Jurnal Ilmu Kesehatan
ISSN: 2580-930X (Print) ISSN: 2597-8594 (Electronic)

Vol. 9, No. 2, 2025, pp. 341-353
DOI: https://doi.org/ 10.33757/jik.v9i2.1459

Perineal Trauma Impact on Postpartum Sexual Function: A Cross-Sectional Study Using Female Sexual Function Index

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Article Info

Article history:

Received Apr 15th, 2025
Revised Oct 10th, 2025
Accepted Oct 13th, 2025

Keyword:

Perineal Rupture
Sexual Function
Female Sexual Dysfunction
Sexual Health

ABSTRACT

Background: Perineal trauma resulting from vaginal delivery can negatively impact postpartum sexual function; however, data from Southeast Asian populations are still scarce.

Objective: We aimed to study the relationship between perineal trauma and sexual dysfunction measured by the Female Sexual Function Index (FSFI) among postpartum women in Indonesia.

Methods: A cross-sectional study was carried out at Pauh Community Health Center, Padang City, between May and June 2025. We used purposive sampling to recruit forty-six women who had a vaginal delivery within the last six months. Sexual function was measured using the Indonesian FSFI version, a tool validated for the Indonesian population, with scores below 26.55 indicating dysfunction. Perineal trauma condition was ascertained from the medical record. The chi-square test assessed the association between perineal trauma and sexual dysfunction.

Results: Sexual dysfunction prevalence was 54.3% (n=25). Of the women who had perineal trauma, 82.6% were sexually dysfunctional, compared to 26.1% in the group without trauma. The relationship was statistically significant (p=0.001) with a crude odds ratio of 13.81 (95% CI: 3.46-55.12). The pain and desire domains were affected the most.

Conclusion: Perineal trauma is a significant risk factor for postpartum sexual dysfunction among Indonesian women. Besides that, health care workers should promote the sexual health of their clients by regularly integrating the screening of sexual health into routine postpartum care, applying evidence-based interventions to reduce perineal injury, and providing easy access to pelvic floor rehabilitation services as a way to improve maternal quality of life.

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Introduction

Perineal injury during vaginal delivery is one of the major problems of obstetrics that has adverse effects on the health of mothers and their quality of life all over the globe. The World Health Organization reports that almost 90% of women get perineal injuries during vaginal delivery, the degree of the injuries being very different ranging from minor lacerations to severe obstetric anal sphincter injuries (OASIS) (Cakwira et al. 2022). In 2020, perineal tears cases were approximately 2.7 million worldwide, and the number is expected to rise to 6.3 million by 2050 (Safitri et al., 2023). The problem of perineal trauma has been overemphasized in Asia, which is responsible for almost 50% of world cases, and still, there has been little known about the differences in occurrence and result of the problem among the regions (Fritel et al., 2024). Data from Indonesia show that the percentage of women who have suffered perineal rupture as a result of vaginal delivery is 24% of those aged 25-30 years and 62% of those aged 31-39 years (Safitri et al., 2023). Besides the injury per se, perineal trauma was linked with a host of conditions that may become chronic such as pain syndromes, urinary and fecal incontinence, pelvic floor dysfunction, and sexual health problems (Sartore et al., 2024). The above-stated diseases not only jeopardize the well-being of the individual but also inflict a heavy economic burden on healthcare systems and lower total quality of life of postpartum women (Tartaglia et al., 2025).

Recent research has identified a very close relationship between injuries to the perineum and the occurrence of sexual dysfunction after delivery. The systematic review carried out by Rezaei et al. (2024) uncovered that women perineal laceration during delivery were more prone to experience painful intercourse, loss of libido, and sexual dissatisfaction than those who had an intact perineum. The Female Sexual Function Index (FSFI), a 19-item questionnaire that evaluates six different aspects of sexual function through desire, arousal, lubrication, orgasm, satisfaction, and pain, and is considered the best method of postpartum sexual health assessment, has been widely used (Rezaei et al., 2024). An overall FSFI score less than 26.5 is indicative of sexual dysfunction, with the lowest scores reflecting the most severe deficits across the different domains. The biologically-based causes of sexual dysfunction after an injury to the perineum are different. Sari (2024) reported considerable decreases in the strength of the pelvic floor muscles of the women who had a vaginal delivery in comparison with those who had a cesarean section emphasizing that the biomechanical stretching as well as the possible nerve damage during the vaginal delivery are the main contributors of muscular dysfunction in the long term. Weak pelvic floor muscles fail to maintain vaginal elasticity, the lack of which results in the loss of the sense of the act of love and the achievement of orgasm (Maria & Riani, 2025).

