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Research Article

**PREVALENCE AND RISK FACTORS OF URINARY
INCONTINENCE IN HEALTHY SAUDI WOMEN**

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Abstract

Background: Urinary incontinence is a common medical disease in which patient cannot control leakage of urine. There are differences in the prevalence of urinary incontinence among nations. The risk factors for urinary incontinence including increasing age, medical co-morbidity, obesity, smoking, gender and previous hysterectomy.

Objective: To assess the prevalence of urinary incontinence in Saudi females and its associated risk factors.

Methods: A cross-section study based on a survey distributed among 500 Saudi females with minimum age 25 years old during the period November – December 2018 in Saudi Arabia.

Results: 500 female participants filled the surveys, most of the participants aged 25-35 years old. The prevalence of urinary incontinence was (12.8%). Almost half of the participants were overweight. Most of the females have two children and most of them also delivered vaginally. It was found that old participants have higher prevalence of urinary incontinence than younger age.

Conclusion: the prevalence of urinary incontinence was slightly high (12.8%). The most common risk factors for urinary incontinence were older age, obesity, menopause and high number of parity.

Keywords: Urinary Incontinence, Prevalence, Risk Factors Females, Saudi Arabia.

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INTRODUCTION:

Urinary incontinence (UI) is an involuntary leakage of urine [1]; it is a common medical disease, [2]. Almost, over 200 million individuals in the world had UI with more prevalence in females [3]. Several studies from European population and North America reported a prevalence of 8.5% to 58% [4]. In a Saudi Arabia studies showed the prevalence of UI among females who attended PHCCs in Jeddah was high 41.4% [5].

It was noticed that UI prevalence is increasing with increasing age, number of childbirths, medical co-morbidity and obesity in females [6].

Gender, previous hysterectomy, pregnancy, chronic cough, depression smoking, genetics and menopause are also risk factors [6]. It was reported that the UI in females is most common among the old age women and those with multiparity [4]. Also, it was reported that one-third of females were suffered from stress incontinence after 5 years of their vaginal delivery [7]. In a cross-sectional study on 400 menopausal women [8] it was found that obesity was a risk factor for UI. UI results in limitation in the daily activities, loss of self-esteem and decrease in the quality of life [7] as it limits exercising, sexual activity, shopping and result in emotional disorders such as depression [3]. The aim of the present study was to assess the prevalence of UI between Saudi women and its associated risk factors.

METHODS:

A cross-sectional study based on survey, it included 500 female participants whose age not less than 25 years old. A soft copies survey was distributed to evaluate the demographics, chronic diseases and risk factor of urine incontinence of females. The study was conducted in the period from November 2018 to December 2018. Data were analyzed by using Statistical Package for Social Studies.

RESULTS:

The current study included 500 female participants, according to age there were 3 age groups; females whose age ranged from 25-35 years represented (38%), females with age range of 36-45 represented (35%) and females whose age was 46 years and above represented (27%). Regarding BMI, the most dominant group was the overweight females (47.2%), followed by normal weight females (28.4%) and obese group were (24.4%). Most of participants (40.4%) had

intermediate education and (28.8%) had university education.

The prevalence of urinary incontinence among out participants was (12.8%). The large majority of females (95%) didn't smoke, while (5%) only were smokers. Regarding menopausal status, the large majority of women were peri-menopausal (71%), while (29%) only were post-menopausal. There was (3.6%) performed hysterectomy, whereas (96.4%) didn't perform this surgery.

Most of females were delivered vaginally (87.4%) and (12.6%) delivered by cesarean surgery. There were (10.2%) that had parity once and (43.4%) delivered two times. (9.6%) of women suffered from depression, while (17%) had diabetes, the demographics of participants are shown in **table1**.

The correlation between prevalence of urinary incontinence and risk factors is shown in **table 2**. Regarding to age, there was a significant difference between females with UI and females without UI (P -value=0.001), most patients with UI were in older age group. BMI was different between the two females group. There was no significant difference regarding smoking between healthy females and patients females. The menopausal status was significantly affected females, where most of patients were post-menopausal, while fewer post-menopausal women were healthy.

There were 18 females who performed hysterectomy; most of them were UI patients. Regarding mode of delivery, the large majority of participants who delivered vaginally were healthy, while most of participants who performed cesarean delivery suffered from UI. Increasing number of parities was correlated to females who were suffered from UI. Depression and diabetes were more common in UI patients than healthy women.

