

# Effect of Urinary Incontinence on Quality of Life among Iranian Women

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## Abstract

**Objective:** Present study aimed to evaluate the effects of stress, urge and mixed urinary incontinence on the quality of life and mental health of Iranian women with urinary incontinence (UI).

**Materials and methods:** This was a cross sectional study of quality of life and mental health among women without and with different types of urinary incontinence (n = 140). Quality of life (QOL) and mental health were compared and measured using the Urogenital Distress Inventory (UDI-6), the Incontinence Impact Questionnaire (IIQ-7) and the 12-items General Health Questionnaire (GHQ-12).

**Results:** Women with any types of urinary incontinence showed a significant lower degree of mental health. Women with mixed incontinence reported significantly lower QOL and mental health ( $P < 0.0001$ ) compared to those with stress and urge incontinence, while there was no significant difference between women with stress and urge incontinence ( $P = 0.95$ ).

**Conclusion:** Patients with UI showed inferior mental health and QOL while these symptoms were more severe among patients with mixed urinary incontinence.

**Keywords:** Urinary Incontinence, Quality of Life, Mental Health

## Introduction

Urinary incontinence (UI) is a common problem, about 20 to 30 percent of adult women population Worldwide of all ages with different severity and manifestation (1). This disorder is defined by the International Continence Society as a complaint of "involuntary loss of urine" (2). The prevalence of incontinence varies in different studies depending on

age, clinical care conditions and the definition of incontinence (3). Some patients do not consider urinary incontinence as a great problem so they view it as a normal aging process seek treatment (1, 4). Urinary incontinence can be categorized as follows: (i) Urge incontinence (involuntary loss of urine while suddenly feeling the need or urge to urinate), (ii) Stress incontinence (involuntary leakage with activities such as coughing, sneezing and lifting) and (iii) Mixed incontinence (involuntary leakage associated with urgency and stress, exertion, sneezing or coughing) (5).

Although incontinence is not a life-threatening

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disease, the loss of bladder control can affect social, psychological, familial, occupational, physical and sexual aspects on patients' lives (6). Urinary incontinence leads to reduce quality of life, to cause social isolation and to restriction life styles (7, 8). Therefore, this disease, as a social problem, personal health prevents employment and education leads to shame and causes rejection from society, ultimately it resulted in moving older peoples from family home to nursing home (9).

Different studies show the high prevalence of comorbid psychiatric disorders such as depression in women with urinary incontinence (10, 11). A few studies examined the impact of different types of urinary incontinence on quality of life and showed that the urge and mixed incontinence, caused, not only more episodes of urinary leakage, but also more negative impact on the quality of life of patients (9- 13). In addition, Paick et al (2007) reported that the perceived severity of incontinence in women revealed a significant impact on their health-related quality of life and sexual functioning (14).

Bogner (2004) investigated the relationship between incontinence and psychological distress among different ethnicities and showed that in the African -American population the likelihood of experiencing psychological distress among patients with incontinence was greater than healthy people, while the relationship between incontinence and psychological distress in the Caucasian population did not reach statistically significant levels (15).

The researchers generally believe that incontinence is associated with a series of physical and behavioral factors and can cause extensive social and emotional problems. Women with stress and urge incontinence also have lower quality of life, less marital and sexual satisfaction than the normal group. However, it is impossible to do a comprehensive evaluation or treatment of urinary incontinence without considering the patients' overall quality of life (16). Due to lack of sufficient data in the field of mental health and quality of life in women with urinary incontinence in Iran, influence of ethnic backgrounds on this disease based on the previous studies (15 as well as impossible application of the research findings of other societies on Iranian patients, the present study aimed to evaluate the effects of stress, urge and mixed urinary incontinence on the quality of life and mental health of Iranian women with urinary incontinence.

