
Sexual dysfunction in patients with painful bladder syndrome is age related and progressive

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Introduction/objective: The degree of sexual dysfunction in patients with painful bladder syndrome (PBS) across their lifespan has not been previously documented.

Material and methods: The Female Sexual Function Index (FSFI) is a research tool to measure the degree of clinical female sexual dysfunction (FSD). This 19-item questionnaire evaluates FSD in six domains: desire, arousal, lubrication, orgasm, satisfaction, and pain. This study used the FSFI with the additional variables of age, geographical location, and current medications. The participants were not blinded to the fact that this study was examining the link between PBS and FSD. Each

question in the survey was targeted to a specific variable of FSD and the answers were rated on a Lickert scale.

Results: When compared with controls, PBS patients self-report significant sexual dysfunction in all domains evaluated by the FSFI ($p < 0.001$). Age-specific results were observed in regards to the domains of arousal, lubrication, and pain ($p < 0.01$).

Conclusions: PBS patients report significant FSD in all domains when compared to controls ($p < 0.001$). Significant differences in the domains of arousal, lubrication, and pain exist between respondents < 30 years old and in those > 50 years of age. The extent of sexual dysfunction is worse in the areas of pain in each age group evaluated. Pain is the most significant finding in patients with FSD and PBS.

Key Words: painful bladder syndrome, sexual dysfunction, female sexual function index

Introduction

Painful bladder syndrome (PBS) is characterized as a chronic painful condition associated with bladder inflammation. The most common symptoms are chronic pelvic pain, urinary urgency and frequency.¹ Many refer to PBS as interstitial cystitis (IC), another painful bladder syndrome. Some patients complain of dyspareunia.

The degree of sexual dysfunction in patients with PBS is an aspect of this condition that needs further investigation. Sexual dysfunctions are highly predominant, and affect 25%-30% of women.² The consequences of sexual dysfunctions on lifestyle are severe, as they can impact an individual's intimate personal relationships as well as their mental health and well-being.

The normal sexual response involves coordination of several phases (desire, arousal, orgasm). Kaplan defines desire as the motivational and appetite aspects of the sexual response that included urges and fantasies. Excitement or arousal involves enhanced subjective awareness during a sexual response. Orgasm is defined as the peak of sexual pleasure with rhythmic contractions of the genital musculature.³

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Until recently, diagnosis of female sexual dysfunction (FSD) relied upon linking the dysfunction to one of these phases, as classified by the American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders, 4th ed. (DSM-IV).⁴ Unfortunately, problems affect one phase often interact and overlap with others that make diagnosis of disorders with organic or mixed causes difficult.⁵

The Female Sexual Function Index (FSFI) is a self-report measure designed to account for the multidimensional nature of female sexual function.¹ This 19-item questionnaire evaluates female sexual dysfunction (FSD) in six domains: desire, arousal, lubrication, orgasm, satisfaction, and pain, and allows for characterization of the relative amount of dysfunction within each domain.

In this study, the FSFI was used to determine whether a significant degree of sexual dysfunction is reported by patients with PBS. The purpose of this work is to investigate the degree of FSD exhibited in this patient population and to determine if the FSD is age-related and progressive.

Material and methods

Questionnaire

The FSFI is a research tool used to measure the degree of clinical female sexual dysfunction.¹ This 19-item questionnaire evaluates FSD in six domains: desire, arousal, lubrication, orgasm, satisfaction, and pain. The participants were not blinded to the fact that this study was examining the link between PBS and FSD. Each question in the survey was targeted to a specific variable of FSD and the answers were rated on a Lickert scale. The FSFI was administered online at the website of the Interstitial Cystitis Network (<http://www.ic-network.com>). Additional questions such as age, duration of diagnosis, medications, and a "write in response" sections were available to the respondents. The survey was approved by the authors' local Institutional Review Board (IRB).

To evaluate the effects of age on the FSFI score, patients from the database (n = 554, mean age: 38.0 ± 10.7 years) were separated into four groups based on age: < 30 years (n = 125), 30-39 years (n = 182), 40-49 (n = 151), and > 50 years (n = 87) of age.

Control group

Data from our database were compared to a control group previously published.¹ This was a group of 131 women (mean age: 39.7 ± 13.2 years) with no complaints of sexual dysfunction.

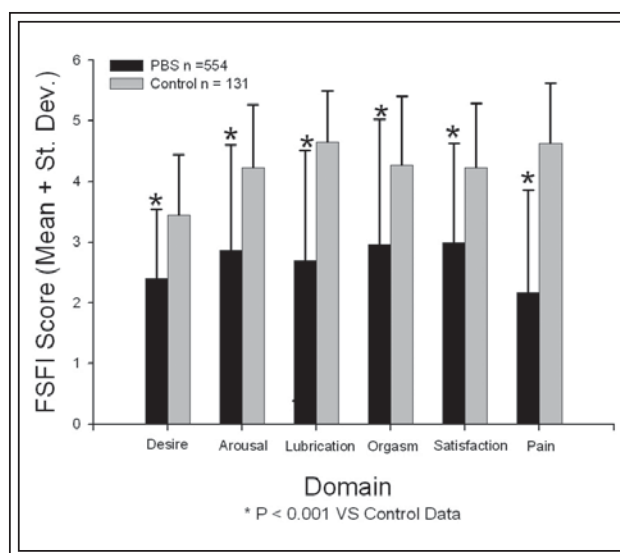


Figure 1. Comparison of PBS related FSD. All of the six domains of FSD were reduced in the PBS groups when compared to the control group ($p < 0.001$).

