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Prevalence and Associated Risk Factors of Dyspareunia and Incontinence Disorders in Postpartum Women: A Prospective Cross-Sectional Study

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Abstract
Background:Postpartum health issues such as dyspareunia, urinary incontinence (UI), and bowel incontinence significantly impact maternal well-being but are frequently underreported and underdiagnosed. These conditions, influenced by obstetric factors and pelvic floor trauma, contribute to a decline in quality of life and intimate relationships.
Objectives:To determine the prevalence and associated risk factors of dyspareunia, urinary incontinence, and bowel incontinence among postpartum women within six months of delivery.
Methods:This was a prospective cross-sectional study conducted over three months at a tertiary care hospital. Ninety-six women aged 20–35 years, within six months postpartum, were enrolled using purposive sampling. Data collection included demographic details, obstetric history, and validated questionnaires such as the Pelvic Floor Distress Inventory (PFDI) and Female Sexual Function Index (FSFI). Data were analyzed using SPSS version 22, with $p<0.05$ considered significant.
Results:Dyspareunia was reported by 34.4% of participants, UI by 28.1%, and bowel/flatus incontinence by 17.7%. Significant risk factors for dyspareunia included vaginal delivery ($p=0.011$) and perineal trauma ($p=0.003$). UI was significantly associated with higher BMI ($p=0.035$), vaginal delivery ($p=0.012$), and perineal trauma ($p=0.019$). Age, parity, and comorbidities showed no significant associations with these conditions.
Conclusion:Postpartum pelvic floor disorders are prevalent and associated with specific obstetric risk factors. Systematic screening and early intervention are essential to improve long-term maternal health outcomes and promote quality postpartum care.

Keywords
Dyspareunia, Incontinence Disorders, Postpartum Women, multiparity, vaginal delivery, perineal trauma

INTRODUCTION

The postpartum period encompasses a transformative phase in a woman's life, marked not only by physical recovery from childbirth but also by significant psychosocial and hormonal adjustments. During this time, various maternal complications can arise, often under-recognized or neglected in routine postnatal care. Among these, pelvic floor disorders—including dyspareunia, urinary incontinence (UI), and bowel incontinence—are highly prevalent and significantly affect a woman's quality of life and intimate relationships [1,2].Dyspareunia, defined as persistent or recurrent pain with sexual intercourse, is frequently reported by postpartum women. It is most commonly associated with perineal trauma, including episiotomy, spontaneous lacerations, and inadequate healing. Hormonal influences, particularly decreased estrogen levels during lactation, contribute to vaginal dryness and mucosal atrophy, exacerbating discomfort during intercourse [3,4]. Psychological factors such as postpartum depression and anxiety may further heighten pain perception [5].Stress urinary incontinence (SUI), the involuntary leakage of urine during physical exertion, is another common complaint, affecting approximately 20–30% of postpartum women [6]. SUI results from weakened pelvic floor musculature and damage to the urethral support mechanisms, typically associated with vaginal deliveries, prolonged second-stage labor, and increased body mass index (BMI) [7].Bowel incontinence, encompassing fecal and flatus incontinence, although less commonly reported, has a profound psychosocial impact. It is often linked to obstetric anal sphincter injuries (OASIS),

particularly third- and fourth-degree perineal tears [8]. Research indicates that up to 25% of postpartum women may experience either fecal or flatus incontinence, with considerable underreporting due to social stigma [9].Despite their prevalence, these conditions are often overlooked during postpartum evaluations, leaving many women without appropriate treatment or referral. The lack of routine screening in postnatal care settings may be attributed to cultural taboos, insufficient provider training, and the prioritization of infant health over maternal well-being.This study aims to estimate the prevalence of dyspareunia, urinary incontinence, and bowel incontinence among postpartum women and identify key risk factors associated with these conditions. Through this, the research seeks to advocate for improved screening and management strategies within routine maternal healthcare services.

METHODOLOGY

This study was designed as a prospective cross-sectional observational study conducted in the Department of Obstetrics and Gynaecology at Sree Balaji Medical College and Hospital, Chennai. The study was carried out over a period of three months, from April to June 2025.

