

Prevalence of Lower Urinary Tract Symptoms and Affecting Factors in Female University Students in Türkiye

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Purpose: Lower urinary tract symptoms (LUTS) are common in women, and negatively affect their lives. The aim of this study is to determine the frequency of LUTS and its affecting factors in female graduate students in Turkey.

Materials and Methods: This descriptive, cross-sectional study consisted of 815 women attending education at Canakkale Onsekiz Mart University. Data were; provided sociodemographic characteristics, a questionnaire, and the Bristol Female LUTS Scale. Linear regression analysis was used to identify the risk factors associated with LUTS.

Results: According to the data obtained, the prevalence of at least one of the LUTS was determined as 71.8% (515/815). It was determined that the prevalence of storage symptoms was higher than that of voiding and urinary incontinence. According to the results of the linear regression analysis, the risk factors for LUTS in female student were hold urine at school, complaints of urinary incontinence in family, bedwetting in children, constipation, regular drug use, obesity.

Conclusion: Consequently, LUTS is a common condition in female students. It is recommended to organize well-attended and repeated training programs for university students on healthy living behaviors, urinary habits, and hygiene.

Keywords: prevalence; lower urinary tract symptoms; female university students

INTRODUCTION

Lower urinary tract symptoms (LUTS) occurs in the form of various urinary symptoms, storage (urinary incontinence, nocturia etc.), voiding (intermittent stream, hesitancy etc.), and post micturition symptoms (post micturition dribble etc.).⁽¹⁾ In addition, LUTS also include symptoms related to sexual intercourse and pelvic organ prolapse, genital and lower urinary tract pain and syndromes related to lower urinary tract dysfunction.^(2,3)

The prevalence of LUTS in women was reported between 27.78% and 94.3% in various studies.⁽⁴⁻⁶⁾ Prevalence studies were mostly conducted in adult women. Increased age, number of pregnancies, vaginal delivery, used drug, comorbidities, consumption of caffeinated beverages, smoking, alcohol consumption, obesity, pelvic organ prolapse, menopausal status and constipation are the risk factors directly related to LUTS.⁽⁷⁻⁹⁾

LUTS, urinary incontinence, especially urge and stress incontinence are very common conditions that negatively affect on women's quality of life and well-being.⁽¹⁰⁾ These symptoms significantly affect quality of life by limiting areas such as the workplace, as well as family and social relationships, sleep patterns, fluid restriction, and daily activities. However, studies show that individuals with these symptoms generally do not seek medical help for reasons such as accepting their complaints as a normal result of the aging process, embarrassment, and thinking that appropriate treatment is

not available.^(11,12) It was reported that the rate of applying to healthcare organizations due to these complaints varied between 10% and 34.6% in different countries.^(12,13) Determining the factors that cause LUTS is significant for choosing the appropriate treatment method. Health care providers should investigate the reasons why women avoid health-seeking behaviors and inform them about the treatment options available.⁽¹⁴⁾ Relevant factors affecting LUTS are not very common in young females, which also affect the prevalence. The fact that young people see LUTS as a special disease to be ashamed of and do not seek help from health institutions increases the importance of screening programs to detect complaints.⁽¹⁵⁾ In this context, knowing the prevalence of LUTS among young women indicates that the current situation in this age group should be determined. LUTS is common in healthcare professionals.^(3,16) and there are limited studies on university students studying in health departments.⁽¹⁷⁾ It is very important for health professionals to pay attention to this area and raise awareness among young people. The novelty of this study is that this is the first research conducted on university students who will be the future health professionals of our country. This study was conducted to determine the prevalence, frequency and related factors of lower urinary tract symptoms in female undergraduate students.

