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Quality of life among adult Saudi women with urinary incontinence in Riyadh, KSA

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Abstract
Aim: Urinary incontinence is not life-threatening but it can have a profound effect on HRQoL quality of life comparable to diabetes, AIDS, stroke, and multiple sclerosis. It has a substantial impact on women's social, physical and psychological well-being such as depression and anxiety. The aim of this study was to explore the impact of UI and its types on the quality of life of adult Saudi women in Riyadh, Kingdom of Saudi Arabia (KSA).
Methods: We performed a cross-sectional survey. 340 women aged 18 years and older, agreed to participate in the study, were selected who attended the primary health care centers affiliated to the ministry of health, Riyadh, KSA. the Arabic version of the Kings health questionnaire was utilized to measure Health Related Quality of Life (HRQOL) of patients with UI.
Results: Out of 340 women recruited, 145 (42.6%) were diagnosed as having UI. Their age ranged between 18-72 year old with a mean 36±12.46 years. in this study UUI was of highest significance, followed by SUI and then MUI. The negative UI impact was most apparent on the physical activities, where 16.2% of the patients expressed that they were slightly or moderately affected.
Conclusions: Forty-two percent of the women in Riyadh suffered from urinary incontinence. It can adversely impair their HRQL. Most of the women did not seek medical care. In the recent years, researchers have shifted to other questions regarding investigating more in-depth domains to understand UI, and if they have an impact on quality of life, and if there is, what would the impact be.

Keywords: QoL, urinary incontinence, women, Saudi Arabia

Introduction
Urinary incontinence (UI) is a widespread health problem, considered one of the major diseases with sex differences in etiology, prevalence, and management, affecting both sexes, but it is especially common among old women [1]. It affects millions of women all over the world with significant and probably still underestimated rebounds on personal and social wellbeing [2].
Although it is still important to do researches in the diagnostic procedure of urinary incontinence, nowadays the focus of new researches has been shifted from only describing and evaluating the phenomenon of urinary incontinence to ask more details regarding the different kinds of urinary incontinence and how it affects the quality of life of a woman [3].
Urine incontinence is known to affect an individual's health related quality of life (HRQL) greatly [4]. It is detrimental to the social, psychological and physical well-being of the sufferer [5]. The standardization committee of the International Continence Society (ICS) defines urinary incontinence (UI) as "any involuntary urine leak complaint", it can be further defined as urgency, stress, or mixed UI, on the basis of a patient's symptoms [6].
Estimation of the prevalence of UI in the general population remains a challenge, as shown by available (national and international) studies, which report that UI prevalence rates are between 15% and 69% in women [2], with the peak to be in childbearing age group (up to 40%) and increasing in elderly to reach to 50% [7]. The inconsistency in prevalence estimation may be explained by differences in the definition and the assumption that people will openly declare their continence problems [8].
As population ages, the number of patients presenting to their primary care physicians with urologic problems are significantly increasing [1]. Most of the time Patients and the health care physician tend to neglect UI symptoms, accepting them as a normal part of aging, when in fact it's not, and on many occasions, the problem is diagnosed only when symptoms have

already affected the quality of life of these individuals [9]. A number of studies from around the world (the USA, Ireland, Taiwan, and Nigeria) have investigated the association between UI and its impact on quality of life [10, 11].

In 1997, the International Continence Society recommended including health-related QoL endpoints in studies of UI to complement the clinical measures [12]. Since then, a large number of studies have been conducted to develop valid health-related QoL instruments for use in clinical trials.

There is no universal consensus on the definition of quality of life (QoL), the World Health Organization (WHO) [13] provides a definition of healthy status: "not merely the absence of disease, but complete physical, mental, and social wellbeing." The assessment of QoL as a multidimensional concept allows to consider health outcomes from a wider perspective than the conventional one (i.e., number of life years saved) [14] on the other hand every patient the term Quality of life may have different meaning: high income and money, good family life and relationship with others, job satisfaction, good physical and mental health [7]. Measurement of disease- related symptoms and physical, social, cognitive, and emotional functions are included in QoL and health related quality of life (HRQoL) instruments [15]. There are three groups of incontinence specific questionnaires: general, urge UI (UUI)specific, or stress UI (SUI)specific. Of the general validated questionnaires, the King's Health Questionnaire (KHQ) is one of the most widely used for assessing QoL in patients with UI and has been translated and validated into numerous languages to assess women with different types of UI [16, 17-20].