A total of 96 postpartum women were enrolled using purposive sampling based on pre-defined eligibility criteria. Women aged between 20 to 35 years who had delivered within the last six months were included to capture both early and late postpartum experiences. Both primiparous and multiparous women, and those who had undergone either vaginal or cesarean delivery, were eligible for inclusion.

Assuming a prevalence of 50% for dyspareunia based on previous study, at a confidence interval of 95% and an absolute precision of 10%, the sample size was calculated to be 96.

Women were excluded from the study if they had a known diagnosis of urinary or fecal incontinence prior to pregnancy, were diagnosed with diabetes mellitus, or had high-risk pregnancies such as multiple gestations or those with major obstetric complications, as these conditions could confound the outcomes being assessed.

Informed written consent was obtained from all participants prior to data collection. Each participant was interviewed using a structured proforma to collect demographic data, obstetric and delivery history, perineal outcomes, and presence of any medical comorbidities. Ethical approval for the study was obtained from the Institutional Ethics Committee of Sree Balaji Medical College and Hospital. Confidentiality and anonymity of all participants were strictly maintained throughout the study.

The presence and severity of dyspareunia, urinary incontinence, and bowel incontinence were assessed using two validated tools: the Female Sexual Function Index (FSFI) for evaluating dyspareunia, and the Pelvic Floor Distress Inventory (PFDI) for incontinence symptoms. Additional variables such as body mass index (BMI), parity, gestational age at delivery, mode of delivery, and degree of perineal trauma were also documented.

Data were compiled in Microsoft Excel and statistical analysis was performed using SPSS software version 22. Descriptive statistics were used to report frequencies and percentages. Chi-square tests were applied to evaluate associations between categorical variables and postpartum complications. A p-value of less than 0.05 was considered statistically significant for all analyses.

RESULTS

The majority of the participants (43.8%) were aged between 26 to 30 years, followed by 31.3% in the 20–25 age group and 25% in the 31–35 age group. With respect to body mass index (BMI), most women had a normal BMI (44.8%), while 29.2% were overweight and 19.8% were obese, highlighting that nearly half the study population was above the healthy weight range. Only a small fraction (6.3%) was underweight. 87.5% of women delivered at term, while 12.5% had preterm deliveries. Vaginal delivery was the more common mode of delivery (56.3%) compared to lower segment cesarean section (LSCS), which accounted for 43.8% of births. Additionally, 21.9% of the women had comorbidities, and 78.1% were otherwise healthy. Multiparity was noted in 55.2% of the sample, while 44.8% were primiparous. A history of episiotomy or perineal tear was reported in 39.6% of women, indicating a substantial proportion experienced perineal trauma during childbirth.

Table 1: Sociodemographic profile and delivery details

Variable	Category	Frequency (n)	Percentage (%)

Age (years)	20–25	30	31.3%
	26–30	42	43.8%
	31–35	24	25.0%
BMI	Underweight (<18.5)	6	6.3%
	Normal (18.5–24.9)	43	44.8%
	Overweight (25–29.9)	28	29.2%
	Obese (≥30)	19	19.8%
Gestational Age	Term (≥37 weeks)	84	87.5%
	Preterm (<37 weeks)	12	12.5%
Mode of Delivery	Vaginal Delivery	54	56.3%
	LSCS	42	43.8%
Comorbidities	Present	21	21.9%
	Absent	75	78.1%
Multiparity	Yes	53	55.2
	No	43	44.8
Episiotomy/Perineal Tear	Yes	38	39.6
	No	58	60.4

Dyspareunia was the most common complaint reported by 34.4% of the participants, followed by urinary and bowel incontinence (28.1%) and Bowel/Flatus Incontinence (17.7%). These figures underscore the need for routine screening and management of these often-overlooked conditions during the postpartum period.

Table 2: Prevalence of Postpartum Disorders

Condition	Prevalence	Percentage
Dyspareunia	33	34.4%
Urinary Incontinence	27	28.1%
Bowel/Flatus Incontinence	17	17.7%

Table 3 examines the association between various maternal and obstetric risk factors and the presence of dyspareunia in postpartum women. Of the 96 participants, 33 (34.4%) reported experiencing dyspareunia. The highest proportion of affected women were in the 26–30 age group (15 cases), though age was not significantly associated with dyspareunia ($p = 0.771$).

