

# PREVALENCE OF URINARY FREQUENCY IN TAIWANESE WOMEN AGED 20–59 YEARS

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## SUMMARY

**Objective:** To evaluate the prevalence of daytime urinary frequency among Taiwanese women aged 20–59 years.

**Materials and Methods:** In 1998, there were an estimated 5.9 million female residents aged 20–59 years in Taiwan. A random sample of 4,549 women was chosen by multistage sampling. Face-to-face visits with 3,537 women were completed by trained professional interviewers within 3 months of the subjects' selection. Questions about lower urinary tract symptoms, sociodemographics, reproduction, and medical and surgical histories were recorded. The factors were assessed by frequency and logistic regression analyses using a significance level of less than 0.05.

**Results:** The prevalence of urinary frequency in Taiwanese women aged 20–59 years was 5.2% (182/3,519); 18 interviewees did not answer the question about frequency and were excluded. For those who complained of frequency, 47.2% voided 8–15 times a day, 37.4% voided 16–23 times a day, 1.1% voided 24–31 times a day and 14.3% voided more than 31 times a day. The prevalence of urinary frequency was not linked to age ( $p = 0.326$ ).

**Conclusion:** Urinary frequency is a common symptom in women of all ages and is not significantly related to age. More than half of the women interviewed admitted that less than an hour occurred between visits to the restroom during the daytime. [*Taiwanese J Obstet Gynecol* 2006;45(3):244–246]

**Key Words:** female urinary frequency, lower urinary tract symptoms, polyuria, prevalence, Taiwan

## Introduction

Urinary frequency is a common symptom in women of all ages, and may occur in isolation or in conjunction with other lower urinary tract symptoms (LUTS) such as urgency, nocturia or urinary incontinence (UI). Frequency is now recognized as a symptomatic

urinary disorder that has many different underlying causes and a significant impact on a person's quality of life and work. Although it is sometimes difficult to target investigations appropriately and so fail to provide a definite diagnosis for urinary frequency, treatment has to be aimed at the symptom rather than an underlying cause. Thus, it is important to assess the prevalence of urinary frequency. However, to our knowledge, reports on the prevalence of urinary frequency are very few, although there have been many studies on UI.

This study was conducted to estimate the prevalence of urinary frequency in Taiwanese women aged

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20–59 years. The definition of daytime urinary frequency according to the International Continence Society (ICS) in 2002 [1] is that the patient complains of having to void too often during the day. This study evaluated the interviewees' report about frequency and adopted the ICS definition described above.

## Materials and Methods

This study was conducted in Taiwan, including the main and the small islands within the sovereign territory. In 1998, there were an estimated 5.9 million women aged between 20 and 59 years living in Taiwan. In coordination with the National Institute of Family Planning (NIFP) of the Department of Health, Executive Yuan, Taiwan, 4,549 women in this age group were selected for a multistage random sample design study. The study was part of the eighth nationwide survey of knowledge, attitudes and practices on family and fertility conducted by the NIFP.

The survey utilized a three-stage selection process in which 56 townships were selected proportional to size from the 331 townships in Taiwan, which were arranged into 27 strata. Within townships, blocks formed the second stage, selected proportional to size, and within each block, two eligible respondents were selected randomly, utilizing the household register of each sampled township as a sampling frame. Those who no longer resided at their registered address were traced to their new residence elsewhere in Taiwan.

A total of 3,537 women were interviewed by about 100 well-trained professional NIFP interviewers within 3 months of selection. The study was fully explained to the participants. The questionnaire was devised to cover five areas: general background, medical history, obstetric and gynecologic history, urinary frequency and other LUTS. Urinary frequency was considered to be present when a respondent answered "yes" to the question, "Do you consider you void too often during the day?" Interviewees who did not answer this question were excluded from the study. Next, the question, "How many times do you void every day?" was asked. Analysis of individual items was based only on the number of subjects who answered those particular questions.

All data were entered into a computer database and analyzed using SAS software (SAS Institute, Cary, NC, USA). The  $\chi^2$  test was used to test for differences in the prevalence of urinary frequency among patients with different variables and to compare potential risk factors between the groups of women with and without urinary frequency. A  $p$  value of less than 0.05 was regarded as statistically significant.

