

Research Article

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Untreated Minds, Unresolved Pain: Treatment Disparities in Patients with Interstitial Cystitis and Depression

Frazee Jennifer OMS-IV^{1*} and Dunn Terry²

¹College of Osteopathic Medicine, Rocky Vista University, Englewood, Colorado

²Department of Clinical Education, Rocky Vista University, Englewood, Colorado

ABSTRACT

Interstitial Cystitis/Bladder Pain Syndrome (IC/BPS) is frequently associated with depression, yet the concurrent management of these conditions remains insufficiently characterized. Co-occurring depression and IC/BPS have been associated with increased symptom burden and reduced quality of life. This study evaluated the prevalence and pharmacologic management of depression among commercially insured patients with IC/BPS. A retrospective chart review of approximately 600 patient records from a private urogynecology practice identified approximately 200 patients with an ICD-10 diagnosis of IC/BPS. Demographic characteristics, treatment status, and comorbidity data were extracted. Eligible patients reported depression before IC/BPS diagnosis and had completed an intake questionnaire. Associations among depression, IC/BPS status, treatment patterns, and chronic comorbidities were evaluated using chi-square analyses. Depression was reported in 35.70% of patients with IC/BPS and 28.86% of patients without IC/BPS; however, this difference did not reach statistical significance ($p = 0.0941$). Among patients with self-reported depression, 26.77% were not receiving antidepressant therapy. Patients with concurrent IC/BPS and depression were significantly less likely to receive treatment for both conditions than patients with a single condition (70.92% vs. 90.06%, $p < 0.0001$). Patients with chronic comorbid conditions demonstrated significantly higher rates of IC/BPS than those without chronic comorbidities ($p < 0.0001$). These findings suggest persistent gaps in the integrated management of IC/BPS and depression. Despite access to commercial insurance, patients with concurrent IC/BPS and depression experienced lower rates of treatment for both conditions, highlighting the need for improved screening strategies and multidisciplinary care models to optimize patient outcomes.

*Corresponding author

Jennifer Frazee, College of Osteopathic Medicine, Rocky Vista University; Englewood, Colorado.

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Introduction

Interstitial Cystitis/Bladder Pain Syndrome (IC/BPS) is a chronic urologic condition characterized by pelvic pain, urinary frequency, and bladder pressure—all symptoms that substantially impair quality of life. In the United States, IC/BPS affects an estimated 3-8 million women and 1-4 million men [1]. The physical burden of IC/BPS is frequently accompanied by psychological distress, with affected individuals demonstrating higher rates of depression and anxiety than the general population [2]. Prior studies suggest a strong association between mental health disorders and increased IC/BPS symptom severity, supporting a bidirectional relationship in which each condition may amplify the other [3]. Effective management, therefore, requires attention to both urologic and psychiatric comorbidity.

Socioeconomic status (SES) further complicates this relationship. Although higher socioeconomic status (SES) is generally associated with greater access to healthcare, management of coexisting mental health disorders and IC/BPS remains inconsistent, even among commercially insured and higher-income populations [4]. Gender and socioeconomic factors influence both disease burden and treatment utilization. Women experience disproportionately

high rates of IC/BPS and are more likely to report untreated depression, highlighting persistent gaps in care despite greater healthcare access in some populations [5]. Despite advances in understanding the pathophysiology of IC/BPS, many patients continue to experience fragmented care, and untreated depression remains common among affected individuals [1].

The existing literature highlights a persistent gap in integrated treatment strategies for patients with coexisting IC/BPS and depression [6]. Traditional approaches to chronic pain management often underemphasize psychosocial factors, which may contribute to suboptimal outcomes [2]. Understanding how these conditions are managed concurrently may help identify barriers to care and inform more comprehensive treatment models. Accordingly, this study evaluated the prevalence and pharmacologic management of depression among commercially insured patients with IC/BPS, with particular emphasis on treatment patterns and comorbid disease burden.

Methods

Dr. Terry Dunn, MD, provided access to the Caretracker electronic medical record system for review of approximately 600 patient charts from her private urogynecology practice in the Denver metropolitan area. Charts were reviewed in reverse chronological order until approximately 200 patients with an ICD-10 diagnosis

of interstitial cystitis/bladder pain syndrome (IC/BPS) were identified. The index date was defined as the first documented IC/BPS diagnosis recorded in Caretracker. Eligibility required self-reported depression documented on a new-patient intake questionnaire completed before the IC/BPS diagnosis date. Patients whose depression diagnosis occurred after the IC/BPS diagnosis and those without a completed intake questionnaire were excluded.

