

Original Article

Impact of Vaginal Discharge on Female Sexual Function by Using Female Sexual Function Index

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ABSTRACT

Background: Vaginal discharge and associated symptoms may influence individual dimensions of female sexual function, but evidence regarding these relationships in Pakistani women is limited. **Objective:** To compare total and domain-specific Female Sexual Function Index (FSFI) scores among women with physiological vaginal discharge, pathological discharge with itching, and pathological discharge without itching. **Methods:** This analytical cross-sectional study included 81 women attending the Department of Gynecology and Obstetrics at Hajiani Day and Night Hospital, Hyderabad, Pakistan, from January to December 2021. Participants were classified into three groups of 27 women. Sexual function was assessed using the 19-item FSFI. Mean scores were compared using one-way analysis of variance followed by Tukey post-hoc comparisons. **Results:** Significant differences between-group were identified for desire ($p=0.004$), lubrication ($p<0.001$), and satisfaction ($p=0.003$). Compared with women with physiological discharge, women with pathological discharge without itching had lower desire (mean difference 0.33, 95% CI 0.06–0.60) and lubrication scores (mean difference 0.32, 95% CI 0.09–0.55) but higher satisfaction scores (mean difference –0.39, 95% CI –0.72 to –0.06). No significant differences were observed for arousal, orgasm, pain, or total FSFI score ($p=0.228$). **Conclusion:** Vaginal-discharge groups differed in selected FSFI domains, but the pattern did not indicate consistently poorer sexual function in women with pathological discharge or itching. **Keywords:** Female sexual function; Female Sexual Function Index; Vaginal discharge; Itching; Sexual dysfunction.

INTRODUCTION

Female sexual function is a multidimensional aspect of health involving desire, arousal, lubrication, orgasm, satisfaction, and pain. Disturbances in these domains may adversely affect women's psychological well-being, intimate relationships, and quality of life. Sexual function is influenced by interacting physical, psychological, relational, and sociocultural factors, and the associated health conditions may differ between women and men (1,2).

Menopause, obesity, infertility, previous vaginal or pelvic procedures, childbirth-related factors, and pelvic irradiation have been described among the potential correlates of impaired female sexual function (3).

The Female Sexual Function Index (FSFI) is a 19-item instrument that evaluates six domains of sexual function: desire, arousal, lubrication, orgasm, satisfaction, and pain. It has been used to assess sexual function in women experiencing gynecological and vulvovaginal conditions, including recurrent vulvovaginal candidiasis (4). Assessment of these individual domains may help identify aspects of sexual function that are potentially associated with genital symptoms even when the total FSFI score does not differ substantially between groups.

Vaginal discharge is a common reason for seeking gynecological care. Although physiological discharge is a normal occurrence, changes in its color, odor, consistency, or associated symptoms such as itching may cause discomfort and concern. Women's perceptions and beliefs regarding vaginal discharge can influence their healthcare-seeking behavior and emotional response to the symptom (5). In addition to physical discomfort, perceived abnormal discharge may contribute to embarrassment, reduced self-confidence, concerns about cleanliness, and avoidance of sexual activity. These perceptions may consequently be associated with different dimensions of sexual function, irrespective of the specific underlying cause of the discharge.

Previous research has examined sexual function among women with abnormal vaginal discharge; however, findings regarding its association with FSFI scores have not been consistent (6). Moreover, evidence from Pakistan remains limited, and it is unclear whether women with physiological vaginal discharge, pathological vaginal discharge accompanied by itching, and pathological vaginal discharge without itching differ in their overall or domain-specific sexual-function scores. Local assessment is important because perceptions of vaginal symptoms and willingness to discuss sexual health may vary according to social and cultural context.

Therefore, this analytical cross-sectional study aimed to compare the total FSFI score and the six FSFI domain scores—desire, arousal, lubrication, orgasm, satisfaction, and pain—among women with physiological vaginal discharge, pathological vaginal discharge with itching, and pathological vaginal discharge without itching attending a gynecology department in Hyderabad, Pakistan. The study specifically examined whether FSFI scores differed among these three symptom-defined groups.

MATERIALS AND METHODS

This analytical cross-sectional study was conducted in the Department of Gynecology and Obstetrics at Hajiani Day and Night Hospital, Hyderabad, Pakistan, from January to December 2021. The study evaluated whether sexual-function scores differed among women classified according to the characteristics of their vaginal discharge and the presence or absence of itching. Women attending the gynecology department with vaginal discharge were assessed for eligibility. Women older than 40 years, those with chronic diseases, those who had given birth during the preceding year, women who were unmarried or not living with their husbands, and women whose partners had sexual dysfunction were excluded because these factors could independently influence sexual function. Participants with incomplete Female Sexual Function Index (FSFI) questionnaires were also excluded from the analysis.

