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Bladder Symptoms and Attitudes In An Ethnically Diverse Population

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Abstract

Objectives—Our aim was to assess pelvic floor symptoms and attitudes in an ethnically diverse population.

Methods—We conducted a cross-sectional survey of women presenting to two community-based, ethnically diverse gynecology clinics. Prior to being seen by a provider, participants were asked to complete a questionnaire.

Results—A total of 312 women were included: 32.7% Caucasian, 50.3% African American, and 17.0% Hispanic. Other racial/ethnic groups were excluded secondary to small samples size. The median age was 34.0 years (27.0–44.0). The groups differed with respect to most demographic characteristics, such as income, education, and nation of origin. Nocturia and urinary frequency were the most commonly reported symptoms. African American respondents were more likely to report nocturia than Caucasian respondents (OR 2.4, 95% CI 1.2–4.8). Respondents' views of normal urinary function generally did not vary by race/ethnicity. However, Hispanic respondents were less likely than Caucasian respondents to agree that it is normal to leak urine after having children (OR 0.28, 95% CI 0.11–0.68). Among women who reported at least one symptom, 46.7% reported that at least one symptom bothered them, and this did not differ with respect to race/ethnicity ($p = 0.59$). African American respondents were more likely than Caucasians to report their urinary leakage to their doctors ($p = 0.006$).

Conclusions—Our study demonstrates that, with few exceptions, bladder symptoms and attitudes are similar among reproductive-age women of various racial/ethnic groups in a community setting.

Keywords

Bladder symptoms; diversity; urinary symptoms

Introduction

Urinary incontinence is a common disorder that affects 25-45% of women (1) and has accompanying psychosocial and medical impacts with personal and societal costs. Despite these negative effects, less than half of women suffering from these symptoms seek care. (1, 2)

Most studies of urinary incontinence have described predominately Caucasian populations and primarily have been conducted in North America, Australia, and Europe. (1, 3) The few studies examining urinary incontinence in other racial/ethnic groups have suggested a lower prevalence in these groups compared to Caucasians and racial/ethnic differences in risk factors and symptoms. (1, 4, 5, 6) Two studies have reported a higher prevalence of urinary incontinence in Caucasian women compared to Black women. (4, 6) A study by Bump et al. additionally found differing risk factors for incontinence between the two groups, a finding that has been supported in other studies. (4, 7, 8) Similarly, a study by Mattox and Bhatia found that Hispanic women were more likely to report stress urinary incontinence symptoms than Caucasian women; however, the incidence of this diagnosis after urogynecologic evaluation was similar between the two groups. (9) In addition, racial/ethnic disparities have been shown in treatment patterns for urinary incontinence. (10, 11) These differences may in part be due to under-reporting secondary to selection of study populations and/or cultural differences in attitudes towards urinary incontinence and patterns of care seeking.

There is a paucity of studies that examine possible ethnic and cultural differences in attitudes and awareness surrounding urinary incontinence and bladder symptoms and the willingness of women to speak with health care providers about these potentially sensitive issues. To effectively address the needs of an increasingly diverse patient population, it is important to assess differences in patients' understanding of urinary incontinence and healthy bladder habits.

Two clinics affiliated with our institution serve a diverse population of women, enabling us to explore differences in attitudes towards bladder health and treatment of urinary incontinence in an ethnically and racially diverse group. We aimed to evaluate attitudes towards bladder symptoms and urinary incontinence and the willingness to discuss this condition with health care providers among women in this population. We also wanted to explore whether potential differences in attitudes may help explain differences seen in the literature and suggest barriers to treatment for some women. This information could enable providers to better understand racial and cultural differences surrounding bladder symptoms and, in turn, aid in optimizing care

Materials and Methods

We conducted a cross-sectional survey of women presenting to two ethnically diverse gynecology clinics affiliated with an academic tertiary care center from February through November 2012. One clinic was in a community health center and the other was based in the hospital. All non-pregnant women age 18 years or older presenting for either an annual examination or specific gynecologic complaint were eligible. Prior to being seen by a provider, participants were asked to complete a self-administered, anonymous questionnaire. The questionnaire was pilot-tested with residents, fellows, attending physicians, and nurses for readability. We attempted to phrase questions in a manner that was similar to other validated questionnaires, such as the Pelvic Floor Distress Inventory questionnaire and the Pelvic Pain and Urinary Urgency Frequency questionnaire; however, we developed our own questionnaire to elicit more information from survey respondents about their attitudes (Appendix A). Patients who were not fluent in English were given the option of an interpreter administering the questionnaire to them. The survey took approximately 10 minutes to complete and was offered to the patient either during the check-in process or when she was escorted to the exam room. Women who declined participation did not receive a questionnaire. Our institutional review board approved the study.

