ABSTRACT

Urinary incontinence is a worldwide problem that affects millions of women, although the magnitude of the problem varies by geography and culture. Epidemiologic questionnaires used to identify and characterize incontinence differ in their wording and approach to eliciting information, which can affect the outcome and the accuracy of efforts to clarify the epidemiology of urinary incontinence. Moreover, in clinical settings, patients often are reluctant to discuss problems of involuntary urine leakage with physicians. Patients and primary care physicians, or other first-line providers, require adequate education and training to recognize, evaluate, and manage urinary incontinence.


A WORLDWIDE PROBLEM

Urinary incontinence affects large numbers of people in populations worldwide, not only in the United States. A recent survey of 4 European countries showed a prevalence of greater than 30% in 3 of the 4 nations (France, Germany, and the United Kingdom; Figure 1). Spain had a lower prevalence of 15%, which still represents a substantial proportion of the population in that country. The survey reflected the proportion of people experiencing involuntary urine loss within the previous 30-day period.1

A survey of Asian countries showed variation in prevalence of urinary incontinence but confirmed that the condition affects individuals throughout the region. The reported prevalence ranged from a high of 17% in Thailand to a low of 4% in China and Singapore (Figure 2).2 The relatively lower Asian rate compared with the European prevalence rates may be secondary to the questions used to obtain the rate.

Another recent study documented 37% prevalence of urinary incontinence in the United States, as defined by urine loss within the previous 30 days. The study involved 45,000 households; 82% of the returned questionnaires included a female respondent.3 The question used in the survey to determine the presence of urinary incontinence was similar to the question used in the European survey.

What accounts for the geographic differences in the prevalence of urinary incontinence? The way in which questions are posed can affect the answers. In the Asian study, the question was, “Have you ever leaked urine inappropriately before reaching the toilet in the past 6 months?” The wording tends to suggest urge incontinence, not incontinence in general. In contrast, the European survey posed the question: “Have you lost urine beyond your control within the last 30 days?” The wording is much more inclusive.

Cultural differences and associated bias also may explain variations in prevalence of urinary incontinence found in different surveys. Embarrassment over a matter considered to be personal may prevent a person from acknowledging incontinence or may result in answers that are inaccurate or imprecise.

Individual variations in recall are still another possible contributor to differences in prevalence. In the
survey of US households, the prevalence of urinary incontinence within the past 30 days was 37%. When women were asked about episodes of incontinence occurring within the past year, the prevalence declined to 26.3%; prevalence was 13.8% when the time frame was 1 to 2 years. Prevalence then increased to 26.3% for the time span of 2 to 4 years and to 33.5% for episodes of incontinence occurring beyond 4 years. These variations could suggest potential problems with recall.

**Stress Predominance?**

Urinary incontinence is not a monolithic condition. Several distinct subtypes have been identified, a fact that has important implications for management of the condition. The survey of US households showed that 45% of patients reported symptoms consistent with mixed incontinence, followed by symptoms of stress incontinence in 41% and urge incontinence in 12% (Figure 3). Combining the proportion of women with mixed symptoms and those with pure stress incontinence, the vast majority of respondents had some symptomatic features of stress incontinence.

Similarly, the European survey showed predominance of stress incontinence, either pure stress incontinence or as a component of mixed incontinence. For example, the overall prevalence of urinary incontinence in France was 32%, which included a 12% prevalence of stress incontinence and about a 16% prevalence of mixed symptoms. Pure urge incontinence accounted for only 2% to 3% of the total prevalence of urinary incontinence.

The Asian survey showed a predominance of mixed symptoms (approximately 64%) followed by urge incontinence (23%). Again, the variation may reflect differences in the wording of the surveys used in the 3 different studies (Asia, Europe, and the United States). The Asian survey tended to be weighted in favor of urge incontinence.

A meta-analysis of published studies of urinary incontinence epidemiology in the world suggested that stress incontinence is the most common type of incontinence. Stress incontinence accounted for almost one half of the total worldwide prevalence of urinary incontinence, and mixed incontinence constituted 29% of the total prevalence. Consistent with the US and European surveys, the analysis showed urge incontinence to be less common.