Research Questions

Q1: What is the prevalence of LUTS in female univer-

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Received March 2023 & Accepted October 2023

Table 1. Sociodemographic background of the participants (N = 815)

Characteristics	n (%)	
Program	Nursing	422 (51.8)
	Midwifery	243 (29.8)
	Vocational school of health services	150 (18.4)
Years of study	1	283 (34.7)
	2	248 (30.4)
	3	123 (15.1)
	4	161 (19.8)
Age (years)	≤ 19	300 (36.8)
BMI (kg/m ²)	< 18.5	109 (13.54)
	18.5–24.9	531 (65.2)
	> 25	175 (21.5)
Employment status	No	737 (90.4)
	Yes	78 (9.6)
Type of residence	Family home	682 (83.7)
	Separate house	70 (8.6)
	Dormitory	63 (7.7)
Marital status	Married	21 (2.6)
	Single	794 (97.4)
Chronic illness	No	713 (87.5)
	Yes	102 (12.5)
Medicine use	No	717 (88.0)
	Yes	98 (12.0)
Use of alcohol	No	681 (83.6)
	Yes	134 (16.4)
Use of cigarettes	No	619 (76.0)
	Ex-smoker	74 (9.1)
	Yes	122 (15.0)
Chronic constipation	No	559 (68.6)
	Yes	256 (31.4)
Physical exercise status	Never	55 (6.7)
	Everyday	68 (8.3)
	At least 2 day/wk	155 (19.1)
	Irregular	537 (65.9)
Nocturnal enuresis in children	No	598 (73.4)
	Yes	217 (26.6)
Holding urine	Never	375 (46.0)
	1 day/week	221 (27.1)
	2-3 day/week	106 (13.0)
	Almost every day	113 (13.9)
Family history of urinary incontinence	No	659 (80.9)
	Yes	156 (19.1)

sity students?

Q2: What are the related factors affecting LUTS in female university students?

Q3: Is the quality of daily life of female university students with LUTS affected?

MATERIALS AND METHODS

This descriptive and cross-sectional research was carried out between 01 March 2021 and 30 June 2021 with a structured online questionnaire. The population of the study consisted of female students studying in the Faculty of Health Sciences, and Vocational School of Health Services at Canakkale Onsekiz Mart University (regardless of the department) during the spring semester of the 2021-2022 academic year (N = 1200). Sample size calculations were carried out as previously reported.⁽¹⁵⁾ In the power analysis “G* Power 3.1.9.4 (Heinrich-Heine-University)” was performed at the end of the study. The power of the study was found to be $f = 0.126$ ($\alpha = 0.05$), and the sample size for 80% power was calculated as 612 people. The sample group was completed with 815 students with a participation rate of 67.9%.

Before starting the study, institutional permission was obtained from the Ethics Committee of Canakkale Onsekiz Mart University School of Graduate Studies, where the study was conducted (protocol date & number: 08.01.2020, 2020/99). Written voluntary informed

consent was obtained from all participants.

Those female students, who were between the ages of 18-30, who had access to the structured questionnaire sent from the computer-assisted internet environment, who voluntarily participated in the study, who filled out the questionnaire completely, and who were active students during the period of the study, were included. The students with any neurological and urological disease, current urinary tract infection symptoms, and pregnant women were excluded.

A questionnaire including the sociodemographic characteristics, health status and personal habits of the students was applied, and the Bristol Female Low Urinary Tract Symptoms (BFLUTS) questionnaire was applied to determine the students' toilet habits. The BFLUTS questionnaire was developed by Jackson et al. in 1996 to evaluate urinary incontinence complaints, other lower urinary tract symptoms, sexual function, and quality of life.⁽¹⁸⁾ It was adapted into Turkish by Güngör and Yalçın (2005).⁽¹⁹⁾ The BFLUTS questionnaire includes a total of 19 questions. The questionnaire consists of five domains: voiding symptoms, storage symptoms, urinary incontinence, sexual function, and quality of life. The answer that may be given to BFLUTS range from “never” to “always” and from “no problem” to “very serious problem” and are scored from “0” to “4” towards the most severe symptom. There is no survey threshold to predict whether LUTS is clinically present. High scores indicate increased severity and perceived importance. Because of the participants answered the BFLUTS-sex questions incompletely or not answered due to the sociocultural structure of the Turkish society, the sexual function questions of the BFLUTS questionnaire were excluded from the scale. It was stated that the Cronbach's alpha value of the original form of the BFLUTS questionnaire was 0.78. In this study, the Cronbach's alpha value was found to be 0.78.

