

Urinary Incontinence Prevalence and Its Related Factors in Pregnant Women

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ABSTRACT

Background & Objective: Pregnancy is a known risk factor for urinary incontinence (UI) due to physiological and anatomical changes, especially in the third trimester of pregnancy. This study aimed to determine the prevalence of UI in the third trimester of pregnancy and its related factors in pregnant women.

Materials & Methods: This cross-sectional study was conducted on 330 pregnant women in the third trimester of pregnancy, referred to the perinatal care clinic of Yas Hospital in 2016-2017. The sampling method was convenience sampling. Then, the prevalence of UI and its related factors were investigated in these participants.

Results: The mean age of the subjects was 30 ± 5 years old. Totally, 98 pregnant women (29.7%) had UI. The rate of urine leakage was mild at 26.4% and moderate or severe at 3.3%. The time of urine leakage in 6.4% of women with UI was before reaching the toilet, 1.2% was permanent, 19.4% was related to cough and sneezing, and 2.7% of women did not indicate a specific time.

In evaluating the relationship between each of the variables and UI, three factors were identified to be completely related to UI, i.e., morbid obesity ($P=0.038$), gestational age between 32 to 37 weeks ($P=0.012$), and age ≥ 35 years old ($P=0.009$).

Conclusion: It seems that one-third of pregnant women in the third trimester of pregnancy have UI, which is a multifactorial issue and therefore requires multidisciplinary programs to prevent it.

Keywords: Prevalence, Urinary incontinence, Pregnancy



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Introduction

One of the most important and very serious issues of gynecological-social medicine in different countries is urinary incontinence (UI), which imposes great economic costs on society (1, 2). This disorder is more common in women; its prevalence in women is twice as likely as men to be affected, which costs them and society plenty of expenses (3-6).

UI affects 15% to 30% of women of different ages (7). Pregnancy is a known risk factor for UI due to physiological and anatomical changes, especially in the third trimester of pregnancy, which can weaken the pelvic floor muscles. The prevalence of UI during pregnancy is 26%-71% in Europe and 43%-63% in North and South America (8).

It seems that one of the adverse effects of UI during pregnancy is an increase in the likelihood of stable UI in the postpartum period or throughout life. In this regard, numerous studies have reported that pregnant women who had UI during pregnancy were more likely

to have UI after pregnancy than those who did not have it during pregnancy (9).

Furthermore, UI negatively affects the life of the patient and has physical, hygienic, psychological, and economic consequences. In other words, UI affects women's daily lives by making them less active outside the home, affecting their work performance and friendships, daily activities at home, public health, and sexuality (10).

As it was mentioned, UI is common in pregnancy and can cause serious problems. However, a proper health care system, especially for antenatal care, could help raise more awareness of pregnant women and health care providers and improve their approach to this issue. This study aimed to determine the prevalence of UI in the third trimester of pregnancy and its related factors in pregnant women.

Materials and Methods

This cross-sectional study was conducted on 330 pregnant women in the third trimester of pregnancy, referred to the perinatal care clinics of Yas Hospital in 2016-2017. The sampling method was convenience sampling.

Inclusion criteria were women referred to the perinatal care clinics of Yas Hospital during the period of this study and had a singleton pregnancy with a gestational age of 28 to 40 weeks.

Pregnant women with gestational diabetes mellitus and a history of chronic lung diseases, heart diseases, recurrent urinary tract infections, neurological diseases, urinary system diseases, and pelvic surgery were excluded.

This study was done in compliance with the Helsinki Declaration and was approved by Tehran University of Medical Sciences Ethics Committee (IR.TUMS.MEDICINE.REC.1396.2932). All the patients signed informed consent.

Information on demographic characteristics (including age, weight, height, body mass index (BMI), gestational age, education, occupation, place of residence, smoking, number of previous deliveries, previous delivery method, history of abortion, and constipation) was collected.

Data analysis was carried out using SPSS 22 (SPSS Inc., Chicago, Ill., USA), and the independent samples *t* test or the Mann-Whitney U test was used to compare the means in the two groups. The chi-square test or Fisher's exact test was utilized to compare the ratios. The logistic regression test was employed to evaluate the effect of variables in predicting pregnancy. A P-value of less than 0.05 was considered significant.

Results

The mean age of the subjects was 30 ± 5 years old, the mean weight of the study participants was 79 ± 11 kg, the average height of the participants was 162 ± 5 cm, the mean BMI of the subjects was 30 ± 4 kg/m², and the mean gestational week of the participants was 35 ± 3.5 weeks.

In terms of education, 0.6% were illiterate, 4.5% had primary education, 11.2% had high school education, 51.2% had a diploma, and the rest had a college degree. Furthermore, 90% of the participants were housewives, 0.6% teachers, 4.2% employees, 0.6% nurses, and 4.2% other occupations.

About 95% of pregnant women lived in urban areas and 3.9% in rural areas. Only three (0.9%) participants were smokers. No previous delivery was reported in 42.4% of participants, while 52.4% had one to three deliveries, and 5.2% had four or more deliveries. Of women with labor history, 41% had a vaginal delivery, and 59% had a cesarean delivery.

