



Letter to the Editor / Editöre Mektup

The Effect of Urinary Incontinence on Quality of Life in Elderly living in Hospice and at Home

Üriner İnkontinansın Huzurevi ve Evinde Yaşayan Yaşlılarda Yaşam Kalitesine Etkisi

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ABSTRACT

Aim: The aim of the study was to analyze the effect of urinary incontinence on the quality of life of elderly people living at home and those living in a hospice by focusing on the different demographic and incontinence related factors. **Method:** The study was designed as a cross-sectional descriptive study and was conducted between December 2015 and June 2016. Fifty participants aged ≥ 65 years who met the inclusion criteria were included in the study. Twenty-five of them were admitted by random sampling method from patients applying to faculty's geriatric outpatient clinic with the complaint of incontinence. The other 25 were selected according to the study criteria out of elderly people living in the Darulaceze Institute. The International Consultation on Incontinence Questionnaire-ShortForm (ICIQ-SF), Incontinence Quality of Life (I-QOL) scale, and Katz Activities of Daily Living scale were used with all the individuals. Other variables were assessed using a demographic data form. **Results:** There was no difference between the quality of life (QOL) scores between the hospice and home groups ($p=0.836$, $p=0.865$, $p=0.841$, $p=0.883$). Social life was the most affected subdomain for both groups. Urinary incontinence (UI) affected psychologic effect (PE) and behavioral restriction (BR) aspects of QOL in individuals between the ages of 65 and 75 years more than those >75 years of age in the hospice ($p=0.024$, $p=0.019$). A higher UI output lowered BR scores only in hospice patients ($p=0.016$). For both groups, frequent incontinence episodes indicated a significantly lower QOL in terms of PE than rare episodes ($p=0.032$ -home, $p=0.022$ -hospice) and lower QOL in BR in home care ($p=0.037$). Mixed type incontinence affected QOL in terms of BR more than other types of incontinence in both groups ($p=0.019$ -hospice, $p=0.007$ -home). There was a significant correlation between I-QOL and ICIQ-SF visual analogue scale scores that measured quality of life ($r=-0.64$, $p<0.001$). **Conclusions:** Frequency of incontinence episodes is the major factor affecting QOL in both groups. Incontinence output has a significant role in QOL for hospice patients. The ICIQ-SF visual scale may be sufficient to evaluate the quality of life. I-QOL can be used for further evaluation of different aspects. Studies on incontinence and QOL in the institutionalized and home-care elderly population should be encouraged to improve conditions.

Key words: Hospice ,home, , incontinence, quality of life

ÖZET

Amaç: Çalışmanın amacı üriner inkontinansın evinde veya huzurevinde yaşayan yaşlılarda yaşam kalitesi üzerine etkisinin farklı demografik ve inkontinansa bağlı faktörler gözönünde bulundurularak incelenmesidir. **Yöntem:** Çalışma kesitsel tanımlayıcı araştırma yöntemi ile Aralık 2015 ile Haziran 2016 tarihleri arasında yapılmıştır. Yaşları ≥ 65 olup dışlanma kriterlerini taşımayan ve inkontinans yakınması ile fakültenin geriatri polikliniğine başvuran hastalar arasından rastgele örneklem yöntemi ile seçilen 25 hasta ve huzurevinde yaşayan araştırma kriterlerine uygun özelliklerde 25 hastanın tümü çalışmaya alınmıştır. İnkontinans değerlendirme testi-kısa form uluslararası konsültasyon (ICIQ-SF), inkontinans yaşam kalitesi ölçeği (I-QOL) ve Katz günlük yaşam aktiviteleri ölçeği tüm katılımcılara uygulanmıştır. Diğer değişkenler demografik bilgi formu ile değerlendirilmiştir. **Bulgular:** Her iki grup arasında I-QOL genel ve alt grup skorlarında fark anlamsızdı ($p=0.836$, $p=0.865$, $p=0.841$, $p=0.883$). Sosyal yaşamın kısıtlılığı her iki grupta en çok etkilenen parametre idi. Üriner inkontinans huzurevinde 65-75 yaş arası bireyleri psikolojik etki (PE) ve davranış kısıtlılığı (DK) açısından ≥ 75 yaş bireylerden daha fazla etkiliyordu ($p=0.024$, $p=0.019$). Artan inkontinans idrar miktarı yalnız huzurevi hastalarında DK'nı artırıyordu ($p=0.016$). Her iki grupta inkontinans episodlarının sıklığında artışın PE'yi arttırdığı ($p=0.032$ -ev, $p=0.022$ -huzurevi) evinde yaşayan hastalarda DK'nı da arttırdığı gözlemlendi ($p=0.037$). Mikst tip inkontinansın her iki grupta DK'nı diğer inkontinans tiplerinden daha fazla etkilediği görüldü ($p=0.019$ -huzurevi, $p=0.007$ -ev). ICIQ-SF'in yaşam kalitesi sorgulayan visuel analog ölçek skorları ile I-QOL skorları arasında kuvvetli korelasyon vardı ($r=-0.64$, $p<0.001$). **Sonuç:** İnkontinans episodlarının sıklığı her iki grupta yaşam kalitesini etkileyen en önemli faktördür. İnkontinans idrar miktarının yaşam kalitesine etkisi ise huzurevi hastalarında anlamlıdır. ICIQ-SF inkontinans yaşam kalitesini değerlendirmek için tek başına, I-QOL ise farklı parametrelerin ileri değerlendirilmesi için kullanılabilir. Huzurevi ve evde bakım hastalarında inkontinansın yaşam kalitesi üzerine etkilerini değerlendiren kapsamlı çalışmalar koşulların iyileştirilmesi amacı ile yürütülmelidir.