Statistical Analysis

The SPSS 25 (IBM Corp., Armonk, NY, USA) program was used to analyze the data. Descriptive statistics were employed to characterize the prevalence of LUTS. Numeric approaches are generally used to fit the data to the normal distribution, such as Kolmogorov Smirnov, skewness and kurtosis values, as well as Q-Q plots, and boxplot graphs are also studied.⁽²⁰⁾ It was observed that the data did not conform to the normal distribution, thus the LN transformation was applied for total score. The conformity of the data to the normal distribution was re-examined both with the test and graphically, and the conformity to the normal distribution was not determined again. For this reason, a normal distribution was obtained by applying the $1/\text{LN}(y) \cdot 100$ transformation to the data. The difference between the BFLUTS questionnaire mean scores and the two groups was analyzed unidirectionally with the Mann-Whitney U test and for differences between three or more groups, the Kruskal-Wallis test and the related group(s) were examined with pairwise comparisons. For multivariable linear regression analysis, variables were added to the model using the Enter method first. A literature search was made for the selection of the variable to be added to the model, and the multicollinearity of the relevant variables was decided by considering the VIF values. All VIF values were < 5 .

Table 2. The frequency of BFLUTS among female university student (N = 815)

BFLUTS ^a	Never n (%)	Rarely n (%)	Sometimes n (%)	Often n (%)	Always n (%)	At least one type of LUTS n (%)
Storage symptoms						
Urgency	230 (28.2)	415 (50.9)	144 (18.0)	18 (2.2)	8 (1.0)	585 (71.8)
Nocturia (>2 times)	408 (50.1)	306 (37.5)	75 (9.2)	14 (1.7)	12 (1.5)	407 (49.9)
Frequency (≤3 hr)	330 (40.5)	229 (28.1)	203 (24.9)	53 (6.5)	-	485 (59.5)
Bladder pain	428 (52.5)	280 (34.4)	87 (10.7)	19 (2.3)	1 (0.1)	387 (47.5)
Voiding symptoms						
Intermittent stream	504 (61.8)	234 (28.7)	59 (7.2)	14 (1.7)	4 (0.5)	311 (38.2)
Straining	676 (82.9)	102 (12.5)	34 (4.2)	2 (0.2)	1 (0.1)	139 (17.1)
Hesitancy	538 (66.0)	208 (25.5)	59 (7.2)	9 (1.1)	1 (0.1)	277 (34.0)
Incontinence symptoms						
Stress incontinence	678 (83.2)	114 (14.0)	18 (2.2)	3 (2.2)	2 (0.2)	137 (16.8)
Urge incontinence	744 (91.3)	50 (6.1)	18 (2.2)	3 (0.4)	-	718.7)
Frequency of urinary incontinence	723 (88.7)	53 (6.5)	24 (2.9)	10 (1.2)	5 (0.6)	92 (11.3)
Unpredictable incontinence (no reason and feeling)	782 (96.0)	19 (2.3)	8 (1.0)	4 (0.5)	2 (0.2)	33 (4.0)
Nocturnal enuresis	801 (98.3)	10 (1.2)	2 (0.2)	2 (0.2)	-	14 (1.7)
Symptoms related to quality of life						
Change outer clothing	765 (93.9)	36 (4.4)	5 (0.6)	5 (0.6)	4 (0.5)	50 (6.1)
Cut down fluid	654 (80.2)	97 (11.9)	52 (6.4)	6 (0.7)	6 (0.7)	161 (19.8)
Affect daily tasks	770 (94.5)	32 (3.9)	8 (1.0)	2 (0.2)	3 (0.4)	45 (5.5)
Avoid situations where no toilet	492 (60.4)	160 (19.6)	71 (8.7)	66 (8.1)	26 (3.2)	323 (39.6)
Overall interfere with life	583 (71.5)	188 (23.1)	25 (3.1)	19 (2.3)	-	232 (28.5)

^aBFLUTS, Bristol Female Lower Urinary Tract Symptoms.

