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# Prevalence and Associated Demographic Factors of Urinary Incontinence among Women Attending Postnatal Clinics in Primary Health Care In Qatar. A Descriptive Cross-Sectional Study

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## Abstract

**Background:** Urinary Incontinence (UI) is more prevalent among women and is a significant health concern which affects the quality of life (QOL) of half of women of middle and older ages. The objectives of this study was to estimate the prevalence of post-partum UI among women attending postnatal clinics in primary care in Qatar and its association with other demographic factors.

**Methods:** A descriptive cross-sectional study. International Consultation on Incontinence Questionnaire-Short Form (ICIQ-SF) was used to collect data. Continuous data was presented as mean (SD) and ordinal and nominal data as frequency and percentage. Chi square test and direct logistic regression was used for bivariate and multivariate analysis with the help of IBM SPSS Statistics 25 software.

**Results:** Data of 357 women from 3 post-partum clinics was collected from April 2018 to May 2019. A total of 144(40.3%) women had urinary incontinence at 6-week check-up with 109(75.7%) stating the amount leaked was small. No correlation was noted with age, ethnicity or multi parity. However, a higher risk of UI was noted with BMI. A strong correlation was found in women reporting UI with a history of UI before or during pregnancy. About 221(61.9%) respondents stated they would seek medical help. And the prevalence of UI has no association with other demographic factors, it's varied among different ethnicities.

**Conclusion:** UI is highly prevalent among postnatal women (40.3%). The most common type of UI is stress UI 72(50%) followed by mixed UI 43(30%). In Qatari population 19(13.2%) had UI. In Non-Qatari population, out of 28 nationalities, Indians 24(16.7%) and Egyptian 21(14.6%) were noted to have more UI than other nationals. Socio-religious factors have a significant effect on the QOL of incontinent women. A well-designed national health intervention early on in pregnancy can bring about significant benefits and improvement of QOL in postnatal women.

**Keywords:** Urinary Incontinence; stress urinary incontinence; post-natal clinics; women, Qatar

## Introduction

The International Continence Society (ICS) and the International Urogynecological Association (IUGA) criteria defined urinary incontinence (UI) as 'the complaint of any involuntary leakage of urine. UI classified as stress UI (SUI), urgency UI (UUI), mixed UI (MUI), postural UI, nocturnal

enuresis, insensible UI and coital UI. Of these, SUI, UUI, and MUI are most common [1].

The prevalence rate of UI in adult women has shown a wide variation from 5 to 69 % with most studies in the range of 25 to 45% [2]. In the Middle East, the prevalence is noted to be between 30-54.8% [3] with 20.6% [4] and

21% [3] reported among women in Qatar. Pregnancy and childbirth seem to be the most consistent and important factor for the development of urinary incontinence [5]. It may be also associated with several factors such as poor education, physical exertion, changes in body position, urgency, obesity indicated by higher BMI, increased waist-hip ratio, visceral obesity, and diseased conditions such as recurrent urinary tract infection and diabetes mellitus [6].

The complaint of involuntary leakage on effort or exertion, or on sneezing or coughing was defined as stress urinary incontinence (SUI). The complaint of involuntary leakage accompanied by or immediately preceded by urgency was defined as urge urinary incontinence (UUI). The complaint of involuntary leakage associated with urgency and with exertion, effort, sneezing, or coughing was defined as mixed urinary incontinence (MUI). Despite significant impact, less than one half of the women with urinary incontinence seek medical care; instead they rely on absorbent pads or lifestyle changes to cope with the condition. These women 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 [6].

Prevalence of all types of UI in pregnancy varies from 32 to 64% with 30% persisting with symptoms in first 3 months of postpartum [7]. Higher rates of depression with low scores on other aspects of quality of life (QOL) involving mobility, physical, mental, emotional, sexual health and relationships have been documented [8]. This descriptive study is to establish the prevalence of UI among postpartum women in Qatar and to check whether any association between the different socio-demographic variables.

## Materials and Methods

The study was carried out in accordance with the guidelines of the Primary Health Care Corporation, Research Section, Qatar, after passing through the ethical committee. A descriptive, cross-sectional study was conducted on females attending their 6-week routine post-natal check-up. Participants was selected from three Health Centers representing the three different regions in Qatar providing postnatal clinics between March 2018 and Feb 2019.

