

Medical and Self-care Practices Reported by Women With Urinary Incontinence

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Objectives: To determine the extent to which women with incontinence have been identified by physicians, the coping and treatment strategies that incontinent women use, and the factors associated with treatment strategy utilization.

Study Design: A 2-stage, nationwide, cross-sectional survey.

Methods: Survey participants were adult women from representative US households in NFO WorldGroup survey panels. Of 2310 incontinent women who received the second-stage detailed questionnaire, 1970 (85%) responded. Descriptive analyses were performed to determine the impact of incontinence, the proportion of respondents who had talked to a physician about incontinence, the responses of physicians to these incontinent women, and coping strategies used. We conducted logistic regressions to determine factors associated with treatment strategy utilization.

Results: Almost half of incontinent women considered their incontinence moderately to extremely bothersome, yet only 56% of the moderately to extremely bothered women had ever talked to a physician about incontinence. In 85% of all cases, the incontinent woman, rather than the physician, raised the issue of incontinence. Coping strategies women reported ever trying included limiting fluid intake (38%) and physical activity (21%). Kegel exercises and prescription medications were used currently by 20% and 6% of this population, respectively.

Conclusions: Among women of all ages, only about half of women bothered by incontinence have ever talked to a physician about it, and many incontinent women rely on strategies to avoid or conceal incontinence. A better understanding of the current use of coping and treatment strategies as well as the interaction between women and physicians regarding incontinence may help to inform efforts to optimize management of incontinence for women bothered by incontinence symptoms.

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consequences is the recent proposal by the National Committee for Quality Assurance (NCQA) of performance measures for evaluating the care of older adults in managed care organizations.⁷ The urinary incontinence performance measures would focus on the following aspects of incontinence care: (1) the proportion of managed care plan members 65 and older who have experienced urinary incontinence in the last 6 months; (2) the proportion of older, incontinent members who consider their incontinence to be a problem; (3) the proportion of such individuals who have discussed incontinence with a healthcare provider; and (4) the proportion who have received treatment for incontinence.

The extent to which these performance goals for incontinence care could be met in the current health-care system is unknown. The aim of this study was to use data from a recent, nationwide survey of community-dwelling women in the United States to address this issue. Additionally, we examined the types of treatment that incontinent women reported using. Previous studies have shown that a large proportion of incontinent women have never talked to a physician about incontinence.^{8,9} To the extent that women's strategies for addressing incontinence symptoms often extend beyond medical interventions, we also explored coping strategies used by incontinent women. Such coping strategies might include defensive strategies (eg, limiting social and physical activities) or strategies intended to conceal urine loss (eg, wearing pads, diapers, or dark clothing).

Urinary incontinence is a highly prevalent condition that can have a significant impact on the lives of those who experience incontinence symptoms. Based on epidemiologic studies, women are known to be affected disproportionately by urinary incontinence symptoms in comparison with men.¹ In addition to being associated with social isolation² and a lower quality of life among women,^{3,4} urinary incontinence may increase the risk of nursing home or hospital admission among the elderly.^{5,6}

One indicator of the growing awareness of the prevalence and importance of urinary incontinence and its

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Much of the earlier research on the use of coping and treatment strategies utilized by people with incontinence has not included US women^{10,11} or has been limited to older people.¹²⁻¹⁴ Although urinary incontinence commonly is thought of as a condition associated with aging,¹⁵ only minimal increases in the prevalence of incontinence by age have been found in studies that have looked at incontinence across a wide age range.^{16,17} In a study of women aged 40-52 years, almost 31% of respondents noted incontinence symptoms at least once a month.⁸ Whereas the proposed NCQA standards focus on the care of older adults, our sample included women of all ages, allowing us to examine the impact of and responses to incontinence among women of different ages. A better understanding of the current level of interaction between physicians and women regarding incontinence would improve our understanding of this condition and aid future efforts to enhance incontinence care.