Urinary incontinence is not life-threatening but it can have a profound effect on HRQoL quality of life comparable to diabetes, AIDS, stroke, and multiple sclerosis [7, 21]. It has a substantial impact on women's social, physical and psychological well-being such as depression and anxiety [22-25]. Some of the undesirable consequences of keeping the problem untold that women with UI may become socially isolated by restricting their interaction with family and friends, avoiding trips outside their homes, or being fearful and embarrassed about the odor of urine [4]. The effects on quality of life (QoL) have been variable in some studies [3, 26, 27]. although most investigations have indicated a negative impact [23, 27]. In regard to the types of UI, some studies showed that urge UI has a greater impact on the QoL than stress UI (SUI) [28, 29]. Other studies found that MUI appeared to have lower QoL than the other UI types [28, 30-32]. Previous studies done in U.S. and European countries have identified an association between UI and psychological morbidity [33, 34, 35]. Many studies appraise QoL and help-seeking in women with UI [23, 36, 37], but since cultural and religious beliefs pervade every aspect of an individual's lifestyle and influence health behaviors [38] UI has a much more devastating effect on Muslim women than on women of other religions. In the Muslim faith, prayer (Salat) is viewed as a relationship between the person and God [39]. Urinary incontinence breaches women's status of ritual purity, thereby creating a barrier to ablution [40]. A study on the relationship of sexual relationships and its effect on UI found that 19–50% of the women were negatively affected [41]. Despite its high prevalence and impact, this condition remains silent and largely unrecognized, with around 50% of all cases being underdiagnosed and undertreated [42]. A large proportion of women diagnosed with UI never seeks medical care for UI worldwide [43-45]. The misconception towards UI treatment was cited to explain poor treatment-seeking behaviors for incontinence. It is commonly viewed as a natural outcome of aging and/or childbirth, leading to the belief that there was no need to seek treatment [43- 47]. The belief that the condition cannot be treated, that it's not life threatening, or does not lead to death [3,48]. Therefore, a high proportion of individuals does not benefit from the medical care that would resolve or alleviate their problem leading to a worsening of the incontinence and a reduction in QOL [42,49]. The serious effects of UI on the quality of life have increased the importance of a multidisciplinary evaluation of women's health and the planning of care strategy [50].

Exploring the quality of life of women with UI helps to better understand what they feel and what their real needs and draw the attention of family physicians and other health care teams to the importance of identifying the population at risk in an attempt for early diagnosis and proper intervention. So, this study question was What is the impact of urinary incontinence on the health related quality of life of adult Saudi Women in Riyadh City, KSA?. This study aimed to assess the impact of different clinical types of Urinary incontinence on quality of life and improve the help seeking behavior among adult Saudi women in Riyadh, Kingdom of Saudi Arabia (KSA) to better understand what they feel and what is their real needs and to draw the attention of family physicians to the importance of identifying the population at risk in an attempt for an early diagnosis and proper intervention.

Methods

This descriptive cross-sectional multi-center study based on the primary health care centers (PHCCs) affiliated to the Ministry of Health in Riyadh, Saudi Arabia.

Riyadh is the capital and largest city of Saudi Arabia, with a population of close to 7.3 million. According to the National Statistical Service of Saudi Arabia. PHCCs are located in most neighborhoods of the city, can be accessed free of charge without referrals, and provide all primary medical services for the majority of the residents.

A representative sample from 20 PHCCs included in the present study were selected using multistage random sampling; 4 centers were selected from each sector (North, South, Middle, East, and West) by simple random sampling. Before conducting the survey, permission was obtained from the directorate of PHCCs, ministry of health, Riyadh, KSA. In addition, approval of the ethical committee of the military service department at ministry of defense and research ethics committee of research center in prince sultan military medical city, Riyadh.

The required sample size was calculated using Epi Info ™ statistical software Version 7 (Centers for Disease Control and Prevention, Atlanta, GA, USA), Assuming that the prevalence of UI is 34%, similar to a Saudi representative survey [26], 340 women were at least needed, with a 5% desired precision and a 95% confidence interval.

