ORIGINAL ARTICLE

Validation of the Arabic linguistic version of the Ureteral Stent Symptoms Questionnaire

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Abstract *Objective:* To validate the Arabic version of the Ureteral Stent Symptoms Questionnaire (USSQ).

Patients and methods: The English version of the USSQ was translated into Arabic using a multi-step process by three urologists and two independent translators. The Arabic version was validated by asking 37 patients with temporary unilateral ureteric stents to complete the questionnaire at 2 weeks after stent insertion. The second group included 53 healthy individuals who agreed to complete the Arabic version of the questionnaire. The reliability of the Arabic version was evaluated for internal consistency using Cronbach's α test. Domain structures were examined by interdomain (section) associations using Spearman's correlation coefficient (r). The discrimination validity was evaluated by comparing the scores of patients with those of healthy individuals, using the Mann–Whitney test.

Results: Internal consistency was high for the sexual index and intermediate for urinary, pain and general health indices. There were good correlations of urinary symptoms with body pain ($r = 0.596$) and general health ($r = 0.690$). There was also

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a good correlation between body pain and general health ($r = 0.681$). For discrimination validity, there were significant changes in all domain scores when comparing patients with ureteric stents and healthy individuals ($P < 0.001$).

Conclusion: The Arabic version of the USSQ is a reliable and valid instrument that can be used to evaluate symptoms and health-related quality of life in Arabic patients with ureteric stents.

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Introduction

The placing of self-retaining ureteric stents is one of the most common urological procedures in current endourology [1]. However, it is associated with patient discomfort and a negative effect on quality of life (QoL) [2,3]. To decrease stent-related discomfort several trials have been conducted to study the effect of pharmacological agents on stent-related symptoms [4,5]. The use of a valid objective tool to evaluate stent-related symptoms and their effect on QoL became available after the development of the Ureteral Stent Symptoms Questionnaire (USSQ) [6]. This questionnaire was used to objectively compare different treatment groups. Validated versions of the USSQ have been published in the Italian, Korean and Spanish languages [7–9]. Arabic is one of the most popular languages in the world because it is spoken by as many as 420 million people (native and non-native) in the Arab world. It is one of six official languages of the United Nations [10].

The present study was conducted to provide a validated version of the USSQ in Arabic. The validation of the Arabic version of this questionnaire will allow its use in future research in all Arab-speaking countries.

Patients and methods

The Arabic linguistic translation of the USSQ was produced using a multi-step process following the guidelines for cross-cultural adaptation of health-related QoL measures [11]. The questionnaire was initially translated from English to Arabic in parallel by two urologists and one independent, native Arabic-speaking professional translator who had English as the first foreign language. Simple language was used to be understandable even by individuals with lower education levels. Any differences between the versions were resolved through a consensus meeting between the translator and the urologists. This Arabic version was back-translated by an independent English-speaking professional with Arabic as the first foreign language. Another back-translation was done by a native English-speaking urologist who has Arabic as the first foreign language. The original USSQ and back-translated version were compared and differences were resolved in a second consensus meeting. This

revised version (definitive version) was used for the study.

A pilot test was used to assess whether the questionnaire was clear and appropriate, by interviews with five male and five female patients who had indwelling ureteric stents. No difficulties were reported in completing it, so no further changes were made.

Subjects

The study included two groups; the first comprised patients with unilateral temporary JJ stents placed for acute benign ureteric obstruction or after ureteroscopic procedures for ureteric or renal calculi. The same type of 6-F double-pigtail ureteric stent (Percuflex®, Boston Scientific, Natick, MA, USA) of suitable length according to patient height was inserted in all cases. Patients with chronic ureteric obstruction, obstruction due to malignancy, chronic pelvic pain syndrome or those who were receiving medications that affected lower urinary tract function, were excluded from the study. We also excluded patients who had had major complications (such as haematuria, sepsis or stent migration) because the clinical course was significantly affected by those complications.

The second (control group) comprised healthy individuals who agreed to complete the Arabic version of the questionnaire. The Arabic version of the USSQ was answered in all cases at 2 weeks after placing the stent, and controls answered the questionnaires once.

Statistical analysis

The power of the study was calculated using the G*Power program (University of Düsseldorf, Düsseldorf, Germany) using the post hoc test with accuracy-mode calculation and an effect size convention of 0.6 for the two-tailed t-test, with an α error protection of 0.05.

The reliability of the Arabic USSQ was evaluated for internal consistency using Cronbach's α for each domain (section). Domain structures were examined by inter–domain associations using Spearman's correlation coefficient (r). The correlation was considered as good when $r > 0.5$. The discrimination validity was evaluated by