MATERIALS AND METHODS

Design and Sample

We conducted a nationwide, cross-sectional mailed survey in 2 stages. First, in May 2001, we sampled 45 000 US households that volunteered to participate in survey projects conducted by NFO WorldGroup (previously National Family Opinion). The sample was drawn from a pool of 250 000 households that participate in NFO surveys, including, for example, surveys used to generate the US Consumer Confidence Index. The sample was balanced to match the US census distributions on multiple factors: geographic region, household income, household size, age of head of household, and market size (see **Appendix**). Each household received a 14-item questionnaire to be completed by the adult male and female heads of household. In this analysis, the 14-item questionnaire was used primarily to determine whether respondents had symptoms of incontinence during the previous 30 days. A total of 66% (29 903 of 45 000) of the questionnaires were returned. Because incontinence affects women more often and for a greater proportion of their lives, the analysis was restricted to women. Overall, 82% of the returned questionnaires included a female respondent (24 581), and 9002 (37%) women reported incontinence symptoms during the past 30 days.

For the second stage of the survey, approximately one quarter (2310) of the incontinent women received a detailed survey in June 2001. They represented a random sample of the 9002 incontinent women in the original sample, stratified based on the distribution of 5 characteristics (household income, household size, age,

geographic region, and market size). The response rate for the detailed survey was 85% (1970/2310).

The institutional review board at William Beaumont Hospital determined that the study was eligible for exempt status. Women were informed that their participation would be confidential. They received \$5.00 for completing the detailed questionnaire only.

Data Collection and Measurement

Prevalence of urinary incontinence was ascertained based on responses to the initial question of the 14-item questionnaire, which asked whether women had experienced symptoms of incontinence during the preceding 30 days. Participants then were asked a series of questions to determine specific incontinence symptoms. Respondents were classified as having stress incontinence symptoms if they answered yes to at least 1 of 4 items on involuntary leakage of urine due to (1) laughing, (2) coughing or sneezing, (3) exercising, or (4) lifting or physical activity. Respondents were classified as having urge incontinence symptoms if they answered yes to one or both of the following items: leakage or loss of urine due to the urge to urinate but unable to get to the toilet before losing urine, or a strong sudden urge to go to the toilet to urinate with no advanced warning. Respondents reporting both stress and urge symptoms were classified as having mixed incontinence symptoms. Two items were considered to be not specific for either urge or stress incontinence symptoms: a leak or loss of urine that did not occur due to sneezing, coughing, exercising, lifting, physical activity, or laughing; and a leak or loss of urine due to a feeling that the bladder is constantly full. Respondents were considered to have "other" incontinence if they answered yes only to one or both of these items or if they indicated that they had symptoms of incontinence but did not answer affirmatively to any of the items used to determine symptom type.

From the second questionnaire, we obtained information on self-reported demographic characteristics, incontinence symptoms, and beliefs about incontinence. For multivariate analysis, demographic characteristics were categorized in the following manner: age (<60 vs ≥60 years), marital status (married vs not married), education (college attendance vs no college attendance), and exercise status (≥2-3 times per month vs <2-3 times per month). Information on incontinence symptoms included frequency of incontinence (<1 episode/week, 1-3 episodes per week, ≥4 episodes per week) and duration of symptoms (< 1 year, ≥1 to <3 years, ≥3 years). The effect of symptoms was assessed using a validated instrument, the incontinence quality of life questionnaire (I-QOL).^{18,19} The I-QOL is scored

from 0 to 100, with a score of zero reflecting the worst possible and a score of 100 reflecting the best possible condition-specific quality of life. To assess the proportion of women who considered their incontinence to be a problem, bothersomeness of incontinence symptoms was measured using a 5-point Likert scale: not at all bothersome, slightly bothersome, moderately bothersome, very bothersome, and extremely bothersome. For purposes of some analyses, bothersomeness was collapsed to 3 categories—not bothered, slightly bothered, and moderately to extremely bothered. Regarding beliefs about incontinence, scores of 4 or 5 on 5-point Likert scales were considered to indicate agreement with the statement that incontinence is just a natural part of growing older and agreement with the statement that expressed acceptance of incontinence as a part of their life.

Both questionnaires were developed using the existing literature on incontinence and the results of focus group research involving incontinent women. Reproducibility of responses to the initial questionnaire has been reported previously.²⁰

Data Analysis

Based on responses to the initial questionnaire, we first performed a descriptive analysis to estimate the prevalence and type of incontinence symptoms among community-dwelling women. We then used responses to the second questionnaire and described the characteristics of the study population. We next determined the proportion of women who had ever discussed incontinence with a physician and used chi-square tests to assess whether this proportion varied by self-reported levels of bothersomeness or by age. Among women who had spoken with a physician about incontinence, we determined whether the woman or the physician initiated the discussion, how recently they had spoken with a physician about incontinence, and the types of physicians that they initially had spoken to about incontinence. Chi-square tests were used to determine whether an association existed between age and the type of physician women initially spoke to about incontinence. For women who initially spoke with a primary care physician, we assessed the proportion who subsequently discussed incontinence with specialist physicians.

