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Depressive Disorders and Panic Attacks in Women with Bladder Pain Syndrome/Interstitial Cystitis: A Population-Based Sample

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Abstract

Objective—We report the population prevalence of probable depressive disorders and current panic attacks in women with bladder pain syndrome/interstitial cystitis (BPS/IC) symptoms and describe their characteristics and access care.

Method—We conducted a telephone screening of 146,231 households and phone interviews with women with BPS/IC symptoms. A weighted probability sample of 1,469 women who met criteria for BPS/IC was identified. Measures of BPS/IC severity, depressive symptoms, panic attacks, and treatment utilization were administered. T-tests and chi-square tests were run to examine differences between groups.

Results—Over one-third of the sample (N = 536) had a probable diagnosis of depression and 52% (N = 776) reported recent panic attacks. Women with a probable diagnosis of depression or current panic attacks reported worse functioning, increased pain and were less likely to work because of bladder pain.

Conclusions—In this community-based sample, rates of probable current depression and panic attacks are high and there is considerable unmet need for treatment. These findings suggest that clinicians should be alert to complaints of bladder pain in patients seeking treatment for depressive

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or anxiety disorders, and to complaints of emotional or personal problems in patients seeking treatment for painful bladder symptoms.

Keywords

Bladder pain syndrome/interstitial cystitis; bladder pain syndrome; depression; panic attacks; epidemiology

Introduction

Bladder pain syndrome/interstitial cystitis (BPS/IC) is a chronic pain syndrome, characterized by bladder pain and voiding symptoms such as urinary urgency or frequency. Primarily affecting women, it is a chronic condition of unknown etiology and no known cure. Treatment is directed at symptom management and pain control. Symptoms of BPS/IC can often be debilitating and can affect work, family, interpersonal relationships, sleep, and sexual activity. Similar to other chronic pain syndromes such as fibromyalgia, chronic fatigue syndrome, and irritable bowel syndrome (IBS), BPS/IC symptoms are associated with an increased prevalence of mental health disorders [1], including depression and panic disorder. [1–3]

Until recently there was no validated methodology for identifying women with BPS/IC that could be used in epidemiological studies of the disorder. Despite this, recent population-based estimates suggest that BPS/IC symptoms are more prevalent than previously suspected [4–6] and raises the issue that concomitant BPS/IC symptoms, depression, and panic disorder may also be widely prevalent. A review by Bair et al. (2003) suggests that the prevalence of depression in individuals with pain, and the prevalence of pain in individuals with depression are higher than the prevalence rate in individuals with the single condition alone. [7] Similarly, another review by Von Korff and Simon (1996) suggests that pain is also associated with anxiety disorders, and that anxiety symptoms such as worry and disturbed sleep are common among pain patients.

Evidence suggests that panic disorder, bladder problems, and other pain disorders may share a common etiology. [2,3,8–11] Based on a series of genetic linkage studies, Weissman and colleagues [2,3,8–11] have suggested that there may be a particular subtype or “syndrome” of panic disorder (PD) characterized by a number of medical conditions, most notably bladder/renal disorders.

Past studies of treated patients with BPS/IC have suggested that the prevalence of depression in BPS/IC patients ranges from 5 % to above 50 %. [1,12–14] The prevalence of panic disorder co-morbid with BPS/IC has been estimated at 14 %, [1] although studies linking the related problem of irritable bowel syndrome to panic disorder have found panic rates of co-morbidity as high as 46 %. [15] These studies focused on patient samples and therefore the population prevalence of BPS/IC symptoms and co-morbid depression or panic is unknown. It is also unknown whether the presence of co-morbid depression or panic is associated with seeking BPS/IC treatment, and the extent of unmet need for mental health care among women with co-morbid BPS/IC symptoms and depressive or anxiety disorders. This is important because of the morbidity and poor quality of life associated with having both disorders

