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DISTRIBUTION OF LOWER URINARY TRACT SYMPTOMS (LUTS) IN ADULT WOMEN
Marie Andrades, Rose Paul, Aisha Ambreen, Sunita Dodani, Raheem H. Dhanani and Waris Oidwai

ABSTRACT
Objective: To determine the distribution of lower urinary tract symptoms in adult women and the frequency with which the women consulted a health care provider for their symptoms.
Design: Cross-sectional analytical study.
Place and Duration of Study: Community Health Center of Aga Khan University Hospital from November 1st to 30th, 2002.
Subjects and Methods: A trained interviewer administered a structured questionnaire to women patients or attendants aged 18 years and older coming to the center.
Results: Fifty-two percent of the study subjects reported having at least one or more urinary complaints in the past. Stress incontinence was the highest reported complaint (38.4%) followed by burning (34.4%), frequency (26%), painful micturition (20.4%), urge incontinence (18.8%), incomplete emptying of bladder (14.4%), dribbling (12.4%) and poor stream (8.4%). Forty-three percent of the women with LUTS never consulted a health care provider for their problem.
Conclusion: Although the distribution of LUTS among females was found to be high, the patients did not consider it important enough to consult a health care provider. There is a need to create awareness among females regarding LUTS and the need to consult a health care provider for their problems.

KEY WORDS: Lower urinary tract symptoms. Female. Urinary incontinence.

INTRODUCTION
Women of all ages report lower urinary tract symptoms (LUTS).1 Older individuals are more likely to have co-existing age-related disease conditions which may contribute to LUTS. Community-based studies show that the worldwide prevalence of lower urinary tract symptoms varies widely ranging from 5 to 59%.2,3
Lower urinary tract symptoms broadly include storage and voiding symptoms. Storage symptoms comprise frequency of micturition, nocturia, bladder pain and incontinence while voiding symptoms include hesitancy in micturition, poor stream, intermittency, straining, dysuria, terminal dribbling, a feeling of incomplete emptying and postvoid dribble.4 Leakage and frequent night time voiding (nocturia) are the most common lower urinary tract symptoms.1 The International Continence Society (ICS) has recently revised the definition of urinary incontinence as "the complaint of any involuntary loss of urine". Incontinence includes both the urge and the stress incontinence.5 A postal survey conducted in a community population of British women above 18 years reported the prevalence of urinary incontinence as 69%.2

The Asia Pacific Continence Advisory Board conducted an Asia-wide epidemiological survey on overactive bladder.6 This questionnaire-based survey performed on 5502 females from 11 countries in Asia, including Pakistan, reported the prevalence of overactive bladder as 51%. The most common symptom was urgency (65%) followed by frequency (55%).6

In Pakistan, a hospital-based study on urinary incontinence reported the frequency of urinary incontinence as 20.5%; however, there is no significant data available regarding LUTS. Although LUTS is common, many women are not aware whether they wish to be investigated or treated.8 Because of the paucity of data concerning local population, this study was done to determine the distribution of LUTS in adult women and the frequency with which the women consulted a health care provider for their symptoms.

PATIENTS AND METHODS
This study was conducted at the Community Health Center (CHC) of Aga Khan University Hospital, a tertiary care teaching hospital in Karachi, Pakistan. All adult females of 18 years and above who consented to the study were included. Patients who had registered for a doctor's consultation and/or their accompanying female attendants were contacted.
A trained interviewer administered a structured questionnaire to the study population from November 1st to 30th, 2002, after pilot-testing it on 15 patients to check for language acceptability. The variables included demographic data, lower urinary tract symptoms (i.e. storage symptoms of stress incontinence, frequency, nocturia, urine incontinence and voiding symptoms of burning, painful micturition incomplete emptying, dribbling and poor stream). Risk factors associated with LUTS (i.e. marital status, parity, menopause, co-morbid medical conditions, surgeries, medications) and frequency of consultation with a health care provider were also included.
A sample size of 246 was calculated using the StatCalc calculator of Epi Info 6.0 with an expected frequency of 20% of patients with symptoms.
RESULTS

Complete information was obtained from 250 study subjects, which included 147 (59%) patients and 103 (41%) attendants. The mean age of the study subjects was 35.32 years (SD±12.28) with a minimum of 18 years and a maximum of 70 years. The demographic characteristics of the study population with and without LUTS are shown in Table I. Seventy-three percent were married, of which 14 were pregnant at the time of interview. Sixty-five percent (n=162) had one or more pregnancies in the past while 47% (n=77) of them had 5 or more pregnancies in the past while 47% (n=77) of them had 5 or more pregnancies in the past 10 years. 

