ORIGINAL ARTICLE

The Comparison of Female Sexual Function in Nulliparous Women Following Vaginal and Cesarean Delivery at 6 and 12 Weeks

Peerawat Imkamol, MD[1], Puckjira Iaocharoen, MD[1], Athita Chanthasenanont, MD[1], Komsun Suwannarurk, MD[1]

[1] Department of Obstetrics and Gynecology, Faculty of Medicine, Thammasat University, Pathum Thani, Thailand

Objective: To compare and investigate the prevalence of female sexual dysfunction (FSD) among nulliparous pregnant women following vaginal delivery (NL) versus cesarean delivery (CS) at 6 weeks and 12 weeks postpartum, as well as associated factors.

Materials and Methods: The present study was a prospective cohort study conducted at Thammasat University Hospital (TUH), Pathum Thani, Thailand, between August 2024 and January 2025. Subjects were parturient delivered at TUH during period of the study. Participants were divided into NL and CS groups. FSD was evaluated using the validated Thai version of the Female Sexual Function Index (FSFI) at 6 and 12 weeks postpartum, alongside demographic data.

Results: Three hundred seventy-five parturients were recruited and divided into NL, with 189 cases, and CS, with 186 cases, groups. Mean age of participants was 31.1 years old. Demographic baseline of both groups was comparable. At 6 weeks, prevalence of FSD in the NL and CS were 78.3% and 79.0%, respectively (p=0.90). Prevalence of FSD decreased to 37% and 43% in NL and CS groups, respectively, at 12 weeks postpartum (p=0.25). Dyspareunia of CS group was higher than NL group at 12 weeks postpartum (p=0.04). Early FSD at 6 weeks predicted persistent dysfunction at 12 weeks, regardless of delivery mode (p=0.041).

Conclusion: Prevalence of FSD were 78.6% and 40.0% at 6 and 12 weeks postpartum, respectively. Type of delivery was not influenced by the FSD prevalence. Parturients who delivered by cesarean route had more dyspareunia than those who delivery by vaginal route.

Keywords: Female sexual function; Vaginal delivery; Cesarean delivery; Postpartum; Nulliparous

Received 9 December 2025 | Revised 18 December 2025 | Accepted 19 December 2025

J Med Assoc Thai 2026;109(2):148-55

Website: http://www.jmatonline.com

Sexual health is a critical component of overall well-being, influenced by biological, psychological, social, and cultural elements that change throughout life[1]. It has several dimensions, including gender, gender identity, sexual orientation, intimacy, eroticism, and pleasure, all of which contribute to total well-being[2]. Furthermore, pregnancy and childbirth bring biological, psychological, and social changes that may influence women's sexual health, affecting their intimacy, relationship, and overall well-being[3].

Correspondence to:

Iaocharoen P.

Faculty of Medicine, Thammasat University, 99/209 Moo 18, Phahonyothin Road, Khlong Nueng, Khlong Luang, Pathum Thani 12120, Thailand.

Phone: +66-93-6416969

Email: puckjiraaeocharoen@gmail.com

ORCID: 0000-0001-8315-9540

How to cite this article:

Imkamol P, Iaocharoen P, Chanthasenanont A, Suwannarurk K. The Comparison of Female Sexual Function in Nulliparous Women Following Vaginal and Cesarean Delivery at 6 and 12 Weeks. J Med Assoc Thai 2026;109:148-55.

DOI: 10.35755/jmedassocthai.2026.2.03917

Previous studies have reported a deterioration in sexual function during pregnancy, which often does not fully return to pre-pregnancy levels in the postpartum period[4]. A recent meta-analysis reported that the overall prevalence of postpartum dyspareunia was approximately 35%, with about 22% of women continuing to experience pain during intercourse at 6 to 12 months postpartum[5]. Some women may continue to experience sexual dysfunction and pain up to 12 months postpartum[6].

To evaluate female sexual dysfunction (FSD), the present study employed the Female Sexual Function Index (FSFI), a 19-item questionnaire frequently utilized to assess female sexual function[7]. It looked at six domains namely sexual desire, sexual arousal, lubrication, orgasm, sexual satisfaction, and dyspareunia. A total FSFI score of less than 26 showed that there was a problem with sexual function[7].

