Undetected prevalence of urinary incontinence among middle-aged women and its association with quality of life

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Abstract

Introduction: The study was conducted to determine the undiagnosed prevalence of urinary incontinence and its association with the quality of life in middle-aged and older women.

Material and methods: The sample of the study consisted of women aged 40 years or above who were admitted to a tertiary care center between March and July 2019. The data were collected by face-to-face interview method. "International Consultation on Incontinence Questionnaire-Short Form (ICIQ-SF)" and "Incontinence Quality of Life Questionnaire (I-QOL)" were used to collect data on urinary incontinence and quality of life.

Results: The screened sample included 140 women (mean age: 60.6±11.3 years). Urinary incontinence was detected in 90 subjects (64.3%). Urinary incontinence complaints were present for an average of four years. Self-rated effect on daily life was moderate (ICIQ-SF: 5.0±2.5), and more than half of them (64.4%) did not consider urinary incontinence as a health issue, More than half (62.9%) did not admit for professional care for many reasons. The average score was 85.0±14.7 from the "Psychosocial influence" sub-dimension, 71.0±16.9 from the "Social isolation" sub-dimension, 65.1±16.6 from the "Limitation of behaviors" sub-dimension, and 74.6±14.5 from the whole scale. There was no significant relationship between I-QOL total score and educational status, marital status, income level, chronic diseases, mode of delivery, and menopause.

Discussion and conclusion: This study found that more than half of women admitted to a hospital for other reasons have urinary incontinence complaints. Although the duration of symptoms was long and quality of life was somehow influenced, admission to a health facility was low.

Key words: urinary incontinence, quality of life, nursing, women's health

Introduction

Urinary Incontinence (UI) is defined as "the complaint of involuntary UI regardless of the amount" (International Incontinence Association). UI affects people of all ages and genders. However, it is two times more common among women and older individuals [1, 2]. The global prevalence of UI varies between 20% and 68% [3-5], while several studies from Turkey showed 40% to 60% UI depending on age [1, 6-9].

Major risk factors for UI are age, obesity, pregnancy, type of delivery, birth frequency, menopause, hysterectomy, and social habits [3,7,10]. Stress incontinence, urge incontinence and mixed incontinence are the most common types of UI. Stress incontinence occurs due to efforts such as coughing, physical activity, sports activity, and position change. Urge incontinence is characterized by a sudden, strong urge to urinate. Mixed incontinence is the coexistence of both types [11,12].

UI negatively affects the person's health status in physical, social, psychological, and financial aspects. Although it is not life-threatening, it increases anxiety, decreases self-esteem, and causes emotional problems

up to depression due to the continuous feeling of wetness and irritation [5,13,14]. Moreover, UI is not easily expressed by the patient and, therefore, frequently remains untreated. Only one in four women is estimated to claim medical treatment, and about half of them wait 2 to 5 years after the initiation of incontinence. The reasons for a late admission include privacy concerns, insufficient knowledge about the potential treatment options, and perception of the condition as a typical feature of aging and general negligence [2,15-18].

Therefore, women with UI complaints are usually not treated or late for the treatment. To cope with the problem, preventing low extremities from cold, warming the abdominal surface, reducing hydration, avoiding carrying heavy objects, and reducing social life are most frequently chosen as alternatives [19-21].

Healthcare staff, particularly the nurses, have an essential role in determining the UI in the early period [10]. All admissions to a healthcare facility should include a UI assessment even though there is no previous diagnosis of UI. This may help increase women's quality of life and prevent permanent health problems. UI is often ignored in women admitted to hospital with another health problem and it is not mentioned. Our study was conducted to determine the presence of UI, its frequency, coping methods, and its effect on quality of life in women admitted to the hospital with another health problem. In addition, this study aims to determine how important this issue is for healthcare personnel and women. In the present study, we aimed to determine UI prevalence, coping behaviors, and its impact on quality of life among hospitalized middle-aged women.