Extreme perineal lacerations, mainly third- and fourth-degree tears that involve the anal sphincter, have been linked to the development of pelvic floor disorders that continue over time and thus, substantially lower the quality of life as well as sexual well-being (Sartore et al., 2024). Not only that, psychological aspects, likewise, significantly affect postpartum sexual dysfunction. A prospective cohort study conducted by Roman et al. (2025) revealed that the group of women who had episiotomy or perineal trauma experienced more anxiety, fear of pain during coitus, and less self-confidence in the first year after giving birth. These psychological symptoms were the main cause of the association between anxiety and low FSFI scores across all domains. In the same way, Erika and Sheryl (2023) figured out that postpartum depression was a significant factor that mediated the connection between perineal trauma and sexual dysfunction, as the depressive symptoms intensified the physical side and diminished the sexual desire. The conjunction of bodily harm, pain, and emotional trouble forms a complicated clinical scenario that calls for thorough, multidimensional strategies in treatment (Kırat, 2025).

The sexual function after giving birth is also affected by various sociodemographic factors such as the woman's age, her number of children, level of education, and cultural background. According to Kırat (2025), women who are younger and are at their peak reproductive years might face sexual dysfunction in a different way than older women. Hormonal changes, tiredness due to taking care of the infant, and the relationship with the partner being affected are the factors that may lead to these situations. Parity has been a major factor that has been linked to the incidence of pelvic floor disorders and sexual dysfunction resulting from the gradual damage of the tissue and stretching of the musculature due to several births (Indah, 2023).

The level of education also has a very significant impact as women with higher educational attainment are more likely to have better knowledge about pelvic floor health, better communication with healthcare providers, and more active participation in rehabilitation processes (Kırat, 2025). Nevertheless, culture may be a significant factor in setting the norms for the discussion of sexual health where even though the conversation is taking place in conservative societies, it may be that there is little disclosure and the seeking of treatment. In many Asian countries,

which include Indonesia, talking about sex is still considered taboo and therefore there is very little reporting of sexual dysfunction and that is why the access to the provision of the right care is limited (Mayangsari et al., 2022).

Although the impact of perineal trauma on sexual function has been increasingly recognized, several essential questions remain unanswered. Most of the studies in this area have been conducted in Western, economically developed countries, and there is a lack of information about the populations of Southeast Asia, where the culture, medical care, and even the anatomy might be significantly different (Fritel et al., 2024; Rezaei et al., 2024). Only a few studies have used validated and culturally adjusted tools, like the Indonesian version of FSFI, to evaluate sexual function in this region. Moreover, the extent to which perineal trauma is responsible for sexual dysfunction compared to other postpartum factors such as breastfeeding, tiredness, and quality of the relationship is still a question. This is especially the case in underdeveloped areas where the availability of postpartum care is not regular. Indonesia is a very different place to tackle this problem. With more than 90% of deliveries taking place in healthcare facilities and vaginal delivery still being the main way of birth, it is very important to know the extent of perineal trauma and what its effects are to be able to improve maternal health services (Dinas Kesehatan Kota Padang, 2024). In addition, the high rate of postpartum depression in Indonesia, which is estimated to be between 50 and 70%, indicates that psychological factors may have an even more significant influence on this population than in Western groups (Amandya et al., 2021). However, as yet, there is no thorough research that has methodically tested the relationship between perineal trauma and sexual dysfunction through the use of validated instruments in Indonesian postpartum women.

This study fills in these gaps by offering the very first in-depth study of perineal trauma and sexual function of Indonesian postpartum women. It uses the validated Indonesian FSFI. The paper has several new contributions to the existing research. First of all, it delivers very essential data about the health of a population in Southeast Asia, in particular, Indonesia, a region, which has been very much neglected in the global research of postpartum sexual health. Secondly, the use of the Indonesian-validated FSFI guarantees that the assessment of sexual function in different domains is culturally appropriate and that the instrument has psychometric reliability. Thirdly, this study, by looking at the impact of socio-demographic factors such as age, parity, and education along with perineal trauma, gives a deeper insight into the postpartum sexual health issue. Fourthly, as Pauh Community Health Center has reported 842 vaginal deliveries in 2023, which is one of the highest in Padang City, it can be highly beneficial to understand the perineal trauma burden in such a place in order to inform local interventions and policy development strategically (Dinas Kesehatan Kota Padang, 2024). The results are very important and have immediate effects on Indonesia postpartum care protocols and other countries that belong to low- and middle-income groups, where sexual health counseling is not yet a common practice in routine maternal care.

The main goal of this research was to figure out if there is any link between perineal trauma and sexual function in women six months after vaginal delivery. For that, the Female Sexual Function Index was used as the main tool of measurement. Besides that, the first set of aims was to characterize sociodemographic factors associated with postpartum sexual dysfunction and describe the prevalence of perineal trauma and sexual dysfunction among postpartum women in the Pauh Community Health Center service area. Next, they were to measure the strength of the relationship between perineal trauma and sexual dysfunction, while also taking into account other confounding variables. Finally, they were to offer Indonesia-based, health care recommendations for the integration of sexual health counseling and pelvic floor rehabilitation into routine postpartum care by means of evidence. Our expectation was that women with perineal trauma would represent a sexual dysfunction group with a substantially higher share than those with intact perinea and that the correlation between the two would still be significant if accounted for age, parity, and education level.

