The bothersomeness of female urinary incontinence and its influencing factors: Study from a Chinese city

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Abstract

Purpose: To investigate the bothersomeness of female urinary incontinence (UI) and analyse its influencing factors.

Methods: A purposive sample of 506 women with UI from three communities in Jinan was studied using the International Consultation on Incontinence Questionnaire—Urinary Incontinence Short Form, modified Social Impact Scale, and a coping efficacy questionnaire. The influencing factors of bothersomeness were identified using one-way analysis of variance, chi-square test, and logistic regression.

Results: Of the participants, 33.4% were bothered by UI symptoms; logistic regression indicated that severity of UI, stigma, coping efficacy, and duration of symptoms were independent factors of bothersomeness, which clarified 49.8% of the variation.

Conclusion: UI patients should receive individualised intervention. Healthcare workers can provide targeted intervention to patients bothered by UI to alleviate symptoms, decrease the sense of stigma, and increase confidence in coping with symptoms to decrease bothersomeness.

Keywords:
Coping efficacy
Female
Urinary incontinence
Shame

1. Introduction

Urinary incontinence (UI) has become a worldwide health problem. A review of epidemiological studies on UI worldwide reported that the median prevalence of UI was 27.6% (range: 4.8–58.4%) in females and 10.5% (range: 1–34.1%) in males, and that prevalence increased with age [1]. Although UI is not a life-threatening condition, it has been demonstrated as exerting a negative impact on health-related quality of life...
2. Materials and methods

2.1. Participants

This was a cross-sectional study. A purposive sample of 506 participants was recruited from three communities in Jinan City in Shandong Province, China. The inclusion criteria were: (i) aged 18 or older; (ii) suffering from involuntary leakage of urine in the last two weeks; (iii) no difficulties reading and writing. We excluded women with severe psychological or physical incapacity or cognitive dysfunction.

2.2. Instruments

2.2.1. Demographic and clinical characteristics questionnaire

We prepared a questionnaire based on information from the literature. The variables included age, race, marital status, education, body mass index (BMI), comorbidity (diabetes mellitus, hypertension, cardiac disease, cancer, gynaecological disease), parity, duration of UI, and previous help-seeking behaviour.

2.2.2. International Consultation on Incontinence Questionnaire—Urinary Incontinence Short Form

The International Consultation on Incontinence Questionnaire—Urinary Incontinence Short Form (ICIQ-UI SF) is a brief and disease-specific questionnaire developed for assessing UI prevalence, severity, type, and impact on QoL. The International Consultation on Incontinence Modular Questionnaire study group developed the ICIQ-UI SF, and it is widely used in the study of UI. The ICIQ-UI SF consists of four sections: the first two include questions related to the frequency and volume of urine leakage, the third assesses the impact of UI on QoL, and the fourth includes eight items that assess the symptoms to aid in determining the type of UI. The total ICIQ-UI SF score (between 0 and 21) is calculated based on the sum of the first three items. The total score can be used to measure the severity of UI, which can in turn be classified into three levels: slight (1–7), moderate (7–14), and severe (15–21) [7]. Cetinel et al. recently validated the Chinese version of the ICIQ-UI SF, and Cronbach’s α coefficient was 0.71–0.96 [8].

2.2.3. UI bothersomeness questionnaire

We asked, “How much does urinary leakage bother your daily life or work?” to determine whether participants were bothered by UI; answers were based on a 4-point scale (1 = not at all, 2 = slightly, 3 = moderately, 4 = severely). Bothered UI was defined as being moderately or severely bothered by UI [6].

2.2.4. Modified Social Impact Scale

Fife and Wright developed the Social Impact Scale (SIS) to assess stigma in patients with HIV/AIDS and cancer [9]. Following adjusting for culture and testing in Chinese women with UI, the modified SIS is an 18-term scale with three domains: social isolation, social rejection, and internalised shame. Confirmatory factor analysis indicated that it has adequate construct validity and composite reliability [10]. The Cronbach α coefficients of the scale and sub-scales are 0.856, 0.798, 0.825, and 0.894, respectively [11]. The score of every item was summed to determine the total stigma and every domain of stigma; higher scores indicate a higher degree of stigma.

2.2.5. Coping efficacy scale

The coping efficacy scale was self-designed and comprised four items: i) "I have the confidence to deal with urinary leakage", ii) "I can deal with the distress caused by UI", iii) "I could still perform tasks as required even though I was affected by UI", iv) "I could reduce the influence of UI on my life through coping strategies". This 5-point Likert scale was scored from 1 (strongly disagree) to 5 (strongly agree). The score of every item was summed to determine the total coping efficacy; higher scores indicated higher coping efficacy. Confirmatory factor analysis demonstrated that it had adequate construct validity with the following goodness-of-fit (GF) indicators: $\chi^2$/degree of freedom = 7.29, GF index (GFI) = 0.98, adjusted GFI = 0.90, normed fit index (FI) = 0.94, incremental FI = 0.95, comparative FI = 0.95, REMSA = 0.04, Cronbach’s α = 0.70 [11].