Statistical analysis

Determination of statistical significance was performed by analysis of variance (ANOVA).⁶ Post hoc comparison of individual concentration means with the control was completed using the Tukey-Kramer Multiple Comparison test.⁷ All data were reported as means ± standard deviations.

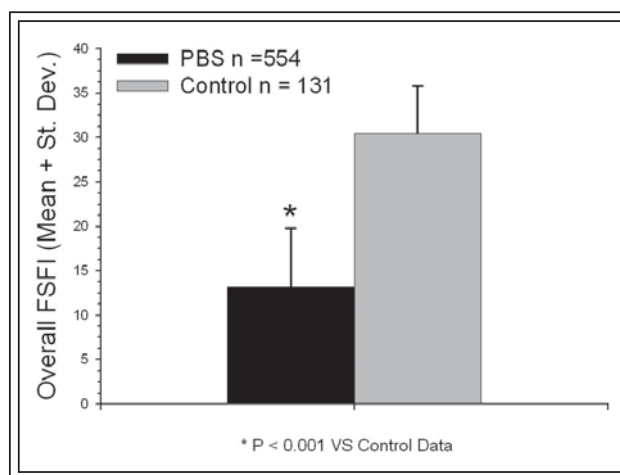


Figure 2. Comparison of overall FSFI. The results indicate that the lower the score in the FSFI questionnaire, those females with PBS (13.15 + 6.65) experience a 56.9% increase in the level of sexual dysfunction when compared to the control group (30.5 + 5.29, $p < 0.001$).

TABLE 1. PBS age related FSD

Domain	Age < 30 (n = 125)	Age 30-39 (n = 182)	Age 40-49 (n = 151)	Age 50 plus (n = 87)	Control data (n = 131)
Desire	2.52 + 1.16*	2.41 + 1.17*	2.41 + 1.13*	2.17 + 1.04*	3.45 + 1.00
Arousal	3.20 + 1.48*	2.83 + 1.71*	2.88 + 1.84*	2.45 + 1.83*	4.23 + 1.04
Lubrication	3.14 + 1.38*	2.79 + 2.12*	2.62 + 1.67*	1.98 + 1.66*	4.65 + 0.85
Orgasm	3.20 + 2.02*	2.98 + 2.00*	2.96 + 2.10*	2.51 + 2.19*	4.27 + 1.14
Satisfaction	3.26 + 1.47*	3.02 + 1.62*	2.88 + 1.69*	2.86 + 1.75*	4.23 + 1.06
Pain	2.47 + 1.49*	2.07 + 1.59*	2.24 + 1.87*	1.84 + 1.74*	4.63 + 0.99
Overall FSFI	14.6 + 5.73*	16.1 + 8.27*	16.0 + 8.90*	13.8 + 8.80*	30.5 + 5.29

*p < 0.001 versus control data

Results

All of the six domains of FSD were reduced in the PBS groups when compared to the control group ($p < 0.001$, Figure 1). As shown in Figure 2, overall FSFI results indicated that the lower the score in the FSFI questionnaire, those females with PBS (13.15 ± 6.65) experienced a 56.9% increase in the level of sexual dysfunction when compared to the control group (30.5 ± 5.29 , $p < 0.001$).

Desire

For each age group in this domain, responses from the FSFI were lower and statistically significant ($p < 0.001$) when compared to the control group. However, no significance was observed between age groups, as shown in Table 1.

Arousal

As shown in Table 1, responses in this domain, for each age group, were lower and statistically significant ($p < 0.001$) when compared to the control group. A 13.9% difference was exhibited between the ages of < 30 and age > 50 years and older groups ($p = 0.008$). The age 50 year group experienced a higher degree of FSD than that of the < 30 age group.

Lubrication

When compared to the control group, responses in this domain for each age group were statistically significant ($p < 0.001$). Statistical significance was also observed between the ages < 30 and 50 and older age groups ($p < 0.001$, Table 1). The age 50 and older groups exhibited a 36.9% increase in the level of FSD than that of the < 30 age group.

Orgasm

For each age group in this domain, responses were lower and statistically significant ($p < 0.001$) when compared to the control group. However, no significance was observed between age groups, see Table 1.

Satisfaction

As shown in Table 1, responses in this domain for each age group were lower and statistically significant ($p < 0.001$) when compared to the control group. When responses were compared between the different age groups, no statistical significance was observed.