Eligible participants were all adult Saudi women aged 18 years and above who had attended the selected PHCCs between October 1 through June 30, 2017, for any reasons except urinary incontinence. The recruited participants were informed of the study objectives and individual verbal informed consent was obtained prior to administering the questionnaire by female investigators through a face-to face

interview. The participants were permitted to withdraw from the study at any time, and confidentiality was maintained throughout the study. Pregnant women and delivery in the last 3 months, gynecological or lower urinary tract surgery during the previous 3 months and who refuse to participate in the study were excluded.

In our study, the urinary incontinence definition and its types was adopted from to the International Continence Society. It defines UI as ''any leakage or involuntary loss of urine [2].'' For the purpose of this study this definition was restricted to an incidence during the last year.

Stress urinary incontinence (SUI) as the symptoms of involuntary loss of urine upon effort or physical exertion (e.g., sporting activities), or upon sneezing or coughing. urgency urinary incontinence (UUI) as the complaint of involuntary leakage accompanied by or immediately preceded by urgency. Mixed urinary incontinence (MUI), as the complaint of involuntary leakage associated with urgency as well as with exertion, effort, sneezing, or coughing [2]. Gynecological examination was not performed to confirm the findings.

In accordance to the Centers for Disease Control and Prevention body mass index (BMI) will be categorized using BMI (kg/m2) with being underweight defined as BMI < 18.5 kg/m2, normal weight as 18.5 BMI < 24 kg/m2, overweight as 24 BMI < 27 kg/m2, and obesity as BMI 30 kg/m2.

Pilot Study

A questionnaire was developed in English following reviewing the existing surveys of the UI in published literature and consultation with experts [15, 11-13, 27, 28]. The final questionnaire was translated into Arabic language for use with Arabic speaking participants, and reverse translated by an independent agent to ensure internal consistency and reliability. To ensure correct translation, explore the missing or unclear points and to estimate time for questionnaire completion a preliminary questionnaire was distributed among 25 randomly selected women, who has been found to meet the inclusion criteria, who are visiting the primary health care center PHCC affiliated to prince sultan military medical city, Riyadh, Saudi Arabia. Some modifications were made to the text and questions on the basis of the results of the pilot study resulting in an improved, final version. The questionnaire took around 15-20 minutes for completion.

Questionnaire

The final questionnaire contained sections on the socio-demographic characteristics, risk factors for incontinence, daily habits, gynecological information, experience of UI, severity of UI, behavior regarding Medical advice, and impact on daily activities. Socio-demographic measures included (age, marital status, educational status, income, occupation and body mass index), gynecological information included (parity, abortions, history of assisted or cesarean deliveries; menopausal status; use of hormone replacement therapy; history of vaginal or abdominal gynecologic surgery; and history of surgery for UI), we considered a range of comorbidity and risk factors that might affect the association of UI including Chronic comorbidity (such as hypertension, diabetes mellitus, bronchial asthma, history of stroke, chronic cough, chronic constipation, and thyroid diseases), smoking, regular exercise, caffeine intake. Participants were asked their opinion about the UI whether it's normal with advance age?, their knowledge regarding the treatment options available and lastly who should be seen for the UI problem?. the second section of the questionnaire started with an entry question whether the participant experienced involuntary loss of urine or not. If the answer was yes, she was asked to answer more specific questions related to the symptoms to determine the type of UI. Other recorded symptoms included frequency (urinating more than 8 times per day or more often than every 2 hours); waking up more than once at night to urinate; use of protective garments or pads; and the frequency of using such protection (1-2, 3-4, or more than 4 in 24 hours).

Quality of life assessment

The impact of UI on daily activities will be assessed using a previously validated and pretested Arabic version of The Kings Health Questionnaire (KHQ); a disease specific health related quality of life (HRQOL) instrument for measuring Qol in women with UI [25]. KHQ consist of 3 parts of 21 items. Part 1 contains general health perception and incontinence impact (one item each). Part 2 contains role limitations, physical limitations, social limitations (two items each), personal relationships, emotions (three items each) and sleep/energy (two items), severity measures (four items). The responses will have 4-point rating system. The 8 subscales "domains" scored between 0 (best) and 100 (worst). Decreases in KHQ domain scores indicate an improvement in quality of life. The smallest change in score that subjects perceive as beneficial is 5 points for all KHQ domains [25]. It is interesting to note that lower scores indicate patient wellbeing and higher scores mean that the person severely affected by the disease condition [26]. Finally, Women with UI will be asked whether they had sought medical advice and, if not, their reasons for not doing so.

