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DISTRIBUTION OF LOWER URINARY TRACT SYMPTOMS (LUTS) IN ADULT WOMEN

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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 39%.²⁻⁴

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.³ 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.² 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

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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 asked 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, urge 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%,⁶ both

an error of 5% and level of significance of 5%. Data was entered into a database using SPSS version 10 and was analyzed by frequency tables and logistic regression.

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 (n=183) were married, of which 14 were pregnant at the time of the 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.

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, fourth and sixth respectively in order of distribution. The voiding symptoms of burning, painful micturition incomplete

Table I: Demographic characteristics.

Variables	Total subjects		LUTS		No LUTS	
	N	%	N	%	N	%
Type						
Patient	147	58.8	79	60.7	68	56.6
Attendant	103	41.2	51	39.2	52	43.4
Age						
18-24	56	22.4	16	12.3	40	33.3
25-34	54	21.6	31	23.8	23	19.2
35-44	80	32.0	45	34.6	35	29.2
45-54	37	14.8	22	16.9	15	12.5
55-64	19	7.6	12	9.2	7	5.8
>65	4	1.6	4	2.3	0	0
Marital status						
Unmarried	67	26.8	18	13.8	49	40.8
Married	183	73.2	112	86.2	71	59.2
Occupation						
None	8	3.2	3	2.3	5	4.1
Student	27	10.8	5	3.8	22	18.3
Housewife	172	68.8	104	80	68	56.6
Others	43	17.2	18	7.2	25	20.8
Education						
None	43	22.4	22	16.9	21	17.5
Primary	35	21.6	23	17.7	12	10.0
Secondary	65	32.0	40	30.8	25	20.8
Inter	47	14.8	19	14.6	28	23.3
Others	60	7.6	26	20	34	28.3

Table II: Frequency of lower urinary tract symptoms (LUTS).

Urinary complaint	Reported		Sometimes (< once/week)		Often (at least once a week)		Daily
			N	%	N	%	
Stress incontinence	96 (38.4%)	<1yr	38	39.6	0	0	1
		>1yr	39	40.6	14	14.5	1
Burning	86 (34.4%)	<1yr	33	38.4	1	1.2	8
		>1yr	38	44.2	4	4.7	2
Frequency	65 (26%)	<1yr	19	29.2	2	3.1	8
		>1yr	20	30.8	5	7.7	10
Painful micturition	51 (20.4%)	<1yr	16	31.4	0	0	5
		>1yr	24	47.1	3	5.9	1
Urge incontinence	47 (18.8%)	<1yr	16	34.0	0	0	1
		>1yr	24	50.0	5	10.6	1
Incomplete emptying	36 (14.4%)	<1yr	6	16.7	0	0	6
		>1yr	16	44.4	2	5.6	6
Dribbling	31 (12.4%)	<1yr	11	35.5	0	0	2
		>1yr	15	48.4	1	3.2	1
Poor stream	21 (8.4%)	<1yr	5	23.8	0	0	2
		>1yr	9	42.9	1	4.8	4

Table III: Age specific distribution of reported lower urinary tract symptoms.

Age (years)	Total	Storage symptoms			
		Stress incontinence	Frequency	Nocturia	Urge incontinence
18-24	56(22.4%)	9(9.3%)	5(7.6%)	7(1.7%)	4(8.5%)
25-34	54(21.6%)	19(19.7%)	13(20%)	5(8.9%)	6(12.7%)
35-44	80(32.0%)	32(33.3%)	27(41.5%)	23(41%)	17(36.1%)
> 45	60(24%)	36(37.5%)	20(30.7%)	21(37.5%)	20(42.5%)

Age (years)	Total	Voiding symptoms			
		Burning	Painful micturition	Incomplete emptying	Dribbling Poor stream
18-24	56(22.4%)	10(11.6%)	4(7.8%)	4(8.3%)	2(6.4%) 2(9.5%)
25-34	54(21.6%)	17(19.7%)	11(21.5%)	7(19.4%)	5(16.1%) 5(23.8%)
35-44	80(32.0%)	32(37.2%)	19(37.2%)	11(30.5%)	10(32.2%) 7(33.3%)
> 45	60 (24%)	27(31.35%)	17(33.3%)	14(38.8%)	14(45.1%) 7(33.3%)

Table IV: Risk factors-univariate analysis.

Variable	LUTS		OR (95% CI) ¹	P-value
	Positive	Negative		
Age	n	n		
< 40 years	86	92	1.63(.963,2.963)	0.068
≥40 years	44	28		
Pregnancy number				
Zero	28	60	3.642(2.102,6.315)	<0.000
1 or more	102	60		
Marital status				
Married	112	71	4.294(2.318,7.956)	<0.000
Unmarried	18	49		
Co-morbid				
Yes	84	46	2.93(1.75,.914)	<0.000
No	46	74		
Surgeries				
Yes	66	39	2.14(1.28,3.581)	<0.000
No	64	81		
Menopause				
Yes	37	24	0.62(.349,1.13)	0.121
No	93	96		

¹Odds ratio with 95% confidence interval.

Table V: Risk factors-multivariate analysis.

Variable	LUTS		OR (95% CI) ¹	P-value
	Positive	Negative		
Pregnancy No	n	n		
0	28	60		
1 or more	102	60	7.724(.656,4.528)	0.269
Marital status				
Married	112	71		
Unmarried	18	49	1.967(.695,5.566)	0.023
Co-morbid				
Yes	84	46		
No	46	74	2.157(1.242,3.745)	0.006
Surgeries				
Yes	66	39		
No	64	81	0.1156(.633,2.110)	0.637

¹Odds ratio with 95% confidence interval.

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 over active bladder (51%) was also found in the Asia-wide epidemiological survey conducted on 5502 females from 11 Asian countries.⁵ 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 45 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.⁹ 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.¹⁰

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).¹¹

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%).¹²

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.¹³ 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.¹⁴

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.⁸

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 co-morbid conditions, not getting time for consultation, monetary problems, feeling ashamed and being afraid of doctors. Incontinence is often dismissed by patients as minor.¹⁵ They avoid seeking help because they are embar-

assed 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 mentioned in our study, they should be looked at in future questions 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 definition¹ of incontinence be expanded to include quality of life issues such as social and hygienic problems as perceived by patients or 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.¹⁰

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.

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