2.2.6. Help-seeking intention scale

This was a 3-item, self-designed scale based on the theory of planned behaviour and was developed according to the standard direct measurement method of Ajzen [12]. The three items were: i) "I intended to consult doctors or nurses for UI previously", ii) "I plan to consult doctors or nurses for UI in the following 1 month", and iii) "I plan to consult doctors or nurses for UI in the following 6 months". Response categories were 5-point Likert scaling from 1 (strongly disagree) to 5 (strongly agree). The sum of the three questions was used to assess the help-seeking intention. Higher scores denoted stronger help-seeking intentions. In this study, Cronbach’s α was 0.84.

2.3. Data collection and procedure

Data were collected using a questionnaire from May to October 2011 in three communities. Advertisements, brochures, and health promotion lectures were used as a recruitment strategy. A woman was defined as having symptoms of UI if she answered “yes” to the following question: “Did you experience any urine leakage at least once during the...”
past 2 weeks?” Women who were eligible and willing to participate in our study were asked to complete a paper-pencil questionnaire at the community health service centre. Once the questionnaires were completed, they were collected immediately after re-checking by the researchers to ascertain questionnaire completion.

2.4. Ethical considerations

We obtained approval for the study protocol from the Shandong University Institutional Review Board. Verbal consent to participate in the survey was obtained from all participants. Completed questionnaires with participant identification numbers were kept in locked file cabinets, and this information was available only to the individual investigators and data collectors on a strict need-to-know basis. All information was kept confidential and secure at all times, ensuring participant confidentiality.

2.5. Data analysis

Data were analysed using the SPSS software suite, version 16.0 (SPSS Inc., Chicago, IL, USA). There were no missing data for any participant. The data were analysed based on normal or nearly normal distribution following a one-sample Kolmogorov test. Descriptive summary statistics were used to determine the qualitative and quantitative nature of the data collected.

Univariate analysis (one-way analysis of variance for continuous variables and χ² test for categorical variables) was conducted to identify the independent significant factors of bothered UI. Variables significantly associated with bothered UI were assessed in a multivariate logistic regression model to examine the predictors of bothered UI. Dummy variables were set if a variable was polytomous.

3. Results

3.1. Demographic and clinical characteristics

The mean age of the participants was 53.77 years (range: 33–77 years). The majority of the participants (96.0%) were Han Chinese. In addition, 91.7% of participants lived with their spouse, 48.4% had senior high school education or higher while 9.3% were educated below elementary level, and 70.8% had only one child. The mean BMI was 24.26 (range: 15.63–35.16). Less than half the participants (48.4%) reported that they were most aware of this and allocate health resources to prioritise those who are most in need.

3.2. UI severity and type

The ICIQ-UI SF score (mean ± standard deviation) was 9.06 ± 3.40. Moderate UI was reported by 46.4% of participants, 41.4% had slight UI, and 12.5% had severe UI. Stress UI (67.6%) was the more common type of UI than mixed UI (30.0%) and urge UI (2.4%). The mean UI frequency was 2.85 ± 0.87, mean UI volume was 2.66 ± 1.09, and mean score of the influence of UI on QoL was 3.56 ± 2.03.

3.3. Bothered UI, stigma, coping efficacy, and help-seeking intention

Of the 506 participants, 66.6% reported non-bothered UI. Among these, 24.9% and 75.1% reported no impact and slight impact, respectively, on their QoL. The remaining 33.4% reported bothered UI. Among these, 88.8% and 11.2% reported moderate impact and severe impact, respectively, on their QoL. The descriptions for stigma, coping efficacy, and help-seeking intention are illustrated in Table 1.

3.4. Influencing factors of bothered UI

The independent significant variables associated with bothered UI were age, duration of UI, coping efficacy, stigma, help-seeking intention, race, comorbidity, education, marital status, parity, UI frequency, UI volume, type of UI, and UI severity (Tables 2 and 3). Multivariate logistic regression was performed using bothered UI as a dependent variable; variables associated with bothered UI were used as independent variables (Table 4). Severity of UI, stigma, coping efficacy, and duration of UI were significantly associated with bothered UI, clarifying 49.8% of the variance for bothered UI (Table 4). More severe UI was accompanied by greater stigma, longer duration of UI denoted higher incidence of bothered UI, and higher coping efficacy predicted lower incidence of bothered UI.

