Lower Urinary Tract Symptoms, Sexual Function, and the Quality of Life of Married Women with Urinary Incontinence

Seon Hwa Kim¹, Hye Young Kim²

¹College of Nursing, Chonbuk National University Hospital, 20 Geonji-ro, Deokjin-gu, Jeonju-si, Jeollabuk-do 54907 South Korea.
²College of Nursing, Research Institute of Nursing Science, Chonbuk National University, 567 Baekje-daero, Deokjin-gu, Jeonju-si, Jeollabuk-do 54896 South Korea.

Abstract

The purpose of the study was to identify the level of lower urinary tract symptoms (LUTS), sexual function, and quality of life (QoL) and its correlates in married women with urinary incontinence (UI). Data were collected through self-reported questionnaires that included items on general and UI-related characteristics, and tools to measure LUTS (Scored Form of the Bristol Female Lower Urinary Tract Symptoms Questionnaire, BFLUTS-SF), sexual function (Female Sexual Function Index, FSFI), and QoL (The Medical Outcomes Study 36-Item Short Form Version 2 Standard, SF-36v2). Data were analyzed using descriptive statistics, t-test, one-way ANOVA, and Pearson correlation coefficients. About 55% of the participants were identified as women with UI. Stress UI was 54.7% and the proportions of urge UI and mixed UI were 13.3% and 32.0%, respectively. The average score for LUTS, sexual function, physical QoL, and mental QoL in married women with UI were found to be 7.55±4.27 points, 14.67±10.52 points, 72.21±18.51 points, and 77.78±15.98 points, respectively. LUTS has a statistically significant negative correlation with sexual function, physical QOL, and mental QoL, respectively, r=-.234, r=-.486, and r=-.445. Sexual function has a statistically significant positive correlation with physical and mental QoL, respectively, r=.281 and r=.406. The results of this study are expected to provide basic data for therapeutic nursing intervention in LUTS management, sexual dysfunction, and low QoL in women with UI, and help to identify and understand the disease of UI.

Keywords: Lower Urinary Track Symptom, Sexual dysfunction, Quality of Life, Women

Abbreviations:

LUTS - Lower Urinary Tract Symptoms
QoL - Quality of Life
UI - Urinary Incontinence
BFLUTS-SF - Scored Form of the Bristol Female Lower Urinary Tract Symptoms Questionnaire
FSFI - Female Sexual Function Index

Introduction

According to the International Continence Society (ICS), urinary incontinence (UI) is a disease that signifies “involuntary leakage of urine” and is generally classified into stress UI, urge UI, and mixed UI [1]. The length of urethra in women is 3–5 cm, which is five times shorter than that of men. In particular, married women have a higher prevalence of UI compared to men due to physical and physiological changes during pregnancy and childbirth [2]. However, married women have a lower awareness of illness and treatment of UI and consider UI as a natural symptom of normal aging process or childbirth experience, and they miss out on proper treatment due to embarrassment and shame. Therefore, studies on UI should be preceded by research in the community rather than in hospitals [3].

The UI have high prevalence and are recognized as important symptoms to represent lower urinary tract symptoms (LUTS). However, in Korea, the focus is mainly on UI, and studies on LUTS, which are likely to occur in duplicate, are rare. LUTS include various urinary symptoms such as urinary frequency, polyuria, nocturia, UI, etc. [4]. These symptoms lead to physical problems such as skin infection, odor, and pressure ulcer [5], and psychological problems such as anxiety about urine odor and incontinence, behavioral limitations (water intake, coughing, or sneezing), frustration or helplessness, and depression; furthermore, these can reduce the quality of life (QoL) of women with UI [6].

Previous studies have shown that women with stress UI have a lower incidence of sexual intercourse and sexual satisfaction than women without it, and tend to avoid sexual activity [7]. The occurrence of LUTS is a major problem women who increasingly engage in social and economic activities but restrict outdoor activities and hobbies as they worry/are anxious about pad use and smell due to incontinence [8]. In particular, studies on UI in Korea have been conducted on elderly women [9] and postmenopausal women [10, 11], but studies on incontinence and related variables of married women, including various age groups (such as 30s and 40s) and physiological changes during pregnancy and childbirth, are rare. In addition, it is important to understand LUTS, sexual function, and QoL, which have been predicted to be related to each other in previous studies on women with UI, in order to increase awareness about UI treatment and to identify related variables that cause sexual dysfunction and low quality of life.

