THE PREVALENCE OF URINARY İNCONTINENCE, SEXUAL DYSFUNCTION AND QUALITY OF LIFE IN WOMEN OF REPRODUCTIVE AGE ADMITTED TO UROGYNECOLOGY DEPARTMENTS

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ABSTRACT

Aim: Urinary incontinence (UI) is fairly common among women and reduces common emotional and psychological well-being and also a phenomenon that weakens sexual life. At the same time, social activities and relationships; family life, his relationship with his wife is adversely affected. In this study of prevalence of UI and the sexual dysfunction (SD) and quality of life were examined in women of reproductive age who admitted family medicine, obstetrics, urology clinics with various symptoms (frequent urination, urinary burning, pelvic pain, urinary incontinence, vaginal discharge and similar complaints).

Materials and methods: The included a total of 665 female patients of 15-49 years of age admitted to Family Medicine, Obstetrics and Gynecology, and Urology polyclinics in Mustafa Kemal University Faculty of Medicine. Training and Research Hospital during October 2013-January 2014 with various complaints, General survey form, ICIQ-SF (International Consultation on Incontinence Short Form), FSFI (Female Sexual Function Index) form, and EORTC QLQ-C30 (European Organization for Research and Treatment of Cancer Quality of Life Questionnaire-C30) version 3.0 were applied to these patients. The general survey form addressed demographic characteristics, risk factor for urinary incontinence, concomitant diseases, anamnesis including medical history and family history. The data obtained in the study were assessed for statistical significance by using Student's t-test, Mann Whitney U test, Chi-square test and Fisher's Exact Chi-square test.

Results: The sociodemographic characteristics of the women were; mean age was 31.85±9.495 (SD) and mean body mass index (BMI) value was 26.39±4.03. Obstetric history was as follows; number of normal vaginal births was 317 (47.66%); number of caesarean sections 471 (70.8%); number of deliveries of infant over 4 kg of birth weight 138 (20.8%) and number of multiple gestations resulting in live birth was 60 (9%). 235 (35.3%) women had previous history of surgery to pelvic floor and 203 (30.5%) of had previous history of abdominal surgery (except cesarean section). Frequency of UI was 42.7% (284 women). Situation that provokes UI; mixed type at 95 (14.3%) women, stress type at 133 (20%) women, urge type at 56 (8.4%) women. The effect on daily life was scored those who report an effect of 8 on a scale to 10 was 159 (23.9%) of. There was chronic disease at 175 (26.4%) of them, disc herniation at 36 (5.4%) of, involuntary defecation at 74 (11.1%) of, involuntary flatulence at 191 (28.7%) of, haemorrhoids at 405 (60.9%) of. urinary tract infection at 244 (36.7%), vaginitis 1-2 times a year at 352 (52.9%) women. Sexual dysfunction (FSFI according to survey results); 215 (32.3%) women have not heard of sexual desire in the past month. Self-confidence about being sexually active presented at only in 222 (33.4%) women. 307 (46.2%) women dont feel wetness during sexual intercourse. 136 (20.5%) women say sexual intercourse is not satisfactory. 57.9% of all cases not satisfied with your sexual life. Painful intercourse at 74 (11.1%) women.

Conclusion: Urinary incontinence in female population is quite a common health problem. A large majority of women perceive it as a result of aging and female gender and do not seek medical assistance. It is important to detect this problem and relevant risk factor among patients who admit to polyclinics. This approach would improve the treatment of this condition which affects quality of life and sexuality.

Key words: Woman, sexual dysfunction, urinary incontinence.

Received February 18, 2014; Accepted June 19, 2014

Introduction

Urinary incontinence (UI) is defined as involuntary leakage of urine and common among women. Is common so it is not considered as a disease but it leads quite considerable problems. While UI is not a life-threatening condition, it is a multi-factorial problem with a social aspect and unfavourable effects on quality of life, and may affecting women of all ages. Incontinence reduces the emotional and psychological well-being; under-mines sexual life. Social activities and relation-
ships; family life, his relationship with his wife is adversely affected. Majority of women with UI face physical, social and psychological problems but do not refer to a doctor due to embarrassment, hesitation and perception of the problem as a consequence of aging. The main problem of incontinence on life that quantification and how best to apply any post-treatment changes in the most sensitive way and with what parameters can be shown. In recent years “Quality of Life” surveys for this purpose are often applied. The most important feature of a quality of life questionnaire is adapted according to the society.

