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High prevalence of sexual dysfunction in a vulvovaginal specialty clinic

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Abstract

Objective—Our study evaluated the presence and predictors of sexual dysfunction in a vulvovaginal specialty clinic population.

Materials & Methods—Women who presented to a vulvovaginal specialty clinic were eligible to enroll. Participants completed a questionnaire, including Female Sexual Function Index (FSFI) to assess sexual dysfunction and Patient Health Questionnaire (PHQ)-9 depression screen, and underwent a standardized physical exam, with vaginal swabs collected for wet mount and culture. Logistic regression assessed the relationship between sexual dysfunction and clinical diagnosis.

Results—We enrolled 161 women, aged 18–80 years (median = 36), presenting with vulvovaginal complaints. Median symptom duration was 24 months; 131 women (81%) reported chronic symptoms (≥12 months). By PHQ-9, 28 (17%) women met depression criteria. In the month prior to assessment, 86 (53%) women experienced sexual dysfunction. Women were primarily diagnosed with vaginitis (n = 46, 29%), vestibulodynia/vulvitis (n = 70; 43%), lichen planus or lichen sclerosus (n = 24; 15%). Controlling for age, sexual dysfunction did not correlate with chronic symptoms (IRR 0.86, 95% CI 0.50–1.48), depression (IRR 1.24; 95% CI 0.59, 2.58), or presence of any of the three main diagnoses (IRR 1.16, 95% CI 0.47, 2.88).

Discussion—Sexual dysfunction is present in over half of women presenting to a vulvovaginitis referral clinic, more than twice the rate in the wider population.

Keywords

Sexual dysfunction; vulvovaginitis; vulvar pain; dyspareunia

Introduction

Sexual dysfunction, defined as a persistent sexual problem that causes personal distress, affects approximately 20% of American women.[1] The complexity of the female sexual response makes pinpointing the cause of dysfunction difficult. A standardized tool that evaluates global sexual function, the Female Sexual Function Index (FSFI) measures 5

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separate components of female sexual function: arousal, desire, satisfaction, ability to orgasm and occurrence of pain.[2] Low sexual desire, the most common complaint among women[1, 3] may be due to psychosocial or physical factors, while problems with pain and lubrication may be more likely due to concurrent medical issues.[4]

Vaginitis accounts for over 10 million office visits a year,[5] and up to 75% of pre-menopausal women report at least one lifetime episode of yeast vulvovaginitis. It seems likely that vulvovaginal symptoms would impact sexual function, and, in fact, women with lichen sclerosus have a significantly higher prevalence of sexual dysfunction than women without the disorder.[6] Depression and mental health disorders are also more prevalent in women with sexual dysfunction compared to the general population.[7] Mental health disorders are similarly present at higher rates in women with vulvovaginitis.[8, 9] All three of these conditions (sexual dysfunction, vulvovaginits and depression) are complex and difficult to characterize, but may interact to significantly impact a patient's quality of life. Despite their high prevalence, few studies have evaluated their relationship.

We performed a cross-sectional study of patients presenting to a vulvovaginal specialty clinic to evaluate associations between vulvovaginal symptoms, depression, and sexual dysfunction.

Materials and Methods

Patients between 18–80 years old who presented to a University of Washington vulvovaginal specialty clinic between March 2005 and March 2008 were offered enrollment in a vulvovaginal disorders registry. Informed consent was obtained from each patient before enrollment in the registry. The University of Washington Medical Center Institutional Review Board approved the registry and this analysis.

Participants completed a self-administered questionnaire. Broad categories of questions included: description of symptoms, past treatments, past diagnoses, reproductive history, general health, and social history. In addition, the Female Sexual Function Index (FSFI) [2] was used to assess sexual function over the past 4 weeks and the PHQ-9 depression screen to evaluate mood symptoms.[10] An FSFI composite score of 26 or less indicates sexual dysfunction. If participants left any question blank on the FSFI a score could not be calculated, and that participant was excluded from the global sexual dysfunction analysis, though not from the analysis of symptom domains. A PHQ-9 score greater than or equal to 20 was used to define depression.

After completing the questionnaire, each patient underwent a standardized physical exam, with vaginal swabs collected for wet mount and yeast culture. One of two board-certified gynecologists or a nurse practitioner with specialized experience in vulvovaginal disorders performed exams. Wet mount and KOH samples were examined in clinic and yeast cultures were sent to the microbiology lab for analysis. Bacterial vaginosis (BV) was diagnosed by Amsel's clinical criteria, trichomoniasis by wet mount and yeast by either wet mount or culture. Desquamative inflammatory vaginitis (DIV) was diagnosed by clinical criteria and

wet mount.[11] Vestibulodynia, vulvitis, lichen sclerosus and lichen planus were diagnosed by clinical symptoms and exam findings.

