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LETTERS) PSYCHOMETRIC TESTING OF THE IIQ-7: A RELIABLE MEASURE OF THE IMPACT OF INCONTINENCE IN MEN?

**Aims of Study**

The Incontinence Impact Questionnaire (IIQ-7) is an easily completed 7-item self-report instrument assessing the impact of urinary incontinence (UI) on 4 domains of women's lives: relationships, emotional health, travel, and physical activity [1]. For men, no equivalent instruments have been tested. The purpose of this study was to test the IIQ-7 in men with urinary incontinence after radical prostatectomy (RP).

**Methods**

Sixty three men with UI (>10 gm urine loss on 24 hour pad test) who were 8 or more weeks post RP enrolled as part of a randomized controlled trial in which treatment of UI with pelvic muscle exercises (PME) or PME plus electrical stimulation was being tested [2]. The IIQ-7, a generic quality of life score (EORTC QLQ, C30), and a symptom score were completed at study entry, 12, 16, and 24 weeks post entry. The psychometric properties of the IIQ-7 were tested with respect to face, content, construct, and criterion validity.

**Face Validity.** Subjects were asked to verify whether the questions "made sense" or were relevant to them.

**Content Validity.** Six health care professional continence experts: (a) evaluated the correspondence of the items to the 4 domains of the IIQ-7; (b) considered the item relevance to the impact of UI on men's lives (4-point scale: 4 = very relevant, 1 = not relevant); and (c) judged if the items represented the content domain of the impact of UI. The proportion of experts rating each item as *quite* or *very relevant* determined the Content Validity Index (CVI).

**Construct Validity.** Factor analysis, hypothesis testing, and correlation with similar constructs were used. Principal components factor analysis with oblique rotation examined the underlying conceptual dimensions. One, two, three, and four-factor solutions were conducted and examined based on a scree test [2] and the *a priori* hypothesized 4 domains of the IIQ-7.

**Convergent validity** The IIQ-7 scores were compared with those of the EORTC QLQ, C-30. **Criterion Validity** was estimated by comparing responses to one related question of the Urine Symptom Inventory, *Does leakage affect your life?*

### **Results and Conclusions**

58 men completed the study. There were no differences between groups with respect to age, weeks post surgery or grams of urine lost at baseline. **Face Validity.** All agreed that the questions were reasonable and understandable; none found the questions to be gender specific.

**Content validity.** CVI was 0.88. Items for which the CVI was below the designated level were: household chores, travel by car or bus more than 30 minutes from home, emotional health, and feeling frustrated.

**Construct Validity:** The two-factor solution explained 84.94% of the variance inherent in the set of items with an interfactor correlation of 0.52. Items were included on Factor I or Factor II based on the factor structure loadings being greater than 0.40. Items loading on Factor I pertained to the impact of urinary incontinence on daily activities; items loading on Factor II pertained to the emotional impact. The IIQ-7 was stable across the 3 groups, consistent with a lack of treatment effect in the study. No significant group differences were recorded on impact of UI ( $F=0.37$ ,  $p=0.70$ ) nor were any differences amongst subjects found over time ( $F=0.90$ ,  $p=0.50$ ). There was a positive relationship between grams of urine loss on 24 hour pad test and IIQ-7 scores (Pearson  $r$  0.34,  $p=0.003$  to 0.51,  $p=0.001$ ). When the IIQ-7 score decreased, self-reported quality of life improved as measured by the EORTC-QLQ, C30 ( $r=-0.57$ ,  $p=0.0001$  to  $-0.49$ ,  $p=0.001$ ).

**Criterion Validity** A strong relationship was found between responses to *Does leakage affect your life?* and the IIQ-7 scores. Thus, if urine leakage was perceived to affect the subject's life, it was also perceived to impact his life, as measured by the IIQ-7.

**Reliability:** Internal consistency (Cronbach's alpha) ranged between 0.88 and 0.92. IIQ-7 scores were consistent when urine loss was stabilized between 16 and 24 weeks post study entry ( $r = 0.89$ ,  $p=0.0001$ ).

**In Conclusion:** The results suggest that the IIQ-7 reliably measures the impact of urinary incontinence in men, is stable over time, and reflects a change in urine loss. Further testing of construct validity is indicated.

### References

- [1] Neurourol Urodyn 1995; 14:131-139.
- [2] BJU 1999; 83:57-65.
- [3] Psychometric Theory (3rd Ed.). New York: McGraw-Hill, 1994.

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