Responses for BFLUTS other than none/never were excepted as presence of the symptom in any degree of severity.

RESULTS

This study was completed with 815 participants. Table 1 reveals the sociodemographic characteristics of the participants. The mean age of the participants was 20.34 ± 1.97 (min: 17, max: 30); 34.7% of the students were the first-year students, 51.8% were in the nursing program, 65.2% had a normal body mass index (BMI) ($18.5\text{-}29 \text{ kg/m}^2$), 90.4% were unemployed, and 83.7% lived with their families. It was determined that 12% of the participants were using regular medication, that 12.5% had a chronic disease, that 31.4% had constipation, that 15% smoked, that 16.4% used alcohol, and that 65.9% did irregular exercise.

Table 2 shows the prevalence of LUTS of female university students. 71.8% (n: 585) of the participants had any complaint of LUTS. While 1.5% (n: 12) of the participants had "always" nocturia, 37.5% (n: 304) had it "rarely". While 1% (n: 8) of the participants reported their urgency complaint "always", 50.9% (n: 415) reported it "rarely". The "occasional" incidence of other LUTS complaints was determined as follows: bladder pain 34.4% (n: 280), frequent urination 28.1% (n: 229), hesitancy 25.5% (n: 208), straining 12.5% (n: 102), intermittent stream 28.7% (n: 234). While 1.06% (n: 5) of the participants "always" had urinary incontinence (UI), 6.5% (n: 53) had it "rarely". The "rarely" incidence of urinary incontinence types was found as follows: stress urinary incontinence (SUI) 14% (n: 114), urge urinary incontinence (UUI) 6.1% (n: 50), nocturnal incontinence 1.2% (n: 12), and unpredictable incontinence 2.3% (n: 19). It was determined that 39.6% (n: 323) of the participants avoided places without toilets and that 11.9% (n: 97) had fluid restriction against LUTS. The quality of life of 28.5% of the participants was adversely affected.

When the BFLUTS questionnaire average scores and the socio-demographic characteristics of the participants were compared (Table 3), a statistically significant correlation was found between the BFLUTS ques-

tionnaire average scores and having a BMI of $25 > \text{kg/m}^2$ ($P = .022$), working status ($P = .001$), staying at home away from family ($P = .004$), constipation problem ($P = .001$), regular medication use ($P = .023$), not exercising ($P = .007$), urinary retention almost every day during the day ($P = .001$), having a family history of UI ($P = .001$) and nocturnal enuresis in children ($P = .003$). However, no statistically significant correlation was found between the mean age group, smoking, alcohol use and the BFLUTS questionnaire.

According to multiple linear regression analysis for variables Influencing the BFLUTS questionnaire scores, holding urine during the day, family history of UI, nocturnal enuresis in children, chronic constipation, medication use, and being obese were the related factors for LUTS (Table 4).

The analysis was carried out by applying the $1/\text{LN}(y) \times 100$ transformation for the dependent variable. BMI, urinary retention, drug use, constipation, familial UI and child nocturia variables were added to the model as dummy variables. In the BMI measurements, < 18.5 was taken as reference, and values between 18.5-25 and above were added to the model as a dummy variable. BMI categories were not statistically significant ($P = .427$, $P = .054$, respectively). Those who gave the answer "never" for the variable of urinary retention were taken as reference, and it caused an increase of .391 units in the converted scale score of those who urinate once a week, .720 for those who urinated 2 days a week, and 1.3 units for those who urinate every day.