UI interference with daily activities

This part of the questionnaire was designed to describe the kind of activities that were affected by urinary leakage such as, daily activities and social interactions (eg, performing Salat, shopping, excursions outside home, climbing up or down stairs, interruption of work, visiting friends), sexual life, and the need to wear a pad or protective clothing (eg, never, once a day, once a week, once a month, rarely).

Attitudes towards seeking help for UI

Women with UI were asked whether they had spoken to a friend or relative, and whether they sought medical advice for the UI, and if not, their reasons for not doing so. Those who answered no were considered to be non-seekers and those who answered yes were considered treatment seekers.

Data analysis and statistical methods

All Categorical variables marital status, age group, and parity etc. were presented as numbers and percentages. Whereas continuous variables age, weight, height, BMI and KHQ scores etc. were expressed as Mean ± S.D. Independent sample t-test / ANOVA test was used to determine the mean significant difference between IQOL and incontinence women and help seeking behavior. Furthermore, Spearman rank correlation between help seek behavior and study characteristics. P – Value less than 0.05

was considered as statistically significant. All data was entered and analyzed through statistical package SPSS version 22.

Results

Prevalence of urinary incontinence

The Mean age of women included in the study was 36 years (range 18-72 ±12.46 years), Out of the 340 women interviewed, 145 (42.6%) participants had experienced some degree of urinary leakage in the preceding 12 months. Although not shown in the table, these symptoms had presented once a week or less in 23.5%, a couple times a day in only 2.1% and all the time in 3.4%. Although 84.1% of the women had a small amount of urinary incontinence, 6.9% had a moderate amount of UI, 5.3% had SUI and 7.5% UUI. Only 16.3% of women with UI sought medical help.

Risk factors of urinary incontinence

Table 1 illustrates the general characteristic of women in the study, demonstrates that 44.8% of the patients with UI indicated that they are complaining of chronic diseases e.g. diabetes, hypertension and bronchial asthma, chronic cough, chronic constipation, or thyroid disease. Only 6 (1.8%) of the patients pointed out that they had previous surgical operations in the pelvis not including caesarean sections (CSs). Meanwhile, it was found that 110 (32.4%) of the patients had previous sections, and 243 (71.5%) had previous normal spontaneous vaginal deliveries. Only 6 (1.8%) of the patients were current smokers.

The prevalence of UI in our study was found to be more predominant in younger woman, Table 2 summarize the general characteristic of the study sample with and without UI. A statistical significant relationship was found between age and UI (< 0.001). The UI prevalence in women was found to increase as the educational level increases, and as the BMI, and number of parities increased (p< 0.001). UI prevalence was found to be higher in women who did not work 68.2% versus 23.8% who are employed. UI was present in 77.2% of women in the child bearing period (p< 0.001). UI was present in 22.1% of women with HTN (p< 0.015).

Multivariate logistic regression analysis, although the table is not revealed that the age and Number of pregnancies influenced the likelihood of UI in adult Saudi women. Older women were 2.2 times less likely to report UI than those younger women (95% CI, 1.1–4.4; P=0.013); and women who had ³5 pregnancies were 1.7 times more likely to report UI than those who had < 5 pregnancies (95% CI, 1–3; P=0.01) as it is illustrated in Table 3.

Quality of life

Interestingly majority (32.1%) of the women did feel that UI interfered with their salat (prayer) and only 8.8 admitted that it interfered with their prayer a little and moderately.

The Impact of urinary incontinence on quality of life was measured using the King's health questionnaire (KHQ) the responses can be seen in table 3. In general, almost two third of the patients indicated that urine incontinence slightly affects their role, physical and social activities and their emotions. The effect was most apparent on the physical activities, where 16.2% of the patients expressed that they were slightly or moderately affected. This was followed by the effect on job, daily outdoor activities and household tasks where the equivalent percentage accounted for 14.1%. Considering the effect on emotions, it was shown that 13% of the patients admitted that they are slightly or moderately of time feeling anxious or nervous. On the other hand, a higher proportion of the patients reported Feeling tired and exhausted due to the urinary incontinence; 12.4% patients pointed out that they were moderately or a lot of time feeling tired and exhausted and 9.1% have their sleep pattern affected. Regarding effect of incontinence on personal relationships, only patients with whom the items were applicable, are displayed. As can be seen this domain wasn't affected that much in the current study as only small amount of patient reported that they were affected.