UI prevalence rate is estimated to be at 17% - 58.4% average in world population. In Turkey, the prevalence of UI ranged from 25.8% up to 68.8% (10-12). The overall prevalence of UI among women is reported as 25% (13,14). Frequency of UI has been detected as 22.9% for the stress-type, 2.8% for the urge-type, and 12.4% for the mixed type of the condition (15). Although epidemiological features of UI have not been fully understood, the main risk factors include age, race, previous childbirth, menopausal status, previous surgery, increased body mass index, smoking, coffee and alcohol intake, and urinary tract infection (16). Studies have shown that obstetric trauma such as long labor, episiotomy during delivery, normal vaginal delivery, giving birth to twins or infant with increased body weight are also involved in UI (13,17,18). Skoner et al. have found an increased rate of medical abortion among women with UI (19). Furthermore, history of UI in first and second degree relatives (19) and nocturnal enuresis during childhood have been reported as risk factor for UI during adulthood (20-21).

Female sexual dysfunction (SD) is the distortion of sexual response cycle at one or several stages such desire, arousal, lubrication or orgasmic stages of physiological (22) and vascular, neurogenic, endocrine, muscular, pharmacological orientated and lowers the quality of life of women (23). SD is examined in separate groups including sexual desire, sexual arousals disorders, orgasms disorders, pain disorders. Despite being a multi-dimensional problem, there are limited studies about female SD. Therefore can not determine issues related to women’s sexual life and can not generate solutions for the problem. But in recent years, the interest shown towards women SD and findings obtained by increasing our studies on this subject: Demirezen et al. (24) in their study, made by women attending primary health care facilities, 67.5% of women’s has a problem at their sexual life. It has been reported in Oksuz and Malhan’s (25) study that 48.3% of women had SD. Çayan et al. (26) showed that the incidence of SD is increasing with age (21.7% in women aged 18-27 years, 25.5% in women aged 28-37 years, 53.5% in women aged 38-47 years, between 48-57 years of age 65.9% in women and 92.9% in women aged 58-67 years).

The surgical procedures performed for the reproductive organs caused physiological, hormonal, structural and psychological changes and this ends with various sexual problems in women (27). Reproductive organs because a determinant of “being a woman” identity and has an important role in formation of women’s body image and self-esteem. The absence of these organs or disease lead to loss of femininity, as women feel self defective or missing (28).

SD in the studies, conducted on some socio-demographic and sociocultural impact on women’s sexual lives are investigated. Throughout this work; age, education level (24), income level, work situation (24,29), active family planning method to use (30), wife and marriage pertaining to the properties (31,32), body mass index (33), such as socio-demographic characteristics and their relation with the community’s cultural structure, living conditions, personal, familial and religious values between the conflicts, sexual issues related to access to education failure or misinformation, traditional and conservative upbringing and social taboos as many of sociocultural factors to affect women’s sexual life was detected.

The sexual function of women in drug treatment studies which examine the effects are quite limited. Using alcohol and illegal drugs, including a significant portion of the drugs can change women’s sexual and may cause SD (34).

In the present study we aimed to investigate the prevalence, risk factors and effects of UI and SD and quality of life among women of 15-49 years of age who visit polyclinics for various conditions.

Materials and methods

The study included a total of 665 female patients of 15-49 years of age who admitted to Family Practice, Obstetrics and Gynecology, and Urology polyclinics in Mustafa Kemal University Faculty of Medicine, Training and Research Hospital during October 2013-January 2014 for various conditions. Pregnant women were excluded.
from the study. Risk factors of UI and SD and quality of life have been evaluated. Verbal consent was obtained from each participant, and individual interviews were performed. Physical characteristics of the women such as age, height, weight, body mass index were recorded, and medical history, family history, obstetric-gynaecological history, and form, frequency and duration of UI were interrogated (Annex-1).

The ICIQ-SF(International Consultation on Incontinence Short Form) addressing the severity, frequency and effects of urinary incontinence on quality of life (Annex-2); the FSFI(Female Sexual Function Index) questionnaire addressing possible sexual dysfunction related to urinary incontinence (Annex-3), and “EORTC QLQ-C30 version 3.0” (European Organization for Research and Treatment of Cancer Quality of Life Questionnaire-C30) (Annex-4) to assess quality of life were applied to the participants. The threshold for FSFI was accepted as 22.

