

Urinary Incontinence in Kuwait: Prevalence and Risk Factors of Men and Women

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Abstract

Urinary incontinence is a common condition and affects the social, physical and psychological aspects of many individuals worldwide. This study was conducted to determine prevalence of urinary incontinence (UI) in Kuwait, and determine the risk factors associated with UI. A cross-sectional design in which self-administered surveys were distributed to women and men in the metropolitan area of Kuwait that looked at factors associated with UI. 268 women and 152 men completed and returned the questionnaires. Mean age and body mass index (BMI) were 29 and 31 years and 25.7 kg/m² and 27.4 kg/m² for the men and women, respectively. 54.5% of women and 22.4% of men reported having involuntary loss of urine. Age above 45 years ($p < 0.001$), four or more children ($p = 0.006$), vaginal delivery ($p = 0.015$), BMI greater than 25 kg/m² ($p = 0.001$), drinking more than one-cup of a caffeinated drink per day ($p = 0.041$), and a history of diabetes mellitus ($p = 0.002$) were related to UI in women. A history of diabetes mellitus ($p = 0.044$), and BMI greater than 30 kg/m² ($p = 0.041$) were related to UI in men. Obesity was the most controllable risk factor for UI. Urinary Incontinence prevention and management programs are indicated in Kuwait.

Keywords: Urinary incontinence, Prevalence, stress incontinence, urgency incontinence, Obesity, Risk factors

1. Introduction

Urinary incontinence (UI) is defined as the complaint of any involuntary leakage of urine (Haylen et al., 2010).

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Urinary incontinence is a common condition and affects the social, physical and psychological aspects of many individuals worldwide and most commonly affects women of advanced age as well as multiparous women (Altaweel&Alharbi, 2012; Thomas et al., 1980). Surprisingly, less than half of women with UI report the problem to a healthcare professional (Minassian et al., 2003).

North American and European studies report that the prevalence of UI in women ranges from 9% to 67%(Buckley&Lapitan, 2010; Coyne et al., 2012; Norton, 1990;Thomas et al., 1980; Thom, 1998; Tennstedt et al., 2008) and 12.4% of men over the age of 20 experienced UI in the United States(Markland et al., 2010). Several Middle Eastern countries report a range of UI between 20% and 41%(Al-Bader et al., 2012;El-Azab et al., 2007;Rizk et al., 1999; Saleh et al., 2005; Shakhathreh, 2005). The variation in prevalence of UI reflects the use of varying definitions, study populations and samples, and variations in how data were collected.

It has been the observation of this author that many women in the country are now realizing the impact of urine leakage on their social and physical lives. Many Physical Therapy clinics in Kuwait have been reporting the complaint of clients' of involuntary loss of urine. No information is available regarding the extent of the problem in Kuwait.

Therefore, the aim of this study was to determine prevalence and risk factors of urinary incontinence in Kuwait. Such information will help establish a baseline for the extent of the problem in the country which has not been reported previously, in addition to providing a basis for developing a national database for the condition, and identifying challenges with respect to its prevention and management.

2. Material and Methods

We conducted a cross-sectional survey. Ethical approval was obtained prior to data collection and all participants provided written informed consent.

Kuwait has no central census registries or telephone directories on which to sample participants for a prevalence study. Therefore, we used a sample of convenience of men and women living in the metropolitan area of Kuwait. Adult men and women aged 18y and older who had basic literacy to complete a questionnaire (n=385) were invited.

We sampled individuals visiting primary healthcare facilities, general hospitals and the four major shopping malls in the country. A sample size of 385 was calculated a priori using the Raosoft® sample-size calculator. Based on the population of Kuwait, an estimated prevalence of 30% and a 95% CI, a sample of 385 was needed. A 10% drop out rate was added giving a needed sample size of 425.

The survey was developed by the research team to give an insight about UI in Kuwait and was based on information from a literature search, and healthcare providers who were considered to be experts in the field. Existing surveys of UI reported in the literature provided a basis for this study (Al-Badr et al., 2012; Hunskaar et al., 2004; Lasserre et al., 2009; Markland et al., 2010; Markland et al. 2011; Onur et al., 2009).