Statistical analyses

Prevalence or mean value of demographic factors was compared between women with and without sexual dysfunction using student's t-test or chi-square. Sexual function scores were compared between groups using ANOVA. A Poisson logistic regression model with robust standard errors was used to assess the relationship between sexual dysfunction, vulvovaginal symptoms and depression. Results are reported as the Incidence Rate Ratio (IRR) rather than odds ratio due to the high prevalence of our outcome of interest. Because age can impact the likelihood of sexual dysfunction as well as depression and some vulvovaginal disorders, we elected to control for age in all models *a priori*.

Results

We enrolled 161 women, aged 18–80 years, presenting with vulvovaginal symptoms. Patients were mostly white (n = 139; 86%), with a small number of Native (n = 3; 2%) and Asian (n = 6; 3%) women.(Table 1) Most patients had completed a college degree (n=92, 58%), were employed at least part-time (n=108, 67%), were married or living with a partner (n=107, 67%), and had never smoked (n=114, 71%). Patients could report multiple symptoms as their chief complaint, and nearly half of patients complained of pain with sex (n=68, 42%), vaginal or vulvar itching (n=70, 43%) or burning (n=73, 45%).

The median duration of symptoms prior to presentation to the referral clinic was 24 months (range 1 – 408 months). Using a definition of chronic vulvovaginal symptoms as symptoms present for more than 12 months, 131 women (81%) reported chronic symptoms. Vaginitis was diagnosed in 46 women (29%): 3 (2%) had BV, 7 (5%) had DIV and 36 (24%) had yeast. Localized provoked vulvodynia (vestibulodynia) was diagnosed in 54 (34%) women, and vulvitis in 16 (10%). An additional 8 (5%) had lichen planus and 16 (10%) lichen sclerosus. Female Sexual Function Index (FSFI) results revealed 86 (53%) women with sexual dysfunction, though 45 (28%) women did not complete all questions on the FSFI and could not be scored. Among the 116 women who did complete the questionnaire, the prevalence of sexual dysfunction was high: 74%. By PHQ-9 analysis, 28 (20%) women met criteria for moderate or severe depression.

Controlling for age, sexual dysfunction showed a trend to increased prevalence in women with depression, vaginitis, vestibulitis/vulvitis, lichen sclerosus or lichen planus, but not chronic symptoms.(Table 2) Since women could report more than one chief complaint, assessment of the general relationship between symptoms and dysfunction could not be performed. However, there was a trend to increased risk of sexual dysfunction in women reporting pain with sex, when compared to women who did not report pain with sex(IRR 1.25; 95%CI 0.81, 1.94).

Of the 45 women with incomplete questionnaires, 19 (42%) were only missing results for one of the six symptom domains, and an additional 14 (31%) were only missing two domains. Seventeen of the women with incomplete questionnaires reported no sexual

activity in the past 4 weeks. Only 4 women did not answer any of the FSFI questions. When comparing the individual components of the FSFI between women with vaginitis, vestibulitis or lichen sclerosus or planus, women with a diagnosis of lichen sclerosus or planus had the lowest overall score and the lowest scores for orgasm and satisfaction, though this did not reach statistical significance. (Table 3) This group of women was also the oldest, with a mean age almost 20 years higher than women with vaginitis or vestibulitis. Women with depression had lower mean scores for arousal (2.4 ± 2.1 vs. 3.2 ± 2; p = 0.06), satisfaction (2.5 ± 1.5 vs. 3.6 ± 1.7; p = 0.008) and orgasm (1.7 ± 2.3 vs. 3.0 ± 2.4; p = 0.08) compared to women without depression.

Discussion

In this population of women referred to a vulvovaginitis specialty clinic, 53% had sexual dysfunction, compared to 20% of women in the general population.[1] No individual diagnosis or symptom was clearly associated with increased risk of sexual dysfunction. Women with the three main vulvovaginal diagnoses: vaginitis, vestibulitis/vulvitis, or lichen sclerosus or lichen planus had similar mean dysfunction scores, with the lowest scores in the pain section of the questionnaire. Overall our data demonstrate that patients with vulvovaginal symptoms, regardless of etiology, are at high risk for sexual dysfunction.

Several studies describe a link between depression and sexual dysfunction,[7] often attributed to low sexual desire. In addition to baseline problems with desire, medical treatments for depression such as SSRIs can lower desire or lead to anorgasmia.[12, 13] Depression further correlates with higher distress over sexual problems,[1, 7] which raises one's likelihood of dysfunction. Our study showed a trend to higher rates of sexual dysfunction in women with depression, and found a trend to more problems with arousal and satisfaction in these women than difficulty with desire or orgasm, though none of these findings reached statistical significance. These findings suggest that depression's relationship with sexual dysfunction is multi-faceted, and relevant to all areas of female sexual response.