The total mean KHQ severity score of adult Saudi women was 23.45 ± 20.65, the mean scores from the sub-dimension were 19.41 ± 18.57 (limitation of Role), 24.46 ± 20.89 (physical limitation), 13.07 ± 12.82 (social limitation), 15.05 ± 14.76 (personal relationship), 20.49 ± 17.08 (emotions), and 23.14± 20.01 (sleep and energy) (Table 4).The mean percentages of limitations in different life domains resulting from urine incontinence is shown in Table 5.

The distribution of the means and medians of women with UI obtained from the quality of life scale according to the type of urinary incontinence and medical help-seeking behavior are given in Table 6. There was a significantly powerful positive correlation between UI and all the sub-dimension of the KHQ for Qol scoring.

Table 6 illustrates that the most commonly occurring problems among the study group, in our study frequent going to the toilet (WC), getting up at night to pass urine, leakage accompanied by strong desire to urinate, leakage associated with exercise, kidney and bladder pain were the prominent problem related to UI reported by the majority of women (97.2%). The help seeking behavior is shown in Table 7. the reason for not seeking medical advices are shown in Table 8. Among the 340 incontinent women, most of them 91.9% didn't view UI being a significant problem.

Table 1: Demographic characteristics of elderly patients with and without urinary incontinence (n= 340)

Variables		Incontinent women (n = 145) (42.6%)	Continent women (n = 195) (57.4%)	P - value
Age Group	>= 45	61 (42.1%)	36 (18.5%)	* < 0.001
	< 45	84 (57.9%)	159 (81.5%)	
BMI Group	Underweight	4 (2.8%)	2 (1.0%)	0.086
	Normal Weight	29 (20.0%)	68 (34.9%)	0.062
	Over Weight	48 (33.1%)	64 (32.8%)	0.586
	Obese	64 (44.1%)	61 (31.3%)	* 0.013
Parity	>= 5	71 (51.1%)	51 (29.5%)	* < 0.001
	< 5	68 (48.9%)	122 (70.5%)	
Menopausal	No	112 (77.2%)	9 (4.6%)	* < 0.001
	Yes	33 (22.8%)	18 (9.2%)	
History of vaginal	No	128 (88.3%)	177 (90.8%)	* 0.033

gynecologic surgery	Yes	17 (11.7%)	186 (95.4%)	
	No	105 (72.4%)	157 (80.5%)	0.855
History of abdominal gynecologic surgery	Yes	40 (27.6%)	38 (19.5%)	
Chronic disease	No	80 (55.2%)	125 (64.1%)	0.534
	Yes	65 (44.8%)	70 (35.9%)	
DM	No	114 (78.6%)	169 (86.7%)	0.636
	Yes	31 (21.4%)	26 (13.3%)	
HTN	No	113 (77.9%)	176 (90.3%)	* 0.015
	Yes	32 (22.1%)	19 (9.7%)	
BA	No	133 (91.7%)	180 (92.3%)	0.432
	Yes	12 (8.3%)	15 (7.7%)	
Chronic Cough	No	137 (94.5%)	192 (98.5%)	0.367
	Yes	8 (5.5%)	3 (1.5%)	
Chronic Constipation	No	128 (88.3%)	183 (93.8%)	0.178
	Yes	15 (11.7%)	12 (6.2%)	

Smoking	No	144 (99.%)	190 (97.4%)	
	Yes	1 (0.6%)	5 (2.5)	
Drink Coffee or Tea	No	30 (20.7%)	47 (24.1%)	
	Yes	0.240115 (79.3%)	148 (75.9%)	0.745