Individuals with pain and depression have more severe symptoms and a worse clinical prognosis for both disorders. [7,9,16–22] Among patients being treated for pain conditions, depression is associated with more pain complaints, worse pain, longer duration of pain, and a greater likelihood of non-recovery. [4,12] Among patients with depression, pain is

associated with a delay in diagnosis and treatment, more severe depression, functional limitations, and worse health-related quality of life. Pain has a strong, negative impact on both the recognition and treatment of depression. [9,18–20,22] Studies suggest that inattention to pain treatment is associated with a poor response to depression treatment and that in patients with pain, neglecting to treat the depression may account for some pain treatment failures. Co-morbidity also increases health care utilization and costs relative to either condition alone. [16,17]

Although less well-studied, similar associations are found for co-morbid pain and anxiety, as anxiety is associated with worse outcomes among pain patients. [23,24] For instance, one study found that individuals with chronic upper extremity pain who also had anxiety disorders returned to work at lower rates one year after rehabilitation. [23] Another study found that anxiety symptoms predict pain severity, disability and pain behavior in among pain patients. [24]

The purpose of this paper is to describe the population prevalence of probable depressive disorders and recent panic attacks in women with BPS/IC symptoms, using data from the RAND Interstitial Cystitis Epidemiology Study (RICE). RICE is a probability sample of BPS/IC symptoms among women in US households. Among women with probable BPS/IC, we compare the demographic and clinical characteristics of women with and without probable current depression, as well as those of women with and without recent panic attacks. We focus on panic attacks, rather than other anxiety disorders, given evidence linking panic with painful bladder problems. [2,3,8,10,11] Finally, we describe access to mental health and BPS/IC care among women with probable depressive disorders and recent panic attacks.

Methods

Study Design and Participants

We used the high specificity RICE case definition to identify women with BPS/IC. [25,26] After obtaining approval from RAND's Institutional Review Board (IRB), for a period of 1 ½ years and reaching 146,231 households, the Opinion Research Corporation (ORC) included two items screening for BPS/IC in their twice-weekly national probability telephone surveys. The screening items were: 1) Is there a female age 18 or over in this household who has ever had problems with pain, pressure or discomfort in the bladder area that makes them urinate frequently or feel like they need to urinate frequently? 2) Have you or another woman age 18 or over currently living in this household ever been told by a doctor that you or they have painful bladder syndrome or interstitial cystitis? These items were asked of the household member interviewed by ORC; female respondents could either identify themselves as the person with symptoms or the BPS/IC diagnosis, or identify another woman in the household as the appropriate person. Male respondents could only identify a woman in the household with the symptoms. Once an eligible woman in the household was identified, the respondent was asked for permission to contact the woman about the study and to supply her first name.

If permission was given, the RAND Survey Research Group (SRG) attempted to contact the eligible woman by phone. When the identified woman was reached, the interviewer conducted a 5-minute eligibility screening interview. The screener included an item asking the number of women in the household age 18 or over who had symptoms of BPS/IC. If there was more than one, the woman with the most recent birthday was selected for the study. The present analysis was limited to women who met criteria for the RICE high specificity case definition (N=1,469) which includes: (1) pain, pressure or discomfort in the pelvic area; (2) daytime urinary frequency 10+ times or urgency due to pain, pressure, or

discomfort (not fear of wetting); (3) bladder symptoms did not resolve after treatment with antibiotics; (4) pain worsens as bladder fills; and (5) never had hormone injection therapy for endometriosis.

Women who met these criteria were asked to complete a more extensive 90-minute interview querying her current and past symptoms related to the condition, medical history, health care seeking and medical treatments, impact on daily life, physical and mental health status, insurance coverage, work status and history, and other demographic information.