To assess whether incontinent women had been offered treatment, we assessed women’s recollections of the initial physician’s response to their reports of incontinence symptoms. For all women in the sample, we examined whether women reported ever using various coping and treatment strategies

as well as whether they reported that use of these strategies continued currently. Chi-square tests were used to determine whether the use of coping and treatment strategies varied based on whether women reported being bothered by their incontinence symptoms.

Finally, we looked more closely at the use of treatments for incontinence. We conducted 3 separate multivariate logistic regressions to determine the factors that were associated with current prescription medication use for incontinence, current use of pelvic floor muscle training, or a history of surgery for urinary incontinence. In each of the 3 models, we included the following variables: age, education, marital status, exercise status, beliefs about incontinence, bothersomeness of incontinence, I-QOL score, and type, frequency, and duration of incontinence symptoms. Analyses were performed using Stata statistical software (version 7.0, College Station, Tex).

RESULTS

Initial Questionnaire

The characteristics of the respondents to the initial questionnaire were similar to the entire NFO sample in terms of population size, geographic region, and household size and income, although respondents were slightly older. On the initial 14-item questionnaire, 37% of women (32.9% of women <60 years and 48.3% ≥60 years) said they experienced urinary incontinence during the last 30 days, 66% of whom reported at least 1 incontinence episode during the last week. A total of 40.6% of incontinent women reported stress inconti-

Figure. Distribution of Reported Types of Incontinence Among Women by Age Group

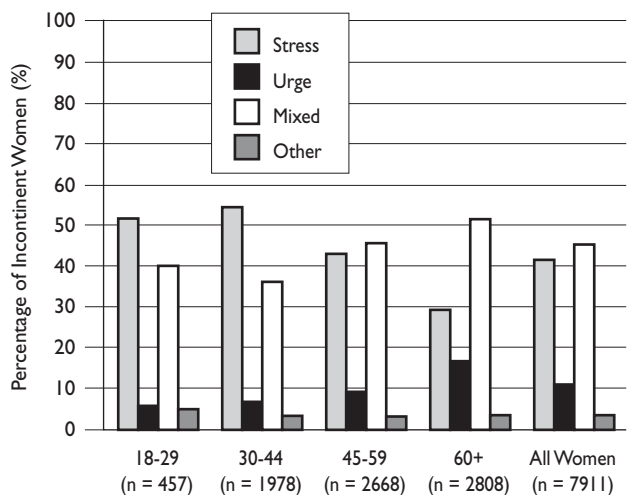


Table 1. Respondent Characteristics

Variable	Total, n (%)
Demographics	
Age (years)	1970
18-29	96 (4.9)
30-44	467 (23.7)
45-59	676 (34.3)
≥60	731 (37.1)
Household income	1846
<\$20 000	507 (27.5)
\$20 000 to \$34 999	381 (20.6)
\$35 000 to \$54 999	371 (20.1)
\$55 000 to \$84 999	320 (17.3)
≥\$85 000	267 (14.5)
Race	*
White race	1772 (90.0)
Black/African American	128 (6.5)
Asian/Pacific Islander	12 (0.6)
Native American	16 (0.8)
Other	40 (2.0)
Marital status	1961
Married	1134 (57.8)
Single, lives with no partner	163 (8.3)
Single, lives with partner	89 (4.5)
Separated or divorced	263 (13.4)
Widowed	312 (15.9)
Education	1962
Less than high school	121 (6.2)
High school graduate	543 (27.7)
Some college	652 (33.2)
College graduate	396 (20.2)
Postgraduate school	207 (10.6)
Other	43 (2.2)
Require assistance with activities of daily living	1962
Yes	37 (1.9)
No	1925 (98.1)
Incontinence symptoms	
Symptom type (self-report)	1970
Stress	824 (41.8)
Urge	193 (9.8)
Mixed	901 (45.7)
Other/unclassified	52 (2.6)
Frequency of incontinence symptoms	1931
< once/week	789 (40.9)
1 to 3 times/week	454 (23.5)
≥4 times/week	688 (35.6)
Duration of incontinence symptoms	1916
<1 year	297 (15.5)
≥1 to <3 years	639 (33.4)
≥3 years	980 (51.2)
Bothersomeness of incontinence	1955
Not bothered	282 (14.4)
Slightly bothered	722 (36.9)
Moderately bothered	500 (25.6)
Very bothered	284 (14.5)
Extremely bothered	167 (8.5)
I-QOL score	1938
≥90	764 (39.4)
80-89	459 (23.7)
<80	715 (36.9)
Beliefs	
Incontinence is a natural part of growing older	1914
Agreement	797 (41.6)
No agreement	1117 (58.4)
Accept urinary incontinence as part of my life	1907
Agreement	897 (47.0)
No agreement	1010 (53.0)
Have talked to a physician about urinary incontinence	1970
Yes	884 (44.9)
No	1086 (55.1)

