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Frequency of Sexual Dysfunction among Female Patients Presenting with Urinary Incontinence

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ABSTRACT

Urinary incontinence can negatively affect women's quality of life, often leading to reduced confidence and sexual dysfunction. Determining its frequency helps guide comprehensive clinical assessment and improve patient-centered management strategies. **Objective:** To determine the frequency of sexual dysfunction among female patients presenting with urinary incontinence. **Methods:** A cross-sectional study was conducted in the Department of Urology, The Indus Hospital, Karachi, Pakistan, from 1st April 2024 to 30th September 2024. This study included 180 sexually active women aged 16–80 years presenting with urinary incontinence. Participants were enrolled using non-probability consecutive sampling. Sexual function was assessed using the Female Sexual Function Index (FSFI), with a score ≤26.55 indicating dysfunction. Demographic data, comorbidities (diabetes, hypertension), and urinary incontinence characteristics (type and duration) were recorded. Data were analyzed using SPSS version 26. Chi-square and Fisher's exact tests were applied, and $p \leq 0.05$ was considered statistically significant. **Results:** Of the 180 participants, 44 (24.4%) had sexual dysfunction, and 136 (75.6%) had normal sexual function. Median age was 46 years, and mean BMI was 31.9 ± 5.8 kg/m^2. Sexual dysfunction showed no significant association with age, BMI, diabetes, hypertension, residence, or type and duration of urinary incontinence. However, FSFI domain scores—including desire, arousal, lubrication, orgasm, satisfaction, and pain were significantly lower among women with sexual dysfunction ($p<0.001$ for all). **Conclusions:** Nearly one-fourth of women with urinary incontinence experienced sexual dysfunction, independent of demographic or comorbid factors. Urinary incontinence adversely affected multiple aspects of sexual health.

INTRODUCTION

Urinary incontinence (UI) is one of the most frequently occurring and troublesome conditions in women all over the world. It plays a major role by affecting health and general well-being, making physical, psychological, and social performance worse [1]. It not only affects the urinary system but also has many other effects, including intimate ones, like sexual functioning, as stated by the International Continence Society (ICS) and the International Urogynecological Association (IUGA). UI is one of the subsets of female pelvic floor dysfunctions, also including fecal incontinence, pelvic organ prolapses, and sexual dysfunction [2]. UI affects different age groups, parity, and comorbid conditions differently, with estimates revealing that 25%-45% percent of adult women experience some type of UI, and higher rates of UI occur among older women or women with more than one child [3]. In Pakistan and other low- to middle-income countries, UI is underreported due to cultural taboos, lack of awareness, and access to medical care; additionally, many women are taught to accept UI as a natural aftermath of delivery or aging and do not seek help [4]. UI may hurt sexual functioning both physically, by causing weakness of the pelvic floor, changes in vaginal sensation, and fear of leakage, as well as psychologically, through embarrassment, low self-perception, anxiety, etc. [5]. Stressful women with UI frequently complain of coital incontinence, which results in

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the prevention of intimacy. Urge UI may result in unpredictability and increased anxiety; hence, urinary and bowel dysfunction are combined, which correlates with increased sexual disability [6, 7]. The new evidence highlights the importance of holistic management of UI, which focuses on sexual health. Pelvic floor muscle training (PFMT) is helpful as a conservative method, and pharmacological interventions, including mirabegron, have been shown to help with continence and sexual functioning [8]. Structured measures of sexual domains are available with validated assessment instruments like the Female Sexual Function Index (FSFI) and PISQ-12 [9, 10]. Although there is more and more global data, there is a relative dearth of research on the prevalence and trends of sexual dysfunction in women with UI in South Asia, where there is a lack of cultural competence and cultural stigma to report it. This study aims to implement culturally competent interventions to improve the quality of life and overall well-being of women with UI.