Population weights were applied related to the first stage of screening. Non-response weights were created as the inverse of predicted probabilities from a logistic regression model in which the outcome was whether or not the household was successfully screened, including bladder symptoms/diagnosis status (had symptoms only, a self-reported diagnosis only, or both), general respondent characteristics (gender, age, race/ethnicity, educational attainment, whether head of household, employment and marital status) and household characteristics (total income, home owned by household, and number of children [under 6, 6–11, and 12–17]) in the model predicting whether the household was screened. Simple imputation of missing predictors was done for those observations that were missing total household income (median imputation) and number of children (mean imputation).

Measures

BPS/IC symptom severity was assessed with the Interstitial Cystitis Symptom Index and Problem Index ($\alpha = 0.59$), a measure that assesses the presence and degree of BPS/IC symptoms and their associated distress. [27–29] We assessed pelvic pain by asking respondents about how much pain they were in from their bladder symptoms “most of the time” over the course of the past 3 months on a 1–10 scale (10=most severe pain). The PHQ-8 was used to assess for probable depressive disorder. The PHQ-8 has a sensitivity of 0.73 and a specificity of 0.98 for the diagnosis of major depression. [28] A score of 10 or greater corresponds with moderately severe depression. Thus, individuals who scored 10 or greater in the current study were labeled as having “probable depressive disorder” because such individuals are likely to meet diagnostic criteria for major depression, but their diagnosis cannot be confirmed in the absence of a diagnostic interview. We evaluated for the presence of recent panic attacks using a two-item scale developed to screen for panic attacks in primary care. [30] The two items assess whether the respondent had a spell or attack when his or her heart began to race or felt faint or whether the respondent had a spell or attack when he or she suddenly felt frightened or anxious in the past 3 months. Respondents who endorsed either of these two items (yes/no) were considered to have recent panic attacks. This two-item scale has a sensitivity of 0.92 and a specificity of 0.74 for a diagnosis of panic disorder. [30] We used the mental and physical health composite scores (age/gender adjusted) from the SF-36 to measure functioning and quality of life. [31] This scale has a mean of 50 and a standard deviation of 10. We assessed working status in relation to bladder pain with the following question: Have bladder problems or pelvic pain kept you from working?

Among individuals with a probable depressive disorder or recent panic attacks, we assessed self-reported bladder symptom treatment utilization over the past 12 months. BPS/IC treatment seeking was assessed with the question: Did you visit any kind of physician for treatment of your bladder symptoms during the past 12 months? Include any visits to any kind of medical doctor that you saw for bladder symptoms. The type of treatment sought (primary care or specialist care) was then assessed using the follow-up question: What kind of doctor do you usually see there? The percentage of women who had no regular source of care were calculated based on a negative response to the question: Is there one place in particular, like a doctor's office or clinic, where you usually go for most of your treatment of

your bladder symptoms or bladder related condition? Mental health treatment seeking was assessed by asking women whether they had visited a mental health or primary care provider for emotional and personal problems, and whether they were taking antidepressant medication. Multiple treatments were accounted for in the analysis by tabulating the percentage of women whose needs were addressed by any of the three mental health components studied separately: medication, mental health specialty care visits, and/or primary care visits.

Statistical Analysis

Scales measuring depression, physical health and BPS/IC symptom severity were standardized. Descriptive statistics were run on weighted data which produced cross tabulations between subgroups (i.e., with and without probable depressive disorder, with and without recent panic attacks) with the following variables: prevalence, age, race/ethnicity, whether they were not working because of bladder pain, SF-36 mental and physical composite scores, health insurance status, pain scale, IC severity and PHQ-8. In addition, descriptive statistics were run to evaluate whether women received care for their BPS/IC and, if so, where the care was received (primary care, specialty care, no regular source of BPS/IC care). Finally, descriptive statistics were also run to evaluate whether women received mental health care and, if so, where that care was received and the number of visits. To test statistical significance of the differences between groups with and without probable depressive disorder, as well as between groups with and without current panic attacks, t-tests were utilized for all comparisons of continuous variables and chi-square tests for all categorical variables. All *P*-values are two-tailed. Analyses were conducted in SAS 9.2.

