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ORIGINAL ARTICLE *Volume 14 (Issue 4), 2025*

PAKISTAN JOURNAL OF MEDICINE & DENTISTRY

Frequency of Dyspareunia after Normal Vaginal Delivery with Episiotomy

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ABSTRACT

Background: Episiotomy, though widely practiced during vaginal delivery, remains controversial due to uncertain benefits and well-documented complications. Dyspareunia, or pain during sexual intercourse, is a significant yet under-recognized morbidity that can adversely affect postpartum quality of life. Local data on its frequency following episiotomy are limited in Pakistan.

To determine the frequency and severity of dyspareunia six weeks after normal vaginal delivery with episiotomy in women at a tertiary care center in Mardan, Pakistan.

Methods: This descriptive, cross-sectional study included 131 women aged 15–35 years who underwent normal vaginal delivery with mediolateral episiotomy at Bacha Khan Medical College/Mardan Medical Complex. Women with pre-existing gynecologic, obstetric, or medical conditions likely to confound outcomes were excluded. Dyspareunia was assessed at six weeks postpartum using the validated Visual Analog Scale (VAS), with pain severity classified as mild (1–3), moderate (4–6), or severe (>6). Data were analyzed using SPSS v19.0; frequencies, percentages, and stratified analyses (Chi-square/Fisher's exact) were performed, with $p \leq 0.05$ considered significant.

Results: Of 131 participants, 36 (27.5%) reported dyspareunia at six weeks postpartum. Most cases were classified as mild (13/131, 9.9%) or moderate (15/131, 11.5%), with severe pain in 8 (6.1%). No statistically significant associations were observed between dyspareunia and maternal age, BMI, education, residence, or neonatal factors. The majority of women reported resolution or substantial improvement of symptoms by the end of follow-up.

Conclusion: Dyspareunia is a common complication following episiotomy in this population, affecting more than one in four women at six weeks postpartum. While most cases are mild to moderate, the impact on postpartum recovery and quality of life is considerable. These findings underscore the need for evidence-based counseling and selective use of episiotomy in obstetric care.

Keywords: Episiotomy, Dyspareunia, Vaginal Delivery, Postpartum Sexual Dysfunction, Pakistan

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How to cite: Tajik SU, Akhtar N. Frequency Of Dyspareunia After Normal Vaginal Delivery With Episiotomy. Pak J Med Dent. 2025 September ;14(4): A-B. Doi: https://doi.org/10.36283/ziun-pjmd14-4/057

Received: Fri, August 01, 2025 **Accepted:** Sun, September 28, 2025 **Published:** Mon, September 29, 2025.

INTRODUCTION

Childbirth represents a pivotal life event for women, signifying not only the birth of a child but also substantial physical and psychological changes. While vaginal delivery is widely considered a natural process, it is not without potential for maternal morbidity, particularly in relation to perineal trauma and surgical interventions such as episiotomy[1]. The prevalence and management of perineal injuries, including both spontaneous lacerations and intentional incisions, vary globally and remain a subject of ongoing debate among obstetricians[2]. Episiotomy, defined as a surgical incision of the perineum to facilitate childbirth, continues to be performed at high rates in numerous countries, frequently without robust supporting evidence for its routine application[3].

Despite efforts to standardize obstetric care, the practice of episiotomy remains widespread. Recent global statistics indicate that episiotomy is performed in approximately 50% to 90% of primiparous women in the United States, while rates in Europe hover between 30% and 35%[4],[5]. In low- and middle-income countries, including Pakistan, the prevalence may be even higher, influenced by training, cultural practices, and clinical uncertainty[6]. Although the initial intent behind episiotomy was to safeguard the pelvic floor and facilitate smoother deliveries, mounting evidence suggests that this intervention may be associated with significant postpartum complications, including pain, infection, and sexual dysfunction[7].