SPSS (Statistical Package for Social Sciences) for Windows 15.0 was used for the statistical analyses during the evaluation of data obtained in the present study. During the assessment of the study data, in addition to descriptive statistical methods (mean, standard deviation, and frequency) Student's t-test was used for the comparison of inter-group parameters with normal distribution to compare quantitative data. Mann Whitney U test was used for the comparison of inter-group parameters without normal distribution. Chi-square test and Fisher's Exact Chi-square test were used for the comparison of quantitative data. The results were evaluated with a confidence interval of 95% and a significance level of p<0.05.

Results

The average age of our patients, 31.85 ± 9.495 (SD) and the mean body mass index was 26.39 ± 4.03. when we look at other socio-demographic characteristics; most of high school graduates (49.0%) despite the fact that most being housewives (42.10% ). Most of them live in the city (48.20%) and married (75.80%) and socio-economic status of women was below average (table 1). 337(50.7%) of women were smoker and 63 (9.5%) of them smoke more than one pack a day. Very rare 137 (20%) were taking alcohol.

Obstetric and gynecologic histories of patients shown in Table 2.

Table 1: Sociodemographic characteristics of females.

<table>
<thead>
<tr>
<th>Age</th>
<th>31.85±9.495 (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body mass index(kg/m²)</td>
<td>26.39±4.03</td>
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</table>

<table>
<thead>
<tr>
<th>Educational status</th>
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</thead>
<tbody>
<tr>
<td>Illetrate:14.7%</td>
</tr>
<tr>
<td>Primary school-19.2%</td>
</tr>
<tr>
<td>Secondary school-17.1%</td>
</tr>
<tr>
<td>High school or university-49.0%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Working status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public sector-31.60%</td>
</tr>
<tr>
<td>Private sector-26.30%</td>
</tr>
<tr>
<td>Housewife-42.10%</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Income status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Too bad-19.50%</td>
</tr>
<tr>
<td>bad-33.10%</td>
</tr>
<tr>
<td>middle-28.60%</td>
</tr>
<tr>
<td>good-18.80%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Marital Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Married-75.80%</td>
</tr>
<tr>
<td>Single-2.60%</td>
</tr>
<tr>
<td>Divorced-21.60%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Village-20.80%</td>
</tr>
<tr>
<td>Town-31.00%</td>
</tr>
<tr>
<td>City-48.20%</td>
</tr>
</tbody>
</table>

Table 2: Obstetric History of Women.

Other findings were history of pelvic floor surgery (35.3%), history of abdomen surgery (30.5%), chronic disease (26.4%), disc herniation (5.4%), constipation (50.7%); Fecal incontinence (11.1%), involuntary flatulence (28.2%), haemorrhoids (60.9%), urinary tract infection (36.7%), vaginitis 1-2 times a year: (52.9%) (table 3).

42.7% of patients suffering from UI.

The cases in which the urine was abducted; missed significantly without causing (mix type) 95 (14.3%)of, missed while on the move, cough or sneeze (stress type) 133 (20%) of, toilet deflected (urge type) 56 (58.4%) of (table 4).

Sexual dysfunction (FSFI according to survey results); 32.3% of feeling sexual desire in the last month; (32.6%) women are not confident about being driven in sexual intercourse and 46.2% peo-
ple did not feel the wetness during sexual intercourse. 20.5% women can not be satisfied during sexual intercourse and 20.6% was not satisfied with their sexual life. Pain during sexual intercourse was at 74 (11.1%) of women (Table 5).

Results of the quality of life assessment; overall health status through the last week (on a scale of 7 from very poor to very good) was: 3 points for 329 patients (49.5%).

Discussion

UI is a complex, common problem resulting from various reasons which may affect women of all ages. It is not only a medical condition but also a problem which affects quality of life defined as physical, psychological, economic and social well-being (35,36).

Prevalence of UI is 2-3 times higher among women compared to men (37,38,39). Prevalence increased with age. Therefore many women perceive UI as a natural component of aging rather than a disorder. The bladder capacity, urinary flow rate and ability to delay urination decrease with aging. Neurological, urological, and renal conditions, decreased mobility, use of medicinal products, estrogen deficiency, diabetes and urinary tract infection establish a ground for the development of UI (40).

The studies in our country about the prevalence of UI have found the rate as 13% for those aged 30 years and younger, and 30% for those aged

Table 3: Patients clinical inquiry.