*No total is listed, as a small number of respondents indicated more than 1 race. I-QOL indicates incontinence quality of life questionnaire.

nence symptoms only, 11.0% urge incontinence symptoms only, 45.3% mixed incontinence symptoms, and 3.1% “other” incontinence symptoms (Figure). Among incontinent women who reported age on the initial questionnaire (n = 7911), the proportion of women with only stress incontinence symptoms was higher among young and middle-aged women compared with older women. Mean ages for stress, urge, and mixed incontinence symptoms were 49.6, 60.4, and 55.5 years, respectively.

Second Questionnaire

We first determined whether the sample of incontinent women who received the second questionnaire was representative of all women who reported incontinence symptoms on the first questionnaire. Based on responses to the 14-item questionnaire, we compared the 2310 incontinent women who were mailed the detailed questionnaire with the 6692 incontinent women who were not mailed the detailed survey. No statistically significant differences were noted in household income, type of incontinence, frequency of incontinence in the last week, proportion of incontinent women using prescription medications for incontinence, or the proportion using pads. Mean ages were similar (53.6 vs 53.5 years). Median duration of symptoms was slightly longer in the group who did not receive the follow-up questionnaire (29.1 vs 27.2 months, P < .05).

Table 1 shows the characteristics of respondents to the second questionnaire. Approximately half of the incontinent women reported symptoms for at least 3 years, and more than one third of the incontinent women reported 4 or more episodes of incontinence each week. A total 85.6% of women reported being bothered by symptoms of urinary incontinence, with 25.6% of women reporting being moderately bothered, 14.5% very bothered, and 8.5% extremely bothered. A total of 44.9% of women had ever talked to a physician about urinary incontinence. Women who were

Table 2. Treatment and Coping Strategies Reported by Women With Symptoms of Urinary Incontinence

Coping Strategies	Strategies Ever Tried (n = 1970)	Currently Try (Total) (n = 1955)	Currently Try (Not Bothered)	Currently Try (Bothered)	P
Defensive					
Go to the toilet frequently even when don't have urge, just to keep the bladder empty	910 (46.2)	654 (33.5)	51 (18.1)	603 (36.0)	< .01
Seek out toilet immediately upon arriving at unfamiliar location	783 (39.8)	576 (29.5)	45 (16.0)	531 (31.7)	< .01
Limit intake of fluids	745 (37.8)	456 (23.3)	32 (11.4)	424 (25.3)	< .01
Avoid going places where don't know location of the toilet	205 (10.4)	111 (5.7)	5 (1.8)	106 (6.3)	< .01
Stay at home more to avoid uncomfortable situations	185 (9.4)	112 (5.7)	2 (0.7)	110 (6.6)	< .01
Limit physical activity	417 (21.2)	242 (12.4)	11 (3.9)	231 (13.8)	< .01
Learn in advance where toilets are before going to an unfamiliar place	367 (18.6)	251 (12.8)	17 (6.0)	234 (14.0)	< .01
Limit social situations	282 (14.3)	180 (9.2)	10 (3.6)	170 (10.2)	< .01
Limit activities, such as travel, that take you away from the toilet for a long period of time	251 (12.7)	150 (7.7)	3 (1.1)	147 (8.8)	<0.01
Concealing or hiding urinary incontinence					
Use panty liners	1141 (57.9)	822 (42.1)	79 (28.0)	743 (44.4)	< .01
Use feminine hygiene pads	762 (38.7)	481 (24.6)	27 (9.6)	454 (27.1)	< .01
Use other absorbent materials (such as toilet paper, tissue, paper towels)	538 (27.3)	245 (12.5)	6 (2.1)	239 (14.3)	< .01
Wear dark clothing or colors that won't show stains	299 (15.2)	190 (9.7)	7 (2.5)	183 (10.9)	< .01
Wear long shirts or jackets to cover stains	198 (10.1)	117 (6.0)	5 (1.8)	112 (6.7)	< .01
Use adult diapers	183 (9.3)	102 (5.2)	4 (1.4)	98 (5.9)	< .01
Treatment					
Take prescription medication	222 (11.3)	124 (6.3)	6 (2.1)	118 (7.1)	< .01
Do pelvic floor exercises (Kegel exercises)	739 (37.5)	388 (19.9)	51 (18.1)	337 (20.1)	.42
Have surgery	151 (7.7)	40 (2.1)	3 (1.1)	37 (2.2)	.21
Take nonprescription medications	89 (4.5)	31 (1.6)	3 (1.1)	28 (1.7)	.45
Take herbal or homeopathic remedies	95 (4.8)	42 (2.2)	3 (1.1)	39 (2.3)	.18