The questionnaire elicited basic demographic information including age, parity, annual income, primary language, educational level and race/ethnicity. Women were then queried about bladder symptoms, the extent to which the symptoms bothered them, and their comfort level in discussing these topics with their provider. The final portion of the questionnaire asked women if they agreed or disagreed with various statements regarding bladder and bowel function norms.

Data are presented as frequency (proportion) or median (interquartile range). There was no *a priori* sample size or power calculation. We used a convenience sample and aimed to obtain at least 300 surveys. Categorical data were compared using a Chi square or Fisher's exact test; ordinal and continuous data were compared with the Wilcoxon rank sum test. Odds ratios and 95% confidence intervals were calculated using logistic regression. Potential confounders were considered for inclusion in the final model if they changed the odds ratio by more than 10%. All analyses were performed using SAS 9.3 (SAS Institute Inc., Cary, NC). All tests were 2 sided, and $p < 0.05$ was considered statistically significant.

Results

A total of 352 women completed the questionnaire. Five women did not report race or ethnicity and 35 reported a racial/ethnic group other than Caucasian, African American or Hispanic. These women were excluded from the analysis. The self-reported race/ethnicity of the remaining 312 women was 32.7% Caucasian, 50.3% African American, and 17.0% Hispanic; the median age of the respondents was 34.0 (27.0-44.0) years. The groups differed with respect to most demographic characteristics, including being born outside of the United States, having a first language other than English, annual household income, and level of education (all $p < 0.0001$; Table 1).

The most common symptoms were nocturia (waking up more than one time during the night to urinate) and urinary frequency (urinating more than eight times during the day). African American respondents and Hispanic respondents were similar to Caucasian respondents in their urinary symptoms, reporting similar prevalences of frequency, leakage, and pain with urination. However, African American respondents were more likely to report nocturia (39.5%) than Caucasian respondents (18.8%, OR 2.8, 95% CI 1.5-5.0). This difference remained after controlling for parity, age, and body mass index (OR 2.4, 95% CI 1.2-4.8). The prevalence of nocturia was similar between Caucasian and Hispanic respondents (Table 2).

When questioned about perception of normal urinary symptoms, more than half of respondents agreed or somewhat agreed that it is normal to leak urine as a woman ages (56.4%) and that it is normal to leak urine after having children (57.4%). Respondents' views of normal urinary function did not vary by race/ethnicity with a few exceptions (Table 3). Both African American and Hispanic respondents were less likely than Caucasian respondents to agree that it is normal to leak urine after having children (OR 0.50, 95% CI 0.30-0.86 and OR 0.21, 95% CI 0.10-0.44, respectively). However, after controlling for parity, age, annual income, education, and being born in the US, this only held true when comparing Hispanic to Caucasian respondents (OR 0.28, 95% CI 0.11-0.68).

The majority of patients agreed that pelvic floor muscle exercises can help urinary symptoms (83.4%) and that there are good treatments for urinary leakage (88.1%). Caucasian women were more likely than African American respondents to agree with the statement there are good treatments for urinary leakage. This did not hold true after controlling for parity, age, annual income, education, and being born in the US (OR 0.91, 95% CI 0.33-2.6) (Table 3).

Among the 150 women (48.1%) who had at least one urinary symptom (frequency, nocturia, leakage, or pain with urination), 46.7% reported that at least one of those symptoms bothered them, and this did not differ with respect to race/ethnicity (both $p = 0.59$), place of birth ($p = 0.54$) or annual income ($p = 0.68$; data not shown). Nearly half (48.0%) of all women who had a urinary symptom, stated they would report their symptom to a provider. Although African American women were slightly more likely to report symptoms to a provider (50.6%) than Caucasian (42.9%) and Hispanic (48.8%) women, these differences were not statistically significant (both $p = 0.41$). More than one third (34.0%) of women who had at least one urinary symptom wanted more information from their physicians about their urinary symptoms. Desire for information also did not differ when comparing Caucasian respondents to African American ($p = 0.054$) or Hispanic respondents ($p = 0.10$; data not shown).