Material and methods

In this cross-sectional and descriptive study, we enrolled female patients admitted to Health Sciences University (SBU) Gaziler Physical Therapy and Rehabilitation Training and Research Hospital, Ankara-Turkey between March-July 2019. The main inclusion criteria were the age at or above 40 years knowing Turkish and absence of incontinence as the primary reason for admission. Patients who not able to communicate verbally or who did not provide consent to participate were excluded. The study was conducted following the Declaration of Helsinki, and the protocol was approved by the institutional review board (code: 46418926-19/90, date of approval: 12.03.2019). Participants gave written informed consent.

We collected data using a face-to-face interview method. In the first step, the following standard explanation was made to each participant: *"Involuntary incontinence is very frequently in women. This situation may develop due to increased intra-abdominal pressure or it may occur without any reason. While women can hold urine easily, it may become impossible over time". Subsequently, the participants were asked, "Are you urinating unintentionally?".* Individuals who answered "yes" to this question continued with the study procedures. Those who responded "no" completed the study, but they were given brief advice about preventive measures of UI.

Additional data were collected using a previously established questionnaire [12,16,17] which consisted of two parts. The first part included six questions about the sociodemographic characteristics. The second part included a survey of chronic diseases, obstetric history, and UI. The next step was to administer the Turkish version of The International Consultation on Incontinence Questionnaire Short Form (ICIQ-SF) developed by Avery et al. Turkish validity and reliability were done by Çetinel et al. ICIQ-SF can be used to evaluate

the prevalence, frequency, amount, perceived causes of urinary incontinence and the effect of urinary incontinence on quality of life in all groups, male-female, young-old. Stress incontinence is defined as "I leak urine while coughing, sneezing" and "I leak when I'm moving or doing sports" in determining the UI type. Urge incontinence should be considered if there is a feeling of urgency and inability to reach the toilet, and if both are seen together, mixed incontinence should be considered. The scale has four dimensions. It deals with how often urinary incontinence occurs in the first dimension, the amount of urinary incontinence in the second dimension. The effect of urinary incontinence in the third dimension on daily life and the situations that cause urinary incontinence in the fourth dimension are discussed. The first three dimensions are scored in the evaluation. The answers given to the fourth dimension, which is not scored, are used to determine the type of urinary incontinence based on the individual's complaints. Scoring was done by determining a single score instead of adding the dimension scores separately. A score of eight or higher for the ICIQ-SF score was determined to be the most appropriate cut-off point for irritating urinary incontinence. The scores that can be obtained from the scale range from 0 to 21. A low score indicates that urinary incontinence has little effect on quality of life, while a high score indicates that it affects the quality of life very much. The cronbach's alpha coefficient of the scale was found to be 0.71. In this study, the ICIQ-SF cronbach alpha value was calculated as 0.76. ICIQ-SF has four dimensions: frequency, degree, impact on daily life, and precipitating factor of UI. To evaluate the effect of UI on quality of life, scores from the first three dimensions summed up to determine a single score. The Turkish version of the ICIQ-SF was previously validated successfully [11]. The scores that can be obtained from the scale range from 0 to 21. Higher scores indicate a higher impact of UI on quality of life.

The Incontinence Quality of Life Scale (I-QOL) was also developed by Wagner et al. in 1996 in the United States to determine patients' quality of life with UI [22]. The scale was revised by Patrick et al. [23] in 1999, and psychometric measurements were implemented during the creation of European versions. I-QOL consists of three subdomains, including limitation of behaviors (LB) (items 1, 2, 3, 4, 10, 11, 13, and 20), psychosocial influence (PI) (items 5, 6, 7, 9, 15, 16, 17, 21, and 22) and social isolation (SI) (items 8, 12, 14, 18, and 19). The total score from the three domains is summed up to obtain a single score between 0 and 100. Higher scores indicate better quality of life. The Turkish validity and reliability of the I-QOL was performed by Özerdoğan and Beji, and the cronbach alpha coefficient was found to be 0.96 [24]. In this study, the I-QOL cronbach alpha value was found to be 0.92. The validity and reliability of the Turkish version of I-QOL were previously published.