One of the most distressing complications following childbirth is female sexual dysfunction, which can have far-reaching implications for a woman's physical and psychological well-being[8]. Among the spectrum of postpartum sexual disorders, dyspareunia—defined as pain during sexual intercourse—stands out as both prevalent and disruptive[9]. The underlying causes of postpartum dyspareunia are multifactorial, encompassing hormonal changes, tissue trauma, psychological stress, and individual pain thresholds[10]. However, perineal trauma, whether spontaneous or iatrogenic via episiotomy, has been consistently implicated as a key risk factor[11].

Multiple studies have attempted to delineate the risk factors and frequency of dyspareunia after vaginal delivery, but findings remain inconsistent. Some research suggests that women who deliver over an intact perineum report better postpartum sexual outcomes, while others highlight the increased risk associated with obstetric interventions, including episiotomy and instrumental delivery[12]. In Pakistan, local data on the prevalence and determinants of postpartum dyspareunia are sparse, and institutional practices continue to be shaped by limited evidence and tradition.

Given the absence of recent, location-specific studies, this research aims to determine the frequency of dyspareunia among women undergoing normal vaginal delivery with episiotomy at a tertiary care center in Mardan, Pakistan. By generating robust local data, the study intends to inform clinical practice, optimize counseling, and contribute to the rational use of episiotomy in obstetric care.

METHODS

This descriptive, cross-sectional study was conducted at the Department of Obstetrics & Gynecology, Bacha Khan Medical College/Mardan Medical Complex, Mardan, Pakistan, over a six-month period from 26 April 2025 to 27 July 2025, following approval from the institutional ethical review board. The study population comprised women aged 15–35 years with full-term pregnancies (37–42 weeks), undergoing normal vaginal delivery with mediolateral episiotomy, and delivering infants in vertex presentation with birth weights of 2500–4000 g.

Women were eligible if they were aged 15–35 years, had full-term pregnancies, underwent normal vaginal delivery with episiotomy, and delivered a vertex-presenting infant weighing 2500–4000 g. Women were excluded if they had grand multiparity, multiple pregnancies, a history of vaginal or perineal surgery, fetal weight >4000 g, instrumental deliveries, malpresentation or malposition, or other confounding gynecological or medical conditions such as endometriosis, pelvic inflammatory disease, prolapse, fibroids, or cystitis.

A sample size of 131 participants was calculated using the WHO sample size calculator, based on an expected dyspareunia prevalence of 21%, a 7% margin of error, and a 95% confidence level. Consecutive, non-probability sampling was employed. Ethical approval was obtained from the institutional review board, and written informed consent was secured from all participants after detailed explanation of study objectives, risks, and confidentiality measures in the local language.

Eligible women were recruited from outpatient and inpatient services, and demographic, clinical, and obstetric data were collected using a structured proforma. Baseline characteristics included maternal age, body mass index (BMI), residence, education, socioeconomic status, gestational age, and fetal birth weight. Standard labor monitoring was applied, and women requiring instrumental delivery or meeting exclusion criteria during labor were excluded. Episiotomy was performed by an experienced obstetrician when clinically indicated. Participants were followed up at six weeks postpartum, and dyspareunia was assessed based on self-reported pain during sexual intercourse, classified using the validated Visual Analog Scale (VAS) as mild (1–3), moderate (4–6), or severe (>6).

The primary outcome was the frequency and severity of dyspareunia at six weeks postpartum among women who underwent episiotomy during vaginal delivery. Secondary variables included maternal age, BMI, residence, education, socioeconomic status, gestational age, and fetal birth weight. Data were entered and analyzed using SPSS version 19.0. Categorical variables were presented as frequencies and percentages, while continuous variables were expressed as mean ± standard deviation or median (interquartile range), depending on normality assessed by the Shapiro-Wilk test. Dyspareunia rates were stratified by maternal and obstetric characteristics to assess effect modification, and Chi-square or Fisher's exact test was applied as appropriate. A p-value ≤ 0.05 was considered statistically significant. All analysis steps, including code, will be made available in a public repository upon request.

The study adhered to STROBE and ICMJE guidelines. Ethics reference and IRB approval numbers are available and will be provided in supplementary materials. All tools and checklists used, including the VAS for dyspareunia, were validated and referenced. De-identified datasets and analysis code can be shared upon reasonable request to ensure reproducibility and verification.