BMI was also not a statistically significant factor ($p = 0.242$), although 10 women with overweight and 8 with obesity reported dyspareunia. Gestational age at delivery—term versus preterm—showed no significant difference in dyspareunia prevalence ($p = 0.909$).

However, mode of delivery showed a statistically significant association ($p = 0.011$), with vaginal delivery linked to a higher incidence of dyspareunia (26 cases) compared to LSCS (7 cases). Comorbidities, while more common

in women with dyspareunia (9 cases), did not show a significant association (p = 0.184). Multiparity also did not demonstrate a significant relationship (p = 0.259).

Perineal trauma, including episiotomy or perineal tear, was significantly associated with dyspareunia (p = 0.003). Among the 33 women with dyspareunia, 22 had a history of such trauma, highlighting its important role in postpartum sexual dysfunction.

Table 3: Risk Factors and Their Association with Dyspareunia

Variable		Dyspareunia		Chi-square value	p-value
		Yes	No		
Age (years)	20–25	9	21	0.521	0.771
	26–30	15	27		
	31–35	9	15		
BMI	Underweight	1	5	4.191	0.242
	Normal	14	29		
	Overweight	10	18		
	Obese	8	11		
Gestational Age	Term	29	55	0.013	0.909
	Preterm	4	8		
Mode of Delivery	Vaginal Delivery	26	28	6.533	0.011*
	LSCS	7	35		
Comorbidities	Present	9	12	1.768	0.184
	Absent	24	51		
Multiparity	Yes	22	31	1.273	0.259
	No	11	32		
Episiotomy/Perineal Tear	Yes	2216		8.873	0.003*
	No	1147			

Table 4 outlines the association between maternal risk factors and urinary incontinence (UI) among the study participants. A total of 27 women (28.1%) experienced UI. Age did not significantly affect the prevalence of UI (p = 0.839), although the condition was most reported in the 26–30 age group (13 cases).

BMI was a significant risk factor (p = 0.035), with UI more commonly reported in overweight (10 cases) and obese women (9 cases). Notably, no underweight participants reported UI. This supports the role of excess body weight in increasing intra-abdominal pressure and straining the pelvic floor.

Gestational age was not significantly associated with UI (p = 0.725), with both term and preterm deliveries contributing proportionately. Mode of delivery, however, showed a significant correlation (p = 0.012). Women who delivered vaginally had a higher prevalence of UI (20 cases) compared to those who underwent LSCS (7 cases).Comorbidities and multiparity did not show statistically significant associations with UI (p = 0.805 and p = 0.174, respectively), although higher numbers were observed among multiparous women. Finally, perineal trauma was significantly associated with UI (p = 0.019). Of the 27 women reporting UI, 17 had undergone an episiotomy or experienced a perineal tear, underscoring the impact of pelvic floor injury on urinary function.

Table 4: Association of Risk Factors with Urinary Incontinence

Variable		UI Present		Chi-square value	p-value
		Yes	No		
Age (years)	20–25	8	22	0.350	0.839

	26–30	13	29		
	31–35	6	18		
BMI	Underweight	0	6	8.627	0.035*
	Normal	8	35		
	Overweight	10	18		
	Obese	9	10		
Gestational Age	Term	24	60	0.124	0.725
	Preterm	3	9		
Mode of Delivery	Vaginal Delivery	20	34	6.248	0.012*
	LSCS	7	35		
Comorbidities	Present	6	15	0.061	0.805
	Absent	21	54		
Multiparity	Yes	17	36	1.845	0.174
	No	10	33		
Episiotomy/Perineal Tear	Yes	17	21	5.483	0.019*
	No	10	48		

DISCUSSION

The present study highlights the substantial prevalence of pelvic floor dysfunctions—specifically dyspareunia, urinary incontinence (UI), and bowel/flatus incontinence—among postpartum women within six months of delivery. The prevalence rates of dyspareunia (34.4%), UI (28.1%), and bowel/flatus incontinence (17.7%) are consistent with prior global data, affirming that these conditions are both common and underrecognized in clinical practice.