The WHO classification was used for obesity grading in the study [25].

Statistical analysis

Analyses were performed using the Statistical Package for Social Sciences (SPSS) 20.0 (IBM SPSS Inc., Chicago, IL) software. Categorical variables were compared using the Chi-square tests. Continuous variables were compared using the Student's t-test or the Mann –Whitney U test. Bivariate correlations were evaluated using the Spearman or Pearson correlation analysis. P < 0.05 values were considered statistically significant.

Results

A total of 140 women were enrolled, and 90 (64.3%) reported UI problems. Table 1 shows the descriptive characteristics of the study population. The average age of the participants was 60.6±11.3 years (40 to 83 years). The majority of the participants (82.2%) were married, and a half (50%) were primary school graduates, more than half (55.6%) were obese, 76.7% had at least one chronic disease, and 85.6% were postmenopausal. The most frequent delivery type was vaginal.

Table 2 shows the data related to UI. Around one-third (37.8%) had UI complaints for 2-4 years, and 44.4% for more than five years. Stress and mixed type were recorded as 47.8% and 34.4%, respectively. UI was persistent in 21.1% and 2-3 times/week in 37.8% of the participants. The severity of UI was moderate to severe in half of the sample. Up to two-third of UI occurred during sneezing/coughing or urging.

Awareness of UI, the impact of UI on daily life, and coping methods are shown in Table 3. The mean score of women's UI effect on daily life was found to be 5.0±2.5. The majority of the participants (64.4%) considered UI a health issue, but a similar proportion (62.9%) did not claim professional help.

Table 1	Introductory characteristics of women, chronic disease status, obstetrics and gynecological characteristics (n=90)	
Variables	N	%
Presence of UI (n=140)		
Urinary incontinence	90	64,3
Without incontinence	50	35,7
Age (year)		
40-49	22	24,4
50-59	17	18,9
60-69	30	33,4
70 and above	21	23,3
X ± Min/Max	60,6±11,3	
Marital Status		
Married	74	82,2
Single	16	17,8
Education Status		
Literate	21	23,3
Primary education	45	50,0
High school	16	17,8
University	8	8,9
BMI (kg/m2)		
Normal weight	9	10,0
Over-weight	7	7,8
Obese	50	55,6
Morbidly obese	24	26,6
Chronic illness *		
Have	69	76,7
Don't Have	21	23,3
Number of births		
0-2	24	26,6
3	26	28,9
≥ 4	40	44,5
Mode of birth		
Vaginal	78	87,6
Caesarean section	11	12,4
Menopausal status		
Yes	77	85,6
No	13	14,4

Urinary Incontinence (Uİ) Minimum (Min)- Maximum (Max) Body Mass Index (BMI)
* The "n" is folded because more than one option is answered

Table 2	Characteristics of women related to UI (n=90)	
Variables	N	%
Duration (year)		
1	16	17,8
2 -4	34	37,8
5-7	20	22,2
≥ 8	20	22,2
Mean (min-max)		4 (1 – 20)
Types		
Urge	11	12,2
Stress	43	47,8
Mixed	31	34,4
No apparent reason	5	5,6
Urinary incontinence frequency		
Once a week or less	28	31,1
Two or three times a week	34	37,8
Once a day	9	10,0
Always	19	21,1
The amount of urinary incontinence		
Little	45	50,0
Moderate	35	38,9
Much	10	11,1
Urinary incontinence status *		
While coughing / sneezing	58	64,4
While going to the toilet	42	46,7
While on the move	40	44,4
While getting dressed after the toilet	16	17,8
While sleeping	7	7,8

Urinary Incontinence (Uİ)   Minimum (Min)- Maximum (Max)
* The "n" is folded because more than one option is answered

The reason for not claiming any help varied and mixed (Table 3). The average time to the first admission from the initial UI symptoms was 18 months (n=34). Regarding the coping behaviors with UI, 82.8% reported changing underwear frequently, followed by using pads/diapers, restricting fluid intake, and keeping feet warm.