Whether cesarean section (CS) offers protection over vaginal delivery (NL) in terms of postpartum sexual health remains controversial. The rate of cesarean delivery has been rising globally, with

an estimated average of 21%[8]. CS is commonly performed for medical indications, though an increasing number of women are now choosing it by preference. Nikolaidou et al. reported that women who underwent NL were more likely to experience dyspareunia and lower sexual satisfaction during the early postpartum period compared with those who underwent CS, although no significant long-term differences in sexual function were noted between the two groups[9].

Moreover, recent studies showed that operative vaginal deliveries (OVD) may elevate the risk of dyspareunia or diminished sexual satisfaction in the early postpartum months. However, by 12 to 24 months postpartum, dyspareunia rates tend to decline, and overall sexual function scores converge across delivery modes[9-11]. However, a previous study by Baud et al. reported that pain related to sexual activity remained more frequent six years after elective CS compared with uncomplicated vaginal delivery, suggesting that long-term differences may persist in certain populations[12].

The present study aimed to investigate the prevalence of FSD among nulliparous parturient after NL versus CS, to compare sexual function between the two groups by using the validated Thai version of the FSFI, and to identify potential factors associated with FSD at 6 and 12 weeks postpartum.

Materials and Methods

This prospective cohort study was carried out between August 2024 and January 2025 at Thammasat University Hospital (TUH), Pathum Thani, Thailand. The Human Ethics Committee of Thammasat University approved the study (MTU-EC-OB-1-065/67). Subjects were term nulliparous parturients who attended postpartum care six weeks after delivery at TUH. The inclusion criteria were nulliparous parturient, age over 20 years old, ability to communicate, read, and understand Thai language and ability to access and use a telephone, who attended a postpartum clinic six weeks after delivery. The exclusion criteria were parturient diagnosed with sexual disorders, those unable to communicate in Thai language, those who refused to participate in the present study, and those who had not resumed sexual activity at the time of evaluation.

The sample size for each group was calculated using a power of 90%, an effect size of 0.35, and a significance level of 0.05. The calculation was performed using G*Power 3.1 software for the statistical test of the difference between the two independent means (two groups)[13]. The required sample size for both groups was 346 participants. To account for a possible 10% dropout rate, the final calculated sample size was approximately 380 participants. Before recruitment, participants were informed about the study process. Information bias was minimized by ensuring private questionnaire completion, limiting interviewer influence, and verifying data completeness.

Participants were informed that they could ask questions at any moment and withdraw their participation at any time without explanation. After thorough counseling, informed consent was obtained from each participant. Upon providing consent, participants received a self-filling questionnaire with four sections. Sexual function was later assessed at 12 weeks postpartum through telephone interviews using the FSFI Thai version. The first section of the questionnaire gathered demographic information from the participants. The second section focused on their obstetric and gynecologic history. The third section included the Thai version of the FSFI, a 19-item self-administered questionnaire designed to assess six domains of female sexual function, including sexual desire, arousal, lubrication, orgasm, satisfaction, and pain. Higher scores indicate better sexual function. Based on previous reports, the Thai version of the FSFI had a reliability coefficient of 0.90[14]. The final section assessed participant satisfaction both before and after completing the questionnaire, with each item rated on a scale from 0 to 5. Total FSFI scores ranged between 2 and 36. A score below 26 was considered FSD. The cutoff point of 26 provided sensitivity and specificity at 77% and 85%, respectively, for diagnosis of FSD[15].

Data analysis was conducted by classifying variables as categorical or continuous. Categorical variables were summarized as frequencies and percentages. Continuous variables were presented either as mean with standard deviation (SD) or as median with interquartile range (IQR), depending on the distribution of the data. Comparisons between groups for categorical variables were made using either the chi-square test or Fisher's exact test, as appropriate. For continuous variables, the independent t-test was used to assess differences between groups. Missing data were handled using a complete-case analysis approach, as the proportion of incomplete responses was minimal. To assess the robustness of the findings, analyses were repeated after excluding participants with incomplete FSFI responses or missing demographic data. The results

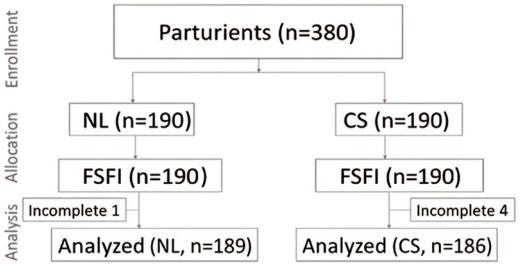

Figure 1. Flow chart of study.

