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Original Article

Prevalence of Urinary Incontinence among Elderly Women in Yazd, Iran: A Population-Based Study

Mohammad Ali Morowatisharifabad[1], Hassan Rezaeipandari[1*], Aghdas Mazyaki[2], Zeinab Bandak[2]

[1]. Elderly Health Research Center, School of Public Health, Shahid Sadoughi University of Medical Sciences, Yazd, Iran
[2]. Department of Health Services, School of Public Health, Shahid Sadoughi University of Medical Sciences, Yazd, Iran

A B S T R A C T

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Introduction: Urinary incontinence (UI) is a common disorder among aging population especially women. Women are at more risk of UI than men, because of anatomic, social and cultural status and also because of pregnancy, delivery and menopause. Regarding lack of studies in the area in Yazd, the study aimed to find the prevalence and related factors to UI among aging women in Yazd city, Iran.

Methods: The cross-sectional study carried out on 127 women aged ≥60 years in Yazd city, in central Iran, who was selected by clustered random sampling. Data were collected with the Persian version of International Consultation on Incontinence Questionnaire-Short Form and were analyzed with descriptive and inferential tests using SPSS software.

Results: The mean age of participants was 70.17 ± 6.50. The prevalence of UI was 62.2% while the prevalence of urge UI was 5.5%, stress UI was 39.4% and mixed UI was 3.1%. There was statistically significant relation between UI severity and history of diabetes ($p < 0.01$), glaucoma ($p < 0.01$), fecal incontinence ($p < 0.01$), menopause ($p < 0.01$) and pain in low abdomen ($p = 0.02$). Also there was a significant positive correlation between UI severity and women's age and weight.

Conclusion: Regarding the high prevalence of UI, especially stress UI and it's relation with some diseases such as diabetes and obesity, any intervention programs aimed to increase the healthy life style among women may be effective in management of UI.

Keywords: Aging, Prevalence, Urinary Incontinence, Women, Iran

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Introduction

The life expectancy is increasing with the aging of population, therefore preventive measures to address health risk factors and safety issues must be directed more prominent in health services (1). UI, as a geriatric disorder, is objectively approved unwanted urine leak, which women are at more risk than men, because of their anatomic, social and cultural status and also pregnancy, delivery and menopause (2). It is commonly due to a disorder of pelvic floor and lower urinary tract (3), and has negative impacts on social and physical aspect of health (2). In general population, some leading factors to UI among aging people are advanced age (especially over 80 years), low physical activity, diabetes, brain stroke , delirium and urinary system infection (4). Common forms of UI include stress, urge, mixed, unconscious and night UI. Stress UI is the most common type among women (5). In a study in Italy, the prevalence of UI is reported up to 72% among women (6). There is not an exact estimate of UI prevalence in Iran but it is

* **Corresponding Author:** Elderly Health Research Center, School of Public Health, Shahid Sadoughi University of Medical Sciences, Yazd, Iran. **Tel:** +989103090966, **Email address:** hrezaeipandari@yahoo.com

reported from 2 to 65 percent in different studies (3). In a study in Tehran, the UI prevalence was reported 23% among 60 to 79 years old women and 32% among ≥ 80 years old women. The UI prevalence among women is reported 3 times more the men (4). UI usually bothers people and cause physical, mental, social and economic problems for the patient, the family and the community (7). It can predispose people to Urinary Tract Infections (UTI), skin rash and infection, pressure sores, skin fragility, increased risk of hospitalization, sleep disorder, shame, mental disorders, reduction of social interaction, physical activity, decrease of self-steam and quality of life, depression, limitation or avoidance of sexual activities and even missing the occupation (7). UI not only in such the way, negatively affects the women's quality of life but also requires costly therapeutic approaches. (8). For example, the costs of UI care and treatment in US is estimated more than 6 billion US dollar (4). Regarding the importance of UI issue and lack of studies in this area in Yazd, the study was carried out with the aim of determining the prevalence of UI and some of its related factors among aging women in Yazd province, Iran.

Methods

Procedures

The cross-sectional study was carried out on 127 women ≥ 60 years old in October 2014. Participants were selected by a cluster random sampling with at least 12 eligible people in 10 selected clusters in Yazd city in central Iran. As the most of eligible participants were illiterate or in low education level, trained interviewers were asked to do private interview with selected participants and completed the questionnaires. The participation in the study was voluntarily.