A total of 357 women participated in the study after obtaining the consent. A non-probability purposive sampling technique was used where the targeted sample is all post-natal women who are coming for their routine six weeks checkup. The criteria included all healthy postnatal women attending their postnatal clinic check-up. Exclusion criteria were any history of abdominal or vaginal surgery leading to urinary incontinence in the past. The International

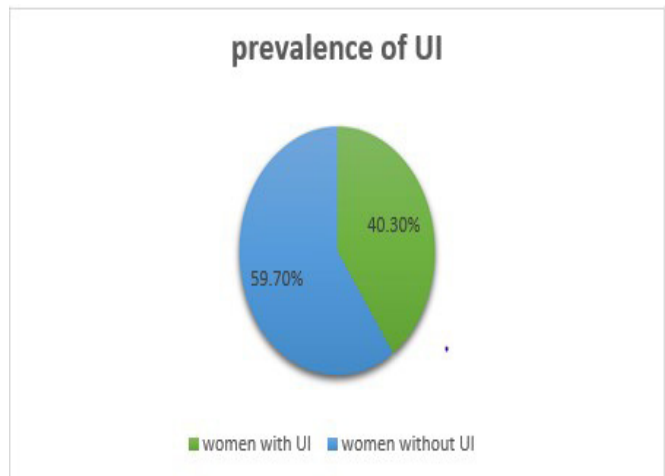


Figure 1: Prevalence of UI in postnatal women with and without UI.

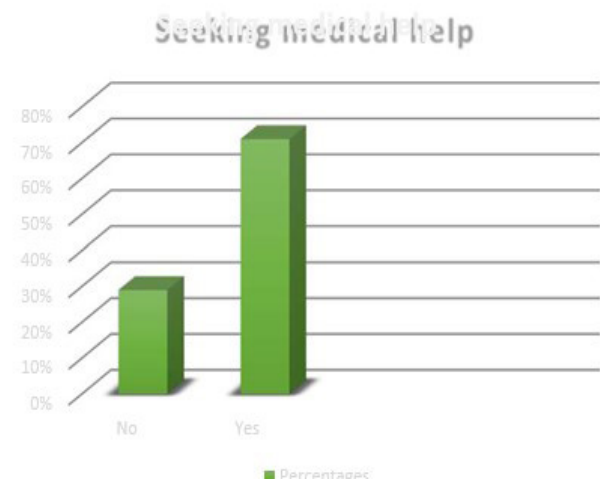


Figure 2: Seeking medical help among women with UI.

Consultation on Incontinence Questionnaire-Short Form (ICIQ-SF) was the main study tool used to diagnose and evaluate the severity of UI. It comprises three scored items (Questions 1– 3), frequency of UI (score range, 0–5), usual amount of UI (score range, 0–6), interference with everyday life (score range, 0–10), and a self-diagnostic item (Question 4, not scored). Due to a paucity of any national studies on postnatal UI prevalence and the wide variation in literature, 33 per cent from a systematic review [7] was chosen as the estimated prevalence in Qatar.

General socio-demographic detail was also taken to identify patient characteristics including age, ethnicity, multi parity and body mass index (BMI). A computerised database was used to analyse and compare various parameters. Continuous data were presented as mean (SD) and ordinal and nominal data as the frequency and percentage. Student t-test was performed for continuous data, Chi square test

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Table 1: Sociodemographic characteristics of women with and without UI.

Variables	No urine leak n=213 (59.7%)	Urine leak n=144 (40.3%)
<b>Nationality</b>		
Qatari	31(14.6)	19(13.2)
Non-Qatari	182(85.4)	125(86.8)
<b>Ethnicity</b>		
Indian	24(11.3)	24(16.7)
Egyptian	17(8)	21(14.6)
Yemeni	8(3.8)	11(7.6)
Pakistan	19(8.9)	9(6.3)
Jordan	9(4.2)	8(5.6)
Palestine	7(3.3)	7(4.9)
Sudanese	21(9.9)	7(4.9)
Others	77(36.2)	38(26.4)
<b>Age in year n (%)</b>		
Less than 20	2(0.4)	1(0.7)
21-29	88(41.3)	49(34)
30-39	110(51.6)	87(60.4)
40 and over	13(6.1)	7(4.9)
<b>Parity n (%)</b>		
Primipara	58(27.2)	27(18.8)
Multipara	99(46.5)	117(81.8)
None	56(26.3)	0
<b>History of UI before or during pregnancy n (%)</b>		
Yes	33(1.4)	124(86.1)
No	210(98.6)	20(13.9)

for categorical data and direct logistic regression was used to determine independent risk factors. Data were analysed using IBM SPSS Statistics 25 software.

The type of questions with related scores and socio demographic characteristics are described in table 1 (Table 1).

## Results

A total of 357 women were recruited in the study from March 2018 to February 2019. Among these 144 (40.3%) women confirmed that they had urinary incontinence at the 6 weeks postpartum checkups, whilst 213 (59.7%) women felt that urinary competency was not a major

Table 2: The distribution of frequency of urine leakage, amount of urine leakage and types of urine incontinence in women with UI and association of BMI with UI in total population.