NL, vaginal delivery; CS, cesarean delivery; FSFI, Female Sexual Function Index

remained consistent with the main analysis, indicating that missing data did not materially affect the study conclusions. IBM SPSS Statistics, version 23.0 (IBM Corp., Armonk, NY, USA) was used for all analyses. All statistical tests were two-tailed, and 95% confidence intervals (CIs) were calculated to indicate precision of estimates. A p-value of less than 0.05 was considered statistically significant.

Results

At first, 380 people were enrolled, and equally allocated to the NL and the CS group, with 190 people in each group. All participants completed baseline assessment and the Thai version of the FSFI questionnaire. After the 12-week follow-up, one case in the NL group and four cases in the CS group exhibited incomplete data. After exclusions, the final analysis included 375 participants with 189 in the NL group and 186 in the CS group, as shown in Figure 1.

Demographic characteristics of participants are presented in Table 1. The mean age and body mass index (BMI) of participants were 31.1 years and 22.6 kg/m², respectively. Four-fifths of the participants (310 out of 375) had a gestational age greater than 37 weeks. One-third of the participants (115 out of 375) had an education level of bachelor's degree or higher. The demographic characteristics of both groups were comparable. At 6 weeks postpartum, the prevalence of FSD for the NL and CS groups were 78.3% and 79%, respectively, with no significant difference. Prevalence of FSD in NL and CS groups decreased to 37% and 43% at 12 weeks postpartum, respectively. Both NL and CS groups had no statistical difference of FSD's prevalence.

Baseline characteristics across all socio-demographic, obstetric, and medical factors are demonstrated in Table 2. There were no significant differences in mean age, BMI, and birth body weight (BBW) between the two groups. Similarly,

Table 1. Demographic characteristics of participants among vaginal delivery (NL, n=189) and cesarean delivery (CS, n=186)

	NL	CS	p-value
Age (years); mean±SD	31.5±6.0	30.6±6.0	0.12
BMI (kg/m^2); mean±SD	22.6±3.9	22.7±3.9	0.80
GA ≥37 weeks; n (%)	147 (77.8)	163 (87.6)	0.25
BBW (kg); mean±SD	3.2±0.5	3.1±0.5	0.54
Education level; n (%)			
Bachelor or higher	64 (33.9)	51 (27.4)	0.59
Occupation; n (%)			0.34
Agriculture	96 (50.8)	91 (48.9)	
Housewife	35 (18.5)	48 (25.8)	
Employee	32 (16.9)	22 (11.8)	
Government officer	15 (7.9)	12 (6.5)	
Business owner	11 (5.8)	13 (7.0)	
Chronic disease; n (%)			
Diabetes mellitus	6 (3.2)	4 (2.2)	0.75
Hypertension	8 (4.2)	6 (3.2)	0.78
Anemia	15 (7.9)	9 (4.8)	0.29
Thyroid diseases	3 (1.6)	3 (1.6)	1.00
Income (THB/month); n (%)			0.10
<15,000	41 (21.7)	26 (14.0)	
15,000 to 30,000	96 (50.8)	111 (59.7)	
>30,000	52 (27.5)	49 (26.3)	
FSD; n (%)			
FSD6	148 (78.3)	147 (79.0)	0.90
FSD12	70 (37.0)	80 (43.0)	0.25

SD=standard deviation; BMI=body mass index; GA ≥37 weeks=gestational age at delivery ≥37 weeks; BBW=birth body weight; FSD=female sexual dysfunction (FSFI score <26); FSD6=female sexual dysfunction at 6 weeks postpartum; FSD12=female sexual dysfunction at 12 weeks postpartum

gestational age at delivery, educational attainment, occupation type, and monthly income did not differ significantly, indicating that socioeconomic status was evenly distributed. The prevalence of chronic medical conditions, including diabetes mellitus, hypertension, anemia, and thyroid disorder, was also low and balanced between groups.