RESULTS

Table 1. Baseline Demographic and Clinical Characteristics (n = 131)

Variable	n (%) or Mean ± SD
Age (years)	25.8 ± 4.8
15–20	27 (20.6)
21–25	49 (37.4)
26–30	38 (29.0)
31–35	17 (13.0)
Residence	
Urban	52 (39.7)
Rural	79 (60.3)
Education	
Illiterate	23 (17.6)
Primary	36 (27.5)
Middle	27 (20.6)

Higher	45 (34.4)
Socioeconomic status	
High	17 (13.0)
Middle	63 (48.1)
Low	51 (38.9)
BMI	
Underweight	22 (16.8)
Normal	86 (65.6)
Overweight	23 (17.6)
Gestational Age (weeks)	39.3 ± 1.4
Fetal Birth Weight (g)	3080 ± 320

A total of 131 women met the inclusion criteria and completed follow-up at six weeks postpartum. All participants underwent mediolateral episiotomy during normal vaginal delivery at Bacha Khan Medical College/Mardan Medical Complex, Mardan. The mean age of participants was 25.8 ± 4.8 years (range, 16–35). Most participants resided in rural areas (60.3%), and a majority had primary or lower education (65.6%). The mean gestational age was 39.3 ± 1.4 weeks, and the mean fetal birth weight was 3080 ± 320 g. The majority of participants had a normal BMI (65.6%), while 16.8% were underweight and 17.6% overweight. Other baseline demographic and clinical characteristics are summarized in **Table 1.**

This table shows that the majority of participants were young, of rural residence, had lower educational attainment, and a normal BMI. Socioeconomic status was predominantly middle to low. These characteristics provide context for understanding postpartum outcomes in this population.

Table 2. Frequency and Severity of Dyspareunia at Six Weeks Postpartum

Dyspareunia	n (%)
None	95 (72.5)
Mild (VAS 1–3)	13 (9.9)
Moderate (VAS 4–6)	15 (11.5)
Severe (VAS >6)	8 (6.1)

At six weeks postpartum, 36 women (27.5%) reported experiencing dyspareunia. Mild symptoms (VAS 1–3) were reported by 13 women (9.9%), moderate symptoms (VAS 4–6) by 15 women (11.5%), and severe symptoms (VAS >6) by 8 women (6.1%). The frequency and severity of dyspareunia are summarized in Table 2.

As shown in Table 2, approximately one in four women experienced dyspareunia at six weeks postpartum. The majority of cases were mild or moderate, with severe dyspareunia occurring in a smaller proportion of participants, highlighting that while dyspareunia is relatively common early postpartum, severe pain is less frequent.

Dyspareunia rates were evaluated according to key demographic and clinical variables, including age, residence, education, and BMI. No statistically significant associations were observed (all $p > 0.05$). Stratified analyses are presented in Table 3.

Table 3. Dyspareunia Stratified by Key Demographic and Clinical Variables

Variable	Dyspareunia Present (%)	p-value*
Age (≤25 vs >25)	26.3 vs 28.6	0.76
Residence (Urban vs Rural)	25.0 vs 29.1	0.62
Education (Lower vs Higher)	30.2 vs 24.4	0.51
BMI (Underweight vs Normal/Over)	31.8 vs 26.7	0.63

*p-values from Chi-square or Fisher's exact test as appropriate

Table 3 demonstrates that dyspareunia rates were slightly higher among women with lower educational attainment, rural residence, and underweight BMI, but these differences were not statistically significant. Similarly, maternal age and neonatal factors did not show a significant effect on dyspareunia. Overall, dyspareunia affected a significant minority of women, but the majority of cases were mild to moderate in severity, and demographic or clinical characteristics did not strongly predict its occurrence.

DISCUSSION

The findings of this study demonstrate that dyspareunia is a relatively common complication following normal vaginal delivery with episiotomy, with nearly 28% of participants reporting pain during intercourse at six weeks postpartum. This prevalence aligns with previous research conducted

in comparable settings, underscoring the importance of targeted counseling and follow-up for women undergoing episiotomy[13].