Frequency of urine leakage (n=144)	Average Percentage (%)
Once a week or less	55(38.2)
Two or three times a week	42(29.2)
Several times a day	31(21.5)
All the time	16(11.1)
<b>Amount of urine leakage (n=144)</b>	<b>Average Percentage (%)</b>
Small	109(75.7)
Moderate	30(20.8)
Large	5(3.5)
<b>Types of Urine Incontinence(n=144)</b>	<b>Average Percentage (%)</b>
Stress	72(50)
Urge	26(18)
Mixed	43(30)
Others	3(2)
<b>BMI (n=357)</b>	<b>Average Percentage of UI (%)</b>
Less than 18	3(0.8)
19-24	80(23.1)
More than 25	264(76.1)
Missing	10(2.8)

Table 3: Logistic Regression Predicting Likelihood of prevalence of UI.

	B	S.E.	df	P	Odd Ratio	95% CI. for Odds Ratio	
						Lower	Upper
Age in years	.021	.050	1	.674	1.021	.926	1.125
Parity	.006	.155	1	.970	1.006	.743	1.362
BMI	-.072	.048	1	.137	.931	.846	1.023
history of UI before or during pregnancy	6.267	.671	1	.000	527.095	141.473	1963.834
Constant	-1.057	1.747	1	.545	.348	.926	1.125

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problem (Figure 1). Of these 50 (14%) were Qatari patients while the remaining 307(86%) were non-Qatari. Out of 28 nationalities, Indian (13.4%) and Egyptian (10.6%) were the two other major ethnic group in the study. Among Qatari, 19 (13.2%) had UI. Indian 24(16.7%), Egyptian 21(14.6%) and Yemeni 11(7.6%) were noted to have more UI than other nationalities following with Pakistani 9(6.3%) and Jordan 8(5.6%) postpartum women (Table 2).

Most participants whom experienced urinary incontinence 87(60.4%) were in 30-39-year age group. The majority were multipara 216 (60.5%), followed by primipara 85 (23.8%). Among 213 women without urinary incontinence 99 (46.5%) were multipara and followed by 58(27.2%) with primipara. Among 144 women with urinary incontinence 117 (81.2%) were multipara and followed by 27(18.8%) with primipara (Table 1). An independent-samples t-test was conducted to compare the parity with impact on daily life for women with and without UI. Our results show there was no significant difference in scores for women with UI ( $2.79 \pm 1.55$ ) and women without UI ( $m = 2.63$ ,  $SD = 1.65$ ). ( $P$  value= 0.4, 95% CI -0.5 to 0.2). However, it was statistically significant when comparing women with UI,  $P$  value <0.05 (95% CI -3.4 to 2.6). About 127 (35.6%) participants stated they had urinary incontinence before and during pregnancy. The majority of women 124 (86.1%) stated that they have history of UI before and during pregnancy while 20(13.9%) women with UI confirmed that they don't have UI before and during pregnancy (Table 2).

Of those affected, 55 (38.2%) had UI at least once a week, while 42 (29.2%) were affected two to three times a week and 47(42%) had more pronounced UI with leaks several times a day or all the time. Majority 109 (75.7%) out of 144 stated that the amount of urine leaked was small and 30 (20.8%) felt it was moderate while 5(3.5%) declared it was a large amount. About 72 (50%) women suffered from stress incontinence and 43 (30%) of them had a mixed type while 26 (18%) had urge incontinence (Table 2). BMI data was missing in 10 of the patients. Majority of 264 out of 347 patients (76.1%) had a BMI of over 25. Only 80 (22.4%) had a BMI between 19-24. With BMI  $\leq 25$  as a reference, the odds of developing any incontinence and frequent UI was increased by 181% and 28% respectively in overweight women (BMI 25-30). For the obese group (BMI  $\geq 30$ ), the odds of developing any UI was increased by 121% and the odds of developing frequent UI was reduced by 47% [9] (Table 3).

Direct logistic regression was performed to assess the impact of several factors on the likelihood that respondents would report that they had a UI. The model contained four

independent variables (age, parity, BMI, and history of UI before or during pregnancy). The full model containing all predictors was statistically significant,  $\chi^2$  (4,  $N = 357$ ) = 319.5,  $p < 0.001$ , indicating that the model was able to distinguish between respondents who reported and did not report a UI. As shown in Table 3, only one of the independent variables made a unique statistically significant contribution to the model (history of UI before or during pregnancy). The strongest predictor of reporting a UI was the history of UI before or during pregnancy, recording an odds ratio of 527.1. This indicated that respondents who had a history of UI before were over 500 times more likely to report a UI problem than those who did not have UI before, controlling for all other factors in the model. Overall, 221(61.9%) women stated that they would seek medical help for their incontinence. Among them around 36 (72%) was Qatari stated that they would seek medical help if they had urinary incontinence (Figure 2).

