Mutairi et al, 2017;1(1):5–10.
https://doi.org/10.24911/IJMDC.1.1.2

RESEARCH ARTICLE

Post-partum urinary incontinence among Saudi women

Nouf Al Mutairi[1]*, Maha Al Farra[2]

ABSTRACT

Background: Urine incontinence is known to affect an individual's health related quality of life and is associated with medical and psychological morbidity. This condition limits the patient's daily activities, resulting in loss of self-esteem. The aim of this study was to determine the prevalence, risk factors, common type and the impact of urinary incontinence on health related quality of life among Primiparous Saudi women.

Methodology: A cross-sectional study was carried out at three primary care centers in King Abdul-Aziz Medical City. The study included 285 participants from primiparous women visiting the primary care clinics. The data were collected through an approved questionnaire.

Results: The prevalence of urinary incontinence in our study was 56.5% of which 52.1% of cases were mixed, 33.7% were due to stress and 14.2% due to urgency.

Conclusion: Most (56.5%) of the primiparous women visiting NGHA primary care suffered from urinary incontinence, the most common type was mixed urinary incontinence.

Keywords: Primiparous, urinary incontinence, Stress urinary incontinence, mixed urinary incontinence, urge urinary incontinence.

Introduction

The International Continence Society (ICS) defines urinary incontinence as the complaint of any involuntary leakage of urine [1]. Urine incontinence (UI) is known to affect an individual's health related quality of life (HRQL). The common types of UI are stress urinary incontinence (SUI), urge urinary incontinence (UUI), and mixed urinary incontinence (MUI) [2]. SUI is the most common type affecting half of the women, with mixed UI next, followed by urge incontinence [3]. The total cost of urinary incontinence in the United States is estimated to be $20 billion [4]. UI limits the patient's daily activities, resulting in the loss of self-esteem and a reduction in their ability to maintain an independent lifestyle [1]. The overall prevalence of urinary incontinence in the Middle East ranges from 20.3% to 54.8% [5,6]. In Qatar it is 20.6%, in the United Arab Emirates it is 20.3% [5,7], in Jeddah and Riyadh, cities of Saudi Arabia were estimated to be 41.4% and 29% respectively [8,9]. There are a number of risk factors for UI which include age, body mass index, medical co-morbidities i.e. obesity, diabetes, hysterectomy and parity [10]. Additionally, pregnancy and delivery seem to be a major risk factor among young and middle-aged women [11]. The modern trend in medicine is to lay emphasis on primary health care urinary incontinence prevalence because prevention is much less costly than treatment [12]. A study was conducted to assess the prevalence, incidence and risk factors of female urinary incontinence UI in Europe, the result showed that the prevalence of UI ranged from 14.1% to 68.8% [13]. Another study in Portland assessed the prevalence of urinary incontinence in 5,599 primiparous women and found that 955 (17.1%) reported the leakage of urine [14]. A study conducted to investigate the prevalence of urinary incontinence six months postpartum on 12,679 primigravidas reported that 31% of the women had urinary incontinence [15]. Obstetric and other risk factors for urinary incontinence that occur during pregnancy or after childbirth in primiparous were identified in 2009 by Glazener [16].

Correspondence to: Nouf Al Mutairi
*Associate Consultant (Family Medicine),
King Abdullah bin Abdulaziz University Hospital, Princess Nourah Bint Abdulrahman University, Riyadh, Saudi Arabia.
Email: dr-nouf1@hotmail.com
Full list of author information is available at the end of the article.
Received: 08 September 2016 | **Accepted:** 13 October 2016

Methodology

The study was carried out at the department of family medicine and PHC at King Abdul-Aziz Medical City (KAMC), Health Clinics for Specialized Care (HCSC) and National Guard Clinics for Specialized Care (NGCSC), Riyadh, Saudi Arabia. This cross-sectional study included all primiparous women visiting the three primary care clinics between 1-June to 31-August-2013. An approved questionnaire was used. All the primiparous Saudi women who delivered a single live born neonate visiting the PHCCs in Riyadh, aged between 15-40 years were included in this study. And any other women incontinent before pregnancy, twin pregnancy or more than one-year post delivery were excluded. A sample size of 285 was estimated using test for single proportion, adjusted up to 300 with margin of error (0.05) and CI of 95%. This was carried out with 2-3 participants included in the study each day from a pool of 20-50 visitors. A well-structured data collection form was designed and validated. This questionnaire was distributed and collected from the patients by a well-trained nurse.