In terms of abortions, 76.7% had no abortion history, 17.3% had one abortion, and 6.1% had two or more abortions. About constipation, 37.6% never had it, 27.3% rarely, 28.5% occasionally, and 6.7% often experienced it.

Totally, 98 pregnant women (29.7%) had UI. The rate of urine leakage was mild at 26.4% and moderate or severe at 3.3%. The time of urine leakage in 6.4% of women with UI was before reaching the toilet, 1.2% was permanent, 19.4% was related to cough and sneezing, and 2.7% of women did not indicate a specific time.

Overall, 3% of pregnant women had urine leakage before pregnancy, and 3% of participants reported postcoital urine leakage (Figures 1, 2).

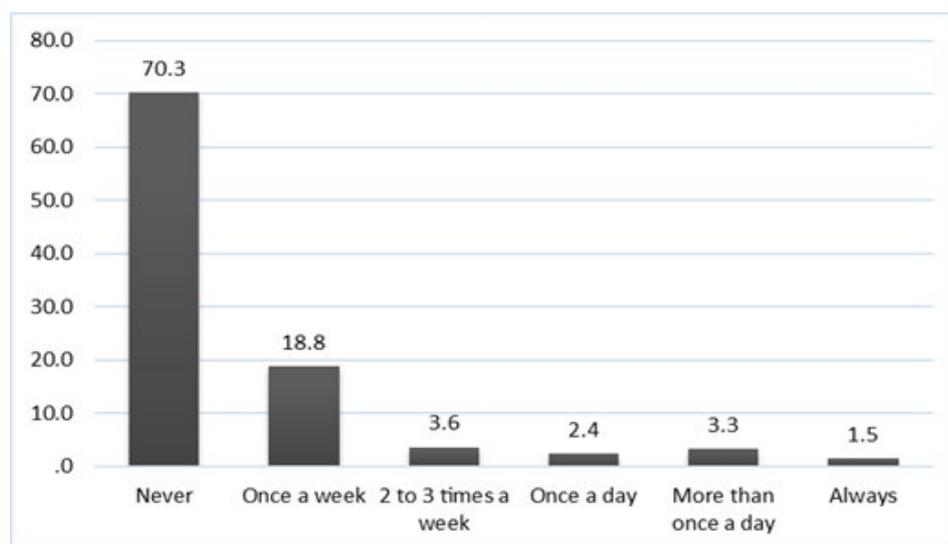


Figure 1. The urine leakage frequency in the participants

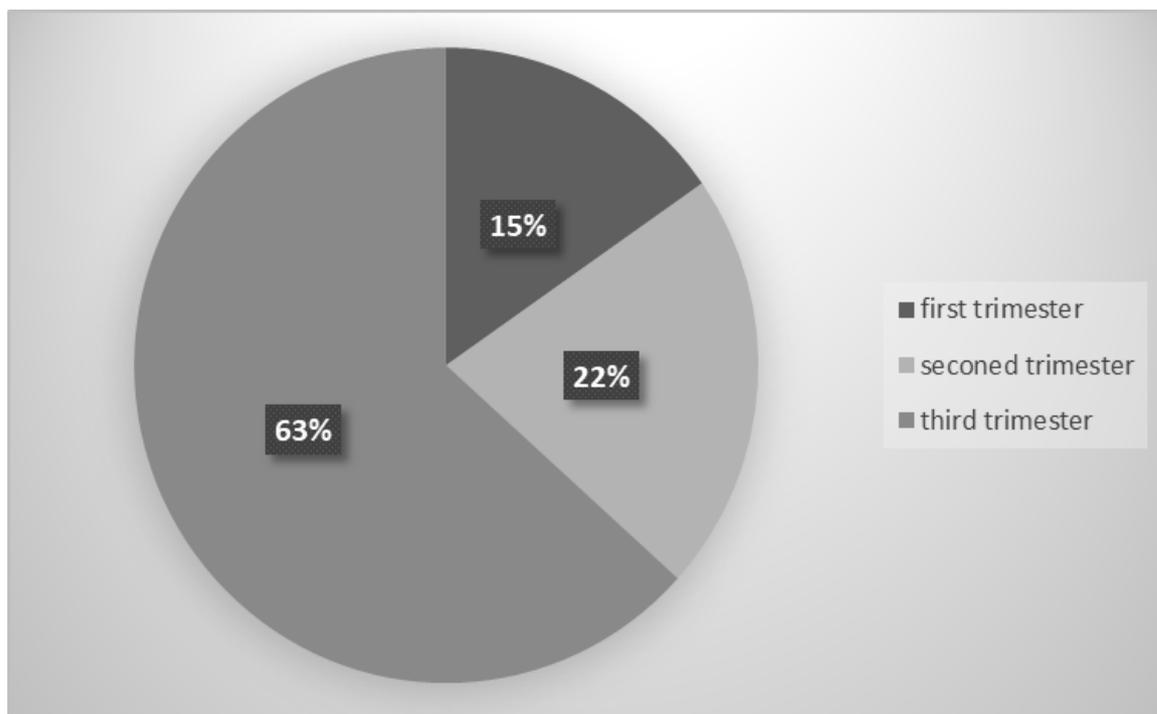


Figure 2. The prevalence of urine leakage according to different pregnancy trimester in women with urine incontinence in pregnancy

In evaluating the relationship between each of the variables and UI, three factors were identified to be completely related to UI, i.e., morbid obesity ($P=0.038$), gestational age between 32 to 37 weeks ($P=0.012$), and age ≥ 35 years old ($P=0.009$).