Discussion

Our data suggests that there are few significant differences between Caucasian, African American, and Hispanic respondents in symptoms, bother and willingness to report their urinary symptoms to their providers. The three groups evaluated were similar in terms of symptom prevalence and bother, their perception of norms of urinary function and their

willingness to report symptoms to their physician. Some notable exceptions were that African American women were more likely to report having nocturia than Caucasian women, and Hispanic women were less likely than Caucasian women to agree that it is normal to leak urine after having children. It is difficult to ascertain whether these differences are the result of a relatively small sample size and geographic area or reflective of true differences among racial/ethnic groups.

Much of our understanding about pelvic floor disorders is based on research with predominately Caucasian populations. (5) Little is known about ethnically diverse or immigrant populations. Literature suggests racial/ethnic variations in incidences of pelvic floor disorders that do not correspond to the frequency with which women in those groups seek and obtain treatment. (6, 10, 12, 13, 14, 15) For instance, Anger et al.'s analysis of Medicare Public Use Files found racial differences in frequency of diagnosis of stress urinary incontinence, frequency of slings used to manage that incontinence, and rate of postoperative complications. (10) Similarly, Thom et al., found significant differences in rates of urinary incontinence when comparing white, black, Hispanic and Asian women. (14) Only an extremely small proportion of ambulatory procedures done for urinary incontinence are performed on African American women. (13) Our data suggests that there are fewer differences in attitudes regarding bladder symptoms than might be expected given the differences in reported prevalence of disorders and accessing care.

Although there have been several research studies examining differences between various racial/ethnic groups in terms of prevalence of disorders, presenting symptoms, and treatment practices, we are unaware of other reports on patient attitudes and willingness to report symptoms. (6-9, 16) Our findings provide further evidence that more than half of patients do not report bladder symptoms to their health care providers.

There were several strengths to our study. Our study population had a substantial proportion of non-Caucasian respondents, allowing us to compare differences between groups. Further, our population was diverse in education and income level. Questionnaires were administered anonymously, which encouraged honest responses. We also offered interpreters for patients who did not speak English to allow for a greater diversity of participants.

Weaknesses of our study include the limited representation of certain ethnic groups, which prohibited us from including them in the analysis, in the case of Asian women, or limited our ability to detect potentially meaningful differences. Race/ethnicity was self-reported by participants; therefore, it is unclear how women of mixed races/ethnicities identified themselves. However, self-report is preferable to provider-determined race/ethnicity. Women were invited to participate by multiple people on the health care team including front desk personnel, medical assistants, and nurses. For this reason, it is not clear how many eligible participants declined, and if those who declined differed from the patient population who did participate. Also, we only surveyed women who were seeking care; their attitudes toward bladder health may be different than women who did not seek care.

Our questionnaire was not validated. We created original questions to allow us to explore patient experience and perceptions of urinary symptoms and bother and their willingness to

discuss these issues with their providers, allowing us to obtain more information regarding patient attitudes. The patient population surveyed was predominately under the age of 40; older women may have different attitudes and comfort level with their provider, particularly given the increased prevalence of urinary symptoms in older women. We also did not record which clinic the questionnaires came from. Although it is possible that patients in the two clinics differed with regard to sociodemographic characteristics, we measured several of these potentially important variables and adjusted for them in our analyses.

Our data suggest that women of various races/ethnicities share similar bladder symptoms, willingness to report these symptoms to their provider, and attitudes surrounding bladder habits. If there are in fact fewer differences among racial and ethnic groups than previously thought, other factors that may be responsible for the reported disparities in treatment utilization among women of color should be investigated. (10, 12, 13) Possible influences could include socio-economic factors, race- or ethnicity-specific barriers to accessing care, or other issues that have yet to be identified. In order to provide optimal care to all women suffering from urinary dysfunction, these issues should be explored and addressed, particularly as the racial and ethnic diversity in the United States continues to grow.

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Appendix A

Women's Opinions on Bladder Health and Habits

Bathroom habits are very personal and vary from one person to another. We would like to better understand your daily habits and opinions about urinary problems, including urinary leakage or accidents. Your responses will be kept completely confidential.

1. What is your year of birth? _____
2. What is your height? _____ ft _____ inches or _____ cm
3. What is your weight? _____ lbs or _____ kg
4. How many pregnancies have you had? _____
Of these, how many were vaginal deliveries? _____ How many were cesarean deliveries? _____
5. What is your race/ethnicity? (Please check all that apply)

☐ White	☐ Black/African American
☐ American Indian/Alaska Native	☐ Native Hawaiian/Pacific Islander
☐ Asian	☐ Hispanic
6. Where you born in the United States? ☐ Yes ☐ No
if yes please move to question #8
7. If no, what country were you born in _____
8. How long have you lived in the United States?