In addition to depression, many chronic medical conditions such as diabetes and hypertension are associated with sexual dysfunction.[4, 14, 15] A recent study by Bogart et al[16] showed that women with interstitial cystitis/painful bladder syndrome had high levels of sexual dysfunction, with over half of sexually active study participants complaining of problems with desire and arousal. Women with fibromyalgia report sexual dysfunction primarily related to diminished desire, low arousal and decreased orgasm.[17] Various dermatologic conditions, such as Behcet's disease and psoriasis, also impact sexual functioning.[18–20] A large proportion of our participants (80%) had chronic vulvovaginitis symptoms that had been present for over a year, which could suggest that their dysfunction relates to having chronic medical illness rather than symptoms intrinsic to vulvovaginitis. However, chronicity of symptoms was not associated with increased risk of dysfunction. Each of the three vulvovaginal disorder diagnoses was associated with an increased risk of dysfunction, though this did not reach statistical significance. Not surprisingly, 40/49 (82%) of women who presented with a chief complaint of pain with sex also had sexual

dysfunction. When controlled for age, vulvar burning was also associated with sexual dysfunction (though not significantly), but vulvar itching was not.

Several issues limit our findings. Our surveys, including the FSFI and PHQ-9, were all self-administered, which meant that a significant proportion of surveys were not fully completed and were not evaluable. Most women completed some of the questionnaire, and many of these reported no sexual activity, which suggests that the prevalence of sexual dysfunction may be even higher than we have reported here. Additional information about medication use and concurrent medical conditions could add significantly to this analysis. Moreover, our referral-based population was likely a very select and motivated group with complex issues not able to be resolved by prior treatment, and may not represent the typical patient with short-term vulvovaginal complaints. Since this was a review of data only from patients with complaints requiring referral to a vulvovagintis specialty clinic, there was no true control group for comparison. We used women who presented with symptoms but were not diagnosed with any vulvovaginal problem, but a better comparison would be with asymptomatic women.

Conclusions

This study highlights the very high prevalence of sexual dysfunction in patients presenting to a vulvovaginal specialty center. It is likely that different etiologies of vulvovaginal symptoms relate to sexual dysfunction in unique ways, which certainly needs to be explored in further research. Our study shows the importance of assessing sexual function in patients who present with vulvovaginal complaints, as over half are likely struggling with their sexual health. It is important that we approach women with vulvovaginal diagnoses from a holistic perspective, addressing their sexual function and mental health while we strive to treat their vulvovaginal symptoms.

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Table 1

Demographics and chief complaints of all women in the vulvovaginal disorders registry, as well as comparison of those with and without sexual dysfunction.

	All women[a] N = 161	Women with complete FSFI[b] score (n = 116)		
		Sexual dysfunction N = 86	No sexual dysfunction N = 30	P value[c]
Age (mean ± SD)	39 ± 14 (range 18–80)	40 ± 14	36 ± 12	0.16
Ethnicity				0.05
White	139 (86%)	74 (86%)	27 (90%)	
Native	3 (2%)	0 (0%)	2 (6%)	
Asian	6 (4%)	3 (3%)	0 (0%)	
Hispanic	8 (5%)	7 (8%)	0 (%)	
Mixed	4 (2%)	2 (2%)	1 (%)	
Education				
Graduate school	44 (28%)	20 (23%)	7 (23%)	0.9
College graduate	48 (30%)	26 (30%)	11 (37%)	
Some college/technical school	49 (30%)	30 (35%)	9 (30%)	
High school graduate	16 (10%)	7 (8%)	3 (10%)	
Less than high school graduate	3 (2%)	3 (3%)	0 (0%)	
Employment				
Full-time work	87 (54%)	40 (47%)	20 (67%)	0.10
Part-time work	21 (13%)	15 (17%)	1 (3%)	
Homemaker	21 (13%)	9 (10%)	5 (17%)	
In school/training	10 (6%)	5 (6%)	2 (7%)	
Retired	12 (7%)	11 (13%)	1 (3%)	
Unemployed/Other	9 (6%)	6 (7%)	1 (3%)	
Smoking				
Current	10 (6%)	4 (5%)	2 (7%)	0.71
Never	114 (71%)	62 (72%)	23 (77%)	
Former	36 (23%)	20 (23%)	5 (17%)	
Alcohol				
>1 drink/day	10 (6%)	3 (3%)	1 (3%)	0.61
1–4 drinks/week	59 (37%)	34 (40%)	8 (27%)	
1–2 drinks/month	39 (24%)	18 (21%)	11 (37%)	
None or rare	52 (32%)	30 (35%)	10 (33%)	
Marital status				0.94
Married/with partner	107 (67%)	56 (65%)	21 (70%)	
Divorced/Separated	13 (8%)	9 (10%)	3 (10%)	
Widowed	1 (1%)	1 (1%)	0 (0%)	
Single	37 (23%)	19 (22%)	6 (20%)	
Health problems				
Diabetes	3 (2%)	2 (2%)	0 (0%)	0.40