Anahtar kelimeler: Huzurevi, ev, inkontinans, yaşam kalitesi

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INTRODUCTION

The International Continence Society has defined urinary incontinence (UI) as involuntary urination of any kind. Urinary incontinence is more frequent in people over 75 years of age since aging results in urethral sphincter dystrophy.^[1] Stress UI is defined as incontinence while coughing, sneezing, making effort or performing physical exercises and its main cause is deterioration of the pelvic floor that supports bladder and urethra. Neurogenic or idiopathic extreme activity of the detrusor muscle plays a role in urge UI. Mixed UI is a combination of stress and urge UI.^[2] UI leads to hygiene and skin problems, sleep disturbances, and sexual activity disorders and impairs quality of life by causing negative psychological and social effects such as lack of self-esteem, shame, anxiety, depression, and social isolation. Worsening of nutritional status, cognitive function, mobility and risk of falling correlate with the prevalence and severity of UI. In addition, UI increases the workload of caregivers and health care costs in hospices.^[3,4]

Hospices are places where older people are supplied with social support that protect them from isolation as well as shelter the care and health services. Quality of life (QOL) is an important measure of optimal health care in chronic disease.^[5]

There are studies which compare depression or quality of life between home and hospice dwellers and some studies described the effect of UI on QOL in hospice or home patients.^[5-8] In this study, we aimed to analyze the incontinence related QOL in the elderly living at home and in hospice with all types of incontinence and find out if there are differences and affecting factors.

MATERIALS AND METHODS

Study sample

The study was designed as a cross-sectional study. The study group was selected from elderly individuals living in a hospice and from those living in their home who had been admitted to the Medical Faculty's geriatric outpatient unit between December 2015 and June 2016. The diagnosis of incontinence was confirmed by the International Consultation on Incontinence Questionnaire-Short Form (ICIQ-SF). The exclusion criteria were communication problems (vision or language problems), being mentally impaired (mini mental state test score < 23), immobilized patients (e.g., due to cerebrovascular disease or musculoskeletal diseases), psychiatric diseases (delirium, psychosis), malignancy and surgery of the genitourinary system and chronic renal insufficiency. Inclusion criteria

were being ≥ 65 years old and reporting any kind of UI. Fifty persons of both gender were admitted to the study. There were 25 eligible patients from the hospice and 25 patients were selected by random sampling method from the geriatric outpatient unit.

Ethical considerations

Necessary permissions for the study were obtained from the University Clinical Studies Ethics Committee (09.11. 2015/349807) and the Ministry of Family and Social Politics' President of Hospices (18.06.2015/020-90). All patients gave their written informed consent.

Measurement Tools

The International Consultation on Incontinence Questionnaire-Short Form (ICIQ-SF), the Incontinence Quality of Life (I-QOL) scale, and the Katz Activities of Daily Living scale (ADL) were applied to all individuals included in the study.

