# Prevalence and Psychosocial Correlates of Symptoms Suggestive of Painful Bladder Syndrome: Results From the Boston Area Community Health Survey

**Carol L. Link,* Samantha J. Pulliam,† Philip M. Hanno,‡ Susan A. Hall, Paul W. Eggers, John W. Kusek§ and John B. McKinlay**

*From New England Research Institutes, Watertown (CLL, SAH, JBM), and Massachusetts General Hospital, Boston (SJP), Massachusetts, University of Pennsylvania Health System, Philadelphia, Pennsylvania (PMH), and National Institute of Diabetes and Digestive and Kidney Diseases, Bethesda, Maryland (PWE, JWK)*

**Purpose:** We estimated the prevalence of symptoms suggestive of painful bladder syndrome defined as pain increasing as the bladder fills and/or pain relieved by urination for at least 3 months, and its association with sociodemographics (gender, age, race/ethnicity and socioeconomic status), lifestyle (smoking, alcohol consumption, physical activity) and psychosocial variables (sexual, physical, emotional abuse experienced as a child or as an adult, worry, trouble paying for basics, depression).
**Materials and Methods:** The data used come from the Boston Area Community Health Survey, an epidemiological study of 5,506 randomly selected adults 30 to 79 years old of 3 race/ethnic groups (black, Hispanic, white).
**Results:** The overall prevalence of symptoms suggestive of painful bladder syndrome was 2% (1.3% in men and 2.6% in women) with increased prevalence in middle-aged adults and those of lower socioeconomic status. Symptoms suggestive of painful bladder syndrome were more common in those who experienced abuse, in those who were worried about someone close to them and in those who were having trouble paying for basics. This pattern held even after adjusting for depression.
**Conclusions:** Painful bladder syndrome is associated with a number of lifestyle and psychosocial correlates. This suggests that the treatment of patients with painful bladder syndrome (physical symptoms) may benefit from a multifaceted approach of combining medical, psychological and cognitive treatment.

*Key Words: cystitis, interstitial; anxiety; social class; urology*

Painful bladder syndrome can be a chronic and debilitating disease, characterized by urinary urgency, frequency and bladder pain.[1,2] Recent studies using symptom based diagnostic criteria for PBS instead of anatomically based diagnostic criteria for IC suggest that the prevalence of this symptom complex may be higher than previously thought.[3] Using symptom based criteria may help to identify individuals in earlier disease stages and to avoid the complication of the variety of diagnostic criteria used by individual physicians to diagnose IC.[4]

Research using symptom based diagnostic criteria suggests that painful bladder syndrome is more common in women and middle aged people.[5,6] Gender disparities, once thought to be dramatic,[7] have decreased in recent studies.[5] Other data suggest that individuals with painful bladder syndrome are more prone to depression[8] and panic disorder.[9] We describe the prevalence of symptoms suggestive of PBS, its variation by demographic factors, and its association with a variety of psychosocial and lifestyle variables.

## METHODS

The Boston Area Community Health Survey is a community based epidemiological survey of urological symptoms and risk factors conducted from 2002 to 2005. BACH is a cross-sectional random sample of community dwelling adults, not a sample of conveniently available patients. Detailed methods are given elsewhere.[10] In brief, BACH used a multistage stratified cluster sample to recruit 5,506 adults 30 to 79 years old in 3 racial/ethnic groups from the city of Boston (2,301 men, 3,205 women and 1,770 black, 1,877 Hispanic, 1,859 white). Information about urological symptoms, comorbidities, lifestyle, anthropometrics and psychosocial attributes was collected via an interviewer administered questionnaire. Respondents used a self-administered questionnaire to answer questions about sexual function and abuse. The study was approved by the internal review board of New England Research Institutes.

We have previously reported the prevalence of symptoms suggestive of PBS by several definitions.[6] Our operational definition of PBS was pain increasing as bladder fills (fairly often, usually or almost always) and/or pain relieved by

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* Correspondence: New England Research Institutes, 9 Galen St., Watertown, Massachusetts 02472 (telephone: 617-923-7747 x205; FAX: 617-926-8246; e-mail: clink@neriscience.com).
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**See Editorial on page 439.**
**For another article on a related topic see page 737.**



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TABLE 1. *Demographic and selected characteristics of the BACH sample*

