

## What Is the Real Impact of Urinary Incontinence on Female Sexual Dysfunction? A Case Control Study

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### ABSTRACT

**Introduction:** Urinary incontinence (UI) has been associated with negative effects on women's sexuality. Women's sexuality and sexual function are a complex issue, and the role of UI is not completely clear.

**Aim:** To assess the impact of UI on female sexual function by comparing this population with a control group of continent women.

**Methods:** We performed a case-control study from August 2012 to September 2013. We evaluated continent and incontinent women (age range = 30–70 years) for their sexuality.

**Main Outcome Measures:** All patients were evaluated by anamnesis, physical examination, and self-report quality-of-life questionnaires. In addition, incontinent women underwent a 1-hour pad test. Patients without sexual activity were evaluated for the role of UI in their sexual abstinence. Sexual abstinence was defined as the absence of sexual activity for more than 6 months. All sexually active women completed the self-report Sexuality Quotient—Female Version (SQ-F) questionnaire.

**Results:** A total of 356 women were included in the study (incontinent,  $n = 243$ ; continent,  $n = 113$ ). Sexual abstinence was found in 162 women (45%). Incontinent women presented a higher prevalence ( $P < .001$ ) of sexual abstinence than their counterparts (129 [53%] and 33 [29.2%], respectively). Age, marital status, and UI were found to be isolated predictive factors for more sexual abstinence in incontinent women. Sexually active women (incontinent,  $n = 114$ ; continent,  $n = 80$ ) presented similar demographic data. Despite a similar frequency of sexual activity, incontinent women had less sexual desire, foreplay, harmony with a partner, sexual comfort, and sexual satisfaction than their counterparts. Women with greater urinary leakage during the 1-hour pad test (weight  $> 11$  g) had the worst sexual function (SQ-F) score.

**Conclusion:** Women with UI were more likely to be sexual abstinent than continent women. Furthermore, women with UI showed less sexual desire, sexual comfort, and sexual satisfaction than their counterparts despite having a similar frequency of sexual activity.

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**Key Words:** Urinary Incontinence; Sexuality; Female Sexual Function

### INTRODUCTION

Urinary incontinence (UI) is a common disorder that affects a large number of women and their quality of life.<sup>1,2</sup> A total of 423 million people worldwide are estimated to present with UI by 2018.<sup>3</sup> UI can be classified based on symptoms: stress UI (SUI),

urge UI (UUI), and mixed UI (MUI). To identify different types of incontinence, validated questionnaires have been developed and recommended as reproducible clinical research tools.<sup>2</sup> Incontinent women have been reported to present urinary leakage during sexual penetration and orgasm, difficulties reaching orgasm, and less desire, lubrication, and satisfaction.<sup>4</sup> For those women who experience leakage of urine during sexual activity, it has been suggested that UUI and SUI show a stronger association with leaking urine during orgasm and during penetration, respectively.<sup>5</sup>

Women's sexuality and sexual function are complex issues, and the role of UI is not completely clear. The effect of UI on sexuality is associated not only with leaking urine during sexual penetration or orgasm but also with several confounding variables, such as aging, pelvic surgery, hormonal influence, self-image

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perception, and chronic diseases, which are risk factors for sexual dysfunction and present a high prevalence in women with UI.<sup>5–8</sup> Several attempts to control for such variables have been published.<sup>9–11</sup> Shaw<sup>9</sup> reported a 46% prevalence of sexual abstinence in incontinent women. Despite the high sexual abstinence rate in that study, the lack of a control group of continent women did not allow any major conclusion on the role of UI in sexual abstinence. In contrast, Tannenbaum et al<sup>10</sup> observed that elderly women (mean age = 71 years) remained sexually active regardless of continence status in a large cross-sectional postal survey. However, the amount of urine loss, degree of SUI, and nocturnal incontinence affected sexual activity in that population. Schoenfeld et al<sup>11</sup> evaluated sexual function in a group of German women with and without UI. They found that all women with UI were less sexually active than the healthy controls. However, the study did not present demographic data, such as marital status, educational level, and chronic diseases.