International Consultation on Incontinence Questionnaire-Short Form (ICIQ-SF): The ICIQ-SF has been developed by Avery et al and Turkish validity and reliability study was performed by Çetinel et al. The three dimensions of the scale question the UI frequency, UI output and its effect on daily life. The fourth dimension questions the causative conditions of UI. The first three dimensions are used for scoring and the fourth dimension is used for determining the type of incontinence. The score may change between 0-21, low scores indicating little influence, high scores showing more influence on QOL. A score of ≥ 8 is the cut-off point for disturbing UI. The Turkish version of ICIQ-SF has a Chronbach's alpha coefficient of 0.71.^[9]

Incontinence Quality of Life (I-QOL): I-QOL was developed by Wagner et al. in 1996 in USA and revised in Europe by Patrick et al., decreasing from 28 questions to 22.^[2] In Turkey, Ozerdogan and Beji performed the reliability and validity study of the revised version and found Cronbach alpha coefficient as 0,96.^[10] It consists of three subdimensions: behavioral restriction (BR), psychological effect (PE), and social life restriction (SLR). All items are evaluated by a likert scale of five and transformed to 0-100 scale value for better understanding. High scores indicate better QOL than low scores.

Katz Activities of Daily Living scale (ADL): The ADL index consists of six questions concerning bathing, dressing, toileting, transferring, continence, and eating activities. On the ADL index, 0-6 points signify dependence, 7-12 points signify semi-dependence, and 13-18 points signify independence.

A demographical data form was used to record the participants' age, gender, height, weight, educational status, occupation, social security, income, civil status, number of children, person they are living with, smoking habit, alcohol use, chronic diseases, and medications.

Statistical Analyses

IBM SPSS version 22 (IBM Corp., Armonk, NY, USA) was used to analyze the data. The descriptive statistics were displayed as the mean \pm standard deviation or median (minimum–maximum) for the continuous variables and as the frequency and percentage for the categorical variables.

The Kolmogorov-Smirnov and Shapiro-Wilk tests were used to evaluate if the variables were normally distributed. The independent samples t-test was used for comparing the difference between two mean values, while for more than two subgroups, one-way analysis of variance (ANOVA) was used. Bonferroni correction test was used for further analysis. Pearson correlation test was used for testing the relation between continuous variables. Statistical significance was accepted at $p < 0.05$.

RESULTS

The demographic data of the study group are summarized in Table 1.

Table 1. Descriptive statistics of the home and hospice groups					
	Home	%	Hospice	%	p
Marital status					
Married	16	64	0	0	0.000054
Single	2	8	10	40	p<0.001
Other	7	28	15	60	
Education status					
≤Primary school	15	60	21	84	0.058
≥High school	10	40	4	16	
Occupation					
Retired	16	64	6	24	0.0043
Unemployed	9	36	19	76	p<0.01
Smoking					
Yes	4	16	16	64	0.00053
No	21	84	9	36	p<0.001
Alcohol					
Yes	1	4	3	12	0.297
No	24	96	22	88	
Gender					
Male	5	20	12	48	0.036
Female	20	80	13	52	p<0.05
Age					
65-75	19	76	15	60	0.225
≥75	6	24	10	40	

Chi-square test

The differences between the home and hospice groups are significant in terms of gender ($p < 0.05$), employment ($p < 0.01$), marital status ($p < 0.001$) and smoking ($p < 0.001$). Educational status, although not statistically significant, was lower in the hospice patients ($p = 0.058$).

Obesity was present in 52% of home residents and in 44% of hospice residents, while 20% of hospice and 8% of home residents were of normal weight ($p > 0.05$). The rest were overweight. Coronary heart disease was found in 44% of the

hospice participants and in 8% of the home-care participants ($p = 0.004$). The distribution of other chronic diseases was similar.

Katz mobility index score was 17.84 ± 0.47 in home patients and 17.52 ± 0.82 in hospice patients ($p = 0.124$).

Urge incontinence was the most common UI type in both home and hospice groups, followed by mixed and stress incontinence. There was no significant difference between the groups in terms of incontinence type ($p = 0.76$).

In the hospice participants, there was a significant correlation between age and the general scale score ($p=0.035$) and PE ($p=0.024$) and BR ($p=0.019$) subdomains of the I-QOL. Participants ≥ 75 years old had better scores than participants between 65 and 75 years of age.

There was no difference between the I-QOL scores of the two groups. There was a moderate degree of decrease in QOL in both home and hospice patients. The most affected subdomain was SLR (Table2).

Scale	Variable	n	Mean	SD	T	p
General Scale Score	Home	25	67.7273	16.63974	0.208	0.836
	Hospice	25	66.8182	14.11716		
I-QOL-BR	Home	25	62.5000	19.34810	0.172	0.865
	Hospice	25	61.6250	16.62234		
I-QOL-PE	Home	25	77.2222	19.67456	0.202	0.841
	Hospice	25	76.2222	14.98199		
I-QOL-SR	Home	25	59.0000	21.16404	0.147	0.883
	Hospice	25	58.2000	17.00980		

Independent t-test

I-QOL-BR = Incontinence Quality of Life-behavioral restriction subdimension; **I-QOL-PE** = Incontinence Quality of Life-psychological effect subdimension; **I-QOL-SR** = Incontinence Quality of Life-social life restriction subdimension.