DISCUSSION

LUTS is a common problem not only in elderly, multiparous and sexually active individuals, but also in young, nulliparous, and sexually inactive individuals.^(3-6,17) In this study, 71.8% of the participants had at least one LUTS complaint. In our study, the participants especially experienced urgency, frequency, nocturia, bladder pain, and avoidance of places with no bathroom

Table 3. Distribution of BLUFT scale results as per sociodemographic characteristics of female university student

Variables	N	Total Score				P
		Mean ± SD	Median	Min-Max		
Program						
Nursing	422	24.88 ± 4.95	24	18-53		
Midwifery	243	24.47 ± 4.58	23	18-53	2.728	
Vocational School of Health Services	150	24.19 ± 4.48	23	18-54	.256	
Year of study						
1	283	23.80 ± 4.00 ^a	23	18-53		
2	248	24.93 ± 5.25 ^b	24	18-53		
3	123	24.16 ± 3.74 ^{a,b}	24	18-35	19.836	
4	161	25.99 ± 4.76 ^c	24	18-54	< .001**	
Age (years)						
≤ 19	300	24.25 ± 4.04	24.00	18-53	.692	
≥ 20	515	24.86 ± 5.12	24.00	18-54	.489	
BMI (kg/m ²)						
< 18.5	109	24 ± 4.44 ^a	23.00	18-43	7.595	
18.5–24.9	531	24.44 ± 4.4 ^{a,b}	24.00	18-54		
> 25	175	25.61 ± 5.78 ^b	24.00	18-53	.022	
Employment status						
No	737	24.5 ± 4.82	24.00	18-54	3.943	
Yes	78	25.94 ± 3.99	25.00	19-39	< .001	
Kind of residence						
Dormitory	682	24.56 ± 4.92 ^a	24.00	18-54	11.247	
Separate house	70	25.41 ± 3.18 ^b	25.00	18-32	.004	
Family home	63	24.57 ± 4.48 ^{a,b}	24.00	18-42		
Marital status						
Married	794	24.53 ± 4.58	24.00	18-54	1.941	
Single	21	28.71 ± 8.58	27.00	18-41	.052	
Medicine use						
No	717	24.37 ± 4.24	24.00	18-54	.023*	
Yes	98	26.58 ± 7.3	24.00	19-53		
Chronic constipation						
No	559	23.98 ± 4.42	23.00	18-54	6.549	
Yes	256	26.06 ± 5.16	25.00	18-53	< .001	
Use of cigarettes						
No	619	24.63 ± 4.87	24.00	18-53	1.389	
Ex-smoker	74	25.32 ± 5.3	24.00	19-54	.499	
Yes	122	24.24 ± 3.74	24.00	18-38		
Use of alcohol						
No	681	24.6 ± 4.76	24.00	18-53	.961	
Yes	134	24.82 ± 4.77	24.00	18-54	.336	
Physical exercise status						
Never	57	25.88 ± 5.7 ^a	25.00	18-53	12.055	
Everyday	68	23.41 ± 3.04 ^b	23.00	18-33	.007	
At least 2 d/wk	155	23.9 ± 4.24 ^b	23.00	18-54		
Irregular	535	24.87 ± 4.92 ^{a,b}	24.00	18-53		
Nocturnal enuresis in children						
No	598	24.36 ± 4.55	23.00	18-53	.003*	
Yes	217	25.38 ± 5.24	24.00	18-54		
Holding urine						
Never	375	23.58 ± 4.57 ^a	23.00	18-53	86.570	
1 day/week	221	24.44 ± 3.61 ^b	24.00	19-40		
2-3 day/week	106	25.46 ± 4.36 ^{b,c}	25.00	20-43	< .001	
Almost every day	113	27.73 ± 6.11 ^c	26.00	18-54		
Family history of urinary incontinence						
No	659	24.27 ± 4.26	23.00	18-53	3.459	
Yes	156	26.15 ± 6.24	24.00	18-54	< .001	

*Significant at $P < .05$.^bSignificant difference at $P \leq .05$ level exists between group a and group b. (a, b, c indicate the post hoc test results).

*Mann Whitney U test ** Kruskal-Wallis test. a-b: There is no difference between those with the same letter.

because of LUTS.