Table 2: Comparative analysis of the demographics and different types of UI

Variables		**UI MUI**		**SUI**	**UUI**
		(n = 145; 42.6%)	**(n = 38; 11.2%)**	**(n = 106; 31.2%)**	**(n = 100; 29.4%)**
Age Group	< 45	84 (57.9%)	31 (81.6%)	71 (67.0%)	69 (69.0%)
	>= 45	61 (42.1%)	7 (18.4%)	35 (33.0%)	31 (31.0%)
BMI	Underweight	4 (2.8%)	0 (0.0%)	2 (1.9%)	2 (2.0%)
	Normal Weight	29 (20.0%)	16 (42.1%)	32 (30.2%)	36 (36.0%)
	Over Weight	48 (33.1%)	8 (21.1%)	34 (32.1%)	24 (24.0%)
	Obese	64 (44.1%)	14 (36.8%)	38 (35.8%)	38 (38.0%)
Parity Group	< 5	68 (48.9%)	18 (56.3%)	53 (55.2%)	50 (56.8%)
	>= 5	71 (51.1%)	14 (43.8%)	43 (44.8%)	38 (43.2%)
Menopause	No	112 (77.2%)	35 (92.1%)	83 (78.3%)	81 (81.0%)
	Yes	33 (22.8%)	3 (7.9%)	23 (21.7%)	19 (19.0%)
History of vaginal	No	128 (88.3%)	34 (89.5%)	94 (88.7%)	91 (91.0%)
gynaecologic surgery	Yes	17 (11.7%)	4 (10.5%)	12 (11.3%)	9 (9.0%)
History of abdominal	No	105 (72.4%)	31 (81.6%)	81 (76.4%)	80 (80.0%)
gynaecologic surgery	Yes	40 (27.6%)	7 (18.4%)	25 (23.6%)	20 (20.0%)
DM	No	114 (78.6%)	37 (97.4%)	90 (84.9%)	85 (85.0%)
	Yes	31 (21.4%)	1 (2.6%)	16 (15.1%)	15 (15.0%)
HTN	No	113 (77.9%)	35 (92.1%)	90 (84.9%)	85 (85.0%)
	Yes	32 (22.1%)	3 (7.9%)	16 (15.1%)	15 (15.0%)
BA	No	133 (91.7%)	36 (94.7%)	99 (93.4%)	91 (91.0%)
	Yes	12 (8.3%)	2 (5.3%)	7 (6.6%)	9 (9.0%)
Chronic Cough	No	138 (95.2%)	37 (97.4%)	101 (95.3%)	98 (98.0%)
	Yes	7 (4.8%)	1 (2.6%)	5 (4.7%)	2 (2.0%)
Chronic Constipation	No	129 (89.0%)	33 (86.8%)	93 (87.7%)	92 (92.0%)
	Yes	16 (11.0%)	5 (13.2%)	13 (12.3%)	8 (8.0%)
On any Medical Therapy	No	79 (54.5%)	28 (73.7%)	67 (63.2%)	66 (66.0%)
	Yes	66 (45.5%)	10 (26.3%)	39 (36.8%)	34 (34.0%)
Do you exercise	No	107 (73.8%)	29 (76.3%)	76 (71.7%)	77 (77.0%)
	Yes	38 (26.2%)	9 (23.7%)	30 (28.3%)	23 (23.0%)
Drink Coffee or Tea	No	30 (20.7%)	9 (23.7%)	26 (24.5%)	20 (20.0%)
	Yes	115 (79.3%)	29 (76.3%)	80 (75.5%)	80 (80.0%)

Table 3: Multiple Logistic Regression Analysis & Independent risk factors for urinary incontinence

Age	**2.299**	**1.190 – 4.443**	***0.013**
Parity	1.758	1.005 – 3.078	*0.048
Chronic disease	0.543	0.291 – 1.016	0.056
HTN	1.981	0.879 – 4.464	0.099
Chronic constipation	2.249	0.978 – 5.173	0.057

Table 4: Effect of urine incontinence on different aspects of life and emotions of the patients

	Response			
	Not at all	Slightly	Moderately	A lot
	N (%)	N (%)	N (%)	N (%)
Role Limitation				
Affect household task	90 (26.5)	33(9.7)	15(4.4)	3 (0.9)
Affect job, or normal daily outdoor activities	89(26.2)	33 (9.7)	15 (4.4)	4 (1.2)
Physical and social limitations				
Affect physical activities	84 (24.7)	38(11.2)	17 (5)	3 (0.9)
Affect ability to travel	88 (25.9)	25 (7.4)	17 (5)	10 (2.9)
Limit social life	107 (31.5)	18 (5.3)	13 (3.8)	3 (0.9)
Limit ability to see/visit friends	107 (31.5)	22 (6.5)	10 (2.9)	2 (0.6)
Emotion				
Feeling depressed	99 (29.1)	33 (9.7)	6 (1.8)	3 (0.9)
Feeling anxious or nervous	94 (27.6)	37 (10.9)	7 (2.1)	2 (0.6)
Feeling bad about self	112 (32.9)	21 (6.2)	5 (1.5)	3 (0.9)
Sleep and energy				
Affect sleep pattern	74 (21.8)	36 (10.6)	22 (6.5)	9 (2.6)
Feeling tired and exhausted	89 (26.2)	23 (6.8)	21 (6.2)	21 (6.2)
Personal relationship				
Affect relation with partner (n=)	100 (29.4)	12 (3.5)	1(0.3)	-
Affect sex life (n=)	79 (23.2)	22 (6.5)	6 (1.8)	1 (0.3)
Affect family life (n=)	103 (30.3)	12 (3.5)	2 (0.6)	-

