

## Urinary incontinence among pregnant Turkish women

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### ABSTRACT

**Objective:** To investigate effect on quality of life and to determine the frequency and risk factors for urinary incontinence (UI) among pregnant Turkish women.

**Methodology:** This was a descriptive and cross-sectional study which enrolled 502 pregnant women.

**Results:** It was found that 40.4% of pregnant women reported urinary incontinence. 78.8% of pregnant women with UI had stress UI, 14.8% of them had mixed type UI and 6.4% of them had urge UI. 12.9% of pregnant women were aware of pelvic floor muscle exercises. It was found that 73.5% of pregnant women feel discomfort, 75.3% of them think that their daily routines are affected, 69.3% think of getting assistance from a health institution, 52.6% of them avoid taking enough liquid with the anxiety of UI. Risk factors of UI among pregnant women were older age (odds ratio [OR] = 1.088, 95% confidence interval [CI] 1.001-1.183) and spontaneous birth (OR=3.938, 95%CI 1.899-8.167).

**Conclusion:** Urinary Incontinence is seen as a common health problem among pregnant Turkish women. Also, it has negative effect on their quality of life. Health care professionals should investigate pregnant women for UI in antenatal care and they should inform them about pelvic floor muscle exercises.

**KEY WORDS:** Pregnant women, Urinary incontinence, Risk factor.

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### INTRODUCTION

Urinary incontinence (UI) is defined as involuntary loss of urine by International Continence Society.<sup>1</sup> UI is physically debilitating and socially incapacitating with loss of self confidence, feelings of helplessness, depression and anxiety all related to its occurrence.<sup>2</sup>

Women frequently experience UI, especially during pregnancy and in the postpartum periods.<sup>3,4</sup> Changes in hormone levels and glomerular filtration rate, as well as anatomic changes associated with the enlarged uterus, have been suspected causal factors for UI during pregnancy.<sup>5</sup> Loss of the posterior urethrovesical angle or reduced tensile strength of the fascia in pregnancy might produce antenatal stress incontinence.<sup>5-7</sup> UI during pregnancy is a problem that can cause considerable embarrassment, inconvenience and worry for many women.<sup>8</sup>

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Studies carried out during pregnancy have proved that between 32%-60% of women report the symptoms of stress incontinence in pregnancy.<sup>9,10</sup> Ege et al reported that UI during pregnancy is 42% among Turkish pregnant women.<sup>11</sup> UI studies have shown relationship between more severe forms of UI and assisted vaginal deliveries or deliveries of infant with a high birth weight, age, higher parity, obesity, long labor duration, and episiotomy which suggest the potential for an intervention promoting continence that is targeted at women who have just given birth.<sup>2,12</sup>

Pelvic floor exercises have been promoted during pregnancy and after delivery to help prevent postnatal UI.<sup>2,7,13-15</sup> Reviews of the literature have concluded that pelvic floor exercises are effective in treating stress UI in women<sup>14,16</sup> particularly during postnatal period.<sup>2,3</sup>

Although in Turkish population there have been many studies conducted on women with UI,<sup>17,19</sup> few studies are done regarding UI during pregnancy.<sup>11</sup> This study will provide new additional information for definition of this condition and determination of risk factors of UI in pregnant Turkish women. The purpose of this study was to investigate effect on quality of life and to describe the prevalence of UI in pregnancy and to identify risk factors of UI.

### METHODOLOGY

This was a descriptive cross-sectional study. The study included 502 pregnant women without urinary incontinence before pregnancy and consulting at Obstetrics Outpatient Clinic, in Ordu, Turkey. Volunteer pregnant women enrolled non-consecutively in the study after verbal informed consent. The study was performed between 3rd October 2005 and 30th January 2006.

The data were collected with a questionnaire form prepared by researchers according to the literature information.<sup>2-9</sup> The questionnaire form included 23 questions and it had two parts including questions about demographic and obstetric characteristics of pregnant women (11 Qs) and UI features (12 Qs). The first part of the questionnaire form was about their age, education level, occupation, place of living, number of birth, mode of birth, weight before pregnancy, current weight of pregnant women, month of pregnancy, weight of earlier newborn, the frequency of birth, history of any diseases and episiotomy in the earlier births. The second part of the questionnaire form included their UI complaints, urinary incontinence type, the beginning time of their complaints about UI, their information about UI,

their information about protection of the pelvic floor muscles (PFM), whether doing exercise of the PFM and the states of being effected quality of life of pregnant women with UI.

The participants were informed by the investigators and through an ethical approval protocol that they would not be paid for their participation in the study. Also, necessary official permissions were taken from the institution before starting the research by researchers.

The dependent variable of this study was being with UI of women. Chi-squared test and t test were used as descriptive univariate analyses to determine an association between dependent and independent variables. A p value less than 0.05 was considered to be significant.