The final survey was translated from English into Arabic for use with Arabic speaking participants. The survey was then back-translated by an independent individual to ensure accuracy. The translated survey was tested on 15 native speakers from the community to ensure proper translation, comprehension and clarity of the questions. The final survey was distributed and completed independently by study participants. Distribution was done by four research assistants who had been trained to address participants' questions. A pilot study on 20 participants was conducted to help determine the final sample size.

The survey contained sections on: 1. demographic information and medical history, gynecological information for women, lifestyle factors such as smoking, and prostate health for men, 2. Questions that assessed the prevalence of UI among participants such as frequency of urination and leakage and questions that helped categorize participants into types of urinary incontinence (stress, urgency, and mixed), as well as risk factors for UI, 3. Questions concerning quality of life such as how much urine leakage affected daily activities, and how it affected sleep at night, and 4. Questions regarding management of UI. The questionnaire could be completed within 20-30 minutes.

Demographic information included age, sex, self-reported height and weight for calculation of body mass index (BMI), education, ethnicity, and medical conditions.

Gynecological information such as parity, type of delivery, history of gynecological or abdominal surgery. Risk factors such as type delivery, smoking status, diabetes mellitus, prostate health in men and chronic cough were also included.

In accordance to the Centers for Disease Control and Prevention, a participant with a BMI of 18.5–24.99 kg/m² was considered to be of typical stature. A participant with a BMI of 25–29.99 kg/m² was considered overweight, and those with BMIs of 30 kg/m² or more were considered obese.

A 10-point numeric rating scale (NRS) was used to assess severity of symptoms at night ranging from 0 (not affected at all) to 10 (greatly affected) (Hoenig & Heisey, 2001). Participants were asked about UI within the past year and whether it occurred with stress (cough, sneezing, laughing, or carrying objects), or whether it was associated with an urge to urinate. Participants were asked about frequency of leakage as well as leakage at night. Questions about the use of protective garments were also included in the survey.

Participants were asked about their seeking medical advice and, if so, what advice was given; and, if not, what was the reason for not seeking advice. Finally, participants were asked about the impact of UI on their daily activities such as work, shopping, and social activities. Participants were also asked about the effect of UI on activities of daily life, social and religious activities, and exercise.

Data were analyzed using the Statistical Package for Social Sciences, v.14.0 (SPSS Inc., Chicago, IL, USA). Data were presented as means \pm standard deviation for the continuous data and frequencies and percentages (n and %) for the categorical data. Categorical data were analyzed using chi-square analysis and Mann-Whitney test for continuous variables that were not normally distributed. A multivariate logistic regression analysis was used to explore associated risk factors for UI in the Kuwait sample. Alpha was set at 0.05.

3. Results

A total of 268 women and 152 men (n = 420) completed and returned the survey. Demographic characteristics of the participants are presented in Table 1. The men were older and had higher BMI than the women. Of the female respondents, 86.6% with children had vaginal deliveries with average baby weight of 3.1 kg.

Of the male respondents, 46% were smokers, and 4.8% were diagnosed with prostate problems. UI was reported by 146 women (54.5%), while 34 men (22.4%) reported having involuntary loss of urine.

Table 1. Demographic Characteristics of Participants (n=420) (Mean±SD for Continuous Variables)

Characteristic	Female (n=268)	Male (n=152)
Age (y)	29±9.7	31±10.4
Height (cm)	160.4±5.9	174.8±6.6
Weight (kg)	65.9±16	84±15.9
BMI (kg.m ²)	25.7±5.9	27.4±4.9
Mean weight of babies(kg)	3.1 (.9)	
Education, n (%)		
Primary	1 (.4%)	
Intermediate	8 (3%)	5 (3.3%)
Secondary	65 (24.4%)	35 (23.2)
Diploma	61 (22.9%)	28 (18.5%)
Bachelors	125 (47%)	71 (46.4%)
Graduate	6 (2.3%)	13 (8.6%)
Parity		
0	142 (53%)	
1-2	47 (17.5%)	
3-4	34 (12.7%)	
>5	45 (16.8%)	
Vaginal delivery	103 (86.6%)	
Smoker	7 (2.7)	69 (46%)
Use of diuretics	11 (4.6%)	9 (6.5%)
Diagnosed prostate problem		7 (4.8%)
Morbidity		
Diabetes Mellitus Type I	3 (1%)	3 (2%)
Diabetes Mellitus Type II	7 (2.4%)	7 (4.6%)
Hypertension	16 (5.4%)	8 (5.2%)
Chronic cough	17 (5.7%)	2 (1.3%)
Neurological	6 (2%)	1 (.7%)

Of the women who reported involuntary loss of urine, 37(25.4%) had stress UI, 50(34.2%) had urgency UI, and 59(40.4%) had mixed UI. Of the men who reported involuntary loss of urine, 4(11.8%) had stress UI, 26(76.4%) had urgency UI, and 4(11.8%) had mixed UI.