Values are n (%).

more bothered by symptoms were more likely to have talked to a physician (not bothered 25.2%, slightly bothered 37.1%, moderately to extremely bothered 56.5%, $P < .05$, chi-square 113.5; $df = 2$; data not shown). Older women were more likely than younger women ever to have talked to a physician about incontinence (53.5% vs 39.8%, $P < .05$, chi-square 34.9; $df = 1$; data not shown).

Of women who had talked with a physician about incontinence, 42.9% first spoke with a general practi-

tioner or family practitioner, 35.1% spoke with an obstetrician-gynecologist, and another 10.9% spoke with an internist (data not shown). Only 4.4% of women initially talked with a urologist. Among women younger than 60 years who had talked with a physician, an obstetrician-gynecologist was the most likely type of physician that they reported initially talking to about incontinence (46.0%), whereas for women aged 60 years and older, the initial conversation reportedly most often

took place with internists or general/family practitioners (67.0%). Of all women who reported initially talking to a general/family practitioner or an internist, 19.0% reported later talking to a urologist and 17.3% to a gynecologist.

Regarding the initial discussion, 85% of incontinent women who talked to a physician stated that they, rather than the physician, had initiated the conversation (data not shown). This finding did not vary by current level of self-reported bothersomeness (chi-square 2.55, $P = .28$; $df = 2$). In 50.3% of cases, respondents recalled the main purpose of the initial conversation visit was a routine physical, 35.4% recalled that the appointment was for a medical condition other than incontinence, and 5.3% recalled the visit was for routine postnatal care. Only 7.6% reported that the visit was scheduled specifically to discuss incontinence. Twelve respondents (1.4%) did not answer this question.

More than one quarter of women who had talked to a physician about incontinence had last talked to a physician about incontinence within the last 6 months. Approximately one fifth had talked to a physician about incontinence 6 to 12 months prior to the survey.

Respondents were asked to recall their physicians' initial responses to their reports of incontinence symptoms. A total of 23.6% of women recalled receiving a recommendation for treatment, and 14.1% recalled being referred to another physician. Another 22.7% reported being told that incontinence symptoms were normal for their age. For 17.5%, the doctor recommended monitoring the condition before beginning treatment, and 14.1% were referred to another doctor for evaluation and treatment. For 6.8%, no explanation, evaluation, or treatment was offered.

Table 2 shows the proportion of incontinent women in the sample who reported coping and treatment strategies that they had ever used and strategies that they were currently using. A total of 42.1% reported current use of panty liners, and 33.5% reported a current strategy of going to the toilet frequently even when they did not have an urge to urinate, just to keep the bladder empty. A total of 23.3% of incontinent women reported a current limitation of fluid intake; pelvic floor muscle exercises were reported to be performed currently by 19.9% of all incontinent women and by 20.3% of women with stress symptoms only. The use of all coping strategies was more common among women who were bothered by their symptoms, although the relationship between bothersomeness and treatment strategies was less clear.