Other variables, including weight ($P=0.472$), height ($P=0.604$), education ($P=0.420$), occupation ($P=0.155$), smoking ($P=0.558$), living in non-urban areas ($P=0.091$), no previous history of abortion ($P=0.050$), parity ($P=0.861$), method of delivery ($P=0.442$), constipation ($P=0.494$), and type of toilet used ($P=0.714$), were not associated significantly with UI.

Discussion

This study showed that 98 pregnant women (29.7%) had UI; in this regard, variables such as morbid obesity ($P=0.038$), gestational age between 32 to 37 weeks ($P=0.012$), and age ≥ 35 years old ($P=0.009$) were significantly associated with UI.

Bekele *et al.* (2016, in Ethiopia) studied the prevalence of UI and related factors among 422 pregnant women; they found that the overall prevalence of UI among participants was 11.4%, which is one-third of the rate obtained in our study. Also, Bekele *et al.*'s study showed that factors such as episiotomy, constipation, obesity, chronic cough/sneezing, and asthma/allergies/sinusitis were associated with UI (8).

In a cross-sectional study, Demircan *et al.* (2016, in Turkey) studied 132 pregnant women to investigate the frequency and predictors of UI and its impact on quality

of life during pregnancy; as a result, they found that 42.4% of the subjects had UI. It is slightly higher than the statistics obtained in our study, which could be due to the study of the entire pregnancy in their study, while we evaluated only the third quarter in our study. In the above-mentioned study, factors such as age, height, being a housewife or having more than primary education, living in a rural area, number of deliveries, abortion, and anemia were the underlying factors for the onset of UI (10).

In our study, living in a rural area and age were effective factors on UI, and, in the case of abortion, they had no history of abortion, which increased the likelihood of incontinence, although the statistical relationship was borderline.

Further, Pirjani *et al.*, in a cross-sectional study (2016, in Iran), examined 300 pregnant women referred to Arash Women's Hospital. They reported that the prevalence of UI in women with low back pain was 41.5% and in other pregnant women was 21.95%, which is about 10% lower than our study statistically (11). In a cohort study (2014, in Iran), Mallah *et al.* followed up 441 women without previous childbirth from the beginning of pregnancy to the postpartum period; the prevalence of UI in the third trimester of pregnancy was 39.4% and in the postpartum period was 31%. Vaginal delivery, maternal weight, and fetal weight were most associated with an increased incidence of UI (12), which in our study the type of delivery did not affect the rate of UI. However, the prevalence of UI was higher in vaginal delivery cases, but it was not statistically significant.

Regarding the mother's weight, we achieved similar results in our study.

In a 2013 review study, Sangsawang *et al.* reported a prevalence of 41% of UI in pregnant women, which is in the same range as in our study (9).

A 2012 study by Bø *et al.* in Norway investigated the prevalence of UI in a multiethnic population and evaluated the known potential risk factors for UI in that population. There were 722 women in the first trimester of pregnancy with a prevalence of UI at 28 weeks of gestation as follows: 26% for African women, 36% for Middle Eastern women, 40% for East Asian women, 43% for South Asian women, and 45% for European/North American women. Also, age and number of deliveries had a positive relationship with the prevalence of UI in pregnancy in the mentioned study (13), which was confirmed by our study, as UI was higher in women over 35 years.

In 2011, a cross-sectional study was conducted in Turkey by Erbil *et al.* to investigate the effect of UI on quality of life and determine the frequency and risk factors for UI among pregnant Turkish women. Out of 502 pregnant women, 40.4% of them were reported to have UI, which is slightly higher than our study. Risk factors for UI among pregnant women included older age and spontaneous delivery (14), which is similar to our results in terms of age.

A 2007 study by Wesnes *et al.* in Norway investigated the incidence and prevalence of UI during pregnancy and related factors. The incidence of UI increased from 26% before pregnancy to 58% at 30 weeks. The number of deliveries, age, and BMI were risk factors for UI in the above study, which are consistent with the results of our study in terms of age and BMI (15).

Lack of willingness to participate in the study, being a single-center study, self-report of variables, and lack of accurate tests to prove UI were the limitations of this study

Conclusion

It seems that one-third of pregnant women in the third trimester of pregnancy have UI, which is a multifactorial issue and therefore requires multidisciplinary programs to prevent it.

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Conflict of Interest

The authors declared that there is no conflict of interest.

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