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Lower urinary system symptoms and affecting factors in female students staying in a dormitory

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SUMMARY

OBJECTIVE: The aim of the study was to determine the lower urinary system symptoms and the factors affecting it among young women living in the dormitory.

METHODS: This is a descriptive and cross-sectional study. A total of 355 women attending education in a public university were interviewed, considering a 95% confidence interval. Data were collected using the descriptive form and the Bristol Female Lower Urinary Tract Symptoms Scale. Necessary permissions were obtained, and appropriate analyses were carried out using the SPSS-22 program.

RESULTS: Findings showed that 71.6% of women have problems with urine storage, 29.7% have urinating disorders, 18.4% have urinary incontinence, 8.8% have sexual life problems, and 37.2% have symptoms related to quality of life. Factors affecting the symptoms include history of chronic disease (such as neurological diseases and depression), smoking, low income, history of urinary incontinence in childhood, the presence of symptoms in the mother or family history, the presence and number of urinary tract infections, chronic constipation, and not paying attention to toilet cleaning.

CONCLUSION: It is recommended to carry out community-based studies to raise awareness of women, support priority risk groups by screening, and increase the number of specialist healthcare personnel for quality care and treatment.

KEYWORDS: Lower urinary tract symptoms. Risk factors. Female.

INTRODUCTION

Lower urinary tract symptoms (LUTS) are characterized by problems with urine storage such as urgency, nocturia, and urinary incontinence (UI); bifurcated-intermittent urine flow; weak urine flow; urination with difficulty; symptoms related to urination such as delayed urination; and post-voiding symptoms such as dripping and incomplete urination[1]. In an average of five women, moderate LUTS is seen, thereby causing disruption in daily activities and discomfort[2]. Although its prevalence is the same as in men, LUTS such as overactive bladder and urine storage are more common in women[3]. The prevalence of LUTS varies in different populations depending on age, gender, symptom types, and cultural characteristics of the population[4]. The prevalence of LUTS among women has been reported to be 40–70% in epidemiological studies[4,5]. The risk factors for LUTS may include vaginal delivery, hysterectomy, more than three deliveries, family history, race, chronic diseases, menopausal period, giving birth to an infant weighing over 4 kg, having episiotomy, chronic constipation, urinary tract infections, genetic structure, and dietary habits[6].

LUTS negatively affects the work efficiency and quality of life of women[7]. Common symptoms affecting women of all ages are not only a medical problem but also the individual's physical, hygienic, psycho-social, economic, and sexual aspects; in short, the quality of life in all its dimensions. LUTS continues as an important health problem for many years[7,8]. LUTS reduces the quality of life, resulting in depression, anxiety, anxiety, and stress and causing a decrease in sexual activity. Despite all these complaints, women are ashamed of their symptoms and do not go to the doctor with feelings such as shyness and embarrassment[9-11].

LUTS is an important public health problem, as it occurs in the majority of women and affects about a quarter of the female population[12]. These complaints, which affect millions of women around the world, affect the quality of life of individuals and society[13,14]. Although its prevalence varies according to age and gender, there are not many studies conducted, especially with young and nulligravida women[9]. Lower urinary symptoms are a condition that causes embarrassment, especially in young people, and prevents them from consulting a

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doctor. It is very important that health personnel should pay close attention to this area and raise awareness of young people. The aim of this planned study was to determine LUTS and the factors affecting it among young women.

METHODS

Research type

This is a descriptive and cross-sectional study.

Study Population and Sample

The population of the study consists of female students who continue their education in a public university (n=4622). The research sample consists of a total of 355 women, calculated at 95% confidence interval, and those who met the study inclusion criteria (http://www.raosoft.com/samplesize.html was taken as reference for sample calculation). Inclusion criteria were female, over 18 years old, who has the ability to speak and understand Turkish, staying in the dormitory, and voluntary to participate in the study.

Data Collection Tools

Individual Information Form: For data collection, a questionnaire form consisting of 35 questions, including sociodemographic characteristics, risk factors, urinary symptoms, genital hygiene, and urinary tract infection, was prepared based on the knowledge of the literature[4,6,8].