Dyspareunia was significantly associated with vaginal delivery and the presence of episiotomy or perineal tears, underscoring the role of childbirth-related pelvic trauma. Vaginal delivery exerts mechanical stress on the pelvic floor and may lead to nerve and muscular damage, contributing to persistent pain during intercourse. Perineal injuries such as episiotomies or spontaneous lacerations are known to impair tissue healing, alter pelvic anatomy, and result in long-term sexual dysfunction [1,2]. Our findings align with Johnson et al., who reported dyspareunia in approximately one-third of women six months postpartum, especially in those with a history of obstetric trauma [1]. Additionally, hormonal changes such as lactational hypoestrogenism may lead to vaginal dryness and atrophy, exacerbating dyspareunia [3]. Although age, BMI, parity, and comorbidities showed no statistically significant relationship with dyspareunia in this cohort, the presence of perineal trauma was a clear and strong predictor.

Urinary incontinence, most likely stress incontinence, was also significantly associated with higher BMI, vaginal delivery, and episiotomy/perineal tear. These findings support previous literature describing the biomechanical strain of pregnancy and childbirth as key contributors to UI [4,5]. Increased BMI has been widely documented as a risk factor due to elevated intra-abdominal pressure that weakens pelvic support structures [6]. Our study reported a higher incidence of UI among overweight and obese women, corroborating research by Subak et al., who identified a direct correlation between obesity and the risk of urinary incontinence [10]. Vaginal delivery, especially when prolonged or traumatic, is known to damage the urethral sphincter and levator ani muscles, contributing to poor bladder control [7]. Perineal injuries further compromise the integrity of pelvic musculature, increasing the likelihood of UI.

Although bowel/flatus incontinence was less common than dyspareunia and UI, its prevalence at 17.7% is nonetheless clinically significant and warrants attention. This condition was notably associated with third-degree perineal tears and episiotomy, consistent with reports that obstetric anal sphincter injuries (OASIS) are primary

risk factors [8]. Arrue et al. found that 16–25% of postpartum women with OASIS experienced fecal or flatus incontinence, often unreported due to embarrassment or cultural taboos [9]. Despite being less prevalent, bowel incontinence can severely impair quality of life and often requires specialist intervention.

One of the key insights from this study is the underdiagnosis and underreporting of pelvic floor disorders in postpartum care. Cultural stigma, lack of awareness, and inadequate provider training contribute to missed opportunities for early identification and treatment [2,11]. This aligns with Cerruto et al.'s systematic review, which emphasized the absence of standardized screening protocols and poor integration of pelvic health in routine postpartum assessments, particularly in low- and middle-income settings [11].

This study's strengths include the use of validated assessment tools—namely, the Female Sexual Function Index (FSFI) and Pelvic Floor Distress Inventory (PFDI)—and the inclusion of diverse postpartum women representing various delivery modes and parity levels. However, certain limitations must be acknowledged. The sample size was modest, and the study was conducted at a single tertiary care center, limiting generalizability. Furthermore, psychological factors such as postpartum depression, which are known to influence dyspareunia and incontinence, were not assessed.

In conclusion, pelvic floor dysfunctions remain a neglected aspect of maternal health. This study reinforces the importance of integrating routine pelvic assessments into postnatal care and educating women about these common conditions. Proactive screening, counseling, and appropriate referrals—particularly for those with known risk factors such as vaginal delivery, perineal trauma, and high BMI—can significantly improve maternal outcomes and overall quality of life.

CONCLUSION

This study reveals a high prevalence of pelvic floor disorders—dyspareunia, urinary incontinence, and bowel/flatus incontinence—among postpartum women, with significant associations observed for vaginal delivery, higher BMI, and perineal trauma. Despite their impact on quality of life, these conditions remain underdiagnosed due to cultural stigma and insufficient screening during postnatal care. Routine postpartum assessments must incorporate validated tools to identify women at risk early and initiate timely management. Educating women and training healthcare providers are crucial steps toward improving maternal health outcomes. Integrating pelvic floor rehabilitation and counseling into standard postpartum protocols is essential for holistic recovery and long-term well-being.

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