Results

The sample consisted of 1,469 women with BPS/IC symptoms. In total, 80.1% were white, 7.7% were black and 7.4% were Hispanic. Mean age was 46 (range 18 to 88 years old). Table 1 shows the population prevalence of a probable depressive disorder and recent panic attacks among women with BPS/IC symptoms, and associated characteristics. Over one-third of the sample reported symptoms consistent with a probable diagnosis of depression, and among those with a PHQ greater or equal to ten, the mean PHQ score was 15.4. Fifty-two % screened positive for panic attacks within the last three months. Having a probable depressive disorder was associated with worse mental health functioning, worse physical health functioning, increased pain, and increased BPS/IC symptom severity and was associated with almost double the rate of not working due to bladder pain (32.7% vs. 19.0%). Those with depression were more likely to be uninsured (14.2% vs. 12.0 %).

Similarly, recent panic attacks were also associated with worse mental and physical functioning, pain, increased BPS/IC symptom severity, higher rates of not working due to bladder pain (29.0% vs. 19.4%), and increased likelihood of being uninsured (15.2% vs. 10.1%).

Table 2 shows where women with and without a probable depressive disorder and recent panic attacks sought treatment for their BPS/IC symptoms. Women with BPS/IC symptoms disproportionately sought primary care (39.9%) rather than specialist care (30.8%), and the majority (55.7%) did not seek any BPS/IC treatment at all in the previous 12 months. Women with probable current depression were more likely to seek BPS/IC care in the primary care setting (44.0%) as compared to those without depression (37.7%), and less likely to seek BPS/IC care from a specialist (28.1% vs. 32.2%). Similarly, women with recent panic attacks were also more likely to seek primary care (43.3%) as compared to those without recent panic attacks (36.1%), and were less likely to seek specialist care (28.1% versus 33.7%).

Table 3 shows rates of mental health treatment among women with and without a probable depressive disorder and women with and without recent panic attacks. Medication management was the most prevalent treatment modality among those with a probable depressive disorder (60.4%) as well as those with recent panic attacks (48.1%), which parallels the results for all respondents (36.8%). The majority of women with current depression or recent panic attacks were receiving some kind of mental health treatment; treatment rates were 77.4% for depression and 64.0% for panic, respectively. Women with psychiatric problems appeared to be slightly more likely to be receiving emotional and personal care from a primary care provider (45.8% for depression, 35.9% for panic) than from a mental health provider (43.6% for depression, 36.9% for panic). Respondents reported a mean of 14.5 visits with a mental health provider in the previous 12 months and a mean of 3.6 visits with a primary care provider for an emotional problem in the previous 12 months.

Tables 2 and 3, show that women with PBS/IC were more likely to be receiving treatment for an emotional or personal problem as compared to their BPS/IC symptoms. Among those with a probable current depressive disorder, 77.4% were receiving some type of treatment for an emotional or personal problem and only 45.8% were receiving BPS/IC care. Similarly, 64.0% of women with BPS/IC symptoms and panic attacks were receiving mental health treatment, while only 43.4% were receiving bladder treatment.

Discussion

To our knowledge, this is the first description of the epidemiology of BPS/IC symptoms and co-occurring depressive disorders and panic attacks using a population-based sample of women with BPS/IC symptoms. Rates of probable current depression and panic attacks are much higher than in the general population. Fully 34.8 % of women with BPS/IC symptoms reported a probable depressive disorder, compared to a point prevalence of 4.9 – 5.4% in the general population (5.9 – 6.7 % of women). [32,33] Other population-based studies of individuals with chronic pain have found rates of depression ranging from 4.7 to 22 %. [34] Similarly, 51.9 % of women with BPS/IC symptoms screened positive for panic attacks within the past 3 months, as compared to a 2.2 % overall (3.2 % among women) past-month prevalence and 7.3 % lifetime prevalence of panic attacks in the general population. [35]