Pain

Responses for each age group in this domain were also lower and statistically significant ($p < 0.001$, see Table 1) when compared to the control group. When the responses were compared between the different age groups, a 25.5% increase in the level of FSD was observed between the age > 50 year group when compared to the < 30 year age group ($p = 0.032$).

Overall FSFI

For each age group, the responses in this domain were lower and statistically significant when compared to the control group ($p < 0.001$, see Table 1). No differences were noted among the age groups in the overall FSFI exist.

Discussion

The degree and type of sexual dysfunction present in patients with PBS, evaluated across the lifespan, has not been well-described. The authors' internet-

based database represents the largest compilation of patients with PBS and FSD. We do not have diagnostic information for all patients surveyed, because our database is internet-based. Thus, we are not aware if patients' diagnoses of IC were met by strict adherence to criteria. Therefore, we chose to use the term, Painful Bladder Syndrome, to describe the patient database. This definition implies the presence of painful urinary symptoms that may not meet the more strict diagnostic criteria of IC.

When compared with controls, PBS patients' self-report significant sexual dysfunctions in all domains were evaluated by the FSFI. Ottem and colleagues also investigated the relationship between IC and FSD.⁸ Using the FSFI, they compared FSD in 75 patients with IC and 22 control patients. As observed in our study (reported herein), all IC patients had lower scores in all six domains of FSD, as determined by the FSFI. The total adjusted FSFI score was lower (20.2 ± 9.6) in the IC compared to control patients (29.9 ± 9.6 , $p < 0.001$). Also, the domain of pain, as in this study, had the lowest score in the FSFI, which indicated the greatest degree of dysfunction in the FSFI.

Peters and colleagues used the Female Sexual Distress Scale (FSDS) and compared the sexual dysfunction in 215 IC patients and 823 healthy controls.⁹ This study reported that patients with IC not only experienced physical pain associated with their condition, but also associated fear and anxiety. Dyspareunia was reported in 74.6% of the IC group studies and 29.9% of the controls ($p < 0.001$). Fear of pain during intercourse was reported by 50.2% of the IC patients and 13.5% of controls ($p < 0.001$). Additionally, a 46% reduction in sexual desire and 44% reduction in the ability to achieve orgasm compared to healthy controls were also reported ($p < 0.001$).

Age-specific differences were also noted. There was a statistically significant difference in arousal, lubrication, and pain between the age > 30 -year group and the < 60 -year group. The reasons for this difference may relate to a worsening of the overall PBS disease state. Such patients may have a decreased interest in sexual intimacy and may also have abnormalities with use of vaginal lubrication. However, also possible is that a component of atrophic vaginitis and senile urethritis exists in the older patients also likely to be post-menopausal. This information would be important to ascertain when treating older patients with PBS.

Results of this study also indicate the extent of sexual dysfunction is most problematic in the area of pain. There appears to be a steady worsening of pain in patients across the age groups, with the lowest scores

noted in the age > 50 -year group. A 25.5% increase in the level of FSD was observed between the age > 50 -year group when compared to the < 30 -age group ($p = 0.032$). When the FSD score for the domain of pain was compared to the other five domains, pain exhibited a higher degree of FSD and lower domain value than arousal, lubrication, orgasm, and satisfaction ($p < 0.001$).

As women age, age-related FSD becomes a common problem. Nicolosi and coworkers reported that age-related FSD in women 40-80 years, 39% experienced at least one form of sexual dysfunction.¹⁰ Additionally, 21% cited a lack of sexual interest, whereas 16% experienced inability to reach both orgasm and lubrication difficulties. Laumann and colleagues further evaluated the effect of age-related FSD in women 18-59 years of age.¹¹

The data were then separated into groups by ages 18-29, 30-39, 40-49, and 50-59 years. No differences were reported in sexual interest, orgasm, pleasure, or lubrication. Women in the 50-59 age group reported experiencing less performance anxiety (6%) than those in the 18-29 age group (16%, $p \leq 0.05$). As was observed with performance anxiety, women in the 50-59 age group reported experiencing less pain (8%) than those in the 18-29 age group (21%, $p \leq 0.05$). Contrary to the authors' experience in patients suffering from PBS, which suggest pain associated with PBS tends to be more severe as the patient ages.

Our results do not consider several factors also important in evaluation of patients with PBS and FSD. Namely, the effects of medications (oral and intravesical), surgical interventions, and presence of concomitant medical problems have not been evaluated in this study. It would be important to ascertain the effects of these interventions on FSFI scores to know whether the FSD associated with PBS can be improved with treatment.

Conclusions

When compared with controls, patients with PBS self-report significant FSD in all domains. When data are evaluated by the survey respondent's age, domains of arousal, lubrication, and pain exhibit significant differences when the < 30 and > 50 age groups are compared. The extent of sexual dysfunction is most noted in the areas of pain in each age group evaluated. Patients in the oldest age group (> 50 years of age) have the lowest scores in each of the domains evaluated by the FSFI. Pain is the most significant finding in patients with FSD and PBS. □

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