<table>
<thead>
<tr>
<th>History of pelvic floor surgery - gynecological</th>
<th>26,30%</th>
</tr>
</thead>
<tbody>
<tr>
<td>urological</td>
<td>9%</td>
</tr>
<tr>
<td>History of abdomen surgery - gynecological</td>
<td>21,50%</td>
</tr>
<tr>
<td>urological</td>
<td>9%</td>
</tr>
<tr>
<td>Chronic diseases - DM</td>
<td>14,9%</td>
</tr>
<tr>
<td>HT</td>
<td>8,3%</td>
</tr>
<tr>
<td>HT+ DM</td>
<td>3,2%</td>
</tr>
<tr>
<td>Disc herniation</td>
<td>5,4%</td>
</tr>
<tr>
<td>Hemorrhoids</td>
<td>60,9%</td>
</tr>
<tr>
<td>Constipation</td>
<td>50,7%</td>
</tr>
<tr>
<td>Fecal incontinence</td>
<td>11,1%</td>
</tr>
<tr>
<td>Urinary tract infection</td>
<td>36,7%</td>
</tr>
<tr>
<td>Vaginitis</td>
<td>52,9%</td>
</tr>
<tr>
<td>involuntary flatulence</td>
<td>28,7%</td>
</tr>
</tbody>
</table>

Table 4: Urinary Incontinence History and type of incontinence.

<table>
<thead>
<tr>
<th>Urinary incontinence frequency - Never</th>
<th>57,30%</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-3/week</td>
<td>20%</td>
</tr>
<tr>
<td>1/day</td>
<td>14,30%</td>
</tr>
<tr>
<td>Always</td>
<td>8,40%</td>
</tr>
<tr>
<td>Amount of Urinary incontinence - Never</td>
<td>57,30%</td>
</tr>
<tr>
<td>Middle degree</td>
<td>23,90%</td>
</tr>
<tr>
<td>Little</td>
<td>10,40%</td>
</tr>
<tr>
<td>Much</td>
<td>8,40%</td>
</tr>
<tr>
<td>Situation that provokes urinary incontinence - Mixed type</td>
<td></td>
</tr>
<tr>
<td>Stress Type</td>
<td>14,30%</td>
</tr>
<tr>
<td>Urge Type</td>
<td>27,30%</td>
</tr>
<tr>
<td></td>
<td>58,40%</td>
</tr>
</tbody>
</table>

Table 5: Female sexual dysfunction (FSFI questionnaire results).

<table>
<thead>
<tr>
<th>Sexual desire in the last one month - never</th>
<th>32,3%</th>
</tr>
</thead>
<tbody>
<tr>
<td>sometimes</td>
<td>23%</td>
</tr>
<tr>
<td>often</td>
<td>34,7%</td>
</tr>
<tr>
<td>Excitation self-confidence in-rare</td>
<td>32,6%</td>
</tr>
<tr>
<td>middle</td>
<td>33,4%</td>
</tr>
<tr>
<td>Sexual intercourse feel the wetness in-sometimes</td>
<td>29,9%</td>
</tr>
<tr>
<td>Lack of sexual intercourse</td>
<td>46,2%</td>
</tr>
<tr>
<td>Be satisfied - very difficult</td>
<td>20,5%</td>
</tr>
<tr>
<td>A little difficult</td>
<td>40,3%</td>
</tr>
<tr>
<td>Sexual satisfaction with life - a little</td>
<td>20,6%</td>
</tr>
<tr>
<td>satisfied</td>
<td>57,9%</td>
</tr>
<tr>
<td>Dyspareunia</td>
<td>11,1%</td>
</tr>
</tbody>
</table>

Table 5: Female sexual dysfunction (FSFI questionnaire results).
70 years and above. The overall prevalence of UI among women is reportedly 25%-30. In a study among 1012 women over the age of 18, Kocak et al. have found the rate of UI as 23.9%-31. Zhu et al. found that the prevalence was 38.5% for UI, 22.9% for stress-type UI, 2.8% for urge-type UI, and 12.4% for mixed type UI-32. In the present study we found the prevalence of UI as 42.7% among patients who admit to urology, gynecology and obstetrics and family practice polyclinics. This rate is higher than the rate found in population based studies. While UI without an apparent reason (mixed type) was seen at a rate of 14.3%, the rate of incontinence during motion, coughing or sneezing (stress-type) was 20%. The rate of urge-type UI was significantly high (58.4%) in our study.