Table 4 shows I-QOL scores. The average score was 85.0±14.7 from the "Psychosocial influence" sub-dimension, 71.0±16.9 from the "Social isolation" sub-dimension, 65.1±16.6 from the "Limitation of behaviors" sub-dimension, and 74.6±14.5 from the whole scale.

The data in Table 5 emerged as a result of the analysis carried out to determine whether there is a correlation between some characteristics of women and the I-QOL scale and its sub-dimensions. Accordingly, a negative, moderate (r=-0.379) and statistically significant correlation was found between age and I-QOL total score. (p<0.001). In addition, a statistically significant difference was found between age and all I-QOL subscales (respectively, p=0.001, p=0.004, p=0.002).

A negative, moderate (r=-0.262) and statistically significant correlation was found between body mass index (BMI) and I-QOL total score (p=0.013). In addition, a statistically significant difference was found between the BMI and I-QOL subscales in terms of behavior restriction score and social isolation score (respectively, p=0.001, p=0.005).

A statistically significant difference was found in terms of I-QOL total score, behavior restriction score and social isolation score among groups formed according to the number of births (respectively , p=0.025, p=0.002, p=0.029).

A negative, moderate (r=-0.254) and statistically significant (p=0.016) correlation was found between the duration of UI

Table 3	The level of UI affecting the daily life of women, the characteristics of UI about being aware of and coping with UI (n=90)

Variables		
Level of influence on daily life		
X± SD	5,0±2,5	
Mean (min/max)	4 (1 – 10)	
Status of seeing UI as a health problem	N	%
Yes	58	64,4
No	32	35,6
Status of applying to a health care facility		
Yes	34	37,1
No	56	62,9
Reasons for not applying to a health care facility * (n=56)		
Disregard	51	91,1
Seeing as a normal situation	36	64,3
Not wanting to disturb the healthcare staff	28	50,0
Refraining from being examined and being embarrassed	25	44,6
Thinking that there is no cure	17	30,4
Not having time	7	12,5
Coping behaviors with UI * (n=90)		
Frequently changing underwear	74	82,2
Using pads and cloths	54	60,0
Reducing fluid intake	53	58,9
Keeping feet warm	42	46,7
Taking care not to lift heavy	14	15,6
Cleaning the genital area with hot water	11	12,2
Seating on hot brick	7	7,8
Applying hot water to the stomach	6	6,7
Duration of application to health institution after UI complaints (month) (n=34)		
X± SD	18,4±15,4	
Mean (min/max)	12 (3 – 60)	

Urinary Incontinence (Uİ) Minimum (Min)- Maximum (Max)
Standard deviation (SD)
* The "n" is folded because more than one option is answered

Table 4	Analysis of women's I-QOL total and sub-dimension mean scores (n=90)

I-QOL and its sub-dimensions	x̄	SD (±)	Min.	Max.
Total I-QOL survey score	74,6	14,5	30,0	99,1
Sub dimensions				
Psychosocial influence	85,0	14,7	33,3	100,0
Social Isolation	71,0	16,9	24,0	100,0
Limitation of behavior	65,1	16,6	25,0	97,5

Incontinence Quality of Life Scale (I-QOL)

Table 5	Correlation analysis between some characteristics of women and I-QOL (n=90)

Variables		I-QOL Total	I-QOL DS	I-QOL PE	I-QOL SI
Age*	R	-0,379	-0,403	-0,300	-0,328
	P	**<0.001**	**<0.001**	**0.004**	**0.002**
BMI*	R	-0,262	-0,335	-0,110	-0,290
	P	**0.013**	**0.001**	0.303	**0.005**
Number of births **	R	-0,263	-0,264	-0,150	-0,257
	P	**0.012**	**0.012**	0.159	**0.014**
Durtaion of UI**	R	-0,254	-0,226	-0,188	-0,278
	P	**0.016**	**0.032**	0.075	**0.008**
Urinary incontinence frequency **	R	-0,616	-0,528	-0,551	-0600
	P	**<0.001**	**<0.001**	**<0.001**	**<0.001**

DS: Limitation of Behavior, SI: Social Isolation, PE:Psychosocial Influence
* Pearson correlation test ** Spearman correlation test

and I-QOL total score. In addition, a statistically significant difference was found between the duration of UI and the I-QOL subscales in terms of behavior restriction score and social isolation score (respectively , p=0.032, p=0.008).