## Materials and methods

### Design and data collection

This cross sectional study included 105 women with urinary incontinence (UI) referred to the urogynecology clinic in Vali-e-Asr Hospital, a teaching center affiliated to Tehran University of Medical Sciences, in Tehran, Iran. Informed consents were obtained from all patients prior to the interviews. The inclusion criteria were as follows: presence of UI symptoms, age above 30 and interest in cooperation, while the exclusion criteria were lack of following factors :receiving any type of UI treatments such as surgery or medicine, physical disability, and suffering from severe mental diseases. The identification of incontinence type was based on the patients' clinical complaints using the Urogenital Distress Inventory (UDI-6). Accordingly, were categorized into following four groups: (i) without incontinence (as control group; n=35), (ii) urge incontinence (n = 35), (iii) stress incontinence (n = 35), and (iv) mixed incontinence (n = 35).

### Measures

1. Incontinence Impact Questionnaire-Short Form (IIQ-7): It is a seven-item questionnaire designed to assess different domains of QOL impairment. The domains evaluate: travelling far from home, social activities, emotional health, entertainment activities, household chores, feelings of frustration, and physical recreation (Uebersax 1995). It includes a four-point rating scale: rating scale, like: (i) 0=not at all, (ii)1=slightly, (iii) 2=moderately, and (iv) 3=greatly, thus a thus a composite score can be computed with higher score indicating poorer QOL. The score for the scale ranges from 0 to 100 where 0 represents the best condition, while 100 the worst quality of life.

2. General Health Questionnaire (GHQ-12): Mental health was measured using the GHQ-12. It is a valid, reliable, and non-specific measure of psychological distress (17). The scale is about the experiences of a particular symptom or behavior within the last month. Each item is rated on a four-point scale (less than usual, no more than usual, rather more than usual, or much more than usual). For example, when using the GHQ-12, it gives a total score of 36 or 12 based on the selected scoring methods. The most common scoring methods are bimodal (0-0-1-1) and Likert scoring styles (0-1-2-3). It has been shown that GHQ-12 is a consistent and

reliable instrument in general population samples (18). The psychometric properties of the Iranian version of GHQ-12 is well documented (Montazeri 2003) (19).

3. Demographic Questionnaire: This was a short questionnaire including items on age, occupation, marital status, education, menopause status, duration and the frequency of UI occurrence.

**Statistical analysis**

Descriptive statistics were used to explore the data. A comparison was made between women with UI and women without UI in terms of quality of life and mental health using one-way analysis of variance (ANOVA) and post hoc Turkey's test. A P value < 0.05 was regarded to be statistically significant. Data were analyzed using the SPSS software version 13.0.

**Results**

A total of 140 patients were studied. They were divided into four sub- groups: (i) women without UI

(n=35), (ii) women with stress incontinence (n = 35), (iii) women with urge incontinence (n = 35), and (iv) women with mixed incontinence (n = 35).

The obtained data revealed that mean age of participants was 43.2 (SD = 11.9) years; in addition, 84.3% were housewives, 86.4% were married and 40% had elementary education. Thirty-two percent of women were in post menopause status, and 67.9% were in pre-menopause period. The period during which patients suffered from UI was 38.6 months for stress incontinence, 30.2 months for urge incontinence, and 50.7 months for mixed incontinence (table 1).

The one-way analysis of variance was performed to compare mental health and quality of life among women groups. The results indicated that there was just a significant difference in mental health among women (P = 0.052). However, further analysis (post hoc analysis) indicated that women with mixed UI showed a significant degree of mental health