## Discussion

Postpartum urinary incontinence is a disorder of incontinence starting before, during and after pregnancy [10]. The usual postnatal follow up appointment in the community after pregnancy was at 6 weeks. 3-40% is the usual prevalence for postpartum UI reported in other studies [7]. The prevalence in this study was 40.3% which was higher than the overall prevalence in Qatar (20.6% and 21%3).

In this study stress (50%) and mixed UI (30%) were the most predominant type of UI. The most common type of urinary incontinence in pregnant women is SUI8 which was used as a single case definition in this study to compare prevalence with other studies. A PubMed review on global prevalence found similar results of SUI in China (18.6%) and India (19.2%) [7]. In a multiethnic study in Norway [11], Middle Eastern (36%) and African origin women (26%) had lower rates of SUI compared to European and American women (45%) [12]. Unfortunately, comparison with other studies is challenging since different factors like population, study design including questionnaire types, wordings, data collection methods and mode of delivery have resulted in a wide variation in prevalence [6,12]. However, SUI (as well as mixed or other types) is seen as a higher risk among white women compared to black and Hispanics [13]. USA (60% - 75%), Australia (36.9%) and European countries like UK (59%), Spain (30.3%) and Scotland (54.3%) have a much higher prevalence [7] of SUI.

As in other studies [3,12], majority (75.7%) stated that the amount of urine leaked was small. Parity, BMI, age and mode of delivery are the major risk factors associated with



urinary incontinence especially SUI in young and middle aged women<sup>14</sup>. Increasing number of childbirths increases risk of developing pelvic organ prolapse later in life while obesity increases intra-abdominal pressure resulting in SUI [14]. No association with age (OR 1, p value =0.926) was seen in this study despite majority 60.4% of 30-39-year-old with urinary incontinence making up more than half the participants (55.2%). Nor was any link seen with parity (Odds ratio=1.006, p value = 0.97) considering 60.5% of women were multipara. This was similar to previous studies in Qatar<sup>3,4</sup>. BMI, however had a higher risk of SUI in this study [15] which was similar to other studies<sup>12</sup>. Unfortunately, mode of delivery was not included in our questionnaire.

Many women do not take action over UI symptoms [16]. The most significant correlation in our study was the higher likelihood of reporting UI as a problem among women who had a history of UI before or during pregnancy as compared to those who did not have UI before (odds ratio of 527.1). Majority of the respondents (61.9%) in our study including those without UI, would seek medical help. However, comparisons between ethnicities was not possible due to the range in sample size making it hard for any meaningful inference.

The challenges in accurately estimating the prevalence of postpartum UI has been highlighted in many studies due to the nature of the condition [6]. There is a high respondent bias when self-reporting stress incontinence in epidemiological studies especially when the presentation of the consultation is for other reasons [6,14]. There is no test which is universally accepted or which is objective available in the community to define significant incontinence [14]. Many cultures still accept UI as an expected consequence of childbirth [4,16]. Factors such as degree of symptoms [12], embarrassment [16], fear of stigmatisation<sup>14</sup>, conservative social values<sup>4</sup>, education<sup>3</sup> and role of friends and relatives [16] plays a significant role in the help seeking behavior especially among women from different multiethnic and socio-economic background. There are also limitations to a cross sectional study. Soon after pregnancy, some women may be willing to lie about their symptoms to avoid further interventions and examination [16]. The dynamic nature of UI with high incidence rates along with equally significant remission<sup>12</sup> also makes it hard to estimate the true prevalence. SUI in pregnancies can therefore range from 18.6 % to 60 %<sup>7</sup> depending on which trimester and time period the studies were done. The reported prevalence is highest in the third trimester, which then gradually decreases in the first year postpartum period [7]. The overall high prevalence of 40.3% in our study at 6 weeks which is similar to 38% in another study at 8 weeks [17] may well change at 3 months

with similar values of 30% highlighted in other studies [13].

## Conclusion

Establishing prevalence of postpartum UI in the 6-week postnatal period was the initial step to developing future new strategies to empower both women and health professionals to address this important and often overlooked form of maternal morbidity. Among 28 nationalities, our findings confirm that UI is highly prevalent in postnatal women especially SUI which was the aim of the study. A longitudinal study of the same population may have help to differentiate true positives from transitional cases.

Nevertheless, this study does highlight the importance of considering the individuality of a woman in the multi-ethnic large expat population of Qatar in terms of culture, needs, beliefs, attitudes, knowledge and close family support. Further research is recommended on whether knowledge, screening and other interventions early on in pregnancy can bring about significant benefits and improve QOL in postnatal women.

## Data Availability

The datasets generated and/or analysed during the current study are not publicly available due to the publicly non-availability but are available from the corresponding author on reasonable request.

## Conflict of Interest Declaration

The authors declare that they have no competing interests

## Fund Statement

This study was not funded by any organization

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## Ethical Guidelines

This study was conducted in accordance with the Declaration of Helsinki (1964).

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