Although not shown in the table, no significant relationship was found between educational status, marital status, perception of income status, chronic disease status, mode of delivery, menopause status and I-QOL total score. In addition, it was determined that the I-QOL scale scores decreased as the age increased (40-49 age 82.9±11.19; 50-59 age 77.3±10.7; 60-69 age 71.8±14.0; 70 and over age 67.6±16.7).

Discussion

UI is a serious condition that often impacts all areas of women's life and its frequency increases with age. However, most women do not get treated on time. In our study, UI was detected in 64.3% of women aged 40 years or older admitted to hospital for reasons other than UI, indicating that the frequency of UI is relatively high, but it remains unreported. These results show that healthcare personnel should question the presence of UI in all women for whatever reason they are admitted to the hospital.

The etiology of UI among women is often mixed. Aging, comorbid chronic diseases, and multiple deliveries are among the most frequently addressed related factors. Although UI may be diagnosed in the young and middle-aged population, bladder contractility, capacity, and ability to delay urination decrease with increasing age. The frequency UI was found 58.4% between the ages of 40-50 years, and 30-60% over the age of 65 in previous studies [6-9]. In our study, 24.4% of women between the ages of 40-49 and 56.7% of women aged 60 and over had UI. As stated in the literature, incontinence is a problem that increases in frequency with advancing age and affects individuals in many dimensions. According to the results of our study, it was found that women's quality of life scale scores decreased as age increased. These results are very important in terms of showing that women's quality of life decreases due to incontinence.

Among other risk factors of UI are BMI, type of delivery, and menopause [3,26]. We found that 90% of the participants were overweight, 76.7% had a chronic disease, 73.4% had three or more deliveries, 87.6% had vaginal deliveries, and 85.6% in the menopause period. The relationship between UI and some risk factors has been shown in many studies. Gözükara et al. found that chronic diseases and menopause increased the risk of UI 1.8 and 2.7 times, respectively [27]. Thubert et al. reported that the relative risk of UI in morbidly obese women was five times higher than non-obese women, and 10% weight loss reduced the frequency of urinary leakage by 50% [28]. These results indicate that women with obesity, chronic diseases, multiple delivery history, and menopause are more likely to experience UI.

The average duration of UI for women participating in the study was four years, while 44.4% had UI for five years or more. Previously, Acar and Yurtsever reported that, among 124 women aged 65 and over with UI complaints, 29.8% had UI for 1-3 years, 21% for 4-6 years, 28.2% for seven years or more [13]. In another study, however, Demir and Beji [2] observed that the longest duration of incontinence was one year (24.3%), while Kok et al. [16] identified 14.11% of the patients had UI complaints for at least eight years. It should be noted that many women live with UI as it is a normal part of daily life for a long time.

We identified that stress (47.8%) and mixed (34.4%) type UI were the most among our study population. Similar findings from different populations exist in the literature. Skyes et al. [29],

Karaca and Nur Demir [30], found that the frequency of mixed incontinence was the highest. However, studies conducted in the community and hospitalized individuals in Turkey, Japan, and Sweden have reported that stress UI occurs more frequently than other types (35.9% to 46%) [31-33], consistent with the current study.

In our study, 37.8% of the participants had UI two or three times a week, 10% once a day, and 12.2% persistently. In addition, half of the women had moderate to large amounts of urine leakage. These results confirm the previous studies conducted by Kocak et al., who found that 45.9% had UI less than twice a week, 17.4% 2-3 times a week, 9.9% every day, 13.2% several times a day, and 13.6% more frequently [7], Demir and Beji who reported 41.8% of women had UI once a week or less, 33.2% 2-3 times a week, 15.1% once a day, 9.9% a few times a day [2].