Method

Study Design and Setting: This research used a quantitative research design with a cross-sectional approach to look into the relationship between perineal trauma and sexual function in women after vaginal delivery. The study was carried out in the working area of Pauh Community Health Center, Cupak Tangah, Pauh District, Padang City, West Sumatra, Indonesia. The Pauh Community Health Center was the research site, as it had a large number of vaginal deliveries, 842 out of 1,127 total deliveries in health care facilities were recorded during 2023, thus it was counted as one of the facilities with the highest birth rates in Padang City (Dinas Kesehatan Kota Padang, 2024). The data collection was done within a two-month period from May to June 2025. This time was enough to recruit the participants meeting the inclusion criteria and to reach the appropriate postpartum interval for sexual function assessment.

Population and Sample. The study population included all women who gave birth vaginally at Pauh Community Health Center in the last six months before the study period. The choice of a six-month postpartum period was based on several sources of literature which commonly indicate that sexual function usually normalizes within three to six months after delivery, thus giving a more accurate assessment and at the same time reducing recall bias (Rezaei et al., 2024; Tartaglia et al., 2025). A total of 46 participants were recruited through purposive sampling procedure, which is a non-probability sampling method that enables the researcher to selectively choose the participants based on their characteristics that are most relevant to the achievement of the research objectives. The calculation of the sample size was done based on the formula for cross-sectional studies with categorical outcomes while taking into account the expected effect size from the studies that report the rate of sexual dysfunction to be around 60-80% in women with perineal trauma and 20-30% in those without (Roman et al., 2025). With a 95% confidence level ($\alpha = 0.05$) and an 80% statistical power ($\beta = 0.20$), the minimum number of the sample size was calculated to be 42 participants. The actual sample of 46 participants was more than enough to meet the minimum requirement and thus it allowed for incomplete questionnaire responses or withdrawal situations.

Eligibility criteria to select the participants were listed women aged 18 to 45 years who had a vaginal delivery at Pauh Community Health Center within the last six months, had resumed sexual activity after the delivery, were willing to participate in the study voluntarily, and provided signed informed consent. The exclusion criteria were women who had a cesarean section, those with a history of sexual dysfunction before pregnancy, women with chronic medical conditions affecting sexual function such as diabetes mellitus or neurological disorders, those who were currently having severe postpartum depression and need psychiatric treatment, women who had not resumed sexual activity after delivery, and those who refused to participate or withdrew consent during the study period. These criteria were set to ensure the homogeneity of the sample and reduce confounding factors that could mask the relationship between perineal trauma and sexual function.

Variables and Operational Definitions: The independent variable of this investigation was perineal trauma, characterized as any laceration or tear of the perineal tissues that happened in a vaginal delivery, irrespective of the extent or degree. The condition of perineal trauma was ascertained by examining medical records that described the delivery process with a particular focus on the documentation of perineal lacerations presence or absence by attending midwives or obstetricians. For the study, perineal trauma was divided into two categories, i.e., present and absent without further differentiation by the degree of the tear due to the inconsistency of the tear severity documentation in medical records. The dependent variable was sexual function, the operational definition of which was the multidimensional capacity for sexual response covering desire, arousal, lubrication, orgasm, satisfaction, and pain, as measured by the Female Sexual Function Index (FSFI) total score. A sexual dysfunction was referred to as an FSFI total score under 26.55, which is in agreement with the set cutoff that has been validated in psychometric studies concerning the instrument (Rezaei et al., 2024). The set of confounding variables were the maternal age at delivery, parity, education level, time elapsed since delivery, breastfeeding status, and mode of perineal trauma management, all of which were recorded during data collection for descriptive and analytical purposes.

Measurement Instrument: Sexual function was evaluated through the Female Sexual Function Index (FSFI), which is a well-validated, multidimensional self-report questionnaire made specifically to assess essential domains of female sexual function. The FSFI is composed of 19 questions grouped into six domains: sexual desire (2 items), sexual arousal (4 items), lubrication (4 items), orgasm (3 items), satisfaction (3 items), and pain during intercourse (3 items). Each item is rated on a Likert-type scale varying from 0 or 1 to 5, with higher scores signifying better sexual functioning in each domain. The domain scores are derived from the summation of the scores of the individual items within the respective domains followed by multiplication with a domain-specific factor to normalize the range. The overall FSFI score varies between 2 and 36, with the scores less than 26.55 reflecting sexual dysfunction (Rezaei et al., 2024). The cutoff point has been very useful in terms of both sensitivity and specificity in recognizing sexual dysfunction in women across populations of different cultures and ethnic groups.

Data Collection Procedure: The first step in the data collection process was getting the approval of the ethics committee. The research ethics committee of the faculty of medicine, Andalas University gave its green light (approval number: 475/UN.16.2/KEP-FK/2025), after making sure that the research was in line with the principles of the Declaration of Helsinki and the regulations of Indonesia concerning research. The Pauh Community Health Center administration also gave the go-ahead. Potential participants were located from the review of delivery registers at Pauh Community Health Center. Women who met the criteria for inclusion based on their delivery date and mode of delivery were screened. Eligible women were contacted for a telephone conversation or during postpartum follow-up visits. During these contacts, the study purpose, procedures, potential risks and benefits, and

confidentiality measures were explained to them. Women who decided to participate were given detailed information sheets and asked to come to a health center enrollment session. A visit to the participants' homes would be arranged if that was their preference.