We conducted 3 separate multivariate analyses to demonstrate factors associated with currently using prescription medications, pelvic floor muscle exercises,

or having a history of continence surgery (**Table 3**). Women who agreed that incontinence was just a natural part of growing older were less likely to use prescription medications for incontinence (odds ratio [OR] 0.49, 95% confidence interval [CI] 0.30-0.79) and were somewhat less likely to have had surgery for incontinence (OR 0.69, 95% CI 0.46-1.03). Older women were more likely than younger women to take prescription medications for incontinence (OR 1.87, 95% CI 1.22-2.88), but were less likely to perform pelvic floor muscle training currently (OR 0.67, 95% CI 0.50-0.89). Women with urge (OR 3.51, 95% CI 1.58-7.78) and mixed (OR 3.01, 95% CI 1.63-5.54) incontinence were more likely than women with stress symptoms only to report current prescription medication use for incontinence. Women with incontinence symptoms for 3 or more years were more likely to have had a history of surgery for incontinence (OR 2.27, 95% CI 1.13-4.57). Women reporting low quality of life scores (I-QOL <80) were more likely to report current use of prescription medications for incontinence (OR 2.84, 95% CI 1.35-5.99) and were more likely to have a history of surgery for incontinence (OR 2.02, 95% CI 1.14-3.58).

DISCUSSION

This nationwide survey of US women of all ages confirmed that urinary incontinence remains highly prevalent and burdensome. The 37% prevalence rate we found is similar to rates in earlier US studies of middle-aged⁸ and older community-dwelling women,²¹ as well as women of all ages in family practice settings.²² Although proposed NCQA measures would focus on older adults, it is important to recognize that the burden of illness extends to women of younger ages.

Incontinence symptoms can be categorized into 3 main types. The International Continence Society defines *stress incontinence symptoms* as the "complaint of involuntary leakage on effort or exertion, or on sneezing or coughing." *Urge incontinence symptoms* refer to "the complaint of involuntary leakage accompanied by or immediately preceded by urgency." *Mixed incontinence* is a combination of both stress and urge symptoms.²³ The term *overactive bladder* refers to a collection of symptoms including urgency, urge incontinence, and frequency of urination (>8 micturitions/24 hours).²⁴ The overactive bladder condition does not include stress incontinence symptoms. In the present study, the prevalence of mixed symptoms was somewhat higher (and the prevalence of stress slightly lower) than found in a recent analysis of epidemiologic studies (49% stress, 29% mixed, and 22% urge).²⁵ Consistent

Table 3. Factors Associated With Use of Medical Treatment for Urinary Incontinence

Factor	Current Prescription Medication Use	Current Pelvic Floor Muscle Exercise Use	History of Surgery
Demographics			
Age <60 years	1.00 (Reference)	1.00 (Reference)	1.00 (Reference)
Age ≥60 years	1.87 (1.22-2.88)	0.67 (0.50-0.89)	1.44 (0.98-2.13)
Not married	1.00 (Reference)	1.00 (Reference)	1.00 (Reference)
Married	1.20 (0.78-1.85)	1.36 (1.05-1.76)	1.27 (0.86-1.87)
No college attendance	1.00 (Reference)	1.00 (Reference)	1.00 (Reference)
Attended college	1.10 (0.71-1.70)	1.62 (1.22-2.16)	1.02 (0.69-1.52)
Exercise <2-3 times/month	1.00 (Reference)	1.00 (Reference)	1.00 (Reference)
Exercise ≥2-3 times/month	1.12 (0.72-1.75)	2.22 (1.64-3.01)	1.13 (0.75-1.68)
Incontinence symptoms			
Type			
Stress	1.00 (Reference)	1.00 (Reference)	1.00 (Reference)
Urge	3.51 (1.58-7.78)	1.05 (0.66-1.67)	2.25 (1.18-4.28)
Mixed	3.01 (1.63-5.54)	1.19 (0.90-1.58)	1.66 (1.05-2.62)
Frequency of symptoms			
<1 episode/week	1.00 (Reference)	1.00 (Reference)	1.00 (Reference)
1 to 3/week	0.75 (0.38-1.49)	0.97 (0.70-1.34)	0.95 (0.54-1.65)
≥4/week	1.32 (0.76-2.29)	0.98 (0.71-1.36)	1.37 (0.84-2.24)
Duration of symptoms			
<1 year	1.00 (Reference)	1.00 (Reference)	1.00 (Reference)
1 to 3 years	1.31 (0.57-3.00)	1.14 (0.77-1.67)	1.22 (0.58-2.58)
≥3 years	1.74 (0.79-3.82)	1.17 (0.81-1.71)	2.27 (1.13-4.57)
Bothersomeness			
Not bothered	1.00 (Reference)	1.00 (Reference)	1.00 (Reference)
Slightly bothered	0.73 (0.27-2.00)	1.12 (0.76-1.67)	0.76 (0.38-1.52)
Moderately to extremely bothered	1.38 (0.51-3.76)	1.24 (0.79-1.94)	0.71 (0.34-1.51)
I-QOL score			
≥90	1.00 (Reference)	1.00 (Reference)	1.00 (Reference)
80-89	1.78 (0.83-3.83)	0.97 (0.69-1.35)	1.07 (0.59-1.94)
<80	2.84 (1.35-5.99)	0.85 (0.59-1.23)	2.02 (1.14-3.58)
Beliefs			
Incontinence is just a natural part of growing older	0.49 (0.30-0.79)	0.83 (0.64-1.07)	0.69 (0.46-1.03)
Accept incontinence as part of life	0.95 (0.61-1.48)	0.67 (0.51-0.87)	1.10 (0.74-1.62)