In this study urgency most common symptom. Sjögren et al., Gücük et al., Zargham et al. this symptom was reported as the most common symptom.^(15,21,22) In this study, frequency (more than eight per day) was another common symptom after urgency. The prevalence in this study was higher than in other studies.^(15,21,23) This symptom is strongly influenced by the level of fluid intake; therefore, whether it is about associated with lower urinary tract disease should be investigated. Nocturia was found in almost half of the population we studied. While the relevant results of this study were

lower than the findings of a study conducted by Nasiri et al. on Iranian women, they were higher than those of Değirmencioğlu et al. performed in Türkiye.^(16, 24) These differences may be due to differences in LUTS data collection tools, and the diversity of the study population. Almost half of the female university students reported experiencing bladder pain. In another study, it was reported that this problem was between 3.9% and 39.25%.⁽¹⁶⁾

Voiding symptoms include hesitancy, intermittency, straining, and terminal dribble.⁽¹⁾ In our study, hesitancy was found to be 34%, intermittent stream 38.2%,

Table 4. Multiple linear regression analysis for variables influencing the BFLUTS scale scores of female university student

	β^1 (95% CI)	β^2	<i>p</i>
(Constant)	32.352 (32.045: 32.658)		< .001
BMI (Reference: < 18.5)			
18.5-24.9	-0.124 (-0.429: 0.181)	-0.037	.427
> 24.9	-0.351 (-0.709: 0.006)	-0.090	.054
Holding urine (Reference: Never)			
1 day/week	-0.391 (-0.640: -0.143)	-0.109	.002
2-3 day/week	-0.720 (-1.042: -0.399)	-0.151	< .001
Almost every day	-1.300 (-1.616: -0.984)	-0.280	< .001
Medicine use	-0.505 (-0.821: -0.189)	-0.102	.002
Chronic constipation	-0.553 (-0.777: -0.328)	-0.160	< .001
Family history of UI	-0.316 (-0.579: -0.052)	-0.077	.019
Nocturnal enuresis in children	-0.265 (-0.498: -0.033)	-0.073	.025

Adj. R² = 15,3%; 1 R-squared; 2 Adjusted R-squared

and straining 17.1%. Değirmenciöğlü et al. reported hesitancy as 25.2%, intermittent stream as 36.3%, and straining as 18% in their study.⁽²⁴⁾ Their study findings are in line with our findings.

In this study, the participants experienced SUI (16.8%) the most, followed by UUI (8.7%). In another study on female university students in Türkiye, it was reported that the most common UI types were UUI and SUI.⁽¹⁵⁾ Zalina et al. found that the most common type of UI was SUI with 21.9%, followed by UUI with 11.6%.⁽¹⁷⁾ Sjögren et al. in a study on young women aged 18-25, reported that at least sometimes or more frequently, 35.9% of the participants had UI, 34.2% had urgency complaints, and most toileting behaviors were associated with LUTS.⁽²¹⁾ These differing results may vary depending on study location, study population, and data collection methods.

In the study, a statistically significant correlation was found between the BFLUTS questionnaire scale average scores and having a BMI of >25 kg/m², working status, staying at home away from family, constipation problems, regular medication use, not exercising, urinary retention almost every day during the day, UI complaint in her family, and nocturnal enuresis in children. In the study of Gücük et al. on university students, BMI, marital status, constipation, urinary retention during the day, UI at night as a kid and having a family history of UI were found to be related factors in terms of LUTS.⁽¹⁵⁾ The results of that study are in line with our findings.

According to multiple linear regression analysis performed in this study, urinary retention during the day, having a family history of UI, nocturnal enuresis in children, having constipation problems, medication use and being obese were the most important related associated with LUTS.

Individuals' urinary retention and suppression of the need for the bathroom can cause bladder dysfunction, urinary tract infection, abdominal pain and chronic constipation. Urinary retention during the day during the education period may be related to the cleanliness of bathrooms and limited toilet availability.^(21,25) In this study, urinary retention during the day was found to be related factor. At the time of this study, 83.7% of the students were living with their families, as the education continued online due to the Covid-19 pandemic. Therefore, their urinary retention during the day may have resulted from personal habits. For this reason, it is important to increase the awareness of young people about bladder health.