Data Analysis: Analyzes were done using Statistical Package for the Social Sciences (SPSS) version 26.0 (IBM Corp., Armonk, NY, USA). Before the processing, the data were checked for completeness, correctness, and outliers. Descriptive statistics were generated to depict the characteristics of participants and the variables of the study. Continuous variables, for example, age and FSFI scores, were explained by means and standard deviations or medians and interquartile ranges, depending on the normality of distribution as tested by the Shapiro-Wilk test. Categorical variables, e.g., perineal trauma status, sexual dysfunction classification, parity, and education level were described by frequencies and percentages.

Univariate analysis was used to describe the distribution of all study variables. The frequency and percentage of women with and without perineal trauma were calculated for the independent variable. For the dependent variable, the prevalence of sexual dysfunction was established based on the FSFI cutoff score, and mean FSFI domain scores were calculated to locate the specific areas of impairment. Bivariate analysis was conducted to determine the relationship between perineal trauma and sexual dysfunction. The Chi-square test of independence was used for categorical outcomes. The association between perineal trauma and continuous FSFI scores was determined by the independent samples t-test or Mann-Whitney U test, depending on the normality of the distribution. Further bivariate analyses were also done to identify the relationships between the possible confounding variables like age, parity, education level, and sexual dysfunction. For all tests, statistical significance was set at $p < 0.05$.

Ethical Considerations: The present study adheres to the ethical principles of medical research on human subjects as specified in the Declaration of Helsinki and the Indonesian national research ethics guidelines. Ethical clearance was secured from the Local Research Ethics Committee of the Faculty of Medicine, Andalas University, before the enrollment of participants (approval number: 475/UN.16.2/KEP-FK/2025).

Results and Discussions

Participant Characteristics:

A total of 46 women who had undergone vaginal delivery at Pauh Community Health Center within the six months preceding the study were enrolled and completed the study protocol. The demographic and obstetric characteristics of participants are presented in Table 1.

Table 1. Sociodemographic and Obstetric Characteristics of Participants (N=46)

Characteristic	n	%
Age Group		
20-35 years	38	82.6
>35 years	8	17.4
Mean ± SD	**28.3 ± 4.7 years**	
Parity		
Primiparous	15	32.6
Multiparous (≥2)	31	67.4
Education Level		
Primary education or less	8	17.4
Secondary education	27	58.7
Tertiary education	11	23.9
Time Since Delivery		
3-4 months	18	39.1
5-6 months	28	60.9
Mean ± SD	**4.8 ± 1.2 months**	

Characteristic	n	%
Breastfeeding Status		
Exclusively breastfeeding	38	82.6
Mixed/formula feeding	8	17.4

The demographic profile of the participants is in line with the expected patterns that are usually observed in community-based maternal health interventions in Indonesia. Most of the women in the age group of 20-35 years reflect the national fertility data, where the age group is identified as the one contributing the largest number of births in Indonesia (Dinas Kesehatan Kota Padang, 2024). The age factor plays an essential role in postpartum sexual function since younger women might have different physiological and psychological reactions to childbirth as compared to older women. For example, Kırat (2025) found that changes in hormones caused by ageing, particularly lowering of estrogen levels during the transition to late reproductive years, can have a major influence on sexual desire, vaginal lubrication, and sexual satisfaction in general. Nevertheless, young women might also encounter certain challenges such as not knowing enough about postpartum recovery, having high expectations of quick return to pre-pregnancy sexual function, and worrying more about body image changes after giving birth.

The fact that most of the women in this sample (67.4%) have given birth more than once is very significant for understanding the issues of perineal trauma and sexual dysfunction that revolve around the women's experiences. Repeated vaginal deliveries have been pointed out to result in damage to the pelvic floor due to accumulation, progressive weakening of the perineal muscles, and increased chances of more severe tears in subsequent pregnancies (Sartore et al., 2024). Gagnon et al. (2021) in their longitudinal research, found the association between the incidence of more than three vaginal deliveries and pelvic floor dysfunction as well as sexual problems leading children born thereafter being 2.5 to 4.8 times more commonly with these problems than those born in first pregnancies, the exact ratio depending on which sexual function domain is measured. The mechanobiological challenge of undergoing childbirth multiple times at once is a cause of fascial extension, injury to the nerves and muscles, and changes in the pelvic area which altogether result in consequences for the sexual health of a person over time (Sari, 2024).

Besides that, educational level played a significant role as one of the sociodemographic features of this group of people (Delancey et al., 2021). The result that around 60% of subjects had at least secondary education gave a positive signal from a health literacy point of view as education has been linked strongly to behaviors that promote health, communication with medical personnel, and compliance with postpartum care instructions (Kırat, 2025). More educated women usually have a better grasp of pelvic floor health issues, are more conscious of the different rehabilitation possibilities, and are at ease discussing sensitive topics like sexual dysfunction with healthcare professionals. A cross-sectional study by Hidalgo et al. (2022) in Spain revealed that women with university-level education were three times as likely to ask for help with postpartum sexual issues than those with only primary education, thus, highlighting education as a key factor in overcoming the stigma and easing the process of getting care.