The FSFI scores at 6 and 12 weeks postpartum, as FSFI6 and FSFI12, respectively, were not significantly different between the two groups. The average FSFI6 score was 22.2, while the average FSFI12 score was 26.6 as shown in Table 3. There were no significant differences between the two groups in the FSFI domains of desire, arousal, lubrication, orgasm, and satisfaction at both FSFI6 and FSFI12 assessments. At 12 weeks postpartum, parturient in CS group had more dyspareunia, or pain domain, than NL group with statistical significance. The relationship between FSFI6 and FSFI12 scores are presented in Table 4. The association between early and persistent overall

Table 2. Participant characteristics by sexual-dysfunction status at 12 weeks postpartum

	FSD (n=150)	Non-FSD (n=225)	p-value
Age (years); mean±SD	31.0±6.1	31.1±6.1	0.88
BMI (kg/m^2); mean±SD	22.7±4.1	22.6±3.7	0.85
GA ≥37 weeks; n (%)	98 (65.3)	160 (71.1)	0.45
BBW (kg); mean±SD	3.1±0.5	3.1±0.5	0.14
Education level; n (%)			
Bachelor or higher	47 (31.3)	66 (29.3)	0.58
Occupation; n (%)			0.72
Agriculture	78 (52.0)	109 (48.4)	
Housewife	33 (22.0)	50 (22.2)	
Employee	17 (11.3)	37 (16.4)	
Government officer	12 (8.0)	15 (6.7)	
Business owner	10 (6.7)	14 (6.2)	
Chronic diseases; n (%)			
Diabetes mellitus	3 (2.0)	7 (3.1)	0.51
Hypertension	4 (2.7)	10 (4.4)	0.37
Anemia	8 (5.3)	16 (7.1)	0.49
Thyroid disorder	2 (1.3)	4 (1.8)	0.74
Income (THB/month); n (%)			0.71
<15,000	24 (16.0)	43 (19.1)	
15,000 to 30,000	86 (57.3)	121 (53.8)	
>30,000	40 (26.7)	61 (27.1)	

SD=standard deviation; FSD=female sexual dysfunction (FSFI score <26); Non-FSD=no female sexual dysfunction (FSFI score ≥26); GA ≥37 weeks=gestational age at delivery ≥37 weeks; BBW=birth body weight; BMI=body mass index

Table 3. FSFI of NL (n=189) and CS (n=186) groups at 6 and 12 weeks

	NL; median (IQR)	CS; median (IQR)	p-value
FSFI6	22.1 (17.6, 25.55)	22.3 (17.6, 25.2)	0.95
Desire	3.6 (2.4, 4.8)	3.6 (2.4, 4.35)	0.82
Arousal	3.6 (2.7, 4.2)	3.3 (2.4, 4.2)	0.25
Lubrication	3.6 (2.4, 4.5)	3.6 (2.625, 4.2)	0.39
Orgasm	3.6 (2.4, 4.4)	4.0 (2.8, 4.4)	0.27
Satisfaction	4.0 (2.8, 4.4)	3.6 (2.4, 4.8)	0.59
Pain	3.2 (2.4, 4.4)	3.6 (2.4, 4.4)	0.68
FSFI12	26.8 (25.05, 28.55)	26.3 (24.7, 27.9)	0.06
Desire	4.4 (3.6, 5.4)	4.2 (3.6, 4.8)	0.18
Arousal	4.5 (3.75, 5.1)	4.5 (3.6, 4.8)	0.60
Lubrication	4.5 (4.2, 5.1)	4.5 (4.2, 5.1)	0.70
Orgasm	4.8 (4.0, 5.2)	4.4 (3.9, 5.2)	0.87
Satisfaction	4.8 (4.0, 5.2)	4.4 (3.9, 5.2)	0.53
Pain	4.4 (4.0, 5.2)	4.4 (3.6, 4.8)	0.04

IQR=interquartile range; NL=vaginal delivery; CS=cesarean delivery; FSFI=female sexual function index; FSFI6=FSFI scores at 6 weeks postpartum; FSFI12=FSFI scores at 12 weeks postpartum