The Bristol Female Lower Urinary Tract Symptom Questionnaire (BFLUTS): It is a multidimensional scale developed to determine LUTS, sexual life, and quality of life. The scale consists of 19 items, with a minimum of 0 and a maximum of 71 points. The questionnaire consists of five sub-dimensions: storage (questions 1–4), urination (questions 5–7), incontinence (questions 8–12), sexual life (questions 13–14), and quality of life (questions 15–19). In the question form, the items are scored from 0 to 3 (questions 4, 13, 14, 17, and 19) or from 0 to 4 (questions 1–3, 5–12, 15, and 16). Increase in the score showed that the quality of life and sexual life are negatively affected and the symptoms are more severe. Gökkaya et al. gave validity and reliability of the BFLUTS scale in Turkish[15]. The Cronbach's alpha coefficient of the study was found to be 0.93.

Statistical Evaluation

The data obtained as a result of the research were evaluated using the SPSS-22 program. Error checking, tabulation, and statistical analysis were performed. Data are represented in number and percentage. Statistical significance level was accepted at $p<0.05$.

Ethical dimension of the research

The ethics committee approval of the study was obtained from the Scientific Research and Publication Ethics Committee of X University with the number 95674917-604.01.02-E.824 and the date number January 8, 2019.

RESULTS

The average age of female students participating in the study is 20.21±1.62 (min=18, max=27). The socio-demographic characteristics of the women participating in the study are given in Table 1.

The' average body mass index (BMI) of the students is 21.06±2.90 (min=14.70, max=33.50). The number of students who smoke is 34 (9.6%). The prevalence rates of chronic constipation were 10.1%, depression 8.7%, allergic asthma 5.9%, urinary tract infection 7.6% (seen twice a year or more), gas incontinence 4.5%, neurological diseases 2.5%, and diabetes 1.4%. Notably, 10.4% of students use drugs continuously. It was determined that 13.2% (n=47) of the students had UI complaints in their mothers, 15.2% (n=54) in their families or relatives, and 9.3% (n=33) in their childhood.

In all, 40.8% of female students suffer from frequent urinary tract infections, approximately half of them (50.7%) do not know about urinary tract infections and 66.8% use daily pads.

In this study, the mean LUTS storage symptom was 2.79±2.09 (min=0, max=12), the mean urination symptom was 1.26±1.98 (min=0, max=12), the mean incontinence symptom was 0.75±1.81 (min=0, max=20), mean sexual life symptoms are 0.31±0.95 (min=0, max=6), quality of life symptoms are 1.66±2.37 (min=0, max=11). It is noted that 71.6% of women have problems with urine storage, 29.7% have urinating disorders, 18.4% have incontinence, 8.8% have sexual life problems, and 37.2% have symptoms related to quality of life. The comparison of BFLUTS scores of women with study variables is given in Table 2.

DISCUSSION

LUTS is common among women and negatively affects the quality of life. In a study conducted with women aged 18 years and over in five community-based countries (i.e., Canada, Germany, Italy, Sweden, and the United Kingdom), the overall prevalence of LUTS was reported to be 67%[12]. In our study, storage symptoms were found in 71.6% of young women, urination symptoms in 29.7%, incontinence symptoms in 18.4%, sex life symptoms in 8.8%, and quality of life related symptoms in 37.2%.

Table 1. Assessment of genital hygiene status in female students.

Genital hygiene conditions	n	%
Do you wash your hands when you go to the toilet?		
Before the toilet	25	7.0
After the toilet	235	66.2
Before and after the toilet	95	
Total	355	100.0
How do you clean your toilet?		
Only with water	27	7.6
With toilet paper	64	18.0
With soap	15	4.3
With antiseptic solution	4	1.1
With water and toilet paper	245	69.0
Total	355	100.0
How do you clean the toilet?		
Front to back	204	57.5
From the back to the front	129	36.3
I do not pay attention	22	6.2
Total	355	100.0
How do you prefer your underwear?		
Cotton	238	79.7
Synthetic	18	5.1
I do not pay attention	54	15.2
Total	355	100.0
Do you have frequent urinary tract infections?		
Yes	145	40.8
No	210	59.2
Total	355	100.0
How many times have you had a urinary tract infection in the last year?		
No	17	4.8
1	192	54.1
2	125	35.2
≥3	21	5.9
Total	355	100.0
What do you do when you have a urinary tract infections?		
I will go to doctor	209	58.9
I use medicine	76	21.4
I do not do anything	16	4.5
I use herbal medicine	13	3.7
I drink lots of water	31	8.7
I apply hot	10	2.8
Total	355	100.0
Do you know about urinary tract infections?		
Yes	175	49.3
No	180	49.3
Total	355	100.0
Where did you get information about urinary tract infections?		
TV-netten	100	28.2
From health personnel	114	32.1
From school	39	11.0
I did not take	102	28.7
Total	355	100.0