Prevalence of Perineal Trauma:

Among the 46 participants, exactly half experienced perineal trauma during their vaginal delivery (50%, n=23), while the remaining half delivered with intact perinea (50%, n=23). This distribution is illustrated in Figure 1.

Figure 1. Distribution of Perineal Trauma Among Participants (N=46)

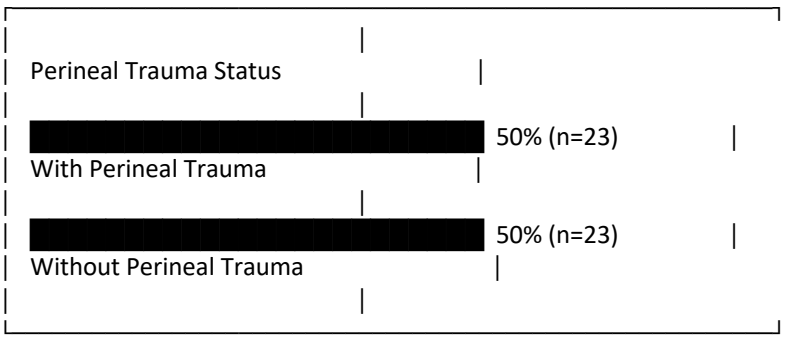


Table 2. Characteristics of Perineal Trauma (n=23)

Variable	n	%
Perineal Trauma Present	23	50.0
Without perineal trauma	23	50.0
Management of Trauma (n=23)		
Sutured	21	91.3
Not sutured (minor tears)	2	8.7
Time of Trauma Documentation		
Immediately post-delivery	23	100.0

An equal distribution, which was coincidental, nevertheless allowed a balanced comparison group to be used in studying the connection between perineal trauma and sexual function. Checking records from the past, it was found that perineal trauma in this group referred to spontaneous lacerations of different degrees. However, the detailed division by degree (first, second, third, or fourth) was not consistently documented in the records available, which limited the possibility of stratifying analyses by the severity of the injury.

The fifty percent rate of perineal trauma that was revealed in this research is within the wide range of that reported by other sources and is slightly lower than that of global figures. According to the World Health Organization, very often, 90% of the women, experience perineal trauma in different degrees, during vaginal delivery; among these, minor abrasions and more severe lacerations, are included (Cakwira et al., 2022). Nevertheless, the rates of prevalence greatly change from one place to another depending on delivery practices, use of episiotomy, characteristics of the birthing population, and definitions used for perineal trauma. For instance, in a significant cohort study done in Australia by Smith et al. (2023), perineal trauma was documented in 68% of vaginal deliveries, with 85% among primiparous women and 55% among multiparous women. Correspondingly, the Roman et al. (2025) study asserts that 71% of the Swedish primiparous women suffered some degree of perineal injury, while only 12% had severe third- or fourth-degree tears that necessitated surgical repair.

Prevalence of Postpartum Sexual Dysfunction:

Assessment using the Female Sexual Function Index revealed that more than half of the participants experienced sexual dysfunction at six months postpartum (54.3%, n=25), while 45.7% (n=21) maintained normal sexual function with FSFI scores above the 26.55 cutoff. The distribution of sexual function status is presented in Figure 2.

Figure 2. Distribution of Sexual Function Among Postpartum Women (N=46)

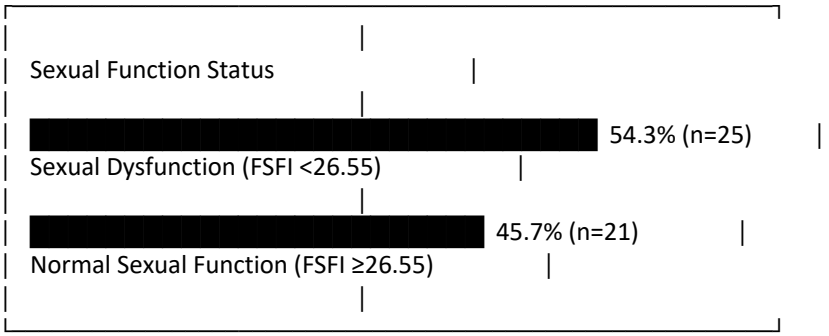


Table 3. FSFI Domain Scores and Sexual Function Classification (N=46)

FSFI Domain	Mean ± SD	Range	Interpretation
Desire	3.2 ± 1.1	1.2 - 6.0	Lowest impairment
Arousal	3.8 ± 1.2	0.0 - 5.7	Moderate impairment
Lubrication	4.2 ± 1.0	0.9 - 5.8	Relatively preserved
Orgasm	3.9 ± 1.3	0.0 - 6.0	Moderate impairment
Satisfaction	4.0 ± 1.1	0.8 - 5.6	Relatively preserved
Pain	3.5 ± 1.3	0.0 - 6.0	Significant impairment
Total FSFI Score	**24.8 ± 5.6**	**10.2 - 34.8**	**Below dysfunction cutoff**
Sexual Function Status	**n**	**%**	
Sexual Dysfunction (FSFI <26.55)	25	54.3	
Normal Function (FSFI ≥26.55)	21	45.7	