**Table 1: Demographic and clinical characteristics of women without and with different types of urinary incontinence**

	Without UI (n = 35) n (%)	With Stress UI (n = 35) n (%)	With urge UI (n=35) n (%)	With mixed UI (n=35) n (%)	P- value*
<b>Education</b>					
Illiterate	5 (14.2)	4 (11.4)	11 (31.4)	10 (28.5)	0.07
Primary	12 (34.2)	17 (48.5)	11 (31.4)	16 (45.7)	
Secondary	14 (40)	8 (22.8)	12 (34.2)	7 (20)	
College/university	4 (11.4)	6 (17.1)	1 (2.8)	2 (5.6)	
<b>Marital status</b>					
Single	4 (11.4)	2 (5.6)	2 (5.6)	0 (0)	0.55
Married	28 (80)	32 (91.4)	28 (80)	33 (94.2)	
Divorced	2 (5.6)	0 (0)	1 (2.8)	0 (0)	
Widowed	1 (2.8)	1 (2.8)	4 (11.4)	2 (5.6)	
<b>Occupation</b>					
Housewife	24 (68.5)	29 (82.8)	33 (94.2)	32 (91.4)	0.19
Employed	9 (25.7)	6 (17.1)	2 (5.6)	3 (8.5)	
Student	2 (5.6)	0 (0)	0 (0)	0 (0)	
<b>Menopausal status</b>					
Pre menopause	29 (82.8)	24 (68.5)	23 (65.7)	22 (62.8)	0.76
Post menopause	6 (17.1)	11 (31.4)	12 (34.2)	13 (37.1)	
<b>Age (years)</b>					
Mean (SD)	42.1 ± 14.8	45.2 ± 9.9	45.6 ± 11.3	46.8± 8.8	0.37
<b>Number of deliveries</b>					
Mean (SD)	2.7 ± 2.2	3.8 ± 1.7	3.7 ± 1.7	4.3 ± 2.2	0.053
<b>Number of leakage episodes during last month</b>					
Mean (SD)	-	42.7 ± 41.8	63.9 ± 45.3	68.2 ± 79.2	0.17
<b>Duration of incontinence</b>					
Mean (SD)	-	38.6 ± 62.1	30.2 ± 63.8	50.7 ± 63.2	0.41

\* Derived from chi-square or one way analysis of variance where necessary

problems compared to women without UI ( $P = 0.017$ ) and women with urge UI ( $P = 0.025$ ). No significant difference was found between women with stress incontinence and those with urge incontinence ( $P=0.192$ ).

Comparing quality of life among three groups of women (stress, urge and mixed UI), measured by the IIQ-7, indicated that there were significant differences among women groups ( $P = 0.002$ ). Again further analysis (post hoc analysis) showed that women with mixed UI reported significant lower quality of life compared to women with stress UI ( $P < 0.0001$ ) and urge UI ( $P = 0.026$ ). There was no significant difference in quality of life between patients with stress incontinence and those with urge incontinence ( $P=0.178$ ). The results obtained from one-way analysis variance are shown in table 2.

## Discussion

The main purpose of the current study was to investigate whether there was a significant difference between women without UI and women with stress, urge and mixed incontinence. The results showed that women without UI had a higher degree of mental health compared to women with any type of UI. The results were consistent with the findings in Teunisse et al (2006) and Mladenovic (2011) who investigated the impact of UI on the quality of life of the elderly (8, 20). They argued that half to one third of the patients had anxiety, distress and disappointment which were manifested mostly in their activities in public places.

Moreover, the report of Goldacre et al. (2007) is another study on the impact of UI on the patients' mental health. In this study, women with UI were investigated in terms of depression and self-harm (21). The results indicated that women with UI in different ages showed a higher degree of depression compared to the healthy population. Women with moderate or severe UI, regardless of their UI type, suffered from major depression three times more than women with mild UI (22). Also, the relationship between UI and symptoms of anxiety was more

common (23, 24). In addition, UI had a considerable impact on the social life of the patients especially at older ages. They described the social consequences of their disease in the framework of feelings of shame and humiliation, so the problem resulted in their isolation from family and friends (25, 26). The psychological effects of UI such as anger, anxiety and depression were more severe in younger patients (27). Some researchers claim a relationship between UI and psychological disorders such as depression in terms of epidemiology and etiology. Oh and Ku (2006) concluded that in spite of the fact that UI is not a deadly disease, but it causes depression, anxiety and dissatisfaction of life (28). They indicated that women with UI reported higher degrees of depression, sadness, and loneliness compared to the general healthy population. They also showed that the depression rate in patients with UI was comparable to patients with chronic illnesses, like diabetes and heart diseases (13).