☐ 0-5 years	☐ 11-15 years
☐ 6-10 years	☐ > 15 years
9. Is English your first language? ☐ Yes ☐ No

For each symptom, please check the box that corresponds to your symptoms and opinions about seeking care.

Do you have this problem?	Does this problem bother you?	Do you want more information from your doctor about this problem?	Would you tell your doctor about this problem?
I usually urinate more than 8 times during the day ↓ ☐ No ☐ Yes →	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
I usually wake up more than 1 time at night to urinate ↓ ☐ No ☐ Yes →	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
I leak urine (have accidents) ↓ ☐ No ☐ Yes →	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
I push or strain to empty my bladder ↓ ☐ No ☐ Yes →	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
I have trouble starting or stopping my urine stream ↓ ☐ No ☐ Yes →	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
I have trouble urinating in a public bathroom ↓ ☐ No ☐ Yes →	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
I cut down on fluid intake to avoid urine leakage ↓ ☐ No ☐ Yes →	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
I avoid sex because I worry about urine leakage ↓ ☐ No ☐ Yes →	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
I have pain with urination ↓ ☐ No ☐ Yes →	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
I have pain with sex ↓ ☐ No ☐ Yes →	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No

NOTE: If there is a word or statement you do not understand, please tell your doctor or nurse

Please check the ONE box that indicates how much you agree or disagree with each of the following statements.

	Agree	Somewhat agree	Somewhat disagree	Disagree
It is normal to leak urine as a woman ages	☐	☐	☐	☐
It is normal to leak stool or gas as a woman ages	☐	☐	☐	☐
It is normal to urinate more frequently as a woman ages	☐	☐	☐	☐
It is normal to leak urine after having children	☐	☐	☐	☐
It is normal to leak urine after menopause	☐	☐	☐	☐
It is normal to have pain with urination	☐	☐	☐	☐
It is normal for women to have pain with intercourse	☐	☐	☐	☐
Fluid intake can worsen urinary symptoms	☐	☐	☐	☐
People who leak urine are unclean	☐	☐	☐	☐
Pelvic muscle exercises can help urinary symptoms	☐	☐	☐	☐
There are good treatments for urinary leakage	☐	☐	☐	☐

Including all sources, what is your annual household income?

- ☐ Less than \$20,000 ☐ \$51,000-75,000 ☐ More than \$100,000
☐ \$21,000-50,000 ☐ \$76,000-100,000

What is the highest level of education you have completed?

- ☐ Elementary/grade school ☐ High school ☐ College graduate
☐ Junior /Middle school ☐ Some college ☐ Graduate education

Did you complete this questionnaire on your own? ☐ Yes ☐ No

If no, what assistance did you require? ☐ Interpreter ☐ Other, please specify _____

THANK YOU!!!!

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Table 1
Demographic characteristics of respondents

Demographic	Caucasian n=102*	African American n=157*	Hispanic n=53*	P
Age (years)	33.5 (27.0-44.0)	35.0 (27.0-47.0)	32.0 (28.0-41.0)	0.61
BMI	24.4 (21.4-30.4)	28.2 (24.6-35.6)	28.9 (25.1-32.6)	<0.001
Parity	0.0 (0.0-2.0)	2.0 (1.0-4.0)	2.0 (0.0-4.0)	<0.001
Born in the US				<0.001
Yes	85 (83.3)	76 (48.7)	19 (36.5)	
No	17 (16.7)	80 (51.3)	33 (63.5)	
Length of time living in the US (if not born here)				0.58
0-5 years	3 (17.7)	15 (19.2)	3 (9.1)	
6-10 years	5 (29.4)	18 (23.1)	8 (24.2)	
11-15 years	4 (23.5)	10 (12.8)	4 (12.1)	
>15 years	5 (29.4)	35 (44.9)	18 (54.5)	
First language				<0.001
English	87 (85.3)	100 (64.1)	19 (35.8)	
Other	15 (14.7)	56 (35.9)	34 (64.2)	
Annual household income				<0.001
Less than \$20,000	25 (26.9)	56 (41.8)	22 (45.8)	
\$21,000-50,000	23 (24.7)	52 (38.8)	17 (35.4)	
\$51,000-75,000	23 (24.7)	14 (10.5)	4 (8.3)	
\$76,000-100,000	8 (8.6)	10 (7.5)	4 (8.3)	
>\$100,000	14 (15.1)	2 (1.5)	1 (2.1)	
Highest level of education				<0.001
High school or less	15 (15.2)	65 (41.9)	14 (29.2)	
Some college	19 (19.2)	41 (26.5)	15 (31.3)	
College graduate	44 (44.4)	45 (29.0)	16 (33.3)	
Graduate education	21 (21.2)	4 (2.6)	3 (6.3)	
Did you complete this questionnaire on your own				0.93
Yes	96 (95.1)	146 (96.1)	47 (95.9)	
No	5 (5.0)	6 (3.9)	2 (4.1)	