The mean total FSFI score across all participants (Table 3) was 24.8 ± 5.6, indicating that on average, women in this sample scored below the threshold for sexual dysfunction. When examining individual FSFI domains, the lowest mean scores were observed in the desire domain (3.2 ± 1.1), pain domain (3.5 ± 1.3), and arousal domain (3.8 ± 1.2), while higher mean scores were noted in the lubrication (4.2 ± 1.0) and satisfaction (4.0 ± 1.1) domains, suggesting domain-specific patterns of impairment.

The 54.3% figure of sexual dysfunction prevalence that has been derived from this research is very much in line with the trend that is gathering more and more evidence, which basically shows that sexual problems after delivery are not only usual but also become in many cases the patients' long-term problems. Rezaei et al. (2024) conducted a systematic review of data from 45 different studies representing the diverse populations and came to the conclusion that the rates of postpartum sexual dysfunction usually range from 41% to 83% depending on various factors like the timepoint for the assessment, measurement instrument, and population characteristics, with an average prevalence figure close to 60% at six months postpartum. Similarly, Tartaglia et al. (2025) observed that 58% of Italian first-time mothers' sexual dysfunction using FSFI occurred at three months postpartum and the figures went down slightly to 52% by six months.

The observed domain-specific pattern of impairment in this research with desire and pain as the most affected areas is very similar to what has been reported by other postpartum population studies. In particular, desire dysfunction has been singled out as a major issue in the postpartum period, the main reasons being a combination of hormonal changes, exhaustion from the physical side of things, psychological stress, and disrupted relationship dynamics (Kırat, 2025). Dyspareunia or pain during sexual intercourse was the next significant area of dysfunction in this sample that the researchers have identified. The main causes of postpartum dyspareunia include perineal trauma and scarring, vaginal atrophy caused by lactational hypoestrogenism, lack of lubrication, pelvic floor muscle tension, and psychological factors like fear and expectation of pain (Roman et al., 2025).

Association Between Perineal Trauma and Sexual Dysfunction:

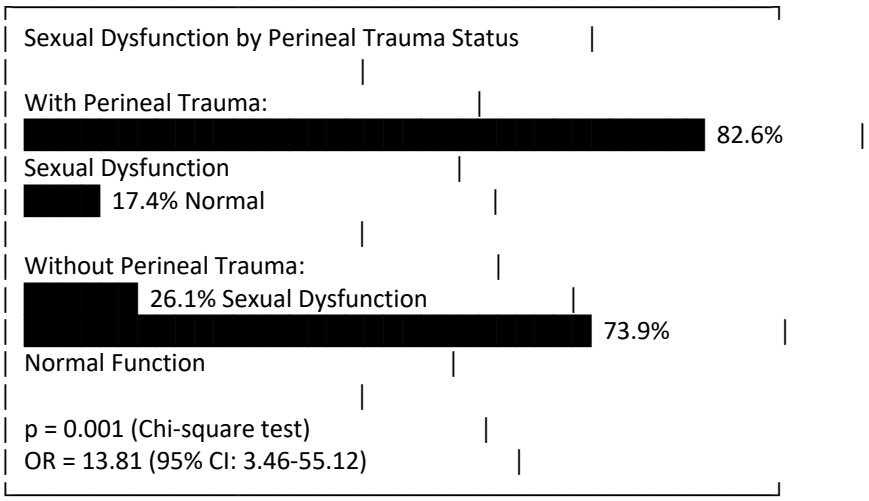
Cross-tabulation analysis revealed a strong association between perineal trauma and sexual dysfunction in this sample (Table 4). Among the 23 women who experienced perineal trauma, the vast majority (82.6%, n=19) met criteria for sexual dysfunction based on FSFI scores below 26.55, while only 17.4% (n=4) maintained normal sexual function.

Table 4. Association Between Perineal Trauma and Sexual Function (N=46)

Variable	Sexual Dysfunction	Normal Function	Total	p-value*	Crude OR (95% CI)
	n (%)	n (%)	n (%)		
Perineal Trauma					
Present	19 (82.6)	4 (17.4)	23 (100)	**0.001**	**13.81**
Absent	6 (26.1)	17 (73.9)	23 (100)		**(3.46-55.12)**
Total	**25 (54.3)**	**21 (45.7)**	**46 (100)**		

*Chi-square test; OR = Odds Ratio; CI = Confidence Interval

Figure 3. Comparison of Sexual Dysfunction Rates by Perineal Trauma Status



In contrast, among the 23 women who delivered with intact perinea, the pattern was reversed, with 73.9% (n=17) reporting normal sexual function and only 26.1% (n=6) experiencing sexual dysfunction. Chi-square analysis yielded a highly significant p-value of 0.001 ($p < 0.05$), indicating that the observed association between perineal trauma and sexual dysfunction was extremely unlikely to have occurred by chance. The crude odds ratio calculated from these data was 13.81 (95% CI: 3.46-55.12), meaning that women who experienced perineal trauma had nearly 14 times the odds of developing sexual dysfunction compared to women with intact perinea.