A total of 81 eligible women were included and classified into three groups of 27 participants each. Group A comprised women with physiological vaginal discharge, Group B comprised women with pathological vaginal discharge accompanied by itching, and Group C comprised women with pathological vaginal discharge without itching. Discharge characteristics during the preceding month were recorded. Yellow or green discharge was classified as abnormal in color, while cottage cheese-like or thicker discharge was classified as abnormal in consistency. The presence of malodor, whether or not it increased during sexual activity, was considered an abnormal odor characteristic. Group classification was based on the reported discharge characteristics and the presence or absence of associated itching.

Data were collected regarding parity, mode of delivery, time since the last delivery, history of spontaneous or induced abortion, contraceptive use, vaginal discharge status, and discharge characteristics. Sexual function was evaluated using the FSFI, a 19-item questionnaire assessing six domains: desire, arousal, lubrication, orgasm, satisfaction, and pain. The instrument evaluates sexual function during the preceding four weeks. Individual item responses are scored from 0 or 1 to 5, depending on the item. Items within each domain are summed and multiplied

by the corresponding domain-specific factor to obtain standardized domain scores. The total FSFI score is calculated by summing the six domain scores, with higher scores indicating better sexual function. A total score of 26.55 or lower was used to identify female sexual dysfunction in accordance with the scoring criterion adopted in the manuscript (7).

Data were analyzed using IBM SPSS Statistics version 23.0. FSFI total and domain scores were summarized as means and standard deviations for the three vaginal-discharge groups. Mean total and domain-specific scores were compared using one-way analysis of variance. When the omnibus comparison was statistically significant, Tukey's post-hoc multiple-comparison test was applied to identify pairwise group differences. The analysis was unadjusted, and the recorded demographic, reproductive, and contraceptive variables were not included as covariates. Participants with incomplete FSFI responses were excluded, and the statistical analysis was conducted using complete questionnaire records. A p-value below 0.05 was considered statistically significant. Bar diagrams were used to display mean FSFI scores across the three groups.

Ethical approval was obtained from the relevant ethics review committee before data collection. Written informed consent was obtained from all participants before enrollment, and participation was voluntary.

RESULTS

A total of 81 women were included, with 27 participants in each of the physiological discharge, pathological discharge with itching, and pathological discharge without itching groups. Significant between-group differences were found for desire, $F(2,78)=5.83$, $p=0.004$, $\eta^2=0.130$; lubrication, $F(2,78)=7.85$, $p<0.001$, $\eta^2=0.168$; and satisfaction, $F(2,78)=6.37$, $p=0.003$, $\eta^2=0.140$. These effect estimates indicate that discharge-group classification accounted for approximately 13.0%–16.8% of the observed variation in these three domain scores.

Women with pathological discharge without itching had lower mean desire scores than women with physiological discharge (mean difference 0.33, 95% CI 0.06–0.60; adjusted $p=0.011$) and those with pathological discharge accompanied by itching (mean difference 0.33, 95% CI 0.06–0.60; adjusted $p=0.011$). Desire scores did not differ between the physiological discharge and pathological discharge with itching groups (mean difference 0.00, 95% CI –0.27 to 0.27; adjusted $p=1.000$).

Lubrication scores were also lower among women with pathological discharge without itching than among women with physiological discharge (mean difference 0.32, 95% CI 0.09–0.55; adjusted $p=0.003$) and women with pathological discharge accompanied by itching (mean difference 0.33, 95% CI 0.10–0.56; adjusted $p=0.002$). No difference was identified between the physiological discharge and pathological discharge with itching groups (mean difference –0.01, 95% CI –0.24 to 0.22; adjusted $p=0.994$).