| | % Overall | % Men | % Women |
|---|---|---|---|
| Age: | | | |
| 30–39 | 35.2 | 37.2 | 33.5 |
| 40–49 | 25.1 | 25.8 | 24.4 |
| 50–59 | 18.1 | 17.8 | 18.4 |
| 60–69 | 13.3 | 11.3 | 15.1 |
| 70–79 | 8.2 | 7.8 | 8.6 |
| Race/ethnicity: | | | |
| Black | 27.6 | 25.0 | 29.9 |
| Hispanic | 13.2 | 13.0 | 13.3 |
| White | 59.2 | 61.9 | 56.8 |
| SES: | | | |
| Lower | 27.7 | 24.3 | 30.8 |
| Middle | 47.1 | 49.1 | 45.2 |
| Upper | 25.2 | 26.6 | 23.9 |
| Health insurance status: | | | |
| Private | 64.1 | 67.2 | 61.4 |
| Public only | 24.0 | 18.0 | 29.4 |
| None | 11.8 | 14.7 | 9.2 |
| BMI: | | | |
| Less than 25 | 30.1 | 26.6 | 33.3 |
| 25–30 | 34.4 | 40.7 | 28.6 |
| 30+ | 22.0 | 25.8 | 18.6 |
| Physical activity: | | | |
| Low | 27.4 | 26.8 | 27.8 |
| Moderate | 50.6 | 47.4 | 53.6 |
| High | 22.0 | 25.8 | 18.6 |
| Depression | 17.2 | 14.0 | 20.1 |
| No. childhood abuse types: | | | |
| 0 | 61.3 | 61.7 | 61.0 |
| 1 | 20.2 | 21.3 | 19.2 |
| 2 | 11.8 | 12.0 | 11.6 |
| 3 | 6.6 | 4.9 | 8.2 |
| No. adolescent/adult abuse types: | | | |
| 0 | 64.3 | 68.6 | 60.3 |
| 1 | 18.5 | 19.4 | 17.8 |
| 2 | 11.2 | 8.4 | 13.8 |
| 3 | 6.0 | 3.6 | 8.2 |
| In last 6 mos has anyone close to you caused you special worry or been especially demanding? (yes) | 50.0 | 46.0 | 53.6 |
| Has a sibling caused you special worry or been especially demanding in last 6 mos? (yes) | 13.5 | 12.6 | 14.3 |
| Has someone at work caused you special worry or been especially demanding in last 6 mos? (yes) | 9.0 | 9.4 | 8.6 |
| Trouble paying for transportation, housing, health or medical care, medications, or food | 25.4 | 23.5 | 27.1 |

urination (fairly often, usually or almost always) lasting for at least 3 months. The primary reason for this definition is that pain is considered to be the cardinal symptom of PBS.[11] This definition is somewhat broader than but consistent with the ICS definition of PBS as "suprapubic pain related to bladder filling, accompanied by other symptoms such as increased daytime and night-time frequency, in the absence of proven urinary infection or other obvious pathology."[1] It is also slightly broader but consistent with the ESSIC for the new nomenclature bladder pain syndrome: "BPS is a clinical diagnosis made on the basis of chronic pelvic pain, pressure, or discomfort perceived to be related to the urinary bladder and accompanied by at least one other urinary symptom such as persistent urge to void or frequency."[2] The ICS definition is known to miss some people with its restriction to bladder filling and suprapubic location.[12] Our operational definition was designed to capture as many respondents as possible while excluding those without the cardinal symptom of pain.

Frequency was considered to be present if respondents reported urinating more frequently than every 2 hours or had frequent urination during the day (fairly often, usually or almost always), or those who reported urinating 8 or more times per day. Urgency was considered to be present if respondents reported having difficulty postponing urination or had a strong urge to urinate (fairly often, usually or almost always) in the last month, or those who experienced a strong urge to urinate in the last 7 days (4 or more times). Nocturia was considered to be present if the respondent got up to urinate more than once at night (fairly often, usually or almost always) or reported 2 or more urinations at night after falling asleep. Urological symptoms were assessed during the previous month. The sources of the questions have been reviewed previously.[13]

Socioeconomic status was defined as a combination of education and income[14] and was categorized such that a quarter of the BACH population is lower, a half middle and a quarter upper. Health insurance status was categorized as (some) private, public only (Medicare and/or Medicaid) or none. BMI was calculated from interviewer measured height and weight (kg/m$^2$), and was categorized as normal (less than 25), overweight (25 to 30) or obese (30 or greater). Smoking status was categorized as never, former or current smoker. Alcohol consumption during the last 30 days was measured using questions from the NHANES and categorized as 0, less than 1, 1 to 3 and 3+ drinks per day. Physical activity was measured by a validated scale, and categorized as low, moderate and high.[15] Having a job with some walking would put someone in the moderate category. In addition, if the respondent got at least 1 hour per day of moderate activities, did light and heavy housework, did outdoor yard work, and took care of someone, they would be in the high category. Three types of abuse (sexual, physical and emotional) were assessed during 2 life stages (childhood, 13 years or younger and adolescence/adulthood, 14 or older) using a validated instrument.[16] Within each life stage we created a variable for 0 to 3 types of abuse. A variable called

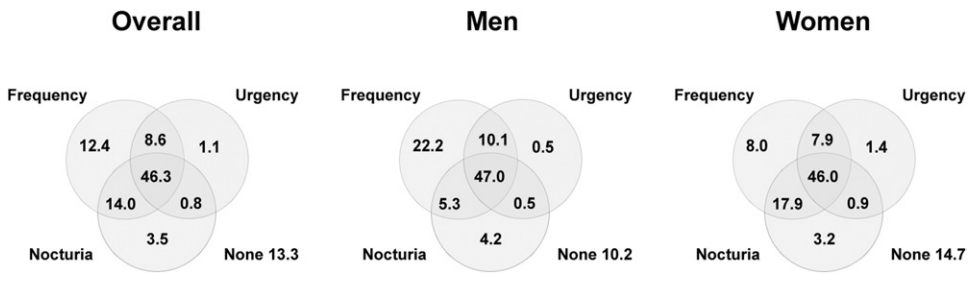


FIG. 1. Prevalence (%) of frequency, urgency and nocturia overall, and for men and women BACH participants with symptoms suggestive of PBS.