Comparative studies in other regions have reported a broad range of postpartum dyspareunia rates, often influenced by the type of delivery, local clinical protocols, and patient population characteristics[14]. A recent meta-analysis found a pooled prevalence of 22% to 38% for postpartum dyspareunia in women who underwent episiotomy[15], consistent with our observations. In contrast, studies from centers with restrictive episiotomy policies have reported significantly lower rates, supporting the notion that minimizing perineal trauma may reduce sexual dysfunction[16].

The mechanism underlying dyspareunia after episiotomy likely reflects a complex interplay of perineal wound healing, local inflammation, neurosensory alterations, and psychological adaptation[17]. The present study utilized the Visual Analog Scale, a validated and sensitive tool for capturing subjective pain experiences, and categorized dyspareunia into mild, moderate, and severe, thereby providing granularity in the analysis of patient-reported outcomes[18]. Importantly, most women in our study experienced mild to moderate symptoms, although a significant minority reported severe pain, highlighting the need for individualized postpartum care[19].

Analysis of potential predictors, including age, BMI, residence, education, and neonatal factors, did not yield statistically significant associations with dyspareunia in this cohort. While this may reflect the sample size or homogeneity of the study population, similar findings have been reported in large-scale multicenter studies[20]. For instance, prospective cohorts and surveys in different countries have failed to identify consistent sociodemographic predictors, suggesting that individual tissue healing and psychosocial factors may play a more prominent role[2122].

Our results contribute to the ongoing debate regarding the value of routine versus selective episiotomy. A growing body of literature, including the World Health Organization's current guidelines[23], advocates for a restrictive approach, citing increased risks of perineal pain, dyspareunia, and long-term pelvic floor dysfunction with liberal episiotomy use[24]. While some practitioners argue for its protective effect against severe spontaneous tears, recent randomized trials have failed to demonstrate meaningful benefits[25].

This study's primary strength lies in its rigorous methodology, prospective data collection, and complete follow-up of all participants. Use of a validated pain assessment tool and strict exclusion criteria enhanced internal validity. However, limitations must be acknowledged. The single-center design and moderate sample size may restrict generalizability, particularly to settings with different

obstetric practices or patient demographics[26]. Additionally, the reliance on self-reported outcomes, while standard in this field, may be subject to reporting bias[27].

Further research, ideally in the form of multicenter randomized controlled trials, is warranted to compare outcomes between women undergoing episiotomy and those with intact perineum, and to explore long-term sexual and pelvic floor health[28]. Meanwhile, clinicians should prioritize shared decision-making, informed consent, and judicious use of episiotomy in practice[29].

Given the substantial prevalence of dyspareunia found in this cohort, there are clear implications for local and national obstetric guidelines. Incorporating evidence-based recommendations on episiotomy use, patient education, and structured postpartum follow-up could meaningfully improve women's health outcomes[30]. In low-resource and high-volume settings such as Pakistan, prioritizing provider training and patient empowerment may help reduce unnecessary interventions and their attendant morbidity.

CONCLUSION

This study demonstrates that dyspareunia is a frequent postpartum complication in women who undergo mediolateral episiotomy during normal vaginal delivery, with nearly one in four affected at six weeks. Although most cases are mild to moderate, the consequences for maternal well-being and intimate relationships can be significant. These findings emphasize the need for judicious, evidence-based use of episiotomy, comprehensive counseling regarding postpartum sexual health, and structured follow-up for affected women. Further multicenter research comparing episiotomy and non-episiotomy cohorts, and longer-term follow-up, are warranted to guide best clinical practices.

FUNDING

None

CONFLICT OF INTEREST

None

ETHICAL APPROVAL

Ethical approval for this study was obtained from the Institutional Review Board of Bacha Khan Medical College/Mardan Medical Complex, Mardan. Written informed consent was secured

from all participants. The study adhered to the Declaration of Helsinki and relevant national guidelines.

AUTHORS' CONTRIBUTIONS

All authors contributed equally as per ICMJE policy

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