Table 1. Comparison of FSFI Domain and Total Scores Among Vaginal-Discharge Groups (n=81)

FSFI outcome	Physiological discharge (n=27), mean $\pm$ SD	Pathological discharge with itching (n=27), mean $\pm$ SD	Pathological discharge without itching (n=27), mean $\pm$ SD	F(2,78)	p-value	η^2
Desire	3.60 $\pm$ 0.01	3.60 $\pm$ 0.01	3.27 $\pm$ 0.71	5.83	0.004	0.130
Arousal	4.50 $\pm$ 0.01	4.50 $\pm$ 0.01	4.28 $\pm$ 0.77	2.20	0.117	0.053
Lubrication	4.79 $\pm$ 0.06	4.80 $\pm$ 0.01	4.47 $\pm$ 0.60	7.85	<0.001	0.168
Orgasm	4.36 $\pm$ 0.23	4.40 $\pm$ 0.01	4.16 $\pm$ 0.83	1.81	0.171	0.044
Satisfaction	3.67 $\pm$ 0.31	3.61 $\pm$ 0.08	4.06 $\pm$ 0.81	6.37	0.003	0.140
Pain	4.70 $\pm$ 0.54	4.80 $\pm$ 0.01	4.74 $\pm$ 0.86	0.20	0.820	0.005
FSFI total	25.61 $\pm$ 0.90	25.71 $\pm$ 0.08	24.97 $\pm$ 2.80	1.51	0.228	0.037

FSFI, Female Sexual Function Index; SD, standard deviation; η^2 , eta-squared effect size. Comparisons were performed using one-way analysis of variance. F-statistics, p-values, and η^2 values were calculated from the reported group means, SDs, and sample sizes.

Table 2. Tukey Post-Hoc Comparisons for FSFI Outcomes With Significant Omnibus Differences

FSFI outcome	Group 1	Group 2	Mean difference	95% CI	Adjusted p-value
Desire	Physiological discharge	Pathological discharge with itching	0.00	–0.27 to 0.27	1.000
Desire	Physiological discharge	Pathological discharge without itching	0.33	0.06 to 0.60	0.011
Desire	Pathological discharge with itching	Pathological discharge without itching	0.33	0.06 to 0.60	0.011

FSFI outcome	Group 1	Group 2	Mean difference	95% CI	Adjusted p-value
Lubrication	Physiological discharge	Pathological discharge with itching	−0.01	−0.24 to 0.22	0.994
Lubrication	Physiological discharge	Pathological discharge without itching	0.32	0.09 to 0.55	0.003
Lubrication	Pathological discharge with itching	Pathological discharge without itching	0.33	0.10 to 0.56	0.002
Satisfaction	Physiological discharge	Pathological discharge with itching	0.06	−0.27 to 0.39	0.900
Satisfaction	Physiological discharge	Pathological discharge without itching	−0.39	−0.72 to −0.06	0.015
Satisfaction	Pathological discharge with itching	Pathological discharge without itching	−0.45	−0.78 to −0.12	0.004

CI, confidence interval; FSFI, Female Sexual Function Index. Mean difference was calculated as Group 1 minus Group 2. Confidence intervals and p-values were adjusted using Tukey's method and calculated from the reported rounded group summaries.

In contrast, the pathological discharge without itching group had a higher mean satisfaction score than the physiological discharge group (mean difference −0.39, 95% CI −0.72 to −0.06; adjusted $p=0.015$) and the pathological discharge with itching group (mean difference −0.45, 95% CI −0.78 to −0.12; adjusted $p=0.004$). Satisfaction did not differ between the physiological discharge and pathological discharge with itching groups (mean difference 0.06, 95% CI −0.27 to 0.39; adjusted $p=0.900$).

No statistically significant between-group differences were observed for arousal ($p=0.117$), orgasm ($p=0.171$), pain ($p=0.820$), or total FSFI score ($p=0.228$). The pathological discharge without itching group had the lowest mean total FSFI score, but the difference was not statistically supported. Accordingly, the reported findings demonstrate domain-specific differences rather than a significant overall difference in female sexual function.

The ANOVA and Tukey values should be confirmed against the original dataset because they were reconstructed from rounded summary statistics, and the reported SDs of 0.01 in several cells require verification before publication. Individual-level data are required to calculate the prevalence of FSFI-defined sexual dysfunction, assess statistical assumptions, adjust for confounders, or create valid distributional figures.

DISCUSSION

This analytical cross-sectional study found that FSFI scores differed among the three vaginal-discharge groups in the domains of desire, lubrication, and satisfaction, whereas arousal, orgasm, pain, and total FSFI scores did not differ significantly. Women with pathological discharge without itching had lower desire and lubrication scores than women in the other two groups but had a higher satisfaction score. Therefore, the findings indicate a domain-specific and nonuniform relationship between discharge characteristics and sexual function rather than consistent impairment across all aspects of female sexual function.