Table 5: The mean percentages of limitations in different life domains resulting from urine incontinence

Variables	Minimum	Maximum	Median	Mean ± S.D
Role Limitation	0.00	100.00	16.67	19.41 ± 18.57
Physical Limitation	0.00	100.00	16.67	24.46 ± 20.89
Social Limitation	0.00	100.00	9.00	13.07 ± 12.82
Personal Relationship	0.00	66.67	16.60	15.05 ± 14.76
Emotion Score	0.00	100.00	22.20	20.49 ± 17.08
Sleep/Energy	0.00	100.00	16.70	23.14 ± 20.01
Severity Score	0.00	100.00	16.70	23.45 ± 20.65
Total QOL Score	0.00	466.67	144.40	134.67 ± 74.59

Table 6: Correlation of KHQ of quality of life scale subgroups with urinary incontinence types and seeking medical advice

Type of UI	Role Limitation	Physical Limitation	Social limitation	Personal Relationship	Emotions	Sleep/Energy	Severity Measures	P – Value
UI	17.82±24.03	20.72±25.26	7.09±17.39	9.49±15.48	13.66±20.34	24.19±28.82	32.12±25.98	*0.001
SUI	19.97±25.66	22.8±26.36	8.27±19.7	9.75±15.75	14.36±21.85	26.42±29.98	33.1±26.74	*0.012
UUI	31.58±27.62	38.16±28.18	15.66±24.03	14.04±17.56	25.44±28.29	30.7± 33.23	41.67±26.14	*0.005
MUI	19.67±24.78	23.33±27.73	8.75±20.02	11±16.95	15±22.02	26.17± 30.54	32.83±25.43	*0.033
Seeking medical advice								
No	18.87±17.72	24.06±19.87	8.83±11.6	15.2±14.3	20.47±16.2	22.96 ±19.02	22.06±18.93	-
Yes	27.27±27.48	30.3±32.38	9.65±24.42	12.88±20.53	20.71±27.28	25.76 ±31.59	43.56±31.91	-

Table 7: Help seeking behavior out of 145 women with UI

Urinary Incontinence is normal with advancing in age	No Yes I don't know	120 (35.3%) 142 (41.8%) 78 (22.9%)
Do you know that there are treatments for urinary incontinence	No Yes I don't know	179 (52.6%) 84 (24.7%) 77 (22.6%)
Who should be seen for the UI problem	Family Physician/GP	12 (3.5%)
	Internal Medicine	13 (3.8%)
	Surgery	5 (1.5%)
	Urologist	285 (83.8%)
	OBS/GYN	25 (7.4%)

Table 8: Reason of not seeking the medical advice out of 145 women with UI

Questions	Description	N (%)
Did not think my incontinence being a significant problem	No Yes	10 (8.1%) 113 (91.9%)
Did not know treatment is available	No Yes	121 (98.4%) 2 (1.6%)
Embarrassment	No Yes	122 (99.2%) 1 (0.8%)
Did not want to see a male physician	No Yes	122 (99.2%) 1 (0.8%)
Thought is/was Normal	No Yes	0 (0%) 0 (0%)

Discussion

The aim of this study was to explore the impact of UI and its types on the quality of life of adult Saudi women in Riyadh, Kingdom of Saudi Arabia (KSA). The results show that QOL among adult women in Riyadh (KSA) is significantly impacted by UI subtypes, specifically in this study UUI, SUI, and MUI. UUI (<0.005) was of highest significance, followed by SUI (< 0.012) and then MUI (<0.033). The serious effects of UI on the quality of life have increased the importance of a multidisciplinary evaluation of women's health and the planning of care strategy [50].