This study aimed to provide basic data for the management of LUTS, sexual dysfunction, and QoL degradation in women with UI. Specifically, this study had the following objectives:

ISSN: 2581-3846
the total sexual function score. The range of measured scores showed that the questionnaire form consisted of 13 questions concerning age, education, duration of marriage, number of vaginal deliveries, menopause, postmenopausal period, Kegel’s exercise, sexual intercourse, and types of UI. Data Analysis The statistical software package SPSS-WIN 23.0 (SPSS Inc., Chicago, IL, USA) was used for data analysis. A 5% level of statistical significance was used. The general and clinical characteristics of the participants are expressed in real numbers and percentages to express the participants’ degrees of LUTS, sexual function, and QoL. The total sexual function score is multiplied by the weighted value for each item. The Spearman-Brown prophecy coefficient was calculated according to the time of development of this tool was 61 ~ .89 [16]. In this study, the Cronbach’s alpha coefficient was .99.

Quality of Life In order to measure Qol, we used the Medical Outcomes Study 36-Item Short Form Version 2 (SF-36v2) developed by Ware and Sherbourne [16] and validated by Quality Metric Incorporated in Korea. This tool had a total of 36 items with 5 items on general health, 10 on physical function, 4 on role-physical, 2 on bodily pain, 4 on vitality, 2 on social functioning, 3 on role-emotional, 5 on mental health, and 1 on overall health status. The FSFI of 15 items and the mental Qol of 10 items are divided again. Score using Health Outcomes Scoring Software 5.0. From 0 to 100, the higher the score, the higher the Qol. The Cronbach’s alpha coefficient at the time of development of this tool was .89 ~ .90 [16].

General Characteristics The number of participants needed was calculated according to power analysis. A power of 0.95, the minimum sample size required for this study was 128 out of 234 women who had UI. As a result, there were 128 out of 234 women who had UI. The statistical software package SPSS-WIN 23.0 (SPSS Inc., Chicago, IL, USA) was used for data analysis. A 5% level of statistical significance was used. The general and clinical characteristics of the participants are expressed in real numbers and percentages to express the participants’ degrees of LUTS, sexual function, and QoL. The total sexual function score is multiplied by the weighted value for each item. The Spearman-Brown prophecy coefficient was calculated according to the time of development of this tool was 61 ~ .89 [16]. In this study, the Cronbach’s alpha coefficient was .99.

Quality of Life In order to measure Qol, we used the Medical Outcomes Study 36-Item Short Form Version 2 (SF-36v2) developed by Ware and Sherbourne [16] and validated by Quality Metric Incorporated in Korea. This tool had a total of 36 items with 5 items on general health, 10 on physical function, 4 on role-physical, 2 on bodily pain, 4 on vitality, 2 on social functioning, 3 on role-emotional, 5 on mental health, and 1 on overall health status. The FSFI of 15 items and the mental Qol of 10 items are divided again. Score using Health Outcomes Scoring Software 5.0. From 0 to 100, the higher the score, the higher the Qol. The Cronbach’s alpha coefficient at the time of development of this tool was .89 ~ .90 [16].

General Characteristics The number of participants needed was calculated according to power analysis. A power of 0.95, the minimum sample size required for this study was 128 out of 234 women who had UI. As a result, there were 128 out of 234 women who had UI. The statistical software package SPSS-WIN 23.0 (SPSS Inc., Chicago, IL, USA) was used for data analysis. A 5% level of statistical significance was used. The general and clinical characteristics of the participants are expressed in real numbers and percentages to express the participants’ degrees of LUTS, sexual function, and QoL. The total sexual function score is multiplied by the weighted value for each item. The Spearman-Brown prophecy coefficient was calculated according to the time of development of this tool was 61 ~ .89 [16]. In this study, the Cronbach’s alpha coefficient was .99.

Quality of Life In order to measure Qol, we used the Medical Outcomes Study 36-Item Short Form Version 2 (SF-36v2) developed by Ware and Sherbourne [16] and validated by Quality Metric Incorporated in Korea. This tool had a total of 36 items with 5 items on general health, 10 on physical function, 4 on role-physical, 2 on bodily pain, 4 on vitality, 2 on social functioning, 3 on role-emotional, 5 on mental health, and 1 on overall health status. The FSFI of 15 items and the mental Qol of 10 items are divided again. Score using Health Outcomes Scoring Software 5.0. From 0 to 100, the higher the score, the higher the Qol. The Cronbach’s alpha coefficient at the time of development of this tool was .89 ~ .90 [16].