Consistent with the literature on the relationships between pain and depression and anxiety, individuals with comorbid depression or panic attacks report significantly greater functional impairment relative to individuals with BPS/IC symptoms alone. For this scale, a 5.6 point difference in the physical composite score and a 6.4 point difference in the mental composite score corresponds to the standard errors of prediction at 90% level of confidence for women and is indicative of a clinically meaningful decrease in quality of life. [36,37] Similar to other chronic pain disorders, depression and panic are associated with worse pelvic pain and BPS/IC symptom severity. This is consistent with the hypothesis that psychiatric problems and pelvic pain may exacerbate the severity and treatment responsiveness of each disorder. While the cross-sectional nature of our study precludes us from making causal inferences about the impact of comorbidity on occupational functioning, other longitudinal studies indicate that co-morbidity is causally associated with losing employment and increased disability. In this regard it is striking that 32.7% of those with co-morbid BPS/IC symptoms and a probable depressive disorder and 29.0% of women with comorbid BPS/IC symptoms and recent panic attacks report not working because of bladder pain, compared to only 14.2% of those with BPS/IC symptoms who did not have either a probable depressive disorder or recent panic attacks.

Surprisingly, our results indicate that women with BPS/IC symptoms are more likely to access treatment for emotional and personal problems than treatment for their bladder symptoms, regardless of their current difficulties with depression or panic attacks. This is particularly salient among women with a probable current depressive disorder, who were more likely to pursue treatment for emotional problems than they were to pursue BPS/IC care. However, it is possible that treatment for emotional or personal problems may also impact BPS/IC symptoms, as there is evidence that tricylic antidepressants are effective in treating BPS/IC. [38–40]

Women with psychiatric problems appeared to be slightly more likely to be receiving treatment for emotional and personal problems from a primary care provider as compared to a mental health provider. Further, of those who were receiving care for their BPS/IC symptoms, women with probable current depression or recent panic attacks were more likely to be receiving this care in the primary care setting instead of a specialist, as compared to women without psychiatric problems. This suggests that primary care providers should be alert to complaints of emotional or personal problems in patients seeking treatment for painful bladder symptoms, and to complaints of pelvic pain in patients seeking treatment for depressive or anxiety disorders. It also suggests that primary care providers with expertise in the treatment of both pain and internalizing disorders may be ideally situated to identify and treat these conditions.

Limitations of the study include our reliance on the PHQ-8 to identify women with probable depression and reliance on a brief two-item screener to identify women with recent panic attacks. We were unable to conduct any clinical assessments of depression, and it is likely that the group of women who we identified as having a probable depressive disorder is a mixture of women with different depression diagnoses. Similarly, panic attacks are common in various anxiety disorders, including panic disorder as well as specific phobia, social phobia, generalized anxiety disorder, and obsessive-compulsive disorder. Individuals who experience panic attacks do not necessarily have diagnosable anxiety disorders (DSM-IV-TR, 2000), so the women in the current study with recent panic attacks likely represent a heterogeneous group with respect to their anxiety diagnoses. We also relied on self-report to measure treatment utilization, which may be affected by recall bias. While we assessed for use of antidepressant medication in assessing treatment utilization, it is possible that individuals may have been taking other medications that were not directly assessed, and it is unclear how this may have influenced the current study's results. It is also important to note that while the BPS/IC criteria were validated on patients being treated by urologists, no clinical evaluation, which was not performed in this study. Therefore, while study subjects demonstrated bladder symptoms consistent with a diagnosis of BPS/IC, we cannot state with certainty that all would have been diagnosed with the condition after a clinical evaluation. Further, the current analysis did not examine potential confounding factors, such as other medical diagnoses (e.g., irritable bowel syndrome, fibromyalgia, endometriosis, etc.), other psychological diagnoses, and additional medical and psychosocial factors, and it is unclear how these other conditions may have impacted participants.