N = 1697 for multivariate analyses. Values are odds ratio (95% confidence interval). I-QOL indicates incontinence quality of life questionnaire.

with the epidemiologic literature,²⁶ stress incontinence symptoms predominated among younger women in our study, whereas urge and mixed incontinence symptoms were more prevalent among older women. A recent study noted that 5 years after a first vaginal delivery, the prevalence of stress incontinence symptoms is 30%.²⁷

Incontinence symptoms appear to be problematic for a number of women. Of the incontinent women completing the detailed questionnaire, almost half described

their symptoms as moderately to extremely bothersome. Although the response categories in our study are not directly comparable, this figure may be slightly higher than the proportion of women reporting a similar degree of burden in a recent Norwegian survey (20% no problem, 46% small nuisance, 34% some bother to a great problem).²⁶

We found that only 45% of all incontinent women and 56% percent of women who were moderately to

extremely bothered by incontinence had ever talked to a physician about incontinence. Primary care physicians and obstetrician-gynecologists were the most likely types of physicians with whom women initially discussed their incontinence symptoms. Interestingly, the vast majority of women who talked with a physician about incontinence raised the issue themselves and only a small proportion of women initially discussed incontinence during a physician visit specifically scheduled for that purpose. Thus, compliance with the NCQA measures will likely depend on physicians proactively asking patients about this problem. Otherwise, the prevalence of incontinence may remain significantly higher than the number of patients being treated for the condition.

For women who do talk with a physician about incontinence symptoms, a number of treatment options may be offered. The type of treatment depends in part on the type of symptoms women experience. Women with symptoms of urge incontinence or overactive bladder symptoms may be treated with behavioral approaches such as bladder training or anticholinergic medications. For overactive bladder, a recent meta-analysis of studies has shown significant benefits of anticholinergic medications compared with placebo.²⁸

In contrast, for stress urinary incontinence, the main therapeutic options include pelvic floor muscle exercises and various surgical options.²⁹ The results of studies of pelvic floor muscle exercises (Kegel exercises) vary considerably. A recent review of published literature on pelvic floor muscle exercises noted that short-term results lead to success rates possibly exceeding 70%.³⁰ A meta-analysis of randomized trials also supports the efficacy of Kegel exercises as a treatment for stress urinary incontinence.³¹ Measures to improve compliance and efforts to teach women to perform the exercises correctly are key to the success of Kegel exercises. One study found that if women were given only verbal instructions on Kegel exercises, only 60% of women contracted the appropriate pelvic floor muscles and almost one quarter performed counterproductive Valsalva maneuvers.³² Sampsel and colleagues³³ found that after group instruction in Kegel exercises, 40% of women performed ideal pelvic floor muscle contractions. When these women were provided with additional, brief individual instruction in Kegel exercises, 97% of women were able to perform the contractions correctly.