Student investigators extracted demographic and clinical variables, including age, race, gravidity, parity, IC/BPS diagnosis, IC/BPS treatment status, self-reported depression, depression treatment status, and comorbidities (multiple sclerosis, type 1 and type 2 diabetes mellitus, systemic lupus erythematosus, Sjögren syndrome, rheumatoid arthritis, fibromyalgia, hypertension, thyroid disorders, chronic kidney disease, Crohn's disease, ulcerative colitis, chronic headache disorders, sarcoidosis, polymyalgia rheumatica, and complex regional pain syndrome). Data were entered into a shared de-identified spreadsheet using a unique study identification number for each patient. Variables were recorded using binary indicators denoting the presence or absence of each characteristic. Following data collection and verification, statistical analyses were performed using the de-identified dataset.

Student investigators catalogued each of the following data points in patient charts: age, race, gravity, parity, diagnosis of IC/BPS, treatment for IC/BPS, history of depression (self-reported), treatment for depression, and comorbidities (Multiple Sclerosis, Type I Diabetes Mellitus, Type II Diabetes Mellitus, Systemic Lupus Erythematosus, Sjogren's Syndrome, Rheumatoid Arthritis, Fibromyalgia, Hypertension, Hypothyroid, Hyperthyroid, Chronic Kidney Disease, Chron's Disease, Ulcerative Colitis, Chronic Headache, Sarcoidosis, Polymyalgia Rheumatica, and/or Complex Regional Pain Syndrome). If any of the following were found to exist, then the patient information was transferred to a shared Excel spreadsheet in a Google Drive folder. The patient's new identification number was used in the first column, with subsequent columns containing each of the aforementioned data points. Each data point collected was labeled using a "Y/N" system for "yes or no" in each of the columns. After the de-identified patient data was collected, assessed, and entered into the Excel file, a statistical analysis was conducted.

Statistical Analysis

All statistical analyses were performed using SAS version 9.4 (SAS Institute, Cary, NC) after data were organized in Microsoft Excel. Associations between categorical variables were evaluated using contingency tables and chi-square tests. Statistical significance was defined as a two-sided p-value < 0.05.

Results

Among patients with self-reported depression, 73.23% were receiving antidepressant therapy, whereas 26.77% were not receiving treatment. No patients without self-reported depression were prescribed antidepressant medication (Table 1).

Depression was reported by 35.70% of patients with IC/BPS compared with 28.86% of patients without IC/BPS; however, this difference did not reach statistical significance (p = 0.0941) (Table 2).

Patients with chronic comorbid conditions demonstrated significantly higher rates of IC/BPS than patients without chronic comorbidities (72.63% vs. 55.70%, p < 0.0001) (Table 3).

Patients with concurrent depression and IC/BPS were significantly less likely to receive treatment for both conditions than patients with a single condition (70.92% vs. 90.06%, p < 0.0001) (Table 4).

Table 1: Association Between Self-Reported Depression and Antidepressant Use. Among Patients Reporting Depression, 73.23% were Receiving Antidepressant Therapy, whereas 26.77% were Untreated

Self-Reported Depression	Medications for Depression		
	No	Yes	Total
Frequency, Percent, Row Percent, Column Percent			
No	397, 66.7, 100, 88.22	0, 0, 0, 0	397, 66.72
Yes	53, 8.91, 26.77, 11.78	145, 24.37, 73.23, 100.00	198, 33.28
Total	450, 75.63	145, 24.37	595, 100.00

Table 2: Association between Self-Reported Depression and IC/BPS Diagnosis. Depression was More Frequently Reported among Patients with IC/BPS; However, The Association did not Reach Statistical Significance (p = 0.0941)

Self-Reported Depression	Diagnosis of Interstitial Cystitis/BPS		
	No	Yes	Total
Frequency, Collective Percent			
Yes	143, 71.14	254, 64.30	397
No	58, 28.86	141, 35.70	199
Total	201	395	596

Table 3: Association between Chronic Comorbid Conditions and IC/BPS Diagnosis. Patients with Chronic Comorbidities Demonstrated Significantly Higher Rates of IC/BPS than Those without Chronic Comorbidities (72.63% vs. 55.70%; p < 0.0001)