Table1: demographics of the participants

Characteristics of participants	N (%)
Age	
25-35	190 (38%)
36-45	175 (35%)
46 and above	135 (27%)
BMI	
Normal	142 (28.4%)
Overweight	236 (47.2%)
Obese	122 (24.4%)
Education level	
Primary	113 (22.6%)
Intermediate	202 (40.4%)
University	144 (28.8%)
Post graduate	41 (8.2%)
Urinary incontinence?	
Yes	64 (12.8%)
no	436 (87.2%)
Smoking	
Yes	25 (5%)
No	475 (95%)
Menopausal status	
Perimenopausal	355 (71%)
Postmenopausal	145 (29%)
Hysterectomy performance	
Yes	18 (3.6%)
No	482 (96.4%)
Type of delivery	
Vaginal (normal)	437 (87.4%)
Cesarean	63 (12.6%)
Parity	
Once	51 (10.2%)
Two times	217 (43.4%)
3 times	130 (26%)
More than 3 times	102 (20.4%)
Do you suffer from depression	
Yes	48 (9.6%)
No	452 (90.4%)
Are you diabetic patient	
Yes	85(17%)
No	415 (83%)

Table2: correlation between prevalence of UI and different variables

Characteristics	With UI N=75	Without UI N=425
Age		
25-45	20 (5.5%)	345 (94.5%)
46 and above	55 (40.7%)	80 (59.3%)
BMI		
Normal/Overweight	15 (4%)	363 (96%)
Obese	60 (49%)	62 (51%)
Smoking		
Yes	9 (36%)	16 (64%)
No	66 (13.9%)	409 (86.1%)
Menopausal status		
Perimenopausal	16(4.5%)	339 (95.5%)
Postmenopausal	59 (40.7%)	86 (59.3%)
Hysterectomy performance		
Yes	14 (77.8%)	4 (22.2%)
No	61 (12.7%)	421 (87.3%)
Type of delivery		
Vaginal (normal)	52 (11.9%)	385 (88.1%)
Cesarean	23 (36.5%)	40 (63.5%)
Parity		
≤3 times	24 (6%)	374 (94%)
>3 times	51 (41.8%)	71 (58.2%)
Do you suffer from depression		
Yes	34 (70.8%)	14 (29.2%)
No	41 (9.1%)	411 (90.9%)
Are you diabetic patient		
Yes	22 (25.9%)	63 (74.1%)
No	53 (12.8%)	362 (87.2%)

DISCUSSION:

The present study was conducted to assess the prevalence of UI among females in Saudi Arabia and its risk factors, this study included 500 female participants whose age was 25 years old and more. The prevalence among participants was found to be 12.5%. US study reported more prevalence than ours 45% ⁽⁶⁾. In Saudi Arabia where 41.4% of females in Jeddah were suffering from UI. Another Saudi study reported an overall prevalence of 29%. [9] In an Egyptian study ⁽¹⁰⁾ it was found that the overall prevalence of UI was 55% and UI prevalence was 20.6% and 20.3% in Qatar and UAE [11] respectively. The UI prevalence in Saudi Arabia was lower than the prevalence in a British study [12]. The lowest rate of UI prevalence was reported in Singapore (4.8%)[13].

Several risk factors for UI were reported. In a study from US it was demonstrated that BMI, medical comorbidity, increasing age, current major depression and a history of hysterectomy were associated with UI [5]. Vaginal delivery, older age, high parity and obesity were reported in Saudi study to be significantly associated with UI [9].

This study showed that older age, obesity, menopausal status, vaginal delivery more parity, depression and diabetes were risk factors for UI. In the present study, increasing age was a risk factor for UI, females whose older than 45 years old with UI were (40.7%), while in the female without UI were only (59.3%). Regarding BMI, the present study showed that almost half of obese females were UI patients, whereas most of those with normal or overweight (96%) didn't suffer from UI. One Study found that obesity was a risk factor⁽⁸⁾. And other study observed that loss of (5%) to (10%) of body weight resulted in a reduction in urinary incontinence ⁽¹⁴⁾. The current study revealed that smoking and hysterectomy were also risk factors for UI, about third of patients with UI were smokers while (86%) whom don't have UI were not smokers and (77.8%) of patients with UI were performed hysterectomy. An American study reported that women who performed hysterectomy were 33% more likely to have UI than women who didn't perform it [6].

The menopausal status was a risk factor for UI, our participants with UI were in post-menopausal status (40.7%), while (59.3%) of post-menopausal women had no UI. A study found

that menopause was significantly correlated with UI development [15].

Several previous studies [16] studied the role of delivery type on the prevalence of UI, they reported a possible protective role of cesarean delivery. also, the present study showed that cesarean delivery was not protective from UI, where 36.5% of female who experienced cesarean delivery were suffered from UI, vaginal delivery was less common between UI patients (11.9%). Our study revealed that multiparity was related to the UI prevalence, where (41.8%) of females who had more than 3 times of parity were UI patients, while (6%) only of the females who had less than 3 times were suffered from UI.

Regarding depression and diabetes, in our study most of females who were suffered from depression (70.8%) and diabetes (25.9%) were also suffered from UI.

CONCLUSION:

The present study showed a moderately high prevalence of urine incontinence among Saudi females. The associated risk factors of urine incontinence were older age, obesity, menopause, high parity, diabetes and depression, also we found that cesarean delivery was associated with urine incontinence prevalence.

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