Despite these limitations, the study also has some notable strengths. Using a well validated case definition, we identified a large, nationally representative probability sample of 1,469 women with BPS/IC. Use of a national probability sample that includes women in the community is a unique strength of the study, as most previous research on IC has relied on clinical samples, who may not be representative of all women experiencing BPS/IC. Indeed, the current study found that less than half of respondents had sought treatment for their BPS/IC symptoms. Using this national probability sample, we were able to provide the first available description of the epidemiology of BPS/IC symptoms and co-occurring probable depressive disorders and panic attacks in the community.

There are several clinical and policy implications of this study. First, the high prevalence of depression and panic attacks in women with BPS/IC symptoms is cause for concern because of the reciprocal relationship that likely exists between BPS/IC and depressive and anxiety disorders. Women with BPS/IC symptoms and depression or panic attacks have worse functioning and are more likely to not be employed because of their pain symptoms. Second, considerable unmet need exists for mental health and BPS/IC treatment, indicating that clinicians should be alert to complaints of pelvic pain in patients seeking treatment for an emotional or personal problem, and to complaints of emotional or personal problems in patients seeking treatment for painful bladder symptoms. Even among those who are receiving treatment for one or more disorders, physical and mental functioning is low and symptom severity high, suggesting that either the treatment is inadequate or, when co-morbid, they are often refractory to treatment. Third, there is a need for further research on whether patients with psychiatric disorders and BPS/IC are as responsive to usual treatments for either disorder alone. Lastly, there is a need for research on the mechanism of the reciprocal relationship. It is unknown whether pain improvement is a direct consequence of improved psychiatric symptoms, or whether improvement in depression and anxiety is mediated by an improvement in pain (i.e., as pain improves, patients feel less depressed and anxious) or whether both psychological health and pain improve as a result of treatment effects on a common pathway.

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Table 1

Population prevalence and characteristics of women with BPS/IC with and without current probable depression and recent panic attacks

	All Respondents	Probable Current Depressive Disorder[a]			Recent Panic Attacks[b]		
	N=1469	Yes N=536	No N=933	χ2 or *t*	Yes N=776	No N=697	χ2 or *t*
% Prevalence	100%	34.8%	65.2%		51.9%	48.1%	
Age, mean	46	45	47	$t = 2.0^{*}$	45	48	$t = 4.8^{***}$
Race/Ethnicity, %							
White	80.1	78.5	80.9	Comparison group	76.8	83.6	Comparison group
Black	7.7	7.3	7.9	*ns*	8.6	6.8	$\chi2 = 7.4^{**}$
Hispanic	7.4	6.4	8.0	*ns*	8.2	6.6	$\chi2 = 6.4^{*}$
Other	4.8	7.8	3.2	$\chi2 = 40.9^{***}$	6.5	3.0	$\chi2 = 31.0^{***}$
Not working due to bladder pain, %	25.1	32.7	18.9	$\chi2 = 50.2^{***}$	29.0	19.4	$\chi2 = 23.9^{***}$
SF-36 Mental, mean	44.8	36.1	49.5	$t = 27.3^{***}$	40.6	49.3	$t = 16.4^{***}$
SF-36 Physical, mean	39.3	34.1	42.1	$t = 12.6^{***}$	37.2	41.5	$t = 6.8^{***}$
Uninsured, %	12.7	14.2	12.0	$\chi2 = 4.1^{*}$	15.2	10.1	$\chi2 = 24.6^{***}$
Pain Scale, mean	5.4	5.8	5.2	$t = -4.8^{***}$	5.6	5.3	$t = -3.0^{**}$
IC severity, mean	11.5	12.5	11.0	$t = -8.3^{***}$	11.8	11.1	$t = -4.2^{***}$
PHQ-8, mean	8.3	15.4	4.5	$t = -59.0^{***}$	10.8	5.5	$t = -18.3^{***}$

Note.

* $p < .05$,

** $p < .01$,

*** $p < .001$ *ns* = nonsignificant; *df* = 1 for all analyses. All percents and means are weighted. BPS/IC = Bladder pain syndrome/interstitial cystitis.