The other study concluded that female with urinary incontinence significantly impair the quality of life in both younger and older women, and also have negative effects on relationship with spouses (29, 30). This finding supported Bushnell's idea (2005) that UI is not just a simple physiological problem, but also it should be considered in relation to various factors such as UI type, frequency, severity, stimulating factors, social effects and influences on quality of life (physical, emotional and social) (31). In a research in Turkey (2005), it was found out that UI had a negative impact on the quality of life of 87.2 % of these patients with mild to moderate severity (32). Women with UI had to limit their physical and social activities in fear of urinary leakage (33, 34). Women with urge urinary incontinence were more likely to report sexual complaints, while a successful treatment has been shown to improve female sexual function scores (35). In a study by Riss et al. (2011), they have indicated that urgency and urge incontinence have a worse effect on quality of life than stress urinary incontinence (7). The other studies showed that

**Table 2:** Quality of life and mental health scores in women without and with different types of urinary incontinence

	Without UI (n = 35)	With stress UI (n = 35)	With urge UI (n = 35)	With mixed UI (n = 35)	P*
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	
GHQ-12**	5.0 (2.96)	6.1 (3.32)	5.1 (2.56)	6.7 (3.11)	0.052
IIQ-7**	-	37.4 (26.7)	45.4 (24.1)	58.7 (23.2)	0.002

\* Derived from one-way analysis of variance; \*\* Higher score indicate a greater symptom.

women with mixed incontinence had a lower degree of mental health and quality of life as compared to stress and urge incontinence (36- 38). These findings were consistent with our study that patients with mixed incontinence face a mixture of problems and limitations in both disorders. Therefore, the damage influencing the quality of life and mental health of patients with mixed incontinence is significantly greater than other UI types.

In the present study, there was not a significant difference in mental health and quality of life between women with stress incontinence and those with urge incontinence. However, other studies showed that urge and mixed incontinence not only reported more episodes of urinary leakage, but also had more negative impact on patients' quality of life (24, 11). Melville et al. (2005) (22) have revealed that effect of other factor on mental health is more than just disorder type, and suffering from moderate to severe UI increases the chance of depression regardless of UI type. Among the factors contributing to the inconsistency in various research findings were the influences of other factors on quality of life. These factors include age, the degree of severity of symptoms in patients, cultural values, patients' coping skills (37), utilizing different assessment instruments and variety in the research participants (25,26). Since the participants in the present study were selected among Iranian Muslim women, it was predicted that there would be no significant difference between stress incontinence and urge incontinence in terms of psychological effects as a result of the stress incontinence-based problems associated with religious rituals, performing ablutions, and saying prayers.

The present study has some limitations. First, determining the type of UI in patients was based on their responses to questions and their self-reports of the symptoms of disease. Although the questionnaire used for this purpose was clinically valid and consistent with the definitions delineated in the International Continence Society, no urodynamic test was carried out on the participants to verify the type of UI. Second, in order to control the influence of gender on mental health, the research sample was selected among women from only one medical center (uro- gynecology clinic in Valiasr Hospital). Therefore, the mentioned research limitations should be taken into account in the generalization of research findings. In general, the present study indicated that the degree of quality of life and mental health of women suffering form UI was lower than the society

average. In addition, our result showed that the more severe disorder caused the greater psychological effects. Therefore, health care professionals apart from their efforts for decreasing the number of episodes of urinary leakage should consider the detrimental effects of this disease in order to evaluate and to promote quality of life and mental health along with medical treatments of UI. More extensive research is required in order to extend the development of preventive strategies, and to accelerate the diagnosis and treatment of factors influencing quality of life and mental health in women affected by UI.

## Conclusion

The findings demonstrated that the patients with UI had inferior mental health and quality of life; furthermore, the negative impact of incontinence on mental health and quality of life was greater among patients with mixed urinary incontinence. So, health care professionals should consider the psychological effects of this disease and evaluate the mental health along with the medical treatments of UI.

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