We observed that age over 45y ($p < 0.001$), four or more children ($p = 0.006$), vaginal delivery ($p = 0.015$), BMI over 25 kg/m^2 ($p = 0.001$), drinking more than one cup of a caffeinated beverage per day ($p = 0.041$), and a history of diabetes mellitus ($p = 0.002$) were related to UI in the women respondents, while history of diabetes mellitus ($p = 0.044$), and BMI over 30 kg/m^2 ($p = 0.01$) were related to UI in the male respondents. Cesarean deliveries and birth weights were not associated with UI in women.

The multiple logistic regression analysis appears in Table 2. In the female respondents, age and obesity were risk factors. In male respondents, obesity was a risk factor.

Table 2. Significant Risk Factors Associated with Urinary Incontinence

Potential Risk Factor	Female UI OR (95%CI)	Male UI OR (95%CI)
Age >45 y	3.8 (1.1-14.0)	
BMI >25 kg.m^2	1.9 (1.1-3.4)	
BMI >30 kg.m^2		4.8 (1.8-13.0)

Among the 146 women who reported having UI, 11(7.6%) had daily leakage of urine, 7(4.9%) had leakage more than once per week, and 128(87.5%) leaked approximately once per week or less. Only 38(26.6%) of women reported wearing protective garments or pads and only 15(10.3%) women sought medical attention. The main reasons for not seeking medical attention were: 60(41.7%) felt it was not a problem, 24(16.6%) had no time, 19(13.2%) felt embarrassed, 15(10.4%) felt that it was a natural condition, 9(6.3%) were afraid of a diagnosis, and 3(2.1%) did not know where to go for help. One hundred and twelve (76.7%) women reported waking up at least once a night to urinate with only 4(3.6%) who woke up more than five times. On average, the degree to which waking up at night to urinate bothered the respondents was 3.18(3.4) on a 10-point NRS. Eighty five women (58.2%) reported that their activities of daily living were not affected by UI, while 46(31.5%) reported their activities were affected to a moderate degree. Fifteen women (10.3%) reported that their activities of daily living were affected to a large degree. Only 13(9%) of respondents were formally diagnosed with UI and only 4(2.8%) were receiving physical therapy as treatment, Table 3.

Table 3. Prescribed Treatments by Physicians for Individuals With Urinary Incontinence

Treatment	Female (n=146) n (%)	Male (n=34) n (%)
None	32 (90.3)	33 (97.1)
Oral medication	1 (3.4)	1 (2.9)
Surgery	1 (2.1)	-
Physical therapy	1 (2.8)	-
Other	1 (1.4)	-

Among the 34 men who reported having UI, all reported having leakage approximately once a week or less. Two men reported wearing protective garments and the same two men sought medical attention, while the remaining men felt it was not a problem. Twenty five (75.8%) of the men reported waking up at night to urinate with one (4%) waking up four times per night, 6(24%) three times per night, and 19(76%) less than three times per night. On average, the degree to which waking up at night to urinate bothered the respondents was 2.8 (3) on a 10-point NRS. Twenty four men (70.6%) reported that their activities of daily living were not affected by UI, while 9(26.5%) reported their activities were affected to a moderate degree. Only one (2.9%) reported that his activities of daily living were affected to a large degree. Only one participant (2.9%) was formally diagnosed by a physician as having UI and he was prescribed medication Table 3.

4. Discussion

The present study found that the prevalence of UI amongst women and men was 49.3% and 22.2%, respectively. These rates do not represent severe cases of UI as only 7.6% of women reported daily leakage and 26.6% wore protective garments. None of the men reported daily leakage of urine and only two men reported wearing protective garments.

The overall prevalence of UI for women in our study was similar to that reported in Egypt (54.8%) (El-Azab et al., 2007) and Saudi Arabia (41.4%)(Altaweel&Alharbi, 2012). However, our prevalence was lower than other Gulf countries whose prevalence ranged between 20.3% and 29%(Altaweel&Alharbi, 2012; Rizk et al., 1999; Saleh et al., 2005).