Diagnosis of IC/BPS	Comorbid Chronic Conditions		
	No	Yes	Total
Frequency, Collective Percent			
No	132, 44.30	101, 27.37	233
Yes	166, 55.70	268, 72.63	434
Total	298	369	667

Table 4: Comparison of Treatment Rates among Patients with Concurrent Depression and IC/BPS Versus those with A Single Condition. Patients with both Conditions were Significantly Less Likely to Receive Treatment for All Diagnosed Conditions than Patients with One Condition Alone (70.92% vs. 90.06%; p < 0.0001)

Full Treatment	Number of Conditions		
	Both Conditions	One	Total
Frequency, Collective Percent			
No	41, 29.08	31, 9.94	72
Yes	100, 70.92	281, 90.06	381
Total	141	312	453

Discussion

This study identified a higher prevalence of self-reported depression among patients with IC/BPS than among patients without the condition. Although the difference did not reach statistical significance, the observed trend is consistent with prior

literature documenting the frequent co-occurrence of psychiatric disorders in IC/BPS and supports a biopsychosocial framework for chronic pain syndromes. These findings underscore the importance of incorporating mental health assessment into routine IC/BPS care.

More than one-quarter of patients with self-reported depression were not receiving antidepressant therapy, indicating a substantial treatment gap. Because depression has been associated with greater pain severity, symptom burden, and reduced quality of life among individuals with chronic pain disorders, untreated psychiatric comorbidity may contribute to poorer overall outcomes in patients with IC/BPS. Routine depression screening and timely intervention may therefore represent important opportunities to improve patient outcomes.

Patients with concurrent IC/BPS and depression were significantly less likely to receive treatment for both conditions than patients with a single condition, highlighting persistent fragmentation in the management of multimorbidity. This finding suggests that urologic and psychiatric symptoms may continue to be addressed independently rather than through coordinated treatment strategies. Integrated multidisciplinary care models may improve simultaneous management of both conditions.

Patients with chronic comorbid conditions demonstrated significantly higher rates of IC/BPS than those without such conditions. This finding is consistent with emerging evidence suggesting that shared inflammatory, neurogenic, or central sensitization mechanisms may contribute to overlap among chronic disease states. Recognition of these multimorbidity patterns may facilitate earlier diagnosis and more comprehensive management.

No patients without self-reported depression were prescribed antidepressants, suggesting that these medications were used primarily for psychiatric indications rather than adjunctive pain management. Given the established role of certain antidepressants in chronic pain treatment, this finding may indicate an opportunity to improve awareness of evidence-based therapeutic options. Taken together, these findings suggest that patients with IC/BPS may experience undertreated psychiatric comorbidity and gaps in coordinated care. Enhanced screening practices, integrated treatment strategies, and collaboration among urology, psychiatry, and primary care providers may help address both the physical and psychological dimensions of IC/BPS. Future research should evaluate whether multidisciplinary care models improve treatment adherence, reduce healthcare utilization, and enhance patient-reported outcomes.

Conclusion

Our study identified a higher prevalence of self-reported depression among patients with IC/BPS than among those without the condition. Although this difference did not reach statistical significance, the observed trend is consistent with prior evidence describing the biopsychosocial complexity of IC/BPS and the substantial overlap between physical and psychological symptom burden [7,8].

More than one-quarter of patients with self-reported depression were not receiving antidepressant therapy. In addition, patients with concurrent IC/BPS and depression were significantly less likely to receive treatment for both conditions than patients with a single diagnosis, suggesting persistent fragmentation between urologic and psychiatric care [9,10,13,14]. These findings support

the need for integrated treatment models that address both chronic pain and mental health.

Patients with chronic comorbid conditions demonstrated significantly higher rates of IC/BPS, suggesting that individuals with autoimmune, endocrine, neurologic, and other chronic diseases may represent a population at increased risk. This finding further supports the value of multidisciplinary management approaches.

Given the well-documented delays in IC/BPS diagnosis, incorporating bladder health assessment into routine clinical evaluation of patients with depression may facilitate earlier recognition and intervention [11,15,16]. Because improvement in IC/BPS symptoms may also alleviate psychological distress, earlier identification could provide benefits across both domains of health.

In summary, these findings highlight the importance of proactive mental health screening and coordinated multidisciplinary care for patients with IC/BPS and comorbid depression. Future research should determine whether integrated care models improve clinical outcomes, reduce healthcare utilization, and enhance long-term quality of life in this population [9-18].

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