Table 4. Relationship of FSFI6 and FSFI12 across mode of delivery

	FSFI6	FSFI12		p-value
		<26	≥26	
NL (n=189); n (%)	<26	59 (31.2)	89 (47.1)	0.15
	≥26	11 (5.8)	30 (15.9)	
CS (n=186); n (%)	<26	67 (36.0)	80 (43.0)	0.20
	≥26	13 (7.0)	26 (14.0)	
Overall (n=375); n (%)	<26	126 (33.6)	169 (45.1)	0.04
	≥26	24 (6.4)	56 (14.9)	

NL=vaginal delivery; CS=cesarean delivery; FSFI=female sexual function index; FSFI6=FSFI score at 6 weeks postpartum; FSFI12=FSFI score at 12 weeks postpartum

dysfunction was statistically significant (p=0.04). Whereas no significant difference was observed within each delivery routes with p at 0.15 for NL and p at 0.20 for CS. One-third (33.6%) of participants with FSD, as FSFI12 lower than 26, continued to have dysfunction at 12 weeks, while 45.1% showed improvement to normal scores, indicating a substantial potential for recovery.

Discussion

Sexual function is frequently impaired during the early postpartum period, with recovery influenced by the duration since delivery and contextual variables rather than the mode of delivery itself[16]. Meta-analytic evidence showed minimal and inconsistent differences in postpartum sexual function between NL and CS groups when data are aggregated[16].

The current study carried out a prospective cohort study involving nulliparous women who underwent delivery by NL or CS. FSD rates were 78.6% (295 out of 375) overall at 6 weeks postpartum. This decreased to 40% (150 out of 375) at 12 weeks postpartum. These findings suggested that while FSD were frequent in the early postpartum phase, partial recovery occurred within the first 12 weeks after delivery. FSD prevalence did not differ significantly by mode at either time point, indicating that mode of delivery had no significant impact on overall sexual function. Only the pain domain, which was dyspareunia, at 12 weeks showed that CS group had significantly more pain than NL group with statistical significance. This single difference should be interpreted cautiously since all other functional domains were equivalent between groups. Importantly, FSD at 6 weeks predicted persistence at 12 weeks postpartum, while women without FSD maintained satisfactory scores. Approximately half of those with FSD improved with time. These data suggested that early postpartum sexual function may predict recovery patterns at 12 weeks postpartum.

Table 5. Comparison of female sexual function outcomes between the present and previous study among parturient

Attribute	Present study		Alimi[16]	Tartaglia[17]	Dawson[18]	Fuchs[19]	Terece[20]	
Year	2024		2023	2024	2020	2021	2024	
Country	Thailand		Iran	Italy	Canada	Poland	Türkiye	
Cases (n)	375		3,410	80	646	398	228	
Nulliparous (%)	100		NA	100	100	58.54	NA	
	NL*	CS		NL			NL*	CS
Age (years)	31.5	30.6	NA	35.7	29.52	28	28.8	27.2
Bachelor (%)	33.9	27.4	NA	66.2	39.6	62.1	25.5	23.2
BMI (kg/m^2)	22.6	22.7	NA	24.5	NA	NA	27.2	29.5
BF (%)	NA		NA	61.3	90.4	50.5	100	74
SA	Yes		No	No	Yes	No	No	
FSD (%)			NA		NA			
Pre-delivery						8.54		
PP6W	78.3	79						
PP12W	37	43		56.2				
PP6M						41.96		
PP1Y					47.7		100	70.6
FSFI								
Pre-delivery				30.67	27.49	30.57		
PP6W	22.1	22.3						
PP12W	26.8	26.3		21.06	24.07			
PP6M					25.57	26.46		
PP1Y			24.27		27.09		15.9	20.2

NA=not available; NL=vaginal delivery; CS=cesarean delivery; BMI=body mass index; BF=breast feeding; SA=sexually active participants; FSD=female sexual dysfunction; PP6W=6 weeks postpartum; PP12W=12 weeks postpartum; PP6M=6 months postpartum; PP1Y=1 year postpartum; FSFI=female sexual function index