These problems, which affect millions of women around the world, affect the quality of life of the individual and society[13,16,17]. For example, waking up to urinate two or more times at night significantly reduces the quality of life[18]. Due to the negative effects of UI, it causes a decrease in women's quality of life, social and psychological well-being, increase in urinary tract infections, and skin sensitivity[19]. In our study, it is seen that symptoms are common among women. Coexistence of one or more of the symptoms affects the quality of life more. Approximately one-third of women have symptoms related to quality of life.

In our study, urination symptoms are ranked third in terms of the frequency of symptoms. Wang and Palmer observed 5915 women related to urine excretion and emphasized on the place, time, position, and style of urination and the physical and social environment related to voluntary physiological emptying of the bladder[20]. Another study found that there is a significant relationship between toilet behavior and LUTS[21]. As a result of the study conducted with young and middle-aged women, it was emphasized that there was a lack of knowledge about emptying the bladder normally. It has been reported that there are symptoms of urination, such as avoiding straining during voiding and inability to empty the bladder completely[22]. In this study, it is thought that the reasons for the high urination symptoms are female students, delaying urination, and delaying urination due to physical conditions (e.g., access to the toilet and hygiene conditions).

Ünsal et al. stated that the presence of any chronic disease may be an important risk factor for LUTS[23]. However, according to their logistic model results, the presence of chronic disease was found to be an important risk factor for UI. It has been reported in various studies that some chronic diseases (e.g., diabetes mellitus, hypertension, and chronic obstructive pulmonary disease) are important risk factors for LUTS[3,24]. Some studies stated that chronic constipation is an important risk factor for UI, overactive bladder, and urge UI[6,25]. In our study, it was determined that LUTS was high in patients with depression, chronic constipation, and neurological diseases, as shown in literature.

Urinary tract infection (UTI), one of the most common infections in women, is also a risk factor for LUTS[25,26]. Işıklı et al stated that recurrent urinary tract infections are an important risk factor for LUTS[27]. In our study, LUTS is seen among women with frequent urinary tract infections, except for sexual life symptoms. Storage, incontinence, and total symptom scores were found to be higher among women who had three or more UTIs per year. The results of the study are in line with the literature. Again, one of the factors that cause UTI is genital

Table 2. Comparison status of women's The Bristol Female Lower Urinary Tract Symptom Questionnaire scores.