These results, in effect, argue that perineal trauma is one of the main causes of postpartum sexual dysfunction, that alongside many Western populations, the impact size was found to be much larger than what has been reported before. Roman et al. (2025) documented in their prospective cohort study the examination of 1,235 first-time Swedish mothers, and they discovered that those who underwent perineal trauma were 3.2 times more likely to have sexual dysfunction at the sixth month postpartum compared to those who did not (adjusted OR = 3.24, 95% CI: 2.15-4.89). Likewise, the result of a large-scale study by Leeman et al. (2022) in the United States revealed that the adjusted odds ratios varied between 2.5 and 4.1 for different sexual function domains among females with second-degree or higher perineal lacerations. The prominently higher odds ratio found here (OR = 13.81) indicates that the effect of perineal trauma on sexual function might be the main factor behind the situation in the Indonesian population, thus, it is a probable reflection of dissimilarities in trauma severity, repair techniques, postpartum care practices, or cultural factors influencing sexual health disclosure and recovery.

Table 5. FSFI Domain Scores Stratified by Perineal Trauma Status

FSFI Domain	With Perineal Trauma	Without Perineal Trauma	p-value*
	Mean ± SD	Mean ± SD	
Desire	2.8 ± 1.0	3.6 ± 1.1	0.012
Arousal	3.2 ± 1.3	4.4 ± 0.9	<0.001
Lubrication	3.7 ± 1.1	4.7 ± 0.7	0.001
Orgasm	3.3 ± 1.4	4.5 ± 1.0	0.002
Satisfaction	3.5 ± 1.2	4.5 ± 0.8	0.003
Pain	2.6 ± 1.2	4.4 ± 0.9	<0.001
Total FSFI Score	**21.3 ± 5.2**	**28.3 ± 4.1**	**<0.001**

*Independent samples t-test

Table 5 demonstrates that women with perineal trauma scored significantly lower across all six FSFI domains compared to those without trauma. The pain domain showed the most pronounced difference (2.6 vs 4.4, $p<0.001$), followed by arousal (3.2 vs 4.4, $p<0.001$) and lubrication (3.7 vs 4.7, $p=0.001$). These domain-specific impairments reflect the multidimensional impact of perineal trauma on sexual function, extending beyond physical pain to affect psychological and relational aspects of sexuality.

Influence of Sociodemographic Factors on Sexual Function:

Although the primary focus of this study was the relationship between perineal trauma and sexual dysfunction, exploratory analyses examining the role of sociodemographic variables provided additional insights (Table 6).

Table 6. Sexual Dysfunction by Sociodemographic Characteristics (N=46)

Characteristic	Sexual Dysfunction	Normal Function	p-value*
	n (%)	n (%)	
Age Group			
20-35 years (n=38)	21 (55.3)	17 (44.7)	0.189
>35 years (n=8)	4 (50.0)	4 (50.0)	
Parity			
Primiparous (n=15)	7 (46.7)	8 (53.3)	0.112
Multiparous (n=31)	18 (58.1)	13 (41.9)	
Education Level			
Primary or less (n=8)	6 (75.0)	2 (25.0)	0.089
Secondary (n=27)	15 (55.6)	12 (44.4)	
Tertiary (n=11)	4 (36.4)	7 (63.6)	
Time Since Delivery			
3-4 months (n=18)	11 (61.1)	7 (38.9)	0.456
5-6 months (n=28)	14 (50.0)	14 (50.0)	

*Chi-square test or Fisher's exact test

Age showed a weak trend that was not statistically significant, with women in the younger age group (20-35 years) reporting slightly more sexual dysfunction (55.3%) than those in the older age group (50.0%), however, the difference was not significant (p = 0.189). Parity was a more dominant factor that raised the sexual dysfunction rate of multiparous women to 58.1% as compared to 46.7% in the case of primiparous women, but the difference between these two groups was not statistically significant in the present small sample (p = 0.112). The level of education had the greatest effect on sexual function among the examined sociodemographic variables. Women with tertiary education had the lowest prevalence of sexual dysfunction (36.4%) compared to women with secondary (55.6%) and primary education or less (75.0%), however, the difference was not statistically significant (p = 0.089)

due to the small sample size.

The results of this study hold a multitude of implications for clinical practice and public health policy not only in Indonesia but in similarly indirect areas as well. The first thing is, the extremely high incidence of sexual dysfunction six months after delivery which is the cause of more than half of the total participants should signal a loud warning that such conditions during the postpartum period constitute a serious problem that cannot be ignored yet contrasts with their rare mention in the literature and normal maternal care procedures (Buurman et al., 2020).

In order to offer complete postpartum care, professionals in the medical field have to get ready for it and also be efficient in the sexual health assessment. Thus, using validated screening tools for brief assessments such as shortened versions of the FSFI, they can recognize those women who need thus most instruction and intervention (Mayangsari et al., 2022).