[a] A score of 10 or greater on the PHQ-8 was used to classify individuals as having a probable depressive disorder.

[b] Presence of recent panic attacks assessed with two-item scale: whether the respondent had a spell or attack when his or her heart began to race or felt faint or whether the respondent had a spell or attached when he or she suddenly felt frightened or anxious in the past 3 months. Respondents who endorsed either of these two items (yes/no) were considered to have recent panic attacks.

Table 2

Treatment utilization for BPS/IC among women with and without current probable depression and recent panic attacks

	All Respondents	Probable Current Depressive Disorder[a]			Recent Panic Attacks[b]		
	N=1469	Yes N=536	No N=933	χ2	Yes N=776	No N=693	χ2
People not seeking IC treatment in past 12 months, %	55.7	54.2	56.4	*ns*	56.6	54.6	*ns*
Sought IC treatment in any setting in past 12 months, %	44.3	45.8	43.6	*ns*	43.4	45.4	*ns*
Sought IC treatment, primary care, %	39.9	44.0	37.7	15.9***	43.3	36.1	22.6***
Sought IC treatment, specialist care, %	30.8	28.1	32.2	7.5**	28.1	33.7	15.2***
Sought IC treatment, no regular source of care, %	29.3	27.9	30.1	*ns*	28.5	30.2	*ns*

Note.

* $p < .05$,

** $p < .01$,

*** $p < .001$, *ns* = nonsignificant; *df* = 1 for all analyses. BPS/IC = Bladder pain syndrome/interstitial cystitis.

[a] A score of 10 or greater on the PHQ-8 was used to classify individuals as having a probable depressive disorder.

[b] Presence of recent panic attacks assessed with two-item scale: whether the respondent had a spell or attack when his or her heart began to race or felt faint or whether the respondent had a spell or attached when he or she suddenly felt frightened or anxious in the past 3 months. Respondents who endorsed either of these two items (yes/no) were considered to have recent panic attacks.

Table 3

Access to treatment for an emotional/personal problem by women with BPS/IC, with or without current probable depression or recent panic attacks

	All Respondents	Probable Current Depressive Disorder[a]			Recent Panic Attacks[b]		
	N=1469	Yes N=536	No N=933	χ2 or *t*	Yes N=776	No N=697	χ2 or *t*
Proportion with MH needs addressed in past 12 months:							
by medication, %	36.8	60.4*	24.2	$\chi2 = 537.5^{***}$	48.1	24.6	$\chi2 = 248.3^{***}$
by mental health specialty care visits, %	27.5	43.6*	18.9	$\chi2 = 292.2^{***}$	36.9	17.3	$\chi2 = 201.0^{***}$
by primary care visits, %	24.6	45.8*	13.3	$\chi2 = 543.9^{***}$	35.9	12.4	$\chi2 = 312.2^{***}$
by any of the above, %	51.1	77.4	37.1	$\chi2 = 620.5^{***}$	64.0	37.1	$\chi2 =301.3^{***}$
# of mental health specialty care visits, mean	14.5	15.1	13.8	*ns*	14.4	14.7	*ns*
# of primary care visits for emotional problems, mean	3.6	4.1	2.8	$t = -2.96^{**}$	3.9	2.7	$t = -2.7^{**}$

Note.

* $p < .05$,

** $p < .01$,

*** $p < .001$; $df = 1$ for all analyses. BPS/IC = Bladder pain syndrome/interstitial cystitis.

[a] A score of 10 or greater on the PHQ-8 was used to classify individuals as having a probable depressive disorder.

[b] Presence of recent panic attacks assessed with two-item scale: whether the respondent had a spell or attack when his or her heart began to race or felt faint or whether the respondent had a spell or attached when he or she suddenly felt frightened or anxious in the past 3 months. Respondents who endorsed either of these two items (yes/no) were considered to have recent panic attacks.