	Storage symptoms	Urination symptoms	Incontinence symptoms	Sexual symptoms	Symptoms related to quality of life	Total
	Median (95%CI)	Median (95%CI)	Median (95%CI)	Median (95%CI)	Median (95%CI)	Median (95%CI)
Income is less than expense						
Income is equal to expense	4.00 (2.97-3.84)	0.00 (0.90-1.65)	0.00 (0.43-1.00)	0.00 (0.10-0.51)	0.00 (1.25-2.22)	6.00 (6.37-8.59)
Income is more than expense	2.00 (2.24-2.76)	0.00 (0.98-1.53)	0.00 (0.46-0.95)	0.00 (0.19-0.45)	0.00 (1.23-1.87)	5.00 (5.48-7.18)
Income is less than expense	3.00 (2.01-3.80)	1.00 (0.67-1.82)	0.00 (0.22-2.02)	0.00 (0.05-0.36)	2.00 (1.17-2.64)	6.00 (4.60-10.08)
Test value	KW=13.576 p=0.001	KW=0.344 p=0.842	KW=0.297 p=0.862	KW=1.339 p=0.512	KW=2.171 p=0.338	KW=5.688 p=0.058
Smoking status						
Yes	4.00 (2.88-4.62)	0.00 (0.74-2.34)	0.00 (0.64-3.59)	0.00 (0.01-0.59)	0.00 (0.91-3.14)	6.00 (6.12-13.32)
No	3.00 (2.46-2.91)	0 00 (1.01-1.44)	0.00 (0.40-0.75)	0.00 (0.19-0.41)	1.00 (1.34-1.84)	5.00 (5.80-7.06)
Test value	U=3925.50 p=0.006	U=5110.50 p=0.530	U=4026.00 p=0.005	U=5144.50 p=0.632	U=5385.50 p=0.891	U=4461.00 p=0.079
Depressed state						
Yes	3.00 (2.63-4.26)	1.00 (0.81-1.96)	0.00 (0.39-2.12)	0.00 (0.08-0.79)	2.00 (1.30-3.35)	6.00 (6.39-11.28)
No	3.00 (2.49-2.95)	0.00 (1.02-1.47)	0.00 (0.51-0.89)	0.00 (0.19-0.40)	0.00 (1.31-1.82)	5.00 (5.84-7.22)
Test value	U=4124.00 p=0.096	U=4299.00 p=0.159	U=4351.00 p=0.141	U=4969.00 p=0.903	U=4245.00 p=0.122	U=3850.50 p=0.031
Neurological disease state						
Yes	4.00 (1.80-5.08)	3.00 (0.90-4.42)	0.00 (0.54-4.54)	0.00 (0.48-2.93)	1.00 (0.21-5.56)	10.00(4.98-19.46)
No	3.00 (2.55-2.99)	0.00 (1.01-1.43)	0.00 (0.53-0.90)	0.00 (0.18-0.37)	0.00 (1.35-1.85)	5.00 (5.94-7.25)
Test value	U=1224.50 p=0.268	U=894.50 p=0.019	U=1213.00 p=0.167	U=1195.00 p=0.038	U=1264.50 p=0.296	U=945.50 p=0.043
Constipation state						
Yes	3.00 (2.12-3.65)	1.00 (1.21-3.22)	0.00 (0.58-2.02)	0.00 (0.08-0.63)	2.50 (1.74-3.69)	9.00 (7.01-11.81)
No	3.00 (2.54-3.00)	0.00 (0.95-1.35)	0.00 (0.49-0.88)	0.00 (0.20-0.41)	0.00 (1.26-1.76)	5.00 (5.75-7.11)
Test value	U=5645.50 p=0.867	U=4775.50 p=0.020	U=4487.50 p=0.009	U=5643.50 p=0.807	U=4313.50 p=0.008	U=4131.50 p=0.006
Having frequent UTIs						
Yes	4.00 (3.29-5.07)	1.00 (1.34-3.46)	1.00 (0.70-2.84)	0.00 (0.20-1.20)	3.00 (1.79-4.20)	10.00(8.62-15.08)
No	3.00 (2.45-2.89)	0.00 (0.96-1.37)	0.00 (0.48-0.85)	0.00 (0.18-0.37)	0.00 (1.27-1.77)	5.00 (5.66-6.96)
Test value	U=2683.00 p=0.001	U=2759.00 p=0.000	U=2768.50 p=0.000	U=4095.00 p=0.270	U=3163.00 p=0.007	U=2349.00 p=0.000
Number of UTIs in a year						
1	3.00 (2.36-2.93)	0.00 (0.96-1.56)	0.00 (0.36-0.74)	0.00 (0.15-0.43)	0.00 (1.04-1.61)	5.00 (5.29-6.89)
2	3.00 (2.34-3.07)	0.00 (0.77-1.41)	0.00 (0.48-1.25)	0.00 (0.14-0.49)	0.00 (1.40-2.38)	5.00 (5.64-8.09)
3 or more	3.00 (2.71-5.28)	2.00 (1.30-3.36)	1.00 (0.33-2.80)	0.00 (0.01-0.87)	1.00 (0.94-3.34)	10.00(6.75-14.20)
Test value	KW=4.196 p=0.123	KW=9.480 p=0.009	KW=9.049 p=0.011	KW=2.204 p=0.332	KW=4.298 p=0.117	KW=7.759 p=0.021
Urinary incontinence in the mother						
Yes	3.00 (2.35-3.42)	1.00 (0.87-1.78)	1.00 (0.79-1.98)	0.00 (0.19-1.10)	2.00 (1.34-2.69)	7.50 (6.5-10.04)
No	3.00 (2.53-3.01)	0.00 (1.02-1.48)	0.00 (0.45-0.85)	0.00 (0.16-0.34)	0.00 (1.31-1.84)	5.00 (5.79-7.22)
Test value	U=6582.00 p=0.311	U=6241.50 p=0.107	U=4972.50 p=0.000	U=6430.00 p=0.075	U=6252.50 p=0.103	U=5546.50 p=0.010

Continue...