In the present study, we assessed the impact of UI on general female sexual function (desire and interest in sex, sexual excitement, harmony with the partner, comfort, satisfaction, and orgasm) by comparing incontinent women with a control group of continent women.

## METHODS

We performed a case-control study from August 2012 to September 2013. The university's local ethics committee approved the study, and all participants signed an informed consent. All patients included in the study were directly invited to participate. We recruited women with UI from the outpatient voiding dysfunction division of our department. Women without UI were recruited from the outpatient ophthalmology and cardiology departments at the same institution.

The inclusion criteria were women 30 to 60 years old with UI (SUI, UUI, or MUI) and without UI who voluntarily participated in the study for the case and control groups. The exclusion criteria were pregnancy, neurologic dysfunction, pelvic organ prolapse greater than stage II (Pelvic Organ Prolapse Quantification), urinary tract infection in the past 3 months, and cognitive dysfunction or poor comprehension.

All patients (incontinent and continent) were assessed by anamnesis and self-report questionnaires: the World Health Organization for Quality of Life (score range = 0–100; higher scores indicate better quality of life),<sup>12</sup> the International Consultation on Incontinence Questionnaire—Short Form (score range = 0–21; higher scores indicate greater incontinence severity),<sup>13</sup> and the Overactive Bladder Questionnaire (patients with overactive bladder are those with cumulative scores > 8).<sup>14</sup> In addition, after completion of the self-report questionnaires, all incontinent women underwent 1-hour pad test and physical examination in accord with the International Continence Society recommendation.<sup>15</sup>

Sexual abstinence was defined as the absence of any sexual activity with a partner for more than 6 months. Sexual activity

was defined not only by sexual intercourse but also by other modalities, such as oral sex and mutual masturbation with a partner.

## Sexually Active Women Evaluation

All sexually active patients completed the Sexuality Quotient—Female Version (SQ-F). The SQ-F consists of 10 questions, including the main domains of female sexuality: desire, arousal, orgasm, and sexual comfort. The overall score ranges from 0 to 100; those with scores lower than 62 were considered as having a risk for sexual dysfunction.<sup>16</sup>

In addition, each patient was asked two questions to evaluate urinary leakage during sexual intercourse:

1. Do you leak urine during sexual activity?
2. Do you believe that leaking urine affects your sexual life?

## Statistical Analysis

The sample size with 95% CI and 90% power was defined based on results from previous studies and a pilot study with 50 sexually active women at our institution.<sup>16</sup> Statistical analysis was performed with SPSS 16.0 for Windows (SPSS, Inc, Chicago, IL, USA). Quantitative data were described as mean  $\pm$  SD. The t-test and Mann-Whitney test were used for parametric and non-parametric data, respectively. Categorical variables were described as percentages and absolute values. The  $\chi^2$  and Fisher tests were used, and multiple logistic regressions were performed to assess the predictive factors for sexual abstinence in incontinent women. Statistical significance was defined as a *P* value less than .05.

## RESULTS

We initially evaluated 400 women. The subject distribution is presented in [Figure 1](#) and demographic data are presented in [Table 1](#). Forty-four women did not fulfill the inclusion and exclusion criteria or refused to participate in the study. Of the 356 women included in the study, 162 (45%) were sexually abstinent. Sexual abstinence ( $P < .001$ ) in incontinent women was statistically higher than in the continent group (129 [53%] and 33 [29.2%], respectively).

Age, marital status, and UI were found as isolated predictive factors for more sexual abstinence. The presence of comorbidities, such as systemic hypertension or diabetes mellitus, and quality-of-life questionnaire score were not predictive factors for sexual activity. These data are presented in [Table 2](#).

## Sexually Active Women Evaluation

To understand the aspects of female sexuality, we analyzed the data of sexually active women after excluding the two groups of abstinent women. Demographic data for sexually active women are presented in [Table 3](#).

The 1-hour pad test showed 16 women (14%) without urinary leakage, 61 (53%) with a pad weight of 1 to 10 g,

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