* All women in the NL group underwent episiotomy

As shown in Table 5, variations among studies result from biological, behavioral, and methodological factors that may surpass the effects of delivery mode[16-20]. Early postpartum perineal trauma like episiotomy or OVD affects pain and arousal. Conversely, CS prevented perineal injury but resulted in abdominal wall pain and activity limitations. These net effects frequently counterbalance, leading to minimal differences between NL and CS in the initial stages[21]. Compared to Fuchs et al.'s and Tartaglia et al.'s studies, prevalence of FSD were 56.2% at 12 weeks and 41.96% at 6 months, respectively[17,19]. Participants in Fuchs's and Tartaglia's studies had education levels higher than bachelor for 62.1% and 66.2%, respectively[17,19]. While education level was higher than bachelor in the current study at 30.7% (115 out of 375), the prevalence of FSD was 40% at 12 weeks. Dawson et al. reported prevalence of FSD at 12 weeks postpartum at 27.5% while education higher than bachelor was 39.6%[18]. Terece et al. reported that prevalence of FSD at 1 year of NL and CS were only 15.9% and 20.2%[20]. Education level higher than bachelor from Terece's study was 25.5% and 2.3% in NL and CS groups, respectively[20]. This finding suggested that subjects with high education level might have high prevalence of FSD. High education level might be correlated with white-collar work. The stress from their high education might impact the sexual function more than type of delivery alone.

The parity and BMI structure varied among studies[16-20]. Parity was linked to cumulative pelvic-floor loading and often correlates with higher BMI[22]. Cohorts composed of nulliparas in Tartaglia et al. and the present studies also had lower mean BMI of 22.3 to 22.7 kg/m^2[17]. While mixed-parity samples reported higher BMI. Subjects in Terece's study had BMI from 27.2 to 29.5 kg/m^2 that potentially amplified mechanical strain and dyspareunia risk[20]. Behavioral and hormonal factors may matter. The present study cohort represented the early postpartum period, up to 12 weeks, when most Thai employed mothers were on maternity leave and could continue breastfeeding. Nursing data was inconsistently collected in the literature, making comparisons difficult. Terece et al. clearly recorded

breastfeeding status and duration. Breastfeeding was more common after NL, but it was not linked with FSD (univariate OR 1.08, p=0.856)[20]. Fuchs et al. also collected feeding types as breastfeeding versus non-breastfeeding and found no FSFI differences by feeding pattern at 6 months, despite lactation-induced hypoestrogenism reducing lubrication and sexual desire[19]. Many women gradually adapted to the physiological changes of lactation, and the use of lubricants or increased communication with partners may mitigate discomfort. Thus, although breastfeeding may temporarily affect certain aspects like lubrication or desire, it seldom resulted in significant variation in these studies when contextual and behavioral adjustments in sexual function scores were taken into account[18,19]. Psychological, partner, and cultural settings also affect trajectories and reporting patterns, resulting in cross-national variability[16,18]. Upon inspection, the assessment period is time sensitive. Although our assessment occurred early, at 6 to 12 weeks, the overall FSFI scores and recovery pattern appeared more favorable than in studies conducted at later intervals. This might reflect methodological and contextual factors rather than genuine physiological differences. The present study included nulliparous, lower-BMI cohort, and no OVD-related perineal trauma, allowing physical recovery. Inclusion of sexually inactive women also influences outcomes. Studies such as those by Alimi et al., Dawson et al., Fuchs et al., Tartaglia et al., and Terece et al. included women who had not resumed intercourse[16-20]. It might have lowered mean FSFI scores and inflated the apparent prevalence of FSD. This may explain why the early postpartum cohort improved sexual function earlier and had lower FSD than other studies.

All of these factors demonstrate that delivery mode alone was not a significant determinant of early postpartum sexual function and why studies with varying perineal trauma profiles, parity, BMI, behavioral and hormonal factors, timing assessment after postpartum, and psychosocial contexts yield differing estimates[16-21]. The present study findings were compatible with Alimi who found no mode of delivery effect and emphasized time since birth and sociocultural factors as the key causes of variation[16]. The present study cohort showed early improvement at 12 weeks post-partum, regardless of mode of delivery. This phase prioritizes healing, hormonal changes, and psychosocial adjustment above delivery mode[16,18].