**Who, When, How Long?**

Some variation exists with respect to the patient populations affected by different forms of urinary incontinence. In the survey of US households, the median age of individuals reporting symptoms of urge incontinence was 61 years. People with mixed symp-
toms were somewhat younger (median age, 55 years), and those with symptoms of pure stress incontinence were younger still (median age, 48 years; \( P < .05 \)).

The age differences are consistent with current theories and understanding of the types of incontinence. Stress incontinence is thought to be related to pelvic relaxation and problems involving the urethral sphincter and pelvic floor muscles, probably related to pregnancy and labor. Such a condition would be expected more often in younger women. In contrast, urge incontinence appears to evolve from a neurologic disturbance leading to detrusor overactivity and symptoms of urgency. This type of condition would likely affect older women.

The survey of incontinence symptoms among US households also provided insights into the duration of different types of incontinence. In the past, it was not uncommon to find that women had symptoms of urinary incontinence for 15 years or more before the condition was diagnosed. In the recent US survey, about one third of patients reported having symptoms for longer than 4 years. About one fourth of the patients reported having episodes of incontinence for 2 to 4 years. Another 20% to 30% said the symptoms had arisen within the past year. The findings reflect a good news/bad news situation. On the one hand, physicians and patients may be recognizing incontinence much sooner than in the past. Unfortunately, the survey also showed that more than one half of the women continue to have symptoms for 2 years or longer.

Among US women reporting incontinence episodes within the past 30 days, a majority reported having symptoms within the previous week. To the extent that the frequency of episodes reflects the severity of incontinence, a substantial proportion of women have moderate-to-severe symptoms. About 40% of women with pure stress incontinence reported having symptoms for 1 to 3 days within the past week, and an additional 10% to 15% said they had symptoms for 4 to 7 days. A similar proportion of women with urge incontinence had symptoms for 1 to 3 days, and about one fourth had more frequent symptoms. Patients with mixed symptoms were most affected. More than 30% had episodes on 1 to 3 days of the past week and about 40% had more frequent symptoms. These findings reflect the fact that more than one half of the respondents with incontinence experience episodes at least weekly.

### Seeking Care

Available data suggest that many women in the United States do not seek treatment for incontinence. In one study of health service utilization, only 56% of women with urinary incontinence had ever discussed the condition with a physician. Only 24% said they had discussed the problem with a physician within the past year.

Despite their infrequent discussion of incontinence with physicians, affected women employ a number of self-management or coping techniques. More than one half report using pads or other absorbent products, and more than 40% actively seek locations of toilets when outside the home. Almost 30% attempt self-management with voiding manipulation, including voiding before leaving home and voiding very frequently even if there is no sensation of urge to void. Other self-help strategies used by incontinent women include manipulation of diet and fluid intake, pelvic muscle exercises, and medications.

The severity of incontinence symptoms influences a woman’s use of coping strategies and willingness to discuss the symptoms with a physician, which is not surprising. Fewer than 20% of women with mild symptoms report discussing incontinence with a physician within the past year. In contrast, about one half of women with moderate-to-severe symptoms discuss the condition with a physician within the past year.
the past year. The proportion increases to 42% of women with severe symptoms. About one half of women with mild symptoms use some form of coping, whereas almost 90% of those with severe symptoms engage in self-management and coping strategies.

The type of incontinence also has some effect on a woman's willingness to seek treatment and use self-management techniques. About 30% of women with mixed symptoms have discussed the condition within the past year compared with about 20% of women with pure stress incontinence or urge incontinence. Similarly, 47% of women with urge incontinence report having tried some form of therapy or coping strategy, increasing to 60% of women with stress incontinence and 77% of those with mixed incontinence.