A total of 130 subjects (52%) in the study population suffered from LUTS. The storage symptoms of stress incontinence, frequency, nocturia and urge incontinence ranked first, third, fifth and sixth respectively in order of distribution. The voiding symptoms of burning, painful micturition incomplete emptying, dribbling and poor stream ranked second, fifth, seventh, eighth and ninth respectively (Table II). The age specific distribution of LUTS is shown in Table III. Out of the 130 subjects with LUTS, 43% (n=56) never consulted a health care provider. The reasons stated included not considering LUTS as a problem, being worried about other co-morbid conditions, feeling it to be a normal ageing process, monetary reasons, not getting time for consultation, feeling ashamed and self treatment. Of those who did consult, 96% (n=71) visited doctors as compared to homeopathic doctors, Hakims and Dais.

A univariate analysis was performed on six major risk factors associated with LUTS (Table IV). Four out of these six, which is parity, being ever married, coexisting co-morbid conditions and a previous history of a pelvic or abdominal surgery were
statistically significant. Multivariate analysis was done to exclude the effect of confounders and showed statistical significance for being ever married and having a coexisting comorbid condition (Table V).

**DISCUSSION**

LUTS is common worldwide. There is a paucity of data on the prevalence of LUTS in Pakistan. This study showed a high distribution of LUTS (52%). A similar high prevalence of overactive bladder (51%) was also found in the Asia-wide epidemiological survey conducted on 5502 females from 11 Asian countries. This suggests that compared to the West, LUTS might be more common in Asia. Further studies are needed to verify a significant difference in prevalence of LUTS among Asians and Western population.

In this study, stress incontinence (38%) was reported most frequently, followed by burning and frequency. The majority (76%) of women were less than 5 years of age which may be the reason that stress incontinence was reported more than urge incontinence (38% and 19% respectively); as stress incontinence is present in all age groups whereas urge incontinence tends to be more prevalent in the older age group. There is also considerable evidence to support the theory that the prevalence of urinary incontinence increases with increasing age as seen in this study as well. It remains uncertain whether the increase in the prevalence of urinary incontinence is due to the decrease in circulating estrogens at menopause or just part of the aging process.

Almost 70% of the women reporting burning were less than 45 years of age. Similarly, in a study in Bristol, among women aged 19 years and above, pain symptoms (bladder pain and dysuria) were reported to be more prevalent in the youngest age group (19 to 39 years).

Fifty-six women (22%) reported having nocturnal voiding of two or more times per night. The prevalence of nocturia in a survey of urinary dysfunction in a Chinese population in Hong Kong was reported by 166 of 819 women (20%).

Parous women were three times more likely to report LUTS as compared to nulliparous women. Thomas et al. reported that parous women had incontinence more commonly than nulliparous women at all ages. This incontinence was similar for those with one child and those with two or three children, however, women who had four or more babies were most likely to report regular incontinence, therefore, the relationship between childbearing and incontinence has to be further clarified.

As in other retrospective studies, we also found a positive association between abdominal or pelvic surgery and lower urinary tract symptoms. There have been studies supporting an association between hysterectomy and lower urinary tract symptoms.

Almost half of the women in our study with symptoms had never consulted a health care provider for their complaints. The reasons stated included not considering LUTS as a problem, feeling it to be a normal ageing process, being worried about other comorbid conditions, not getting time for consultation, monetary problems, feeling ashamed and being afraid of doctors. Incontinence is often dismissed by patients as minor. They avoid seeking help because they are embarrassed or ashamed. Sometimes they view incontinence as a normal consequence of bearing children or growing older because they do not understand that it is treatable. Women who do not seek treatment because of mild or easily manageable symptoms could benefit from knowing the facts about symptoms especially if the symptoms progress to a more severe form. Though the bothersome aspects were not questioned in our study, they should be looked at in future so that they can help identify the reasons for low consultation rates in our population. In our culture it would also be important to inquire about the impact of LUTS on performance of religious duties. It has been suggested that the ICS definition of incontinence be expanded to include quality of life issues such as social and hygienic problems as perceived by patients and caregivers. Social problems would include the statement that individual leisure or work activity is compromised by the incontinence. Hygiene problems would include the need to wear protective aids or to change under, outer or bed clothes because of incontinence.

**CONCLUSION**

LUTS was common among women, yet 43% of the study subjects never consulted a health care provider. There is a need to create awareness among females regarding LUTS.

**REFERENCES**


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