METHODS

A cross-sectional study in the Department of Urology, The Indus Hospital, Karachi, Pakistan, was carried out after the approvals of the Institutional Review Board and Ethics Review Committee of The Indus Hospital Research Centre (ERC No. IHHN_IRB_2024_02_015). A national research review body reviewed the research protocol and approved it regarding the Declaration of Helsinki. The research was conducted between 1st April 2024 and 30th September 2024 after receiving the consent of the College of Physicians and Surgeons Pakistan (CPSP). All the female patients aged 16 to 80 years who reported to the Outpatient Department of Urology with urinary incontinence were included. Non-probability consecutive sampling was used to recruit the participants. The sample size was estimated using the WHO sample size calculator with a 64.7% prevalence assessment of sexual dysfunction among women with urinary incontinence, which was determined in the literature [11], with a 95% confidence and a 7% margin of error, resulting in a required sample size of 180 participants. The participants had to be eligible to respond to the study questionnaire. Individuals who failed to give consent, had a history of prior pelvic or gynecological surgery, or who had neurogenic bladder, multiple sclerosis, or spinal cord injury affecting voiding were excluded. Pregnant mothers and those with active infections of the urinary tract were also excluded. The data were obtained with informed consent. The questionnaires were given privately in order to maintain confidentiality. A trained female research assistant helped the participant when it was necessary to clarify something, but this did not affect answers. Measures of sexual functioning were conducted by means of the Female Sexual Function Index (FSFI), a validated self-report questionnaire comprising 19 questions in the six domains: sexual desire (2 questions), arousal (4 questions), lubrication (4 questions), orgasm (3 questions), satisfaction (3 questions), and pain (3 questions). All of the domain scores were obtained by adding together the scores of individual items within the domain and multiplying by a domain-specific factor. There was a range of 2-36 in total FSFI score, with the higher the score, the better the sexual functioning. In accordance with the existing literature [12], the FSFI was applied to determine the presence of sexual dysfunction with a total FSFI score of 26.55 or below. Other variables that were gathered were the demographics, nature, and length of urinary incontinence, and comorbid conditions like diabetes mellitus and high blood pressure. Classification of urinary incontinence was made based on standard definitions, which included stress, urge, and mixed urinary incontinence. The principal investigator and trained research personnel were used to collect data. Each participant received an individual study code, and no personal identifiable data were entered.

SPSS version 26.0 was used to do statistical analysis. The Shapiro-Wilk test was used to test the normality of quantitative variables. Appropriate descriptive statistics were applied; frequencies and percentages were used to describe categorical variables, whereas mean and standard deviation were used to describe continuous variables. The stratification was done based on age, duration of symptoms, type of urinary incontinence, and comorbidities. Where necessary, chi-square or Fisher's exact tests were used. The independent sample t-tests are applied to compare the mean FSFI domain scores of women with sexual dysfunction and those without it. A value of $p \leq 0.005$ was regarded as statistically significant.

RESULTS

A total of 180 adult female participants were included. Among them, 44 (24.4%) had sexual dysfunction (FSFI ≤ 21) and 136 (75.6%) had normal sexual function (FSFI > 21). The median age was 46 years, and the mean BMI was 31.9 ± 5.8 kg/m^2. Baseline demographic and clinical characteristics such as age, BMI, diabetes mellitus, hypertension, and residence showed no significant association with sexual dysfunction, as shown in table 1.

Table 1: Baseline Demographic and Clinical Characteristics of Participants (n=180)

Variables	With SD (n=44), Mean ± SD/n (%)	Without SD (n=136), Mean ± SD/n (%)	p-value
Age (Years), median (IQR)	46 (39.3-52)	46.5 (42-52)	0.825
BMI (kg/m^2)	33.7 ± 6.6	32.3 ± 5.5	0.106
Diabetes Mellitus	11 (25.0%)	36 (26.4%)	0.847
Hypertension	11 (25.0%)	35 (25.7%)	0.923
Residence (Urban)	18 (40.9%)	68 (50.0%)	0.294

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Urinary incontinence characteristics, including duration and type, were also not significantly associated with sexual dysfunction. Most participants in both groups had symptoms for ≤1 year, and stress incontinence was the predominant type, as shown in table 2.

Table 2: Association between Type and Duration of Urinary Incontinence and Sexual Dysfunction (n=180)

Variables	With SD (n=44), n (%)	Without SD (n=136), n (%)	p-value
Duration of UI			
≤1 Year	25 (56.8%)	88 (64.7%)	0.190
2–4 Years	18 (40.9%)	38 (27.9%)	
5–7 Years	1 (2.3%)	10 (7.4%)	
Type of UI			
Stress UI	36 (81.8%)	111 (81.6%)	0.952
Mixed UI	8 (18.2%)	22 (16.2%)	
Urge UI	0 (0%)	3 (2.2%)	

Domain-wise comparison of FSFI scores revealed significant differences across all six domains—desire, arousal, lubrication, orgasm, satisfaction, and pain—with lower mean scores in women with sexual dysfunction. The total FSFI score was markedly lower in women with dysfunction, indicating a substantial reduction in overall sexual function, as shown in table 3.