**USE OF SURGERY**

Surgery is an uncommonly used therapy for incontinence. We explored factors related to a history of surgery in our own patient population, including almost 25,000 women. Overall, about 4% (n = 967) of patients reported having some form of surgery for urinary incontinence. The mean age of the survey respondents who had undergone continence surgery was 60 years. Surgery was more common in patients 60 years of age or older (7.7%). About three fourths of the patients had a single incontinence operation. Almost 7% had undergone 3 or more operations for incontinence. The route of the most recent surgery was equally divided among vaginal and abdominal procedures (37% to 38%).

A telling finding related to the ongoing use of hygienic products, prescription drugs, and Kegel exercises. More than one half of patients required absorbent pads despite surgery for incontinence. Additionally, about 20% reported use of prescription medication for incontinence, and 17% performed Kegel exercises.

For a majority of patients, surgery did not provide a cure for incontinence, when cure was defined as absence of symptoms. Of those who had continence surgery, only 20% never experienced recurrent stress symptoms, 18% had no recurrent urge symptoms, and 41% were without retention symptoms. At the other end of the spectrum, 31% of patients reported having stress incontinence symptoms at least once daily, as did 23% of the urge incontinence group. About 16% of patients said they had symptoms of retention once daily or more often.

Satisfaction with surgery varied considerably. When asked about their satisfaction within the first 3 months of surgery, 41% were very satisfied, and 23.3% were somewhat satisfied, leaving more than one third who were not satisfied, including almost 18% who were very dissatisfied. The figures were even lower for women who were asked about their most recent incontinence surgery; 46% said they were somewhat or very satisfied with the results, leaving a majority unsatisfied or undecided. A little more than one half of the patients surveyed (56%) said they would recommend surgery to a friend.

When we analyzed factors that influenced patient satisfaction with surgery, we found that absence of weekly incontinence symptoms (stress or urge), absence of weekly voiding difficulties, and nonuse of absorbent pads all predicted a greater likelihood of satisfaction. Additionally, patients who had surgery more recently (within the past 2 years) were more likely to be satisfied than those who were farther from the date of surgery. The latter finding raises the question of whether patients with recent surgery are more satisfied because of improved techniques and outcomes or whether they have not been observed long enough to make a true determination of surgical success. Another significant observation is that total dryness is not a prerequisite for satisfaction, but elimination of weekly incontinence episodes and elimination or significant reduction in pad use are major factors.

**Remission Rates**

Several years ago, we surveyed a group of people 60 years of age and older. We found a 37% prevalence of urinary incontinence, virtually identical to the recent survey of US households. One year later, we found that 20% of the women who were initially continent reported experiencing episodes of urinary incontinence, making the 1-year incidence 20%. Furthermore, 12% of the women who initially identified themselves as incontinent reported being continent 1 year later, suggesting a 1-year remission rate of 12%.

These findings suggest that incontinence might be a transient condition. One also may assume that remissions reflect response to treatment. However, very few of the patients we surveyed received treatment for incontinence.

We also found that women with stress incontinence were likely to remain incontinent in the inter-
vening year between surveys. Most patients continued to have predominantly stress symptoms or mixed symptoms. Women who had mixed incontinence symptoms continued to have mixed symptoms. Those who were initially continent and became incontinent over the ensuing year tended to have mild symptoms. Fortunately, most patients who were initially incontinent did not have worsening symptoms. However, patients who had severe incontinence at the outset continued to have severe symptoms 1 year later.

**Summary**

Urinary incontinence is highly prevalent, affecting millions of women worldwide. Stress urinary incontinence and mixed urinary incontinence predominate in most surveys. Urinary incontinence affects women of all ages, and the majority of patients remain untreated. Most incontinent women learn coping strategies to control or hide their condition. Relatively few women have incontinence surgery, which produces patient-reported satisfactory results in two thirds of cases during the first 1 to 2 years, declining thereafter. A majority of women continue to use absorbent pads after surgery.

The major challenge to physicians is to help incontinent women overcome their reluctance to seek treatment. Primary care physicians and other first-line providers who care for incontinent women require better training and education in the recognition, diagnosis, and management of urinary incontinence.

**REFERENCES**