The success and complication rates of surgical therapy vary depending on the type of surgery performed. Although the methodology for assessing surgical outcomes and complications has been criticized,³⁴ a review of surgical treatment options in the published literature

revealed rates of cure/improvement ranging from 86% to 91% at 1 to 2 years and 73% to 90% at 4 or more years.³⁵ Assessments of surgical outcomes from patient questionnaires may reveal less favorable outcomes, however.³⁶⁻³⁸ Among a sample of community-dwelling women with a history of surgery for incontinence, 58% reported current incontinence during the preceding week and more than half currently used pads or other absorbent material.³⁹

Regarding pharmaceutical approaches, alpha-adrenergic agents, such as phenylpropanolamine, have been used in the treatment of stress urinary incontinence, although concerns about sympathomimetic side effects have limited their use.²⁹ Phenylpropanolamine recently was removed from the US market. Similarly, some clinicians have used estrogen for the treatment of stress urinary incontinence. Some evidence has suggested subjective improvement in postmenopausal women with stress incontinence symptoms.⁴⁰ In 2 randomized controlled trials, however, estrogen was not found to have benefits in the treatment of stress incontinence symptoms.^{41,42} Further information on urinary incontinence and treatment options for women is available through the National Kidney and Urologic Diseases Information Clearinghouse.⁴³

In the present study, more than 25% of women who had talked to a physician recalled receiving no evaluation or treatment from the initial physician or perceived that they were told that incontinence was a normal part of aging. Although we relied on patient recall and did not have the benefit of knowing physicians' actual responses, these findings at least suggest that the initial interaction between incontinent women and physicians might be improved. A survey of Oklahoma physicians found that 50% of family physicians and 73% of internists considered themselves only somewhat or poorly prepared to evaluate incontinence,⁴⁴ a fact that may both explain our patients' observations and suggest opportunities for medical education.

Many incontinent women rely heavily on coping strategies, whereas a smaller proportion uses a specific treatment. The use of coping strategies, such as frequent trips to the bathroom, wearing pads or panty liners to conceal incontinence episodes, limiting fluid intake, and limiting physical activity, in some ways reflects the burden of incontinence symptoms for many women. Yet, in our study, 47% of women accepted incontinence as part of their lives and 42% believed that incontinence is just a natural part of growing older. Women who accepted incontinence as part of their lives were less likely to perform pelvic floor muscle training, and women who believed that incontinence is just a natural part of growing older were less likely to use prescription medications.

This study has a number of limitations. There is a possibility of nonresponse bias. For the initial survey, 66% of households responded. However, most of the analysis in this report was based on answers to the follow-up questionnaire completed by incontinent women, for which the response rate was 85%. In addition, the second survey involved only women who were currently incontinent. Therefore, we are unable to comment on previously incontinent women whose symptoms resolved without treatment or provide information on the prevalence of treatment or coping strategies that resulted in successful resolution of incontinence. Furthermore, as we reported current levels of bothersomeness, lower levels of bothersomeness may be a reflection of effective treatments that women had received previously.

In summary, this study provides some information on the prevalence of incontinence and the experiences of incontinent women with physicians. This information should be considered prior to any widespread implementation of systematic efforts to improve incontinence care in response to proposed performance measures. More than one third of community-dwelling US women have symptoms of incontinence, and almost half find incontinence moderately to extremely bothersome. Yet fewer than half of the incontinent women have talked to a physician about incontinence and even fewer have received behavioral, medical, or surgical treatment. Although some incontinent women may not feel they need or want medical treatment for incontinence, it is important that women who want to consider treatment are able to receive accurate information from their healthcare providers to make informed decisions about their options.

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Appendix. Categories Used to Define Sample Characteristics of Survey Participants

Category	Value or Description
Geographic region	New England, Mid Atlantic, East North Central, West North Central, South Atlantic, East South Central, West South Central, Mountain, Pacific
Market size (N)	<100 000, 100 000 to 499 999, 500 000 to 1 999 999, ≥2 000 000
Head of household age (years)	
Family household	<30, 30-39, 40-49, 50-59, ≥60
Nonfamily	<35, ≥35
Household size (n)	1, 2, 3, 4, ≥5
Household income (\$)	<20 000, 20 000 to 34 999, 35 000 to 54 999, 55 000 to 84 999, ≥85 000