Table 3: Comparison of FSFI Domain Scores between Women with and without Sexual Dysfunction (n=180)

FSFI Domain	With SD (Mean ± SD)	Without SD (Mean ± SD)	p-value
Desire	2.8 ± 0.9	4.6 ± 0.8	<0.001
Arousal	2.6 ± 0.8	4.3 ± 0.7	<0.001
Lubrication	2.4 ± 0.7	4.0 ± 0.6	<0.001
Orgasm	2.5 ± 0.8	4.0 ± 0.7	<0.001
Satisfaction	2.3 ± 0.9	3.8 ± 0.8	<0.001
Pain	2.1 ± 0.8	3.0 ± 0.9	<0.001
Total FSFI Score	16.8 ± 3.2	28.4 ± 4.1	<0.001

DISCUSSION

In the present study, the frequency of sexual dysfunction (SD) among females presenting with urinary incontinence (UI) and its association with various demographic and clinical variables were studied. Almost 1 out of 4 respondents experienced the SD, findings said. The UI and SD are interrelated entities of female pelvic floor disorders. The current study provides useful local data from Pakistan that may help in strengthening the case for a one-stop-shop approach to female urological disorders [13]. Our study findings corroborate these findings. Women suffering from UI scored significantly lower across all domains of sexual function than those without SD. The occurrence of SD in this study (24.4%) is similar to that which is reported in the literature across the world, which ranges from 20% to 70%, depending on the methodology and the study population [14]. In another study conducted at a tertiary hospital, a comparable frequency was observed among women with incontinence. A population-based study also noted that UI was an independent risk factor for female sexual dysfunction. Thus, there is a considerable burden of SD on women with UI, and it is important to routinely assess the sexual life of these women [15]. In the present study, SD was not significantly associated with demographic variables like age, BMI, diabetes, hypertension, or area of residence. A variety of studies done earlier have reported mixed findings. Some studies have shown an age-related decline of sexual function; however, others, including this one, have reported no such outcome. This difference can arise due to other popular demographics, views on sexuality, and openness to disclose sexual issues [16]. In the same way, although diabetes and hypertension harm blood vessels and nerves (and may cause some SD), they didn't matter so much in this group, presumably because they were well controlled [17]. There was also no significant association between UI type and duration with SD. Participants predominantly experienced stress incontinence but had similar sexual outcomes whether they experienced stress or mixed incontinence. This is consistent with recent findings from tertiary-care studies, reporting that SD occurs regardless of incontinence subtype [18]. The FSFI domains mainly impacted in our population were desire, arousal, lubrication, and orgasm, suggesting psychogenic and physiological mechanisms. The muscles that hold everything in your body are often weak if your libido and lubrication are reduced. Hormonal effects or the fear of wetting yourself may also make you not feel competent and smart. The marked drop in orgasm and satisfaction suggests emotional distress as well as physical discomfort in sensation. Compared with larger epidemiological datasets, women who wet themselves did not engage as frequently in sex and had less satisfaction than those who did not wet themselves [19]. The mechanisms linking UI and SD are multifactorial. Chronic pelvic floor muscle problems may affect blood flow and sensory feedback to the genitals and result in arousal and orgasm problems [13]. In addition, repeated infections, recurrent medication, or pelvic pain may promote sexual avoidance. Expressing problematic bladder symptoms, especially, has been connected to greater rates of dyspareunia and reduced sexual interest. But earlier data implies treatment of bladder symptoms can lead to a considerable improvement in sexual function [20]. Therapeutic methods like pelvic floor muscle training and behavioral therapy have shown benefits on continence and sexual outcomes. Pharmacologic agents similarly exert variable effects on sexual health. Cultural and social factors also play a crucial role in SD prevalence perception and reporting. In conservative societies like Pakistan, it is a

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taboo to talk about sexual issues because of stigma, shame, and a low level of sexual health literacy [21]. The strengths of the study were the use of FSFI questionnaires, which were validated, the average sample size, and systematic data collection.

However, some limitations should be noted. You cannot make a causal inference between UI and SD because of the cross-sectional design being a single-center study; the results cannot be generalized to all. Also, depression, anxiety, marital satisfaction, medication, and others were potential confounders that were not assessed. Even with these limitations, this research gives vital clinical evidence signaling that urological practice must think about sexual health.

CONCLUSIONS

This study demonstrates that sexual dysfunction is a common comorbidity among women presenting with urinary incontinence, significantly affecting multiple domains of sexual function. The absence of significant associations with age, BMI, comorbidities, and incontinence type indicates that the relationship is complex, multifactorial, and primarily driven by the physiological and psychological burden of UI. A multidisciplinary, patient-centered approach involving urologists, gynecologists, and psychosexual counselors is essential to improve both continence and sexual health outcomes. Integrating sexual health screening into UI management can enhance overall quality of life and promote comprehensive women's health.

Authors' Contribution

Conceptualization: MH[1]
Methodology: MH[1], SY, AJ, MH[2], ZK
Formal analysis: MH[1]
Writing and Drafting: MH[1], SY, AJ, MH[2], ZK
Review and Editing: MH[1], SY, AJ, MH[2], ZK

All authors approved the final manuscript and take responsibility for the integrity of the work

Conflicts of Interest

All the authors declare no conflict of interest.

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