	All women[a] N = 161	Women with complete FSFI[b] score (n = 116)		
		Sexual dysfunction N = 86	No sexual dysfunction N = 30	P value[c]
Hypertension	18 (11%)	10 (12%)	2 (7%)	0.44
Asthma	28 (17%)	17 (20%)	5 (17%)	0.71
Thyroid dysfunction	25 (16%)	16 (19%)	5 (17%)	0.81
Irritable bowel syndrome	23 (14%)	13 (15%)	4 (13%)	0.81
Chief complaint[d]				
Pain with sex	68 (42%)	40 (47%)	9 (30%)	0.12
Vaginal/Vulvar itching	70 (43%)	44 (51%)	13 (43%)	0.46
Vaginal/Vulvar burning	73 (45%)	39 (45%)	14 (47%)	0.90
Vaginal discharge	38 (24%)	24 (28%)	6 (20%)	0.39
Symptom duration				0.43
Acute (< 12 months)	30 (19%)	17 (20%)	4 (13%)	
Chronic (≥ 12 months)	131 (81%)	69 (80%)	26 (87%)	
Depression	28 (20%)	18 (21%)	2 (7%)	0.08
Sexually abstinent past 30d	57 (35%)	35 (41%)	0 (0%)	< 0.01

[a] The Female Sexual Function Index (FSFI) had missing data for 45 patients, thus a score could not be calculated and they are not included in the comparison of those with and without sexual dysfunction

[b] Female Sexual Function Index, a validated questionnaire to measure sexual dysfunction

[c] p value for chi square or t-test comparison of those with and without sexual dysfunction

[d] Participants could choose more than one

Table 2

Association between sexual dysfunction and vulvovaginal symptoms or depression, controlled for age.

	N = 116	IRR[a] for presence of sexual dysfunction (95% CI)
Depression (by PHQ-9)		
Minimal/Mild	83	Ref.
Moderate/Severe	16	1.26 (0.75, 2.14)
Chronic vulvovaginal symptoms		
Absent	21	Ref.
Present	95	0.86 (0.50–1.48)
Diagnosis		
No vulvovaginal diagnosis	8	Ref.
Vaginitis	35	1.11 (0.42 – 2.93)
Vestibulitis	49	1.17 (0.46 – 2.98)
Lichen sclerosus or planus	17	1.24 (0.42 – 3.65)
Chief complaint[b]		
Pain with sex	49	1.25 (0.81, 1.94)
Vaginal/vulvar itching	57	0.99 (0.65, 1.53)
Vaginal/vulvar burning	53	1.14 (0.73, 1.76)
Vaginal discharge	30	1.14 (0.71, 1.83)

[a] Incidence Rate Ratio

[b] Compared to women without each chief complaint. Women could record multiple chief complaints, so categories are not mutually exclusive

Table 3

Mean component scores for the Female Sexual Function Index according to diagnosis. Each section is scored out of 5, and a lower score indicates more severe dysfunction.

	n	Vaginitis	n	Vestibulitis	n	Lichen sclerosus or planus
Age	47	38 ± 12	70	35 ± 14	24	51 ± 11
Total score	35	19 ± 9	49	18 ± 10	17	17 ± 10
Components[a]						
Arousal	45	3.4 ± 1.8	63	2.8 ± 2.0	22	2.9 ± 2.2
Desire	44	2.9 ± 1.3	67	2.8 ± 1.3	23	3.3 ± 1.5
Satisfaction	41	3.5 ± 1.6	57	3.5 ± 1.8	19	3.2 ± 1.7
Orgasm	29	3.0 ± 2.5	47	3.0 ± 2.4	21	1.9 ± 2.2
Pain	42	2.5 ± 2.1	65	2.0 ± 1.9	23	1.9 ± 2.2
Lubrication	42	2.8 ± 2.1	63	2.9 ± 2.3	22	2.9 ± 2.4

[a]Component scores from all participants who completed that section of the FSFI included, even if a complete score not calculable