Mode of delivery has limited influence on postpartum sexual outcomes[21]. Early screening for FSD might be more beneficial in identifying women at risk and facilitating targeted counseling on dyspareunia, lubrication, and psychosocial factors rather than emphasizing delivery-mode guidance. Extending follow-up to 6 to 12 months postpartum, while systematically recording perineal variables, breastfeeding, contraception, and psychosocial measures, would refine risk stratification and help target interventions that accelerate recovery. Comparison of the present to the previous literature was summarized and presented in Table 5.

The strength of the current prospective cohort was the use of validated Thai FSFI and included a large sample of nulliparous women, providing culturally relevant data on postpartum sexual function. The design minimizes confounding from prior deliveries. Furthermore, the participants were selected only from individuals who have a history of being sexually active. However, the limitation included that the follow-up period was limited to 12 weeks, which may not capture longer-term changes. Being single center reduces the generalizability of findings. Self-reported data may introduce response bias. Data on antenatal care and postpartum-related factors, including maternal exhaustion and the availability of neonatal supportive persons, were not available. This limitation might influence the assessment of postpartum determinants of sexual function.

In conclusion, overall FSFI scores at 6 and 12 weeks postpartum did not show significant differences between the NL and CS groups. Additionally, CS group has experienced more dyspareunia symptoms compared to NL group at 12 weeks postpartum. Notably, FSD identified at 6 weeks postpartum tended to persist at 12 weeks postpartum, suggesting that early sexual problems may continue without appropriate intervention. Therefore, routine evaluation of sexual function among parturients attending postpartum clinics is recommended to facilitate early detection and timely intervention, which may help prevent persistent sexual health problems.

What is already known about this topic?

Pregnancy and childbirth bring biological, psychological, and social changes that influence women's sexual health, affecting their intimacy, relationship, and overall well-being. Deterioration in sexual function during pregnancy did not fully return to pre-pregnancy state. Type of delivery was

controversial, and reported that it might be associated with FSD.

What does this study add?

Forty percent of participants still had FSD at 12 weeks of postpartum. Type of delivery was not related to FSD among parturient. Parturient delivered from cesarean delivery had more dyspareunia than vaginal delivery.

Acknowledgement

The authors gratefully acknowledge Thammasat University Research Fund for financial support. The authors also thank Miss Yanwadee Chitkoolsamphan for assistance in manuscript preparation and to Miss Thanaporn Pongsiriyakul for her kind emotional support.

Authors' contributions

Study design: PIm and Pia; Methodological guidance: AC; Ethics submission: PIm; Data collection: PIm and PIa; Data analysis & interpretation: PIm, Pia, and KS; Manuscript drafting: PIm and PIa; Critical review of the manuscript: AC and KS; Study supervision: KS; Revising the manuscript: PIm, PIa, AC, and KS.

Funding disclosure

The funder had no role in study design, data collection, analysis, or publication decisions.

Conflicts of interest

The authors declare that there are no conflicts of interest relevant to this study.