Quality of Life In order to measure Qol, we used the Medical Outcomes Study 36-Item Short Form Version 2 (SF-36v2) developed by Ware and Sherbourne [16] and validated by Quality Metric Incorporated in Korea. This tool had a total of 36 items with 5 items on general health, 10 on physical function, 4 on role-physical, 2 on bodily pain, 4 on vitality, 2 on social functioning, 3 on role-emotional, 5 on mental health, and 1 on overall health status. The FSFI of 15 items and the mental Qol of 10 items are divided again.
to the general characteristics, significant mean differences existed with respect to duration of marriage, menopause, Kegel's exercise, and sexual intercourse per month of UI. The LUTS, Sexual Function, and QoL scores were 3.55±2.00, 7.55±4.27, and 72.21±18.51, respectively (Fig. 1). The LUTS score for the Sexual Function was 1.00±1.27 for filling symptom (range 0–15), 0.00±0.00 for voiding symptom (range 0–12), and 7.55±4.27 for sexual symptom (range 0–6). The total score for physical and mental components was 72.21±18.51 (Range 0–100) and 77.78±15.98 (Range 0–100), respectively (Table 2).

Correlation among the LUTS, Sexual Function, and QoL

LUTS has a statistically significant negative correlation with sexual function, physical QOL, and mental QOL, respectively, (r=-.322, p<.001) and (r=-.455, p<.001). Sexual function has a statistically significant positive correlation with physical and mental components of QOL, respectively, (r=.322, p<.001) and (r=.360, p<.001) (Table 3).

Discussion and Conclusion

The purpose of this study was to investigate the relationship between LUTS, sexual function and QoL and lower in married women with urinary incontinence. In this study, the prevalence according to the type of incontinence was 54.7% for stress UI, 13.3% for urge UI, and 32.0% for mixed UI. The prevalence of UI in previous studies varied according to subject selection and data collection methods. The incidence of UI in this study was similar to that of a previous study [17]. The incidence of LUTS during the menopausal transition was 55.7%, the incidence of stress UI was 60.8%, the urge and mixed UI were reported to be 1.6% and 38.2%, respectively [17]. However, according to the results of a population-based sampling study of adult women of the same age range (range 30 to 79 years) as in the present study, the incidence of UI was 41.2%, including stress UI (37.8%) and urge UI (34.9%) [12], and the prevalence of UI was lower in this study. The reason for the difference in the prevalence of urinary incontinence in this study is the age associated with incontinence incidence. In the Oh et al. [12] study, mean age was 51.1±12.8 years, while the mean age of women in this study was 53.8±11.1 years. For this reason, the prevalence of incontinence seems to be low. There was a difference in prevalence according to the type of UI, but it is consistent with the fact that stress UI is relatively higher in other types. However, the prevalence of UI in this study and previous studies is different because different tools have been used to determine UI. Thus, in future studies, it may be necessary to identify variables related to UI using objective indicators.

In this study, we discuss the levels of LUTS, sexual function, and the QoL of married women who have UI. First, the LUTS score for women with urinary incontinence was 7.55±4.27 points out of 47 points. The results of this study showed that the LUTS score for urinary incontinence is similar to that of previous studies and sexual function scores, it was found that the average age of the sexual function, the number of menopausal women, and 47% (37.6%), respectively. Because of these differences in general characteristics, sexual function scores in this study seem to be significantly lower. In addition, the sexual function score of this study was 14.67±10.52, which was significantly lower than the cut-off score of sexual dysfunction (26.6 points) [21] suggesting that there are many women with sexual dysfunction. In this study, many of the women with UI might have had sexual dysfunction.

In the present study, the QoL scores for women with UI were 68.27±16.00 points out of 100 points. The results of this study were similar to those of previous studies in that the QoL of the women with UI was measured by SF-36, the tool is also used in the present study, with a score of 69.0±10.6 [22]. In this study, the LUTS, sexual function, and QoL according to the demographic and UI-related characteristics of married women with UI was related to various sociodemographic and UI-related factors. In conclusion, this study should develop a nursing intervention program that can improve the three variables considering the demographic and UI-related characteristics reported to be associated with LUTS, sexual function, and QoL in married women with UI.