### RESULTS

The mean age of the 502 pregnant women in the study was 26.7 years. The average number of birth of pregnant women was 1.7. The mean duration of pregnancy was 8.1 months, the mean weight of earlier newborn of pregnant women was 3323.5g, the frequency of birth was 2.9 years. In this study, 44% of pregnant women were elementary school graduates, 79.1% of them were housewife, and 72.3% of them lived in the district or city. The mode of earlier birth of 53.4% of pregnant women was cesarean. Thirty-eight percent of pregnant women had episiotomy in the earlier delivery. Of 502 pregnant women, 23.1% had chronic systemic diseases, 22.3% had excretory system diseases and 8.4% had respiratory system diseases.

In the present study, 40.4% of pregnant women reported UI and 11.6% UI complaints during earlier pregnancies. 78.8% of women had stress incontinence, 14.8% of them had mixed type UI, and 6.4% of them had urge UI. It was found that only 21.3% of pregnant women have information about UI, and 60% of informed women got the information from the doctors. 87.1% of pregnant women had no information about protecting the PFM, and 5% of pregnant women do Kegel exercises. The most common effects on quality of life of UI among pregnant women were affected daily activities (75.3%), felt discomfort (73.5%), avoid taking enough liquid (52.6%), effected their sexual life negatively (47%), isolated themselves from their environment because of UI problems (35.8%).

Risk factors and factors associated with urinary incontinence are shown in Table-I. Association was found between urinary incontinence and the age of the pregnant women ( $p=.000$ ), the number of births

( $p=0.000$ ), the weight of pregnant women ( $p=0.042$ ), the weight of earlier newborn ( $p=0.001$ ), their occupation ( $p=.025$ ), their excretory system disease ( $p=0.000$ ), their respiratory system diseases ( $p=0.032$ ), spontaneous of earlier birth ( $p=0.000$ ), and urinary incontinence in earlier pregnancies ( $p=0.000$ ).

According to the results of the logistic regression analysis, older ages (Odds ratio [OR]= 1.088, 95% Confidence interval [CI] 1.001-1.183), spontaneous birth (OR:3.938, 95% CI 1.899-8.167) were determined to constitute risks in terms of urinary incontinence.

Table-I: Independent determinants and risk factors associated with UI (n=502).

Variables	UI				Significant test	OR ( 95% CI)**
	Yes		No			
	n	%	n	%		
Education level						
Elementary school	80	36.2	141	63.8	NS	0.953(0.462-1.963)
Middle school and higher	123	43.8	158	56.2		
Occupation						
Housewife	150	37.8	247	62.2	$\chi^2=5.040$ p=0.025	1.405(0.623-3.172)
Working	53	50.5	52	49.5		
Place of residence						
Village	56	40.3	83	59.7	NS	1.223 (0.526-2.846)
District or city	147	40.5	216	59.5		
Chronic system disease						
Yes	48	41.4	68	58.6	NS	1.440 (0.656-3.160)
No	155	40.2	231	59.8		
Excretory system disease						
Yes	63	56.3	49	43.8	$\chi^2=14.964$ p=0.000	1.729 (0.816-3.666)
No	140	35.9	250	64.1		
Respiratory system diseases						
Yes	24	57.1	18	42.9	$\chi^2=4.580$ p=0.032	2.175 (0.771-6.137)
No	179	38.9	281	61.1		
Mode of earlier birth						
Section Ceaserian	68	33.5	135	66.5	$\chi^2=22.311$ p=0.000	3.938 (1.899-8.167)
Spontaneous birth	103	58.2	74	41.8		
Episiotomy (n=303)						
Yes	68	58.6	48	41.4	NS	0.783 (0.371-1.655)
No	98	52.4	89	47.6		
UI in earlier pregnancy						
Yes	52	89.7	6	10.3	$\chi^2 =65.950$ p=0.000	8.675 (0.888-84.714)
No	151	34.0	293	66.0		
	Mean	SD	Mean	SD		
Age (year)*	28.30	5.73	25.69	4.66	t=5.599p=0.000	1.088 (1.001-1.183)
Number of births	1.97	0.85	1.61	0.79	t=4.293p=0.000	1.321 (0.795-2.193)
Weight before pregnancy (kgs)	61.81	8.91	60.52	9.38	NS	0.931 (0.843-1.028)
Present weight of pregnant (kgs)	71.59	9.62	69.59	10.72	t=2.043p=0.042	1.042(0.953-1.140)
Month of pregnancy (months)	8.25	1.15	8.09	1.50	NS	0.969(0.735-1.277)
Weight of earlier newborn (grs)	3412.63	375.71	3246.66	559.94	t=3.289p=0.001	1.001 (1.001-1.002)
Frequency of birth (year)	2.95	1.66	3.12	2.21	NS	1.025 (0.828-1.269)

\*Mean and standard deviation; \*\*Adjusted for education level, pregnant women's occupation, place of residence, pregnant women' chronic system disease, excretory system disease, respiratory system disease, mode of earlier birth, episiotomy, and earlier pregnancy. CI, confidence interval; OR, odds ratio.