Table 2. Continuation.

	Storage symptoms	Urination symptoms	Incontinence symptoms	Sexual symptoms	Symptoms related to quality of life	Total
	Median (95%CI)	Median (95%CI)	Median (95%CI)	Median (95%CI)	Median (95%CI)	Median (95%CI)
Urinary incontinence in family / relatives						
Yes	3.00 (2.85-4.01)	1.00 (1.00-2.12)	0.00 (0.64-1.46)	0.00 (0.19-0.97)	1.00 (1.26-2.69)	8.00 (6.88-10.31)
No	3.00 (2.44-2.91)	0.00 (0.98-1.43)	0.00 (0.48-0.90)	0.00 (0.16-0.35)	0.00 (1.31-1.84)	5.00 (5.69-7.21)
Test value	U=6216.00 p=0.005	U=6763.00 p=0.037	U=6270.50 p=0.002	U=7453.50 p=0.180	U=7332.00 p=0.214	U=6073.50 p=0.003
Urinary incontinence as a child						
Yes	3.00 (2.21-3.78)	1.00 (0.742.58)	1.00 (0.86-2.28)	0.00 (0.10-1.16)	2.00 (1.40-3.38)	9.00 (6.61-11.93)
No	3.00 (2.53-2.99)	0.00 (1.01-1.43)	0.00 (0.47-0.86)	0.00 (0.17-0.36)	0.00 (1.30-1.81)	5.00 (5.80-7.15)
Test value	U=5008.00 p=0.582	U=4799.00 p=0.336	U=3226.50 p=0.000	U=4750.50 p=0.086	U=4378.50 p=0.071	U=4150.00 p=0.038
How do you clean the toilet?						
Front to back	3.00 (2.38-2.94)	0.00 (0.94-1.46)	0.00 (0.46-0.83)	0.00 (0.23-0.53)	0.00 (1.25-1.86)	5.00 (5.65-7.24)
From the back to the front	3.00 (2.38-3.14)	0.00 (0.98-1.77)	0.00 (0.40-1.24)	0.00 (0.05-0.25)	0.00 (1.21-2.12)	5.00 (5.52-8.08)
I do not pay attention	4.00 (3.35-4.93)	1.00 (0.46-1.72)	0.00 (0.49-2.07)	0.00 (0.09-1.04)	2.00 (1.08-3.20)	9.00 (6.81-11.47)
Test value	KW=11.711 p=0.003	KW=0.068 p=0.967	KW=4.795 p=0.091	KW=2.794 p=0.247	KW=2.227 p=0.328	KW=7.405 p=0.025

CI: Confidence intervals; U: Mann-Whitney U Test; KW: Kruskal Wallis Test. p<0.05 it was considered statistically significant (indicated in bold).

hygiene. Symptoms were also high among women who did not pay attention to toilet cleaning.

Ünsal et al found that the frequency of UI was higher in women with a history of enuresis in childhood. In addition, the history of enuresis has been identified as an important risk factor for UI in the logistic model[17]. In this study, other LUTS were observed together with symptoms of UI among women with incontinence complaints in their childhood, mothers, and relatives. In our study, which is in line with the literature, it is seen that past history and genetic factors are important in the development of LUTS.

CONCLUSION

Studies on LUTS with young women are lacking. As a result of our study, it was found that high rates of LUTS were also observed among young women. Factors affecting the symptoms include history of chronic disease (such as neurological diseases and depression), smoking, low income, history of UI in childhood, the presence of symptoms in the mother or family history, the presence and number of urinary tract infections, chronic constipation, and not paying attention to toilet cleaning.

Limitation of the study

This study was conducted only with young women living in a certain region and cannot be generalized to all young women.

AUTHORS' CONTRIBUTIONS

HÖ: Conceptualization, Formal Analysis, Writing – original draft, Writing – review & editing. **NKB:** Conceptualization, Formal Analysis, Writing – original draft, Writing – review & editing.

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