Secondly, the tight connection between the damage suffered by the perineum and the occurrence of sexual dysfunction points out the necessity of the utilization of well-grounded, scientifically corroborated intrapartum methods to reduce empirically unmerited damage to the perineum. Some of the procedures and actions that have been shown to be effective include the restriction of episiotomy to cases in which there is a clear clinical indication rather than its routine use, the application of warm compresses and perineal massage during the second stage of labor, as well as adoption of upright or lateral delivery positions that lead to less perineal pressure (Fritel et al., 2024). According to a meta-analysis accomplished by Aasheim et al. (2021), these interventions combined

brought about a 30-40% reduction in the rates of severe perineal trauma without affecting maternal or neonatal outcomes.

Thirdly, there is a wealth of evidence on the benefits of pelvic floor muscle training (PFMT) in the prevention and treatment of postpartum sexual dysfunction (Kettle et al., 2022). A Cochrane review by Woodley et al. (2020) reported that supervised PFMT programs that were started in the early postpartum period led to a significant improvement of sexual function, reduction of dyspareunia, and enhancement of the quality of life as compared to the control group. The inclusion of pelvic floor physiotherapy services in the postpartum care program would not only be a step forward in Indonesian healthcare, but it would also be a solution to the currently unmet demand in most local healthcare facilities (Maria & Riani, 2025).

Conclusions

This cross-sectional study revealed that perineal trauma was significantly associated with sexual dysfunction after childbirth among women in the Pauh Community Health Center area. The odds of sexual dysfunction in women with perineal trauma were 13.81 times higher than in those women with intact perinea (p=0.001). The overall prevalence for sexual dysfunction at six months postpartum was 54.3%, with painful intercourse and lack of sexual desire being the most affected areas. These results show that perineal trauma is the leading cause of postpartum sexual dysfunction; however, other factors such as age, parity, and education level also have some influence on the risk of sexual dysfunction.

Given the heavy load of postpartum sexual dysfunction and the serious consequences of such a condition on the quality of life and intimate relationships of women, a number of recommendations can be drawn from this study. Healthcare providers should include regular sexual health examinations in postpartum care through the use of validated tools such as the FSFI; they should also take preventive measures against perineal trauma as a result of delivery, including episiotomy restrictions and the usage of protective delivery techniques. Moreover, the repair of the perineum after any injury should be done in the right time with the appropriate skills, while pelvic floor rehabilitation services should be established and considered as a part of routine postpartum care. Besides that, providing comprehensive sexual health counseling which covers both the physical and psychological aspects of the recovery process would be very beneficial, and finally, the creation of supportive clinical environments which enable women to talk about their sexual problems without stigma should be the focus of healthcare practitioners.

Further studies should follow a prospective longitudinal approach and have a larger number of participants in order to assess recovery trajectories over time more accurately. In addition, they should use uniform classification systems to detail perineal trauma severity and facilitate analyses which determine dose-response relationships, as well as incorporate multivariable analyses that adjust for confounders like breastfeeding status, mental health, and relationship quality. Also, combining quantitative measures with qualitative approaches would help to better understand women's experiences and views in the Indonesian cultural context. Lastly, interventions aimed at preventing and rehabilitating should be assessed through randomized controlled trials that are specifically designed for resource-constrained settings.

Although the study is limited by the cross-sectional design, small sample size, and single-center setting, it still offers essential insights into a disadvantaged population in Southeast Asia and draws attention to the need for comprehensive postpartum care which focuses on sexual health as a vital part of maternal well-being.

Acknowledgments

The authors are eager to convey their highest appreciation, thankfulness, and respect to all the people and the entities that have backed and uplifted this research to its triumphant finish. We are especially thankful to the ladies who were the voluntary research participants and who, in spite of the sensitive nature of the topic, shared their experience of postpartum sexual health wholeheartedly. Consequently, these valuable insights will greatly contribute to the quality of maternal healthcare services.

We are also very delighted to the Pauh Community Health Center, Padang City, management and staff, for their readiness, and support in facilitating data collection, providing access to medical records, and participant recruitment. We would also like to acknowledge and thank the midwives and healthcare workers who were at the center, offering their full support and assistance in participant recruitment and study period activities.

We take this opportunity to thank the Research Ethics Committee of the Faculty of Medicine, Andalas University for their timely and thorough review of the study protocol leading to the approval. (ethical clearance

number: 475/UN.16.2/KEP-FK/2025) They ensured that all the research procedures adhered to the highest ethical standards for human subjects research. We are also grateful to the academic leadership and faculty members of the Department of Midwifery, Department of Obstetrics and Gynecology, and Department of Public Health and Community Medicine at the Faculty of Medicine, Andalas University for their support and supervision through the different stages of this research project.

We would like to express our gratitude to the local research environment team, who were specially prepared for this work, and who, by their method of work, showed that they respected the respondents, were sensitive, and devoted themselves to the performance of their tasks. We also express our gratitude to the contributors and validators of the Indonesian version of the Female Sexual Function Index (FSFI) for allowing us to use this validated instrument in our research.

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