Burgio et al. reported that willingness to receive treatment for UI was not associated with occupational status and educational level-33. The present study also found no association between these aspects (p=0.667). Studies have found a statistically significant association between childbirth and UI. UI has been less commonly reported among women without children compared to those who have given birth34. Milson et al. found an association between UI and high number of deliveries. The increase in frequency of UI is particularly notable after the first birth. Holst et al. found that frequency of UI was 20% among women without previous childbirth and increased to 53% after the first pregnancy, to 34% after two pregnancies, to 39% after three pregnancies, to 54% after four pregnancies and to 62% after five or more pregnancies35. No such association was found in the present study (p=0.063).

Some studies have reported that delivery with caesarean section has a protective effect against stress-type UI. Compared to vaginal delivery, caesarean section decreases the risk of UI36,37. In the present study, no association was found between caesarean section and UI in the group with incontinence compared to the groups without incontinence. It remains unclear whether it is pregnancy or delivery that increases the frequency of UI. No such association was found in our study (p=0.051).

An increased rate of fecal incontinence has been shown in elderly women with UI compared to those without38. In the present study, we also found a significant association between UI and fecal incontinence and involuntary flatulence. Disruption in two systems both of which are supported by pelvic floor structures appears to be a natural outcome. No significant association was found in our study (p=0.402).

Urinary tract infection is a transient condition contributing to UI. In a study by Kocak et al., recurrent urinary tract infections were shown to increase the risk of UI by two-fold. The prevalence of UI is higher in women with pyuria compared to those with normal urine sample39. No significant association was found in our study (p=0.476). Bump et al. reported a 5-fold increase in risk of stress-type UI among women smoking more than one pack of cigarettes a day40. Some studies support this finding41. However, the study by Kocak et al. found no association between UI and smoking42. Similarly, no such association was found in the present study (p=0.745).

In the present study, we found that the women with UI had lower income and higher level of financial problems. The high costs associated with diagnosis and treatment of UI is one of the important factors leading to delayed and postponed treatment. Sensation of stinging during urination (39%) and urinary tract infection (38.4%) has been found to be higher in the group with lower income43. Furthermore, failure to treat urinary tract infection due to the low income level and financial problems of the patients may also establish a ground for UI. In women who do not seek medical treatment in a timely manner, the condition shows progression, decreasing the chance of early treatment, leading to more complex procedures as well as higher treatment costs. This is a social and medical condition associated with high costs making up approximately 2% of the healthcare expenditures in USA44. These results may explain why women with UI rarely refer to a doctor.

The studies show that mastectomy45, hysterectomy46, vulvectomy47 as well as many surgical intervention adversely affects women’s body image, self-esteem48, womanhood / femininity characteristics and sexual function49.

SD was found 64% of sexually active women admitted to the Urogynecology unit50. Despite SD is a very common problem; the American Society of Urogynecology his recent study with 471 gynecologist analyzed that a very small portion of patients examined for SD51. In England the population-based study found that 54% of women had sexual problem in the last 1 year at least continuing through one month and 62% of mentioned that sexual problem prevents sexual intercourse. Only 21% of these women had received assistance52. In the prevalence study of Öksüz and Malhan, SD has been reported as 67.9% at 46-55 age group in the
general population, according to the FSFI evalua-
tion(29). In the study conducted by Cayan et al the
prevalence of SD was found to be 46.9%(30).

UI in women with SD prevalence reported to
range between 26% and 47%.(31,32) In the study with
complaining of UI at 19-66 aged 216 women, has
been identified that 34% of has decrease in sexual
desire, 23% of sexual arousal disorder, 11% of
inability to orgasm(60). Women living in Turkey who
complain from UI; 83.6% of has decrease in sexual
desire and frequency of sexual intercourse, 78.1% of
has decrease in sexual satisfaction, 77.7% of has
orgasm difficulties, 45.3% of has dyspareunia(12).

In the study evaluated a total of 4052 women
advanced age, stress incontinence, urgency type of
incontinence, mixed incontinence, co-morbid condi-
tions such as diabetes and cardiovascular risk fac-
tors were found to be independent risk factors for
SD(61). This research is the first study showing that
UI is an independent risk factor for female SD.