Data were analyzed via Statistical Package for Social Sciences (SPSS) software version 18.0. Both descriptive statistics (e.g., number and percentage) and analytic statistics were carried out. Chi-Square was used to test for the association and/or the difference between two category variables. P-value equal to or less than 0.05 was considered statistically significant. Regression analysis to obtain the correlations was also carried out.

Results

A total of 285 primiparous women were included in this study, all women were continent before pregnancy. Demographic and potential risk factors of urinary incontinence are presented in Table 1. The mean age was 25.5 ± 4.4 SD years, range was 15-40 years, mean body mass index was 26 ± 4.3 kg/m^2 and range was 18.03-39.54 kg/m^2. The total number of women who had normal delivery were 229 (80.4%) and the women who had delivered by cesarean section were 56 (19.6%). Among the 285 women, 39.6% had gained less than 8 kg in weight during pregnancy and around 63.9% of those women had given birth to babies weighing between 2.5 and 3 kg.

UI was reported by 56.5% (161/285), 27.7% during pregnancy, 37.1% after delivery and 35.2% reported UI in both during pregnancy and after delivery (figure 1).

Table 2 shows that there was no statistically significant difference in the prevalence of UI among women who delivered vaginally (55%) or cesarean section (62.5%), P value = 0.312. Additionally, we found no statistical difference in the prevalence of urinary incontinence among women who had elective cesarean deliveries or emergency cesarean section, giving a P value 0.434. We found the risk of UI increased in women who delivered vaginally with laceration, OR1.9, 95%CI 1.1-3.3, P value = 0.028 (Figure 2).

Women with high body mass index are more likely to have UI. We also found that women with higher weight at the beginning of pregnancy were more likely to have UI. It was statistically significant, P = 0.002 (Table 3).

Discussion

There is a high prevalence of UI that is reported in this study as compared to other studies [11,17]. This might be due to the use of broader inclusion criteria including any form of involuntary urine leak and marked as urinary incontinence. The common type of UI reported in the present study was 52.1% mixed, 33.7% stress and 14.2% urgency. In the mixed group of primiparous and multiparous women, some studies reported mixed UI as being more common than stress UI [6,18]. Other studies have reported stress UI as the most common [19,20]. We are not aware of any other studies that have investigated the prevalence of each type of UI in primiparous women although some studies have investigated the specific type of UI in primiparous women but not all types [17]. Interestingly, in our study, we did not find a significant association between mode of delivery and UI. The lack of association between mode of delivery and UI is hard to explain, however it could be due to small sample size. Most of the studies demonstrated an increase of UI among women who delivered by vaginal delivery [14,15,16]. Some studies mention that the type of delivery was not a significant risk factor for UI [17,21,22]. Although the relationship between UI and cesarean section delivery is controversial, some studies mention it is protective [8,10,23] and others demonstrate that there is an increase among women who have delivered by C/S as compared with nulliparous [14,15] which is similar to the findings of another study [14]. The present study detects no statistically significant increase in the risk of UI among women who had elective cesarean section compared with the emergency cesarean section. Lacerations in the delivery area and the use of any device during vaginal delivery have been shown in our study to be statistically significant in association with UI. Some studies reported that forceps-assisted delivery was a risk factor for the UI [14,24,25]. However, other authors did not find any significant association between assisted delivery and UI [14]. Other studies have found a relationship between UI and laceration in the delivery area [16]. The present study detects a statistically significant relationship between high BMI and UI, as a high BMI may worsen pelvic floor weakness during pregnancy and vaginal delivery. Interestingly, our results showed that weight gain during pregnancy did not seem to be a risk factor for urinary incontinence, which was similar to another study [26]. Results of our study showed no statistically significant relationship between baby weight and UI in primiparous women, where several studies support our finding [15,16]. In contrast, some studies reported the first child weight was already known to be a risk factor for UI after the first delivery [24]. Diabetes mellitus, bronchial asthma, chronic constipation have all been shown in our study to be significantly associated with UI, these risk factors have been described only by a study as significant risk factors for UI [14]. In our study, most of the women reported a mild effect of UI on their quality of life. Some

studies that have been conducted to evaluate the impact of UI in primiparous women reported a mild effect of UI in HRQL [27]. The impact on quality of life is considered to be mild, perhaps because most women consider urinary incontinence as a temporary difficulty that will resolve on its own. Urinary incontinence remains an underreported and embarrassing condition. A small number of women seek medical care for this condition.