The difference in prevalence rates of other Gulf countries may be due to the fact that they only surveyed women aged 45y and older. However, Altaweel and Alharbi(2012) studied women aged 20y and older but only observed a prevalence rate of 29%. The difference in prevalence could be due to variation in sample sizes between our studies, or the study population. Altaweel and Alharbi (2012), for example, examined clinic-based participants while we surveyed women in clinics as well as public venues. Our high prevalence rate is consistent with prevalence reported in Western countries which are as high as 51%(Buckley&Lapita, 2010; Coyne et al., 2012; Markland et al., 2011).

No information is available regarding UI for men in the Middle East. The overall prevalence in the USA, UK and Sweden as reported by Coyne et al. in their cross-sectional internet survey of men ranged between 39.4% and 50.5%(Coyne et al., 2012). While the number of male respondents in our study was relatively low, we believe it is worthwhile to report on our findings due to the lack of information regarding this condition in this population. We also believe the overall prevalence may be under reported due to cultural barriers and embarrassment about discussing UI and lack of education. Further study is needed to elucidate these issues in Kuwait.

The most frequent type of UI reported in our study was urgency UI; 18.7% in women and 17% in men. This is inconsistent with reported prevalence rates in other studies which report stress UI as being more common(Coyne et al., 2012; Minassian et al., 2003). This may have been due to the method for administering the questions related to privacy (interviewer vs. self-administration). In addition, respondents may have misinterpreted the question.

We observed a relationship between childbirth and UI especially in women who had four or more children or who had experienced a vaginal delivery. Interestingly, we did find a high prevalence rate of UI in nulliparous women 69 (48.6%). This could be explained by the fact that the majority of the nulliparous women in this study had a BMI greater than 25kg/m² (61.9%).

Women over the age of 45y were 3.8 times as likely to report UI than those who were younger ($p=0.04$); and women with a BMI greater than 25 kg/m² were 1.9 times as likely to report UI as those with a lower BMI ($p=0.01$). Men with a BMI greater than 30kg/m² were 4.8 times as likely to report UI than those with a lower BMI ($p=0.002$).

These findings are consistent with findings from various countries including other Arab countries (Altaweel & Alharbi, 2012; Al-Badr et al., 2012; Buckley & Lapita, 2010; Coyne et al., 2012; Markland et al., 2010). However, other risk factors reported in other studies such as vaginal delivery, hypertension, and high parity were not observed in this study. This could be due to the sample size, type of survey questions, and cultural barriers. Further study is needed to elucidate these differences.

Urinary incontinence in general seems to be underreported and underdiagnosed globally. According to Minassian et al. (2003), over 75% of women with UI seem to endure the condition without seeking the help of a healthcare provider. In our study, only 10% of women sought the help of a medical professional. Almost half of the women in our study reported their problem was not sufficiently severe or inconveniencing to seek the help of a healthcare provider. We contend that the problem of UI in Kuwait is only now being appreciated and understood, and that Kuwaiti women, in particular, are just now opening up to reporting personal and sensitive issues such as UI.

There were several limitations of this study that need to be considered in future work. First, collecting prevalence data in Kuwait in the general population is problematic given the lack of central registries and census information. Another limitation is that surveys are restricted to self-reports and biases of the respondent. The survey was also intended to reflect on prevalence and was tested for reliability, but not validity. Furthermore, the development of national registries for UI may require interview as opposed to self-completed questionnaires. Also, same sex interviewers as the interviewees will likely increase participation and response validity, particularly in Kuwait due to cultural values.

Incontinence is a growing public health concern often related to lifestyle practices which affects not only the social and psychological aspect of the individuals' lives, but also the healthcare system. A clear understanding of the prevalence of UI for both men and women in Kuwait is important for predicting the need for healthcare services. Alarmingly, almost half of the women and one quarter of the men in this study reported they experience UI, and obesity was the most controllable factor. Further studies are needed to determine the impact of UI on the quality of life of adults in Kuwait.

In addition to being made aware of UI as a health concern, the public would benefit from being informed about cost effective non-pharmacological interventions of UI such as physical therapy (including health education, exercise and physical interventions). Public health education is indicated to help establish a national UI registry and inform individuals with UI about its prevention and management.

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