The absence of a significant difference in total FSFI score is broadly consistent with previous research reporting no clear relationship between abnormal vaginal discharge and the overall prevalence of female sexual dysfunction. However, Gungor et al. reported higher mean FSFI scores among women with abnormal discharge than among controls, suggesting that the presence of discharge does not necessarily correspond to uniformly poorer sexual function (6). The current findings partly reflect this complexity: the group with discharge accompanied by itching did not have lower total or domain-specific scores than the physiological-discharge group, whereas the group with pathological discharge without itching had lower desire and lubrication but higher satisfaction. Differences between studies may reflect variation in participant selection, cultural context, symptom perception, sexual activity, diagnostic criteria, and the clinical causes of vaginal discharge.

Evidence from clinically confirmed vulvovaginal disease has also shown that associations may vary across individual components of sexual function. Moshfeghy et al. found lower overall sexual-function, orgasm, and satisfaction scores among women with recurrent vulvovaginal candidiasis than among unaffected women, while other FSFI domains did not differ significantly (4). Unlike that investigation, the present study classified participants according to discharge characteristics and itching rather than a documented microbiological diagnosis. Consequently, differences in desire, lubrication, and satisfaction cannot be attributed to a particular infection or pathological process. The contrast between the two studies reinforces the importance of distinguishing symptom-defined vaginal discharge from clinically confirmed vulvovaginal disease.

Several pathways may plausibly explain why vaginal symptoms are related differently to individual FSFI domains. Changes in discharge color, odor, or consistency may cause concern, embarrassment, reduced confidence, or altered perceptions of genital cleanliness. Women's beliefs and perceptions regarding vaginal discharge can influence their emotional responses and healthcare-seeking behavior (5). Genital malodor can also be distressing even when a specific cause is not identified, while common infectious causes require appropriate clinical evaluation (8). Such concerns could reduce sexual interest or interfere with physiological readiness for sexual activity. Nevertheless, body image, emotional distress, relationship quality, and perceptions of discharge were not measured in this study; these explanations should therefore be regarded as plausible interpretations rather than mechanisms demonstrated.

The higher satisfaction score in the pathological-discharge-without-itching group, despite lower desire and lubrication, illustrates that FSFI domains do not necessarily change in parallel. Sexual satisfaction can reflect emotional intimacy, partner-related factors, expectations, and the overall sexual relationship rather than genital symptoms alone. The finding may also have been influenced by differences among the groups in demographic, reproductive, relational, or psychological characteristics. Although parity, delivery history, abortion history, contraceptive use, and time since the last delivery were recorded, these variables were not included in an adjusted analysis. Residual confounding therefore remains an important explanation for the observed differences.

From a clinical perspective, the findings suggest that women presenting with vaginal discharge may benefit from respectful assessment of both vaginal symptoms and sexual concerns. The presence of discharge or itching alone should not be assumed to indicate impairment across every sexual-function domain. Equally, symptom-defined discharge should not replace appropriate clinical assessment of its underlying cause. Where women report changes in desire, lubrication, satisfaction, or pain, clinicians may consider a broader evaluation that incorporates physical symptoms, psychological well-being, relationship context, medication use, reproductive history, and other potential contributors to sexual function.

A strength of the study was the use of the multidomain FSFI to examine specific aspects of sexual function rather than relying exclusively on a single overall score. The inclusion of three equally sized groups also enabled direct comparison according to discharge characteristics and itching status. However, the findings should be interpreted in light of important limitations. The cross-sectional design does not establish temporality or causality. The small, single-center sample limits precision and generalizability, and the participant-selection method was not clearly documented. Classification of discharge was based on reported characteristics without a documented standardized clinical or laboratory diagnosis, creating a risk of exposure misclassification. Sexual-function and vaginal-symptom data were self-reported and may have been affected by recall and social-desirability bias. The analysis did not control demographic, reproductive, psychological, relational, or clinical confounders. Furthermore, multiple FSFI outcomes were examined, and several reported standard deviations were unusually small, requiring confirmation against the original data. These limitations mean that the domain-specific associations should be considered exploratory.

CONCLUSION

Vaginal-discharge group classification was associated with differences in desire, lubrication, and satisfaction scores, but not with arousal, orgasm, pain, or total FSFI score. Women with pathological discharge without itching reported lower desire and lubrication but higher satisfaction than the comparison groups, demonstrating that the observed pattern was not uniformly indicative of poorer sexual function. These findings support individualized assessment of sexual-function domains among women presenting with vaginal discharge, while the cross-sectional design and unadjusted analysis preclude causal interpretation.

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