## Results

A total of 3,537 women completed the questionnaire, producing a response rate of 77.8%. Of these interviewees, 3,519 women answered the questions on urinary frequency and were included in this study, and the 18 who did not answer were excluded. This study found that the prevalence of urinary frequency in Taiwanese women aged 20–59 years was 5.2% (182/3,519) (Table 1).

Table 2 shows that none of the interviewees who complained of frequency voided less than eight times a day. About half of the women who complained of urinary frequency felt that voiding 8–15 times during the day was too often. On average, less than 1 hour occurred between visits to the restroom for 52.8% of these women. Further, the mean value for number of times of voiding for all those who reported "increased daytime frequency" was 15.5. Additionally, Table 3 shows that age is not significantly related to urinary frequency.

**Table 1.** Prevalence of daytime frequency ( $n = 3,519^*$ )

Urinary frequency	$n$ (%)
Yes	182 (5.2)
No	3,337 (94.8)

\*Of the 3,537 interviewees, 18 women did not answer the questions on urinary frequency.

**Table 2.** Distribution of daytime frequency by voiding numbers ( $n = 182$ )

Voiding numbers	$n$ (%)
8–15	86 (47.2)
16–23	68 (37.4)
24–31	2 (1.1)
$\geq 32$	26 (14.3)
Total	182 (100)

**Table 3.** Prevalence of daytime frequency by age ( $n = 3,519$ )

Age (yr)	Inter-viewees* $n$	Daytime frequency $n$ (%)	$\chi^2$	Degrees of freedom	$p$
20–29	947	39 (4.1)	3.458	3	0.326
30–39	1,041	60 (5.8)			
40–49	925	48 (5.2)			
50–59	579	34 (5.9)			

\*Of the 3,519 interviewees, 27 women were missing.

## Discussion

This is the first nationwide epidemiologic study of urinary frequency using population-based multistage random sampling in Taiwan. To our knowledge, there are few reports in the literature about the prevalence of urinary frequency. The findings of this study showed that the prevalence of urinary frequency in Taiwanese women was lower than that of previous studies. In an epidemiologic study, Bungay et al assessed the prevalence of various LUTS in 1,120 women, aged between 30 and 65 years, and found that approximately 20% admitted to urinary frequency [2]. Norby et al reported LUTS in the Danish population and showed that the prevalence of urinary frequency in women aged 50–59, 60–69, 70–79 and over 80 years was 22.5%, 15.5%, 30.6% and 23.8%, respectively [3]. In addition, a community-based, healthy population study about the prevalence of UI and overactive bladder conducted by Chen et al in Taiwan reported that the prevalence according to patients' perception and ICS criteria was 21.1% and 2.3%, respectively [4].

In the past, the definition of urinary frequency was the passage of urine every 2 hours or more than seven times during the day. However, in 2002, the ICS recommended a new definition for daytime frequency to be a woman's perception of voiding too often during the day. In accordance with this new definition, the prevalence of urinary frequency in Taiwanese women is 5.2%, much lower than that reported by Chen et al.

Similar to this study, Bungay et al showed that the prevalence of frequency did not significantly alter with age. The same study also reported that there was no specific increase in the prevalence of frequency among women in their peri- or postmenopausal years. This study showed a similar result; the prevalence of frequency in women aged 50–59, 40–49 and 30–39 years was 5.9%, 5.2% and 5.8%, respectively.

Although one is a symptom during the day and the other during the night, both frequency and nocturia lead to similar complaints by the patient who considers that they void too often. This study found that the prevalence of frequency (5.2%) in Taiwanese women aged 20–59 years was much lower than that of nocturia (26.4%) [5] in the same population. The difference may be due to nocturia having a greater significant impact on a patient's daily life by affecting their sleep [6]. Thus, the

subjective perception of the patient is much stronger and this might induce higher self-reporting of nocturia [7]. Further, aging is not a risk factor related to urinary frequency, but it is significantly related to nocturia [8] and so might contribute to the higher prevalence of nocturia.

It is apparent that better health education is required to improve understanding of these disorders, increase awareness of the availability of treatments and improve quality of life.

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