Measures

The International Consultation Incontinence Questionnaire–Short Form (ICIQ-SF) was used for data collection which is a brief, specific questionnaire developed under the auspices of the International Continence Society (9). It consists of three items:(1) frequency of UI (never, once a week, two or three times a week, once a day, a few times a day, always); (2) volume (none, small amount, moderate amount, large amount); and (3) how much urine leakage affects your daily life (0:not at all; 1–3: mildly; 4–6:moderately; 7–9: severely; 10: to a great extent). From the sum of these three items, the total ICIQ-SF score (between 0 and 21) was calculated. A fourth item included eight questions related to the symptoms to determine the type of UI. The reliability and validity of the Persian version of ICIQ_SF has been examined and approved in previous studies (10, 11). The demographic information was added to ICIQ-SF.

Data analysis

Data were analyzed using frequency distribution tables and qui-square test, Pearson correlation coefficient test in SPSS software. The significant level was considered at 0.05 level.

Results

Descriptive results

The mean age of participants was 70.17 ± 6.5. The prevalence of UI was 62.2% and the mean of UI severity score was 7.65 ± 6.02 out of 21. Of the participants 62% had diabetes, 33% were suffering from difficulty passing stool and 28.3% reported observation of blood in urine. (Table 1, 2)

Table 1. Descriptive characteristics of participants.

Variable	Mean	SD	Range
Age	70.17	6.5	60-89
Weight	69.39	15.39	35-112
Height	160.67	6.99	142-178
UI severity	7.65	6.02	0-21

Table 2. Frequency of chronic diseases and conditions among participants.

Variable	Label	N	%
Smoking	Yes	1	0.8
	No	126	99.2
Diabetes	Yes	79	62.2
	No	48	37.8
Glaucoma	Yes	33	26
	No	94	74
History of surgery in back of abdomen or lower parts	Yes	63	49.6
	No	64	50.4
Vaginal discharge	Yes	38	30.2
	No	88	69.8
Pain in lower abdomen	Yes	48	38.4
	No	77	61.6
History of mental disorders	Yes	48	37.8
	No	79	62.2
History of mental disorders treatment	Yes	39	30.7
	No	88	69.3
Defecation status	normal	80	63
	Incontinence	5	3.9
	Problematic	42	33.1
History of blood in the urine	Yes	36	28.3
	No	91	71.7
Menopause status	Did not started	12	9.4
	started	5	3.9
	completed	56	44.1
	More than one year	54	42.5

The prevalence of urge UI was 5.5%, stress UI was 39.4% and Mixed UI was 3.1%. Of the participants, 6.3% reported urine leak when physical activity/exercising, 53.5% when cough or sneeze and 19.7% before getting to toilet. (Table 3)

Correlates of UI

There was a significant positive correlation between UI severity and participant's age and weight. (Table 4)

There was a statistically significant relation between UI severity and having diabetes ($p < 0.05$), glaucoma ($p < 0.002$), gross hematuria ($p < 0.016$), fecal incontinence ($p < 0.001$), menopause status ($p<0.001$) and pain in lower abdomen ($p < 0.021$). (Table 5)

The data on how often the participants have leak urine is shown in table 6.

Table 3. Urine leak situations among participants.

When does urine leak?	N	%
Never-urine dose not leak	41	32.3
Leaks before you can get to the toilet	25	19.7
Leaks when you cough or sneeze	68	53.5
Leaks when you are asleep	8	6.3
Leaks when you are physically active	8	6.3
Leaks when you have finished urinating and are dressed	21	16.5
Leaks for no obvious reason	8	6.3
Leaks all the time	10	7.9

Table 4. Correlation matrix of UI severity and some continuous variables of participants.

Variable	Severity	Age	Weight	Height
UI Severity	1			
Age	0.385**	1		
Weight	0.228**	-0.011	1	
Height	0.025	-0.042	0.427**	1

** p<0.01

Table 5. Mean and SD distribution of UI severity by chronic diseases and conditions among participants.