References

1. Hunter W, Pettigrew J, Carpenter KM, Worly B, Coons HL. Improving sexual health across the life span through integrated care in obstetrics and gynecology. Clin Obstet Gynecol 2024;67:233-46.
2. Ramlachan P, Naidoo K. Enhancing sexual health in primary care: Guidance for practitioners. S Afr Fam Pract 2024;66:e1-5.
3. Arampatzi C, Michou V, Eskitzis P, Andreou K, Athanasiadis L. Factors associated with postpartum sexual function during the puerperium period: A cross-sectional study in Greece. Nurs Rep 2025;15:86. doi: 10.3390/nursrep15030086.
4. de Amorim AC, Roque LC, Ito LM, de Oliveira Murer PG, Sartori MGF. Symptoms of pelvic floor dysfunctions during pregnancy and postpartum. BMC Pregnancy Childbirth 2025;25:742. doi: 10.1186/s12884-024-07071-0.
5. Banaei M, Kariman N, Ozgoli G, Nasiri M, Ghasemi V, Khiabani A, et al. Prevalence of postpartum dyspareunia: A systematic review and meta-analysis. Int J Gynaecol Obstet 2021;153:14-24.
6. Bhandari Randhawa S, Rizkallah A, Nelson DB, Duryea EL, Spong CY, Pruszynski JE, et al. Factors associated with persistent sexual dysfunction and pain 12 months postpartum. Sex Reprod Healthc 2024;41:101001. doi: 10.1016/j.srhc.2024.101001.
7. Rosen R, Brown C, Heiman J, Leiblum S, Meston C, Shabsigh R, et al. The Female Sexual Function Index (FSFI): a multidimensional self-report instrument for the assessment of female sexual function. J Sex Marital Ther 2000;26:191-208.
8. Angolile CM, Max BL, Mushemba J, Mashauri HL. Global increased cesarean section rates and public health implications: A call to action. Health Sci Rep 2023;6:e1274.
9. Nikolaidou E, Antoniou E, Sarella A, Iliadou M, Orovou E, Dagla M. The effect of type of delivery on female postpartum sexual functioning: A systematic review. Healthcare (Basel) 2022;10:1212. doi: 10.3390/healthcare10071212.
10. Fanshawe AM, De Jonge A, Ginter N, Takács L, Dahlen HG, Swertz MA, et al. The impact of mode of birth, and episiotomy, on postpartum sexual function in the medium- and longer-term: An integrative systematic review. Int J Environ Res Public Health 2023;20:5252. doi: 10.3390/ijerph20075252.
11. Rosen NO, Dawson SJ, Binik YM, Pierce M, Brooks M, Pukall C, et al. Trajectories of dyspareunia from pregnancy to 24 months postpartum. Obstet Gynecol 2022;139:391-9.
12. Baud D, Sichitiu J, Lombardi V, De Rham M, Meyer S, Vial Y, et al. Comparison of pelvic floor dysfunction 6 years after uncomplicated vaginal versus elective cesarean deliveries: a cross-sectional study. Sci Rep 2020;10:21509. doi: 10.1038/s41598-020-78625-3.
13. Kang H. Sample size determination and power analysis using the G*Power software. J Educ Eval Health Prof 2021;18:17. doi: 10.3352/jeehp.2021.18.17.
14. Peeyananjarassri K, Liabsuetrakul T, Soonthornpun K, Choobun T, Manopsilp P. Sexual functioning in postmenopausal women not taking hormone therapy in the Gynecological and Menopause Clinic, Songklanagarind Hospital measured by Female Sexual Function Index questionnaire. J Med Assoc Thai 2008;91:625-32.
15. Wiegel M, Meston C, Rosen R. The female sexual function index (FSFI): cross-validation and development of clinical cutoff scores. J Sex Marital Ther 2005;31:1-20.
16. Alimi R, Marvi N, Azmoude E, Heidarian Miri H, Zamani M. Sexual function after childbirth: a meta-analysis based on mode of delivery. Women Health 2023;63:83-96.
17. Tartaglia S, Puri L, Brugnoli F, Quintiliani F, Allegrini C, Gallitelli V, et al. Sexual function after vaginal

delivery in primiparous women: A perspective in the first months postpartum. Healthcare (Basel) 2025;13:566. doi: 10.3390/healthcare13050566.
18. Dawson SJ, Vaillancourt-Morel MP, Pierce M, Rosen NO. Biopsychosocial predictors of trajectories of postpartum sexual function in first-time mothers. Health Psychol 2020;39:700-10.
19. Fuchs A, Czech I, Dulska A, Drosdzol-Cop A. The impact of motherhood on sexuality. Ginekol Pol 2021;92:1-6.
20. Terece C, Turan G, Uçkan HH, Eser A, Özler MR, Düyamalıyeva A, et al. Impact of delivery mode on sexual functions in the first year after childbirth: a comparative study of vaginal delivery and cesarean section. Thai J Obstet Gynaecol 2024;32:365-76.
21. Gutzeit O, Levy G, Lowenstein L. Postpartum female sexual function: Risk factors for postpartum sexual dysfunction. Sex Med 2020;8:8-13.
22. Mao Z, Hao D, Gao Q, Meng Y, Zhou M, Zhang L. Effects of Age and Parity on Pelvic Floor Dysfunction and Recovery in the Early Postpartum Period: A Retrospective Cohort Study. Br J Hosp Med (Lond) 2025;86:1-24.