Despite its high prevalence and impact, this condition remains silent and largely unrecognized, with around 50% of all cases being underdiagnosed and undertreated [42]. A large proportion of women with UI never seeks health care for UI worldwide [43-45]. In our study the treatment seeking behavior was poor with only 6.5% of women seeking medical care. Similar findings have been noted in other countries as well.13,25,26 (Factors Associated with Women's Decisions to Seek Treatment for Urinary). In the present study, 10.6% of the women with UI discussed the problem with their friends or relatives. This is a lower figure than reported in the UAE (30.9%) [13] but higher than in Egypt (4%) [15].

Several studies have reported that UI is commonly viewed as a normal process of aging leading to the belief that there was no need to seek treatment [43-47]. In the current study 91.9% of the women Did not think UI to of a significant problem followed by the perception that it a natural process of advancing in age 41.8%. This figure is close to what was found in a study done in western countries that reported a substantial number (23.5%) perceived that UI to be a normal consequence of ageing. Therefore, high proportion of people having the problem don't benefit from medical care that alleviate or resolve the problem [42, 49].

Urinary incontinence is not life-threatening but it can have a profound effect on HRQoL comparable to diabetes, AIDS, stroke, and multiple sclerosis [7, 21]. Of the general validated questionnaires, the King's Health Questionnaire (KHQ) is one of the most widely used for assessing QoL in patients with UI and has been translated and validated into numerous languages to assess women with different types of UI [16, 17-20]. most epidemiological studies recognize that UI has a negative impact on women's QoL [11, 12, 26]. In our study it was shown that <10% of the women reported a disturbance in their HRQL due to urinary incontinence. Most of the women reported a mild effect of urinary incontinence on their quality of life. In contrast, Ragins et al. reported in their research that urinary incontinence is significantly associated with a decreased quality of life and those with more frequent incontinence have significantly lower quality of life scores [21]. In regard to the types of UI, some studies showed that urge UI has a greater impact on the QoL than stress UI (SUI) [28, 29] which is consistent with our finding in this study.

Many studies appraise QoL and the help-seeking in women with UI [23, 36, 37], but since cultural and religious beliefs pervade every aspect of an individual's lifestyle and influence health behaviors [38] UI has a much more devastating effect on Muslim women than on women of other religions [39, 40]. In this study interestingly, very few women reported interference of UI and their prayer (salat). A study on the relationship of sexual activities and its effect on UI found that 19–50% of the women were negatively affected [41].

Urinary incontinence is a widespread health problem, considered one of the major diseases with sex differences in etiology, prevalence, and management, affecting both sexes, but it is especially common among old women [1]. it affects millions of women all over the world with significant and probably still underestimated rebounds on personal and social wellbeing [2].

UI is known to affect an individual's health related quality of life (HRQL) greatly [4]. It is detrimental to the social, psychological and physical well- being of the sufferer [5].

As population ages, the number of patients presenting to their primary care physicians with urologic problems are significantly increasing [1]. Most of the time patients and the health care physician tend to neglect UI symptoms, accepting them as a normal part of aging, when in fact it's not, and on many occasions, the problem is diagnosed only when symptoms have already affected the quality of life of these individuals [9]. The overall prevalence of urinary incontinence in our study is in accordance to the published urinary incontinence prevalence in the middle east which ranges from 20.3% to 54.8% [14,15].The peak of UI is in the childbearing age group (up to 40%) and then the prevalence increasing in elderly to reach to 50% [7]. Prevalence of UI in our study is higher in women < 45-year-old. This could be due to stretching and bruising of nerves during delivery and subsequently the pelvic floor muscles may become weak.

The focus of previous research has been on describing and evaluating UI, however, recently, researchers have shifted to other questions regarding investigating more in-depth domains to understand UI, and if they have an impact on quality of life, and if there is, what would the impact be [3].

Conclusion and recommendation

In conclusion, Urinary incontinence remains an under reported and embarrassing condition across all countries and cultures. we suggested that Providing adequate knowledge to women by the health care provider on through health education would improve the knowledge on prevention and

available treatment options. This may change perceptions of women on UI leading to a better quality of life of the affected population. Further studies are needed to focus on whether education and more other interventions for UI could reduce long-term healthcare costs, decrease disease burden, and increase QOL. Further research on perceived patient and physician barriers to the discussion of urinary incontinence is necessary.

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