Variable	Label	Mean	SD	p
Smoking	Yes	2	0	0.34
	No	70.7	6.02	
Diabetes	Yes	8.82	6.11	< 0.01
	No	5.77	5.41	
Glaucoma	Yes	10.53	6.73	< 0.01
	No	6.68	5.46	
History of mental disorders	Yes	7.36	5.10	0.67
	No	7.83	6.53	
History of surgery in back of abdomen or lower parts	Yes	8.27	5.79	0.26
	No	7.06	6.22	
History of mental disorders treatment	Yes	7.05	4.98	0.45
	No	7.93	6.44	
History of gross hematuria	Yes	9.69	6.71	0.01
	No	6.84	5.55	
Defecation status	normal	5.72	5.08	< 0.01
	Incontinence	18.20	2.58	
	Problematic	10.04	5.83	
Menopause status	Did not started	4.81	3.68	< 0.01
	Started	8.21	6.64	
	Completed	6.25	5.80	
	More than one year	10.01	6	
Vaginal discharge	Yes	8.81	6.44	0.16
	No	7.18	5.82	
Pain in lower abdomen	Yes	9.27	6.52	0.02
	No	6.7	5.59	

Table 6. Urine leakage frequency among participants

How often do you leak urine?	N	%
Never	48	37.8
About once a week or less often	47	37
Two or three times a week	18	14.2
About once a day	4	3.1
Several times a day	6	4.7
All the time	4	3.1

Discussion

The study revealed that 62.2% of participants suffer from UI, which indicates a high prevalence of UI that needs more attention to the issue and its related factors. In a study in Italy, the prevalence of UI among 17-79 years old women was reported between 9-72percent (6). Studies in different countries reported the prevalence of UI 19-45 percent (12-15). In Iran the prevalence of UI has not been exactly assessed yet but is projected between 4 and 65 percent (3). The prevalence of UI among menopause women in Tehran was reported 37.8% (16). It seems the higher proportion of older women in Yazd suffer from UI than other study populations. As UI causes a lot of physical, mental, social and economic problems for patient and her family and it can predispose subjects to UTI, rash, skin infection, Pressure sores, Skin fragility, rise in the risk of hospitalization, sleep disorders, mental problem, reduction of social interaction, physical activity, and self-esteem, alteration of quality of life, depression and sexual dysfunctions should be addressed more than before. The most frequent urine leakage was when cough or sneeze (53.5%) and the commonest type was stress UI which is consistent with the studies by bakuei et al. in Babol and also Hunskaar et al in European countries (8, 12). The multi-factorial nature of stress UI requires that, in order to prevent UI among elderly women, they should be educated to request for help from health professionals when leakage. The health professionals should educate patient about UI, how to self-manage UI, stress management, promote their self-esteem and have intimate relationship with their families.

Some risk factors for UI consist of aging (especially over 80) low physical activity, diabetes, brain stroke, delirium, environmental barriers and UTI (4). The result of the study also approved the relation of UI severity with diabetes, glaucoma, gross hematuria, fecal incontinence, menopause status and pain in lower abdomen. Dehghanmanshadi et al. reported that, age, number of delivery, body mass index (BMI), anal incontinence and constipation is higher among women with UI than women without UI (8).

The results of the study revealed the significant relation of UI with number of pregnancy and delivery, but it was not in relation with age, educational level, employment status, delivery interval, BMI, delivery type, history of constipation in pregnancy, baby's weight and head circumference (8). In a study by Holtedahl et al. UI was in relation with being overweight, week function of perineum and obstetrics surgery with hysterectomy exception (13). Also in a study in America, it is reported that, UI chance increases with aging, BMI increase and severe depression, history of hysterectomy and number of delivery (14). A study in Norway also reported that the prevalence of UI increase by age increase (15). Actually the aging itself is not a cause for UI but accompanying problems such as chronic conditions are the risk factors that should be addressed when managing UI. Regarding BMI and the risk of UI, it can be attributed to the increase of Intra-abdominal pressure and pressure in pelvic during activities of daily living and in turn the increase of pressure to bladder and urethra mobility (3). So any effort in BMI reduction may lead to decrease of UI. Pregnancy and delivery numbers also have been identified as a risk factor for UI which can be attributed to perineum disorders that itself is due to the effect of pregnancy hormones on connective tissues of perineum muscles (17). Also it seems that the increase damage to the reproductive system leads to morbidity after delivery such as UI (18-20).

Conclusion

The high prevalence of UI among participants indicates that the issue be addressed by local health care authorities as a common health problem. Educational programs for aging people and their families about causes of UI and its management are essential. Moreover, as the most reported type of UI is stress, any program directed to stress reduction among elders could be useful in UI control.

Study limitations

Self-report nature of the measures and also the special cultural characteristics of the participants should be addressed in using the results of the study.

Conflict of interest

None declared.

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