Table 1. *Obstetric and medical characteristics of the study group (n = 285).*

Characteristics	Frequency	Percent
Weight gain during pregnancy		
<8 kg	133	39.6%
8-10 kg	108	37.9%
10-15 kg	47	16.5%
>15 kg	17	6.0%
Baby weight at birth		
<2.5 kg	73	25.6%
2.5-3 kg	182	63.9%
3-4 kg	29	10.2%
4 kg	1	.4%
Delivery mode		
Normal delivery	229	80.4%
Cesarean section	56	19.6%
History of assisted delivery		
Yes	61	26.6%
No	168	73.4%
History of cut or laceration in the delivery area		
Yes	155	67.7%
No	74	32.3%
Cesarean delivery		
Emergency	45	80.4%
Elective	11	19.6%
diabetes mellitus		
Yes	16	5.6%
No	269	94.4%
Bronchial asthma		
Yes	66	23.2%
No	219	76.8%
Chronic constipation		
Yes	59	20.7%
No	226	79.3%

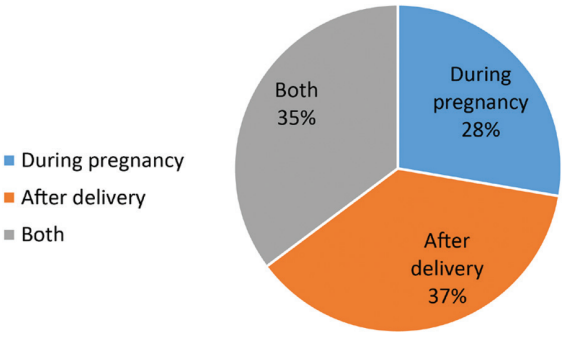

Figure 1. *Distribution of urinay incontinence among participants.*

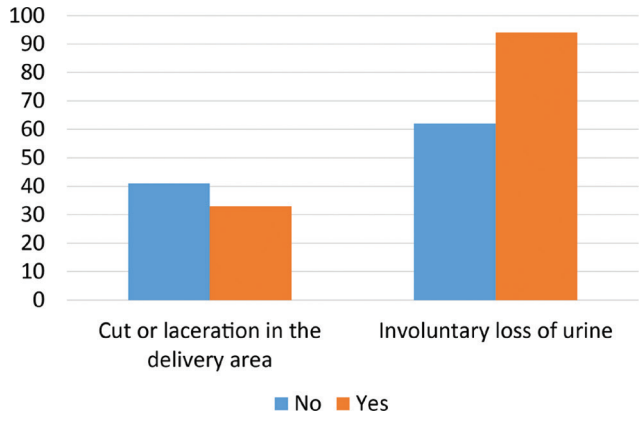

Figure 2. *Relationship between urinary incontinence and laceration in delivey area.*

Table 2. *Relationship of incontinence with medical conditions in study subjects.*