## DISCUSSION

Of 502 women in this study, 40.4% of pregnant women reported UI, 78.8% of pregnant women with UI had stress UI, 14.8% of them had mixed type UI and 6.4% of them had urge UI, 60.3% of pregnant women have complaints about UI only in current pregnancy. In the previous studies, urinary incontinence frequency during pregnancy vary from 32% to 60%.<sup>4,10,11,20,21</sup> In this study, especially, stress UI rate was found higher than other UI types. Wesnes et al<sup>21</sup> stated that the prevalence of UI increased from 26% before pregnancy to 58% in week 30 and nulliparous women were 15% and 48%, and for parous women 35% and 67%. In the same study, the cumulative incidence was 46%. Stress UI was the most common type of UI in the 30th week of pregnancy, experienced by 31% of nulliparous and 42% of parous women.<sup>21</sup> Several studies have determined it to be an independent risk factor for UI postpartum,<sup>22,23</sup> and later in life.<sup>24,25</sup> UI starting before or during pregnancy is likely to be associated with UI after pregnancy.<sup>4</sup> Viktrup et al<sup>22</sup> reported that 4% admitted to stress UI before pregnancy began and that this symptom developed in 32% of them during pregnancy and stress UI developed in 7% after delivery and twelve months after delivery, stress UI was present in only 3% of pregnant women. Foldspang et al<sup>26</sup> followed 1232 women 12 to 120 months postpartum. Of them 16% that had antenatal UI, 67% reported postpartum UI, compared with only 19% of those without antenatal UI. Wesnes et al<sup>4</sup> found that 5102 women among 12629 women developed UI during pregnancy (40.4%). In this study, UI rate among pregnant women was found similar to some research results.<sup>4,21</sup>

UI is a common health complaint for women and it has a negative effect on quality of life and activities of daily living, particularly at older ages.<sup>2,9</sup> Also, UI affects woman's social and emotional health and causes social isolation.<sup>11</sup> Fultz and Herzog<sup>27</sup> stated that women with UI are lonely, unhappy and depressive than other women. Kocak et al<sup>18</sup> reported that 62.4% of women presented at least one complaint for their social life. In the same study, it was stated that women experienced anxiety and nervousness (40.4%), requirement for wearing pad or protector (33.8%), affect shopping or excursions outside the home (17.3%), affect daily home activities (17%), affect general health status (11.1%), affect sexual life (5.3%), affect working performance and "friendship" (2.8%) due to UI.<sup>18</sup> Ege et al found that 7.6% postpartum women experienced UI affect on their sexual life

and 13.8% of them restricted activities due to urine leakage.<sup>11</sup> Oh et al<sup>28</sup> reported that the quality of life was significantly related to perceived severity, type of UI, and frequency of UI. Results of this study and literature was compared and it was seen that the quality of life of the pregnant women affected higher ratio than other women.

The majority of pregnant women in this study group (87.1%) were found to be unaware of PFM exercises. It was determined that only a small percentage (5%) did these exercises regularly. The most appropriate treatment for stress UI is the practice of PFM exercises during pregnancy.<sup>20</sup> Intensive PFM training during pregnancy prevents UI during and after pregnancy. PFM strength may improve significantly after intensive PFM training.<sup>9</sup>

In this study, while a relationship was found between UI and pregnant's age, number of births, present weight of pregnant women, weight of earlier newborn, pregnant women occupation, excretory system disease, respiratory system diseases, mode of earlier birth, and having UI in their earlier pregnancies, no correlation was seen between UI and weight before pregnancy, month of pregnancy, frequency of birth, pregnant women education level, place of residence, chronic system disease, and episiotomy (Table-I).

In the present study, the logistic regression analysis showed only that older ages, higher weight of earlier newborn, being spontaneous birth of mode of earlier birth and having UI in pre-pregnancy signified a risk to develop UI. Factors related with UI were age, multiparity, vaginal delivery and instrumental delivery in the studies<sup>10,26</sup> but McKinnie et al<sup>29</sup> found that cesarean section does not decrease the risk of UI compared to pregnancy with a vaginal delivery. Results of this study are similar to literature. A major limitation of our study is its reliance on self-reports of UI rather than objective measurements.

In conclusion, it was determined that four out of every ten pregnant women reported UI, which negatively affects the quality of women's life. The authors would like to emphasize that women should be informed about protecting against UI before the pregnancy by health care professionals. The present findings have provided an informative sample only in Ordu province of Turkey. This study is important because it assess risk factors of UI from a cross-section of the Turkish pregnant. Further studies may provide information that is more detailed on the relationship between UI during pregnancy and some variables in different regions with similar sample groups.



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