In both the hospice and home-care groups, participants with mixed-type incontinence had significantly lower scores in the general scale score ($p=0.045$ hospice, $p=0.035$ home), and the BR subdomain of the I-QOL ($p=0.019$ hospice, $p=0.007$ home) than the participants with urge or stress incontinence.

There was no difference between the home-care and hospice participants in terms of incontinence frequency ($p=0.065$), except that 12% of the hospice participants had total incontinence. Home-care participants who suffered UI episodes several times a day had significantly worse scores in the general scale and in the PE and BR subdomains of the I-QOL than those with incontinence episodes once a day, once a week, and two or three times a week ($p=0.032$, $p=0.037$, and $p=0.025$). The same relationship was found in the hospice group in the general scale score and in the PE subdomain of the I-QOL ($p=0.022$ and $p=0.043$).

There was no significant difference in the incontinence output between the hospice and home-care participants ($p=0.096$). A medium level of urine output in the incontinence episodes was present in 28% of the hospice participants and in 8% of the home-care participants. The increase in the incontinence output had a significantly negative effect on the BR scores of the I-QOL only in the hospice participants ($p=0.016$).

There was a strong negative correlation between the visual analogue scale scores of ICIQ-SF and I-QOL scores ($r=-0.64$, $p<0.001$).

DISCUSSION

Primary care professionals have an important role in the development of a systemic approach for the detection of UI and in the enhancement of the quality of incontinence care for elderly persons living at home and hospice. Majority of the patients can not receive help because they believe UI is a normal and natural consequence of old age; believe that treatment will not be effective; do not know where to get help; feel distress, indecisiveness, and fear with regard to discussing their incontinence with a medical professional; and worry about the high cost of diagnosis and treatment interventions.^[8]

In Turkey, Ateşkan et al. have declared that the prevalence of UI in the community is 57.1% in females and 21.5% in males (overall 44,2%), and that it affects the QOL of females more than males.^[11] Arslan et al. have found out that the frequency of UI in hospices is 43% in females and 20.9% in males.^[12] The prevalence of UI in the elderly in community was 62.5% in Suhr's study. In Koyama's study in Japan, incontinence was present in 16.2% of males and 23.2% of females in hospice and 11.3% of females and 4.7% of males in

homebound. In a study by Debus, the frequency was 43–77% among women in nursing homes. [13,14,4]

Irwin et al. stated that the gender ratio in the occurrence of UI was 4:1 in people < 60 years old and 2:1 in those ≥ 60 years old, with a female dominance.[15] In our study, the gender ratio of UI was found to be 1:1 in hospice participants and 4:1 in home participants with female dominance. This difference may result from embarrassment of males to admit the incontinence problem and existence of older age group in the hospice which may be a factor for bringing closer the incontinence rate between genders. [6,12]

In the study by Debus, the most common form of incontinence in women in nursing home was stress incontinence (50%) followed by mixed-type (40%) and just urge incontinence (overactive bladder-20%).[4] In Turkçu's study, the most common type of UI was mixed-type urinary incontinence in women in nursing homes (31.7%).[2] In Ando's study in Japan, urge incontinence was dominant among male patients while urge, stress, or mixed-type incontinence were prevalent in female patients in the institutionalized elderly.[16] In Suhr's study, the most common types of UI were urge-27.6% and stress-27.33% in the home-care.[13] In our study, the most common form was urge incontinence, which was detected in 44% of the home-care participants and 60% of the hospice participants regardless of gender. Similarly other studies have indicated that urge incontinence was the most frequent type in the hospice with a rate of 66.6%. [12,17]

Choo et al., found out that the presence of UI negatively affected the participants' social life and QOL in the community.[18] Accordingly, Özerdoğan et al. detected a medium or low level effect on QOL resulting from UI by using I-QOL.[10] In our study, a medium-level effect of UI on QOL existed in both home and hospice. The fact that UI was regarded as a natural consequence of getting old and other comorbidities preventing elders from giving priority to incontinence symptom may be the reason for this modest effect.