Risk factor	Do you have any involuntary loss of urine? No %	Yes %	chi-square	P value
Weight gain during pregnancy				
<8 kg	55 (48.7%)	58 (51.3%)	2.04	.56
8-10 kg	43 (39.8%)	65 (60.2%)		
10-15 kg	19 (40.4%)	28 (59.6%)		
>15 kg	7 (41.2%)	10 (58.8%)		
Baby weight at birth				
<2.5 kg	31 (42.5%)	42 (57.5%)	.065	.968
2.5-3 kg	80 (44.0%)	102 (56.0%)		
3-4 kg	13 (44.8%)	16 (55.2%)		
Delivery mode				
Vaginal delivery	103 (45.0%)	126 (55.0%)	1.024	.312
Cesarean section	21 (37.5%)	35 (62.5%)		
History of cut or laceration in delivery area				
No	41 (55.4%)	33 (44.6%)	4.803	0.028
Yes	62 (40.0%)	93 (60.0%)		
Assisted delivery				
No	86 (51.2%)	82 (48.8%)	9.835	.002
Yes	17 (27.9%)	44 (72.1%)		
Cesarean section				
Emergency	18 (40.0%)	27 (60.0%)	0.611	0.434
Elective	3 (27.3%)	8 (72.7%)	11	19.6%
diabetes mellitus				
No	122 (45.4%)	147 (54.6%)	6.632	0.010
Yes	2 (12.5%)	14 (87.5%)		
Bronchial asthma				
No	114 (52.1%)	105 (47.9%)	28.101	.000
Yes	10 (15.2%)	56 (84.8%)		
Chronic constipation				
No	110 (48.7%)	116 (51.3%)	11.844	.001
Yes	14 (23.7%)	45 (76.3%)	226	79.3%

Table 3. *Relationship between risk factor UI and effect of UI on HRQL Score.*

Score of urinary incontinence affected life of women	N	Mean	(SD)	T test	P value
Normal delivery	131	8.72	3.273	.930	.354
Cesarean section	38	9.26	2.854		
Assisted delivery					
No	86	8.08	3.229	−3.182	.002
Yes	45	9.93	3.033		
History of cut or laceration in the delivery area					
No	34	8.94	3.541	.462	.645
Yes	97	8.64	8.64		
Diabetic Mellitus					
No	154	8.73	3.236	−1.483	.140
Yes	15	10.00	2.360		
Bronchial asthma					
No	113	8.58	3.294	.597	.138
Yes	56	9.36	2.907		
Constipation					
No	119	8.63	3.067	−1.326	.187
Yes	50	9.34	3.426		

Conclusions

The majority (56.5%) of the primiparous women in PHCCS in Riyadh suffered from urinary incontinence, the most common types are mixed UI which was almost half of all the incontinence types. High BMI, DM, BA, chronic constipation and instrument use during labor, were signifcant risk factors. Urinary incontinence did affect women HRQL.

Recommendations

Future studies should be carried out with larger samples in a higher number of primary care centers. Urinary incontinence remains an underreported and embarrassing condition. A small number of women seek medical care for this condition. The main reason for not seeking help was that most women believed that incontinence is part of normal life. Therefore, we suggest that an awareness program should be carried out for all women through media or lectures.

Limitations of the study

The study was done on a limited population and its fndings cannot be generalized to all primary care populations. Our questionnaire was distributed to women from 6 weeks to one year after delivery so the recall bias cannot be excluded e.g. the weight at the start of pregnancy, weight gain during pregnancy and baby weight.

Acknowledgment

I would express my sincere gratitudeand appreciationto my supervisor Dr. Maha AL-Farra Consultant FM in NGH for her help, guidance and advice during this study. I am grateful to Dr. Saeed ur Rahman Consultant FM in NGH for all his efort and assistance. Also, thank Ms. Hind AlShatry Research Coordinator for her technical and administratie support.

List of Abbreviation

UI	Urinary incontinence
SUI	Stress urinary incontinence
MUI	MIXED URINARY INCONTINENCE
UUI	Urge urinary incontinence
HRQL	Health Related Quality of Life
BMI	Body mass index
PHCCs	Primary health care centers
KAMC	King Abdul-Aziz Medical City
MNGHA	Ministry National Guard Health Affairs

Conflict of Interest
None

Funding
The research was funded by the King Abdullah International Medical Research Center.

Consent for publication
Not applicable

Ethical considerations
Written permission from King Abdullah International Medical Research Center in Riyadh was obtained. Informed consent was also taken from all subjects.

Author details
Nouf M. Al-Mutairi[1], Maha Al Farra[2]

1. Associate Consultant (Family Medicine), King Abdullah bin Abdulaziz University Hospital, Princess Nourah Bint Abdulrahman University, Riyadh, Saudi Arabia

2. Consultant (Family Medicine), King Abdulaziz Medical City, National Guard Clinics for Specialized Care, Riyadh, Saudi Arabia

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