual quality of life.

In a cross sectional study has done by [16], 177 primipara women at 2 years postpartum. The overall FSFI score was not significantly different in women undergoing VD or CS. Moreover showed that delivery method has no long-term effect on female sexual function. Mean score of sexual function was not statistically significant between the study groups. However, participants in CS group showed significantly higher sexual arousal score than VD group.

A descriptive correlational study done by [10] was performed on 450 nulliparous women at interval of 12 weeks to six months after childbirth revealed no statistically significant difference between VD and CS groups. Hicks et al., reported inconsistent associations between CS and sexual dysfunction [28], showed that there was no significant difference between primiparous women who had VD with midiolateral episiotomy and those who performed CS regarding their sexual function level.

In the cross sectional study done by [29], on 150 primiparous women; 81 women delivered vaginally with episiotomy and 69 women delivered by CS evaluated at 3 and 6 months postpartum, there was no significant difference between mode of delivery and postpartum sexual function.

In a cross sectional study done by [13] before pregnancy and 6 and

24 months after delivery on 213 women, concluded that no significant difference regarding six domains of sexual functions between women who underwent VD or CS. Moreover added that CS is not preferred to VD in preserving normal sexual function [30], observed non-significant difference in sexual function 12-18 months postpartum between women that delivered vaginally without episiotomy, heavy perineal laceration, or secondary operative interventions compared with women that performed elective CS.

As opposed to our findings, Chang., in a prospective longitudinal study reported that there were a higher prevalence of depression, lower sexual satisfaction, and higher scores of libido in the CS group compared to the VD group. Through another studies presenting contrasting findings, such as studies done by [31], that showed Sexual function was better in women with VD in all domains; libido, arousal, satisfaction, orgasm, lubrication, and pain.

Conclusion

Based on the current findings of this study, Postpartum sexual problems are common but delivery method has no long-term effect on female sexual Function where VD/epi has no impact on the sexual function of the women one year after delivery. Hence, undergoing CS in order to preserve sexual function is not a prophylactic measure. There was no statistically significant difference between VD/epi and cesarean section according to FSFI score in the three periods of participants' life; before pregnancy, first sexual activity after delivery, and one year after delivery.

In the current study, the participants who delivered vaginally with episiotomy showed a statistically significant difference between before pregnancy and first sexual activity after delivery according to Desire, lubrication, satisfaction and Pain. While after CS delivery shows statistically significant difference according to Desire, satisfaction and pain.

In the current study, the comparison between before pregnancy and one year after delivery according to FSFI score shows no statistically significant difference in VD/epi and in cesarean section.

Recommendations

Health providers should educate women about the appropriate delivery type and the advantages and disadvantages of both procedures. Sexual problems are common in early months after delivery; which is not persistent, or related to mode of delivery. Health providers are suggested to develop a positive attitude towards VD, and change pregnant women misbelief of demanding CS to protect them against sexual dysfunction. Further study is required to evaluate the postpartum sexual dysfunction and its associated factors.

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