Data are presented as median (interquartile range) or n (%)

*Frequencies do not add up to totals in each group due to missing responses

Table 2

Symptom prevalence stratified by race/ethnicity

Symptom	Caucasian (n=102) n (%)	African American (n=157) n (%)	Crude OR* (95% CI)	Adjusted OR [†] (95% CI)	Hispanic (n=53) n (%)	Crude OR* (95% CI)	Adjusted OR [†] (95% CI)
Urinate more than 8 times a day							
Yes	22 (22.0)	37 (24.8)	1.2 (0.64-2.1)	1.0 (0.52-2.1)	16 (30.8)	1.6 (0.74-3.3)	1.5 (0.68-3.4)
No	78 (78.0)	112 (75.2)			36 (69.2)		
Wake up more than 1 time per night							
Yes	19 (18.8)	60 (39.5)	2.8 (1.5-5.0)	2.4 (1.2-4.8)	12 (23.1)	1.3 (0.58-2.9)	1.4 (0.58-3.6)
No	82 (81.2)	92 (60.5)			40 (76.9)		
Leak urine							
Yes	15 (15.2)	29 (18.8)	1.3 (0.65-2.5)	0.71 (0.31-1.6)	7 (13.7)	0.92 (0.36-2.4)	0.72 (0.25-2.1)
No	84 (84.8)	125 (81.2)			44 (86.3)		
Pain with urination							
Yes	4 (4.0)	8 (5.2)	1.2 (0.38-4.0)	0.92 (0.25-3.4)	2 (4.0)	1.1 (0.22-5.5)	0.98 (0.20-4.9)
No	96 (96.0)	146 (94.8)			48 (96.0)		
Any urinary symptom							
Yes	42 (41.2)	83 (52.9)	1.6 (0.96-2.6)	1.2 (0.67-2.2)	25 (47.2)	1.3 (0.65-2.5)	1.2 (0.57-2.5)
No	60 (58.8)	74 (47.1)			28 (52.8)		

Frequencies do not add up to totals in each group due to missing responses

* Caucasian group is the reference

[†] Caucasian group is the reference. Adjusted for parity, body mass index, and age

Table 3

Opinion regarding urinary symptoms stratified by race/ethnicity

Statement	Caucasian (n=102) n (%)	African American (n=157) n (%)	Crude OR* (95% CI)	Adjusted OR [†] (95% CI)	Hispanic (n=53) n (%)	Crude OR* (95% CI)	Adjusted OR [†] (95% CI)
It is normal to leak urine as a woman ages							
Agree	59 (58.4)	82 (55.0)	0.87 (0.52-1.5)	1.3 (0.67-2.6)	24 (49.0)	0.69 (0.35-1.4)	1.2 (0.51-2.7)
It is normal to leak urine after having children							
Agree	66 (67.3)	74 (50.7)	0.50 (0.30-0.86)	1.1 (0.55-2.3)	14 (29.2)	0.21 (0.10-0.44)	0.28 (0.11-0.68)
It is normal to leak urine after menopause							
Agree	42 (43.8)	58 (43.0)	0.97 (0.57-1.6)	1.6 (0.78-3.2)	11 (23.4)	0.40 (0.19-0.88)	0.45 (0.18-1.1)
It is normal to have pain with urination							
Agree	3 (3.0)	13 (8.7)	2.7 (0.81-9.1)	3.3 (0.81-13.2)	3 (6.0)	2.0 (0.44-9.4)	2.4 (0.47-12.3)
Pelvic muscle exercises can help urinary symptoms							
Agree	83 (87.4)	100 (71.9)	0.38 (0.19-0.77)	0.86 (0.37-2.0)	38 (79.2)	0.55 (0.22-1.4)	1.1 (0.37-3.2)
There are good treatments for urinary leakage							
Agree	75 (90.4)	117 (86.7)	0.72 (0.30-1.7)	0.91 (0.33-2.6)	37 (84.1)	0.56 (0.19-1.6)	0.71 (0.21-2.4)

Frequencies do not add up to totals in each group due to missing responses

* Caucasian group is the reference

[†] Caucasian group is the reference. Adjusted for parity, annual income, education, being born in the US, and age