The consequences of UI include physical, social, and psychological issues. However, different studies have shown that only one-fourth of women seek help, and most women take no action [8,34,35]. Our findings in the present study indicated that the duration of UI was on average four years, and the daily life of women was moderately affected (X±SS: 5.0±2.5). Nevertheless, 64.4% of the participants stated that they did not consider it a health issue and did not claim help (62.9%). Considering the results of our study, individuals stated that they do not care about this situation to a large extent (91.1%) and they see it as normal (64.3%). In addition, they stated that they don't want to disturb the healthcare personnel for this problem (50%), they are embarrassed to be examined (44.6%), and they thought that there is no treatment (30.4%). These findings suggest that women change their lifestyle instead of receiving professional care to cope with UI. This is confirmed by the fact that those admitted to the hospital mentioned their complaints were present for an average of one year. The average I-QOL score of individuals with incontinence was 74.6±14.5, and it was seen that their quality of life was negatively affected. In the study conducted by Koçak et al. on 1012 women over the age of 18, they found that the mean ICIQ-SF of those with UI was 10.26 [7]. In the study of Ceyhan et al., it was determined that the mean ICIQ-SF score of the individuals was 10.65±4.40 and 80.9% of them experienced urinary incontinence at an uncomfortable level. All these results show strikingly that UI negatively affects the lives of individuals as age increases.

The reasons for ignoring professional help have been previously reported, including the belief that it is normal for the age, privacy concerns, and perception of no cure [34-36]. In our study, the reasons for no admission for care were consistent with the literature. Concerning the coping behaviors of the participants, most patients reported changing underwear more frequently, pad/diaper use, and fluid restriction. Similar findings were reported by Saleh et al. [37], who reported that women took frequent showers, used pads, changed underwear frequently, and took measures such as reducing fluid intake as a coping behavior. Moreover, Demir and Beji [2] determined that women took precautions such as changing underwear frequently, used pads/diapers, kept the body warm, and avoided lifting heavy work. The present study and previous works have shown that women do not use pelvic muscle exercises (KEGEL) recommended for the treatment of UI [17,38].

Coping behaviors with UI impact women's physical, mental and social health, home, work, and sexual life and reduce the overall quality of life. In the current study, the participants had moderate quality of life scores. Quality of life was most negatively affected by psychosocial influences, social isolation, and limitation of behaviors. There was a statistically significant relationship between age, BMI, number of deliveries, frequency of UI and duration of UI, and quality of life. Similarly, in community-based and hospital-based studies, UI was reported to negatively affect women's quality of life at a mild-moderate level [30-32]. Various studies have shown that increasing age, BMI, number of deliveries, frequency, and duration of UI negatively affect the quality of life [31,32].

It was determined that the quality of life of the individuals in the study due to incontinence was affected in the sub-dimensions. It was determined that the mean of limiting behaviors 65.1±16.6, psychological impact 85.0±14.7 and social isolation 71.0±16.9 points were seriously affected. In the study of Ceyhan et al., I-QOL sub-dimension and total score averages were found to be seriously affected by limiting behaviors 20.00±4.83, psychological effects 29.04±3.78, and social isolation 13.52±3.83 points and overall I-QOL total scores were determined as 63.39±11.26 [39]. This shows that incontinence is a problem that negatively affects the quality of life of women, socially, behaviorally and psychologically, in all areas of the woman's life.

This study has some limitations. First, the sample consists of women over 40 years of age who were admitted to a tertiary care facility in a single center. Therefore, it does not reflect male patients, the general public, and younger aged individuals. Second, UI was determined using subjective assessment.

In conclusion, UI is common among women middle-aged women. Stress type UI was the most common, and the complaints were associated with mixed etiology. Most women do not claim professional help shortly after their symptoms start. UI impacts women's quality of life from many aspects. Evidence-based qualitative and quantitative studies are needed to increase the awareness of women about UI.

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