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A WEB-BASED COMPARISON OF TWO QUESTIONNAIRES FOR ASSESSING THE SEVERITY OF URINARY INCONTINENCE: THE ICIQ-UI SF VERSUS THE INCONTINENCE SEVERITY INDEX

Hypothesis / aims of study

We aimed to compare two questionnaires for assessing the severity of urinary incontinence in women: the Incontinence Severity Index (ISI) (1) and the International Consultation on Incontinence Questionnaire Short Form (ICIQ-UI SF) (2). Both are highly recommended by the International Consultation on Incontinence, and have been awarded Grade A status based on standard validation criteria (3).

The ISI has been validated against pad weighing as a gold standard, and has been used in several epidemiological studies. It is a multiplicative score based on two items assessing the frequency and volume of incontinence: "How often do you experience urinary leakage?" (four levels: 1 "less than once a month" 2 "a few times a month" 3 "a few times a week" 4 "every day and/or night") and "How much urine do you lose each time?" (three levels: 1 "drops" 2 "small splashes" 3 "more"), resulting in an eight-level index score with values between 1 and 12. The index score is then further categorised into four levels of incontinence severity: "slight" (scores 1-2), "moderate" (scores 3-4, 6), "severe" (scores 8-9) or "very severe" (score 12) (1).

The ICIQ-UI SF is a validated, self-completed questionnaire developed by the International Consultation on Incontinence, comprising an unscored self-diagnostic item to assess the perceived causes of leakage, and three scored items to assess the level and impact on quality of life (QoL) of urinary incontinence. The three items are: "How often do you leak urine?" (0 "never", 1 "about once a week or less often", 2 "two or three times a week", 3 "about once a day", 4 "several times a day", 5 "all the time"), "How much urine do you usually leak (whether you wear protection or not)?" (0 "none" 2 "a small amount" 3 "a moderate amount" 4 "a large amount"), and "Overall, how much does leaking urine interfere with your everyday life?" (visual analogue scale ranging from 0 "not at all" to 10 " a great deal"), resulting in a summed score between 0 and 21.

Both questionnaires assess frequency and volume, but the ICIQ-UI SF also assesses impact on QoL, while the ISI purposely does not. The purpose of this study was to conduct a comparative analysis of these two instruments and to determine if the ISI severity index can be used to develop corresponding severity categories for the ICIQ-UI SF.

Study design, materials and methods

We used a web-banner placed at three different web sites (for no cost as a result of the owners' generosity) to invite women to complete an entry questionnaire (comprising the ISI and ICIQ-UI SF) as part of a general Women's Health Study. Web users were blinded to the original intent of the research. Those women declaring "any leakage of urine" were consequently entered into the comparative study arm. The association between the ISI and ICIQ-UI SF scores was investigated by Pearson's product moment correlation coefficient (r) and regression analysis. Data were collected by means of a web form using Inquisite software version 3.1 and analysed using SPSS 11.0 for Mac OS X.

Results

1,812 women completed the entry questionnaire. 343 (19%) of these declared urinary leakage and were subsequently branched into the comparative arm of the study. Mean age (SD) was 36.5 (11) years and the distribution of stress, urge, mixed and other incontinence was 41%, 17%, 39% and 3%.

The mean (SD) ICIQ-UI SF score was 7.4 (3.6). Responses to the item assessing frequency were as follows: 0% "never", 46% "about once a week or less often", 25% "two or three times a week", 10% "about once a day", 18% "several times a day", 1% "all the time". Responses to the item assessing volume were 2.5% "none", 86% "a small amount" 9% "a moderate amount", 2.5% "a large amount". Responses to the ISI item assessing frequency were 14%

"less than once a month", 34% "a few times a month", 34% "a few times a week" and 18% "every day and/or night". Responses to the ISI item assessing volume were 54% "drops", 42% "small splashes" and 4% "more".

Figure 1 depicts the corresponding ICIQ-UI SF scores (95% confidence intervals) for each of the four ISI severity categories. There was a strong correlation (r=0.66, P<0.01) between the four-level ISI severity index and ICIQ-UI SF scores. Regression analysis between the eight-level ISI score and the ICIQ-UI SF score showed a significant positive linear correlation (r= 0.69, P<0.01), rendering a line with a slope of 1.05 intercepting the Y-axis at an ICIQ-UI SF score of 3.2.

Interpretation of results

We found a significant linear correlation between the ISI and ICIQ-UI SF questionnaires. Confidence intervals for the three lowest levels of ISI did not overlap. We therefore propose that the four-level ISI may be used to define a corresponding severity index for the ICIQ-UI SF score. This requires further investigation, possibly including comparison with other gold standards. It is acknowledged that the post-entry study sample comprised a small number of respondents with very severe incontinence, which consequently contributed to the wide confidence intervals observed for the highest severity category. Performing a larger study is therefore proposed.

Concluding message

A strong positive correlation was found between the ICIQ-UI SF and the ISI. We therefore recommend that the ICIQ-UI SF is a suitable measure to assess the severity of urinary incontinence.

References

- 1. A severity index for epidemiological surveys of female urinary incontinence: comparison with 48-hour pad-weighing tests. Neurourol Urodyn 2000;19(2):137-45.
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Figure 1: ICIQ-UI SF scores versus ISI severity categories