Social life was the most disturbed aspect of QOL in the present study. Ando et al. emphasized that social life was the most affected parameter by UI, in line with our study. [16] There are other studies indicating that the SLR subdomain was deteriorated by incontinence in the community and in the hospice. [17,2]

Temml et al. found out that the UI frequency lowers the QOL in both genders in their research.[20] Several other researchers also stated that QOL significantly deteriorated in relation with the

UI episode frequency ($p < 0.001$).[10,14,17] In our study, incontinence frequency negatively affected general scale score, PE and BR subdomains of the I-QOL in home group and general scale score and PE subdomain of the I-QOL in the hospice group accordingly.

Increase in incontinence output lowered the BR scores of the I-QOL in hospice patients but not in home patients which may be attributed to the social and physical conditions of the hospice such as socializing and eating together in groups and sharing the same environment and bathroom.

Although urge incontinence was the dominant type in our study in both groups, mix-type incontinence had the most effect on QOL as has been demonstrated in other studies. [2,18]

In the analysis, a significant correlation was found between age and the PE subdomain of the I-QOL scale in the hospice participants. Participants aged >75 years had a significantly better PE score than participants between 65 and 75 years of age. This may be due to the lower QOL expectation of the older people, who have multiple comorbidities.

Hospice patients were mostly single or widowed, with significantly lower education levels, and higher smoking and unemployment rates than home patients. Female gender was significantly dominant in home participants whereas male: female ratio was equal in the hospice.

Benlioğlu stated that as the education level increased, the frequency of UI decreased.[21] On the other hand, Kocaöz and Ceyhan et al. did not find any relationship between the education level and UI properties in their studies, in accordance with our current study. [22,17] °

The increase in body weight may be a risk factor for UI due to the increase in the intraabdominal and intravesical pressure. Obesity is also risk for low quality of life. In our study, a body mass index [BMI] ≥ 30 was present in 52% of the home residents and in 44% of the hospice residents but it was not found to effect the I-QOL scores. In several studies, obesity was reported to increase UI severity or lead to UI; however, some studies have not found any significant relation between them. [12,18,19,23]

In the research by Bump and McClish, it was found that smoking increased all types of UI by two or three times.[24] It has been reported that UI may occur because chronic cough development due to smoking may strain the pelvic floor muscles and increase intra-abdominal pressure. Also, the detrimental substances in tobacco smoke have an

irritant effect on the muscles of the bladder. Ozerdoğan reported that there was no relationship between smoking and UI.^[10] Kocaöz declared that the smoking rate was 39% in women with UI.^[22] In our study, 64% of the hospice participants and 16% of the home-care participants smoked regardless of gender and no significant correlation was found with I-QOL.

As a consequence, the incontinence related quality of life between participants from home and hospice were not significantly different. Still quality of life was moderately impaired in both groups predominantly in social life restriction. As a paradox, age above 75 years was a factor that increased ICIQ-SF. Further studies with more patients, measuring prevalence and taking into account gender and environment related factors as having to share a public livingroom and bathroom with others are needed to measure incontinence related quality of life to improve specific conditions.

In this study, we have used ICIQ-SF to diagnose and confirm the type and severity of incontinence and I-QOL to determine its effect on quality of life. There was a strong correlation between the visual analogue scale of ICIQ-SF which measures QOL and the general scale and subdomain scores of I-QOL. This fact has been also pointed out by other researchers.^[2,17,25]

Study limitations

An important limitation of the study is the sample size which is considerably small because some residents of the hospice were away at the time of our survey or were not eligible for the study. Therefore, we could not perform an analytical study measuring the frequency or prevalence. It was not possible to make a distinction between genders in terms of QOL and relevant factors. Another limitation is that the participants were not assessed for depression with Geriatric depression scale before admittance to the study. Since UI may cause depression and vice versa, this could have given more insight to our understanding of I-QOL.

CONCLUSION

Urinary incontinence among elderly persons living at home and the hospice is often unattended by health-care professionals. Both genders, especially males are reluctant to admit and seek solution for this problem which is one of the major factors affecting QOL of the elderly. The incontinence related QOL was similar in home and hospice setting in this study. There was a modest effect on quality life and most affected subdomain for both groups was social life restriction. Incontinence frequency and type were the factors related with QOL at home and hospice

and moreover incontinence output affected the QOL in hospice. Individual factors like marital status, social status, obesity, smoking and education level did not seem to have any effect on I-QOL in both groups although they may have had an impact on incontinence. A community health-care program and public support system are essential for the proper understanding of elderly people's UI problems and for providing a solution for them.

Conflicts of Interest: The authors declare no conflicts of interest.

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