It was suggested that the mothers of women with LUTS also had the same complaints.^(10,14) Other studies reported similar results in Turkey.^(7,15) Providing detailed counseling about LUTS to women in this age group is important in terms of raising awareness.

In this study, nocturnal enuresis in children was found to be a related factor for LUTS. Our study findings are supported by the findings of the study of Gücük et al.⁽¹⁵⁾ Questioning the past life history while taking the anamnesis is important in terms of determining risk factors. While medication use increases as a result of chronic diseases, side effects occur due to medication use. Various medications accelerate the formation of urine and cause lower urinary tract symptoms due to their effects on the sympathetic and parasympathetic nervous systems.⁽²⁴⁾ In this study, LUTS was found to be a related factor for the female students who used medication continuously. Contrary to our findings, in the study of Gücük et al. no relationship was found between the medication used continuously and LUTS.⁽¹⁵⁾ This may vary depending on the medication used continuously. Zhou et al. reported that constipation increased urinary incontinence 2.3 times.⁽²⁷⁾ Our finding in this study is consistent with the literature.^(23,28)

Obesity is a common problem both in the world and in Turkey. It was reported that increased BMI in both women and men was a risk factor for LUTS.^(3,29) Constipation and obesity are modifiable factors. Young people should be educated on this subject.

Early prevention of LUTS is crucial for promoting public health because early experience of LUTS may predispose women to recurrence and worsening of LUTS with age.^(30,31) Prevention of LUTS is important for promoting both emotional well-being and physical health. More than 50% of women with LUTS report depression or anxiety, and loneliness has been reported to be common.⁽²⁹⁾ Therefore, LUTS has a significant impact on women's health and quality of life throughout their lives, and prevention is important at all ages.⁽³²⁾ In our study, LUTS affected the quality of life of one-third of the university students, although it was occasional. The participants took precautions for LUTS complaints by avoiding non-toilet environments, restricting fluids, and paying attention to their clothes. There are studies parallel to our study.^(11,20) In those studies, it is stated that LUTS symptoms seem to be a normal part of life with increasing age, and that treatment is not sometimes sought for reasons such as embarrassment and boredom. This study has certain limitations. The study sample was selected from a single university in Turkey due to Covid 19 pandemic process. Another limitation is that the study is a cross-sectional study and the data on LUTS are based on the statements of individuals. Further studies are needed in large scale sampling groups including different universities in face to face education periods. In addition, the evidence-based qualitative and quantitative studies in the future may also help to better understand the ways of prevention and treatment of LUTS at the young age group in our country.

CONCLUSIONS

Although LUTS affects the quality of life and sexual life increases with age, it is a health problem of women frequently encounter at early ages. The prevention of LUTS and the provision of necessary treatments are important for women health. The results of this study

revealed that LUTS is a common problem among female students. The present study determined that the prevalence of storage symptoms was higher than that of voiding and urinary incontinence. The risk factors for LUTS in female students were found to be holding urine at school, complaints of urinary incontinence in the family, bedwetting in children, constipation, regular drug use, and obesity. It seems very difficult for young people to cope with their LUTS complaints, to share this problem, and to seek solutions within the physical and psychological changes of the period they are in. It is of great importance for female university students to be aware of these complaints and to be encouraged to consult with health institutions when necessary. Health education and hygiene issues should be included in the curriculum of university education to prevent LUTS and to develop healthy lifestyle behaviors. In addition, it is recommended to conduct evidence-based qualitative and quantitative studies in the prevention and treatment of LUTS at the young age group in our country and further studies should also include its effect on the frequency, risk factors, quality of life and sexual functions.

ACKNOWLEDGEMENTS

This work was supported Canakkale Onsekiz Mart University The Scientific Research Coordination Unit (Project number 3510, 2022). The author would like to thank to the specialist Temel Ertuğral, who made the statistical evaluations of the data, and to all participants for their cooperation in this study.

CONFLICT OF INTEREST

The authors report no conflict of interest.

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