UI and SD, although quite closely related,
there are few studies showing the effects of inconti-
nence surgery on sexual function(62). Stress inconti-
nence surgery treats urinary incontinence during
sexual intercourse and this improving sexual func-
tion in women. However, as a result of vaginal
surgery there can be scar contraction, band / strap
erosion and can cause fear of damaging on surgery
during sexual intercourse. Psychological problems
associated with surgery may adversely affect sexual
function(62).

Rogers et al. examined women’s sexual function in
his study with UI and after surgery of pelvic organ
prolapse; found no statistically significant differ-
ces between preoperative and postoperative
frequency of sexual intercourse but reported that
incontinence reduced during sexual intercourse(63).
In the study of Elzevir et al.; 54% of women had UI
during sexual intercourse before TVT(tension-free
vaginal tape) surgery, and after surgery this ratio
reduced to 22%(64). This results an increase in self-
confidence and satisfaction at sexual life.

Absence of a control group could be described
as the weakness of the study. Comparisonal statist-
s of the patient group with healthy volunteers
could reflect the importance of the phenomenon
more decently. We consider that future large num-
ber studies including controls are needed to receive
statistical results of higher value.

References
1) Alexandra J W, Bryce B R, Urinary incontinence and
health-related quality of life among older Americans
with and without cancer: a cross-sectional study. BMC
2) Şensoy N, Doğan Kadınlarda idrar kaçırma: yaygın
olanlar, risk faktörleri ve yaşam kalitesi üzerine etkisi.
3) T C O’Dowd Management of urinary incontinence in
women, Br J Gen Pract. 1993 October; 43(375): 426-
429.
4) SE Lamb, J Pepper, R Lall, EC Jørstad-Stein, MD
Clark, L Hill, J Fereday-Smith, Group treatments for
sensitive health care problems: a randomised con-
trolled trial of group versus individual physiotherapy
sessions for female urinary incontinence, BMC
Women's Health. 2009; 9: 26. Published online 2009
5) Diane Borello-France, Kathryn L. Burgio, Adherence to
Behavioral Interventions for Stress Incontinence:
Rates, Barriers, and Predictors, Phys Ther. 2013 June;
93(6): 757-773. Published online 2013 February 21.
6) S Nurko , SM Scott, Coexistence of constipation and
incontinence in children and adults, Best Pract Res
Clin Gastroenterol. 2011 February 1; 25(1): 29-41. Doi:
7) Biri A, Durukan E, Maral I, ve ark. Incidence of stress
urinary incontinence among women in Turkey. Int
8) Schimpf MO, O’Sullivan DM, LaSala CA, Tulikingas
PK. Anterior vaginal wall prolapse and voiding dys-
function in urogynecology patients. Int Urogynecol J.
9) Van der Vaart CH, Lamers BHC, Heintz APM.
Feasibility and patient satisfaction with pelvic organ
prolapse and urinary incontinence day surgery. Int
10) Özerdoan N, Beji KN, Yalçın O. Urinary inconti-
nence: its prevalence, risk factors and effects on the
quality of life of women living in a region of Turkey.
11) Kocak I, Okyay P, Dundar M, Erol H, Beser E. Female
urinary incontinence in the west of Turkey: prevalence,
risk factors and impact on quality of life. European
12) Oskay Ü, Beji N, Yalcın Ö. A study on urogenital
complaints of postmenopausal women aged 50 and over.
13) Hung KJ, Awtrey CS, Tsai AC. Urinary incontinence,
depression, and economic outcomes in a cohort of
women between the ages of 54 and 65 years. Obstet
0000000000000186.
14) Subak LL, Goode PS, Brubaker L, Kusek JW,
Schembri M, Lukacz ES, Kraus SR, Chai TC, Norton
P, Tennstedt SL; Urinary incontinence management
costs are reduced following Burch or sling surgery for
stress incontinence.Urinary Incontinence Treatment
S0002-9378(14)00217-8. doi: 10.1016/j.ajog.2014.03.012.
The prevalence of urinary incontinence, sexual dysfunction ...


47) Obstet Gynecol. Author manuscript; available in PMC 2011 June 22. Association between Menopausal Transition Stages and Developing Urinary Incontinence. 2009 November; 114(5): 989-998. doi: 10.1097/AOG.0b013e3181bb531a


60) Hansen BL. Lower urinary tract symptoms (LUTS) and sexual function in both sexes. Eur Urol 2004; 46(2): 229-234.