4. Discussion

4.1. Bothersomeness of UI

Only 33.4% of the participants were bothered by UI, which was consistent with the findings of previous studies. A study conducted in American community-dwelling women reported that only 29% of participants with UI reported a moderate or severe level of bothersomeness [13]. Another study drew similar conclusions, finding that more than half of women with UI in Turkey were not bothered by it [6]. This suggests that some UI patients may not experience bothersomeness when UI symptoms are not severe enough to influence life or work. Therefore, healthcare workers should be aware of this and allocate health resources to prioritise those who are most in need.

Table 1 – Description of stigma, coping efficacy, and help-seeking intention (n = 506).

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean ±SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stigma</td>
<td>18</td>
<td>66</td>
<td>39.62 ± 8.10</td>
</tr>
<tr>
<td>Coping efficacy</td>
<td>4</td>
<td>20</td>
<td>14.92 ± 2.82</td>
</tr>
<tr>
<td>Help-seeking intention</td>
<td>3</td>
<td>15</td>
<td>8.90 ± 3.25</td>
</tr>
</tbody>
</table>

SD = standard deviation.
4.2. Factors associated with bothered UI

4.2.1. Severity of UI
Consistent with previous research [6], UI severity was the most important factor associated with bothered UI. More severe UI was related to higher incidence of bothered UI. In our study, UI severity was determined by the frequency and volume of urine leakage and the level of impact on QoL. This implies that targeted interventions that alleviate UI symptoms may be the most important strategy for reducing bothersomeness caused by UI.

4.2.2. Stigma
We found that a higher level of stigma predicted higher incidence of bothered UI. Few studies in this country have focused on the association between stigma and bothered UI. However, previous studies from other countries provide evidence that supports our findings. Elstad et al. [14] reported that patients perceived stigma because they worried about urine leakage and odour. These concerns had a significant impact on psychological burden. A survey conducted in Taiwan concluded that more than 50% of UI patients did not seek medical help mainly due to shame [15]. Hence, healthcare workers should provide related health education to aid UI patients in forming the correct perception of UI and facilitate their efforts to seek medical care.

4.2.3. Coping efficacy
Coping efficacy is the subjective belief that one has the confidence to manage the problems caused by UI successfully. In our study, participants with higher coping efficacy experienced less bothersomeness. There is scant literature on the relationship between coping efficacy and bothered UI. An earlier study in women with UI in Turkey reported...
that most patients had never sought medical assistance, and some were not bothered by it because they believed they could manage UI independently. Self-management strategies such as keeping the feet and perineum warm, using pads, washing underwear frequently, showering often, and using deodorant prevented women with UI from being bothered by their symptoms to some extent [16]. This suggests that interventions that enable women with UI to manage the condition independently will be helpful for reducing the bothersomeness of UI.

4.2.4. Duration of UI
We found that longer duration of UI was related with higher incidence of bothered UI. UI symptoms might worsen with UI duration, which increases the incidence of bothered UI. This finding is consistent with the study of Monz et al., [17] who found that longer UI duration decreased the QoL of UI patients. The decreased QoL might lead to increased bothersomeness of UI. This implies that healthcare workers should prioritise intervention aimed at preventing or postponing the occurrence of UI.

5. Conclusion
Not all of the participants with UI were bothered by it. As health resources are limited, they should first be allocated to UI patients who are bothered by UI. Individualised intervention should be provided to UI patients. For patients with bothered UI, healthcare workers can provide targeted interventions to alleviate symptoms, decrease the sense of stigma, and increase confidence in coping with symptoms to decrease bothersomeness.

Table 4 – Multiple logistic regression analysis of influencing factors of bothered urinary incontinence.

<table>
<thead>
<tr>
<th>Predictors</th>
<th>β</th>
<th>SE</th>
<th>Wald χ²</th>
<th>p</th>
<th>Exp (β)</th>
<th>Exp (β) 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>UI severity</td>
<td>2.133</td>
<td>0.237</td>
<td>80.681</td>
<td>0.000</td>
<td>8.438</td>
<td>5.298–13.439</td>
</tr>
<tr>
<td>Stigma</td>
<td>0.091</td>
<td>0.017</td>
<td>27.681</td>
<td>0.000</td>
<td>1.095</td>
<td>1.059–1.133</td>
</tr>
<tr>
<td>Coping efficacy</td>
<td>−0.143</td>
<td>0.044</td>
<td>10.660</td>
<td>0.001</td>
<td>0.867</td>
<td>0.796–0.945</td>
</tr>
<tr>
<td>Duration of UI</td>
<td>0.077</td>
<td>0.032</td>
<td>5.637</td>
<td>0.018</td>
<td>1.080</td>
<td>1.014–1.151</td>
</tr>
</tbody>
</table>

UI = urinary incontinence; SE = standard error; CI = confidence interval.

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References


Contributions

Study design: WKF; data collection: WXJ, LY, WC; data analysis: WXJ, WKF; manuscript preparation: WKF, WXJ, LJJ, WXJ, ZY, LY, WC.

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Conflict of interest statement

The authors declare that they have no competing interests.