The results of this study showed that LUTS was correlated negatively with sexual function and QoL, and sexual function was positively correlated with QoL. That is, the more severe symptoms of lower urinary tract, the lower the sexual function and the QoL, and the positive correlation with the QoL is higher. The QoL of the Turkish women in this study was 77.78±15.98, which was significantly lower than the Turkish women in the previous studies and sexual function scores, it was found that the average age of the sexual function, the number of menopausal women, and 47% (37.6%), respectively. Because of these differences in general characteristics, sexual function scores in this study seem to be significantly lower. In addition, the sexual function score of this study was 14.67±10.52, which was significantly lower than the cut-off score of sexual dysfunction (26.6 points) [21] suggesting that there are many women with sexual dysfunction. In this study, many of the women with UI might have had sexual dysfunction.

The prevalence and correlation of urinary incontinence and overactive bladder in Taiwanese women. Neurourol Urodyn 22: 109-117.

Kim JS, Lee EH (2003) Treatment-Seeking Behaviors and Quality of Life among Community-Dwelling Older Women with Urinary Incontinence. Hanguk Nonyonhak 23: 33-47.

Kim M, Lee S (2008) Prevalence Rate and Associated Factors of Urinary Incontinence among Nursing Home Residents. J Korean Acad Nurs 38: 92-100.

Kim OK, Yim H (2013) Prevalence of Urinary Incontinence, Single Voided Volume, Post Void Residual Volume, Daytime Frequency, and Nocturia in Women over 40 Years. Korean J Adult Nurs 25: 679-689.

Oh S, Park WH, Park CH, Paick JS, Seo JT, et al. (2003) Prevalence of Urinary Incontinence and Incontinence-related Quality of Life in Korean Women: A Population-based Study. Int Neurourol J 7: 73-80.

Brookes ST, Donovan JL, Wright M, Jackson S, Abrams P, et al. (2004) A scored form of the Bristol Female Lower Urinary Tract Symptoms questionnaire: data from a randomized controlled trial of surgery for women with stress incontinence. Am J Obstet Gynecol 191: 73-82.

Rosen R, Breslow C, Heiman J, Leiblum S, Meston C, et al. (2000) The Female Sexual Function Index (FSFI): a multidimensional self-report instrument for the assessment of female sexual function. Sex Marital Ther 26: 191-208.

Kim HY, So HS, Park KS, Jeong SJ, Lee JJ, et al. (2002) Development of the Korean-version of Female Sexual Function Index (FSFI). World J Mens Health 20: 50-56.

Wade J, Sheerburne CD (1992) The MOS 36-item short-form health survey (SF-36). 1. Conceptual framework and item 80 selection. Medical Care 30: 473-483.

Song HJ, Lee DH, Lee KY, Kim MJ (2001) Epidemiologic Study of Urinary Incontinence among Korean Women Over 30 years old. Int Neurourol J 5: 24-38.

Gopal M, Sammel MD, Aya LA, Freeman EW, Lin H, et al. (2008) Association of Change in Estradiol to Lower Urinary Tract Symptoms and the Menopausal Transition. Obstet Gynecol 112: 1045-1056.

Sen I, Ouran A, Akkuk N, Arcan C, Tan MO, et al. (2006) The impact of urinary incontinence on female sexual function. Adv Ther 23: 1096-1104.

Kim M (2013) Factors Influencing the Sexual Function of Women with Urinary Incontinence. Korean J Women Health Nurs 19: 108-118.
21. Wigal H, Meston C, Rosen R (2005). The Female Sexual Function Index (FSFI): Cross-validation and development of clinical cutoff scores. Sex Marital Ther 31: 1-20.

22. Kim HJ, Lee HS, Lee SH (2003) The Impact of Urinary Incontinence on the Quality of Life in Women. Korean J Fam Med 24: 709-714.

23. Kweon Y, Kang Y (2012) Lower Urinary Tract Symptoms and Incontinence Quality of Life among Middle Aged and Elderly Women. Womens Health 13: 21-37.

24. Ozkan S, Ogce F, Cakir D (2011) Quality of life and sexual function of women with urinary incontinence. Jpn J Nurs Sci 8: 11-19.