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Arabic translation and validation of Pelvic Pain and Urgency/Frequency (PUF) Patient Symptom Scale

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Abstract

Background: The Pelvic Pain and Urgency/Frequency Patient Symptom Scale is a screening tool used to diagnose patients with chronic pelvic pain. Numerous articles demonstrated the efficacy of the Pelvic Pain and Urgency/Frequency Patient Symptom Scale, not only as a screening tool, but additionally for complete assessment and management process. Therefore, in this article we aim to translate the Pelvic Pain and Urgency/Frequency Patient Symptom Scale from English to Arabic and then to validate the translated version using an innovative technique that compares the original English version to a back-translated version.

Results: Using back-translation method, the comparability of the language and similarity of the interpretation for each item of Pelvic Pain and Urgency/Frequency Patient Symptom Scale were validated. The back-translated version showed seemingly dependable results and demonstrates an almost identical meaning to the original English version. There was no difference found statistically in the median or mean scores for all items between the English and Arabic back-translated versions. The multi-staged process we followed thoroughly and the results obtained during this process ensured the validity of the Arabic version of the Pelvic Pain and Urgency/Frequency Patient Symptom Scale.

Conclusions: The current study provides that the Arabic version of Pelvic Pain and Urgency/Frequency Patient Symptom Scale is proven to be a valid tool in the assessment of Arabic-speaking patients with painful bladder syndrome or interstitial cystitis.

Keywords: Interstitial cystitis/painful bladder syndrome, PUF symptom scale, Arabic

Background

Interstitial cystitis (IC) and painful bladder syndrome (PBS) are general terms that describe a chronic and devastating condition with an unidentified aetiology that affects both males and females, severely decreasing their quality of life (Marcu et al. 2018; Huffman et al. 2019). This condition encompasses a cluster of lower urinary tract symptoms (LUTS) originating in the bladder, such as urgency and frequency that are associated with chronic pelvic pain lasting longer than six weeks. The classic symptoms include suprapubic pain, although patients sometimes report pain radiating to the groin, vagina, rectum and sacrum, and up to 60% of female patients report dyspareunia (Huffman et al. 2019; Daniels et al. 2018). The severity of symptoms varies among affected individuals and ranges from mild pain with urinary symptoms to severe, devastating pain that markedly reduces their quality of life, and increases in severity with disease progression (Huffman et al. 2019). The pain itself can result in a poor quality of life, but usually, other issues, such as LUTS, anxiety, stress and sleep deprivation, contribute to it (McKernan et al. 2020).

There are obvious variations and discrepancies between epidemiological studies that aim to estimate

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the prevalence of IC/PBS in populations (Huffman et al. 2019; Anger et al. 2022). This is mostly due to different definitions for the same condition, the lack of definitive diagnostic criteria and poor sampling methodologies (Skove et al. 2019; Lee et al. 2021; Malde et al. 2018). Furthermore, to date, there are no published studies that estimate the prevalence of IC/PBS in Saudi Arabia or any Arab country. In general, the literature shows a prevalence of IC/PBS ranging from 0.045 to 6.5% among women and 0.008% to 4.5% among men (Khullar et al. 2019).

Due to lack of a complete understanding of the aetiology of IC/PBS, an absence of definitive diagnostic tests and variations between definitions and diagnostic criteria in different guidelines, the diagnosis of IC/PBS has become a challenging process for clinicians (Lee et al. 2021; Malde et al. 2018; Khullar et al. 2019; Pape et al. 2019). However, for the initial investigation and evaluation of the patient's complaints, all guidelines recommend a full analysis of the patient's history and complaints, followed by a comprehensive physical examination and routine laboratory tests, such as urine analysis, culture and cytology to detect other possible causes of the patient's current complaints (Pape et al. 2019; Tirlapur et al. 2013). The most important step in diagnosing IC/PBS is the comprehensive analysis of the patient's complaints; hence, many screening tools have been developed to aid in the diagnosis of IC/PBS. One of the most widely used instruments is the Pelvic Pain and Urgency/Frequency (PUF) symptom scale (Lee et al. 2021; Parsons et al. 2002). The PUF symptom scale, attached as 'Additional file 1', was first introduced in 2002 by C. Lowell Parsons as a screening modality to detect IC/PBS in women with chronic pelvic pain and LUTS (Parsons et al. 2002). The scale consists of two scores: The first score measures the severity of the patient's LUTS, pelvic pain and sexual intercourse-associated symptoms and ranges from 0 to 23 points. The second score measures how much the patient is troubled by these symptoms and ranges from 0 to 12 points. When these two scores are combined, the total PUF symptom score ranges from 0 to 35 points (Parsons et al. 2002; Rosenberg et al. 2007; Cheng et al. 2012). The PUF symptom scale has been validated using the intravesical potassium sensitivity test (PST); a higher score on the PUF symptom scale is associated with up to a 90% chance of a positive PST (Rosenberg et al. 2007; Cheng et al. 2012). The PUF symptom scale has been reported to be a useful tool for screening patients for IC, assessing the severity of their symptoms, following up on the success of symptom management and assessing patients for recurrence or progression of their symptoms. Additionally, it is a widely used tool among clinicians worldwide (Tirlapur et al. 2013; Cheng et al. 2012; Kushner and

Moldwin 2006; Brewer et al. 2007). Thus, our aim in this paper is to translate and validate the original English PUF symptom scale to Arabic.

Methods

A written permission was initially obtained electronically from Professor C. Lowell Parsons to translate the PUF symptom scale from English to Arabic. The process was divided into two phases: (1) translation of the PUF symptom scale from English to Arabic and (2) validation of the original English version to a back-translated English version of the PUF symptom scale.

Phase 1: translation of the PUF symptom scale from English to Arabic

We recruited two independent, bilingual translators, certified by the American Translators Association (ATA), to translate the English version of the PUF symptom scale to Arabic using a forward-translation technique. Then, two bilingual expert clinicians, with Arabic as their native language who had completed their higher education in English-speaking Western countries, reviewed the two Arabic versions of the scale, thereby creating a third, (modified) version of it An Arabic teacher checked the latter version of the PUF symptom scale for phonation and grammatical errors, attached as 'Additional file 2'. Then a third, independent ATA-certified translator, fluent in English and Arabic, as well as medical terminology, translated the final Arabic version back to English, resulting in a back-translated English version.

Phase 2: validation of the original English version to a back-translated English version of the PUF symptom scale

A committee of thirty experts compared the back-translated and original English versions of the scale using the 'Comparability/Interpretability Rating Sheet' to ensure the quality of the translation (Sperber et al. 1994). Some of the experts were native English speakers, and some were native English speakers who were bilingual in Arabic and English. We ensured that all of them held higher education degrees in the field of medicine and/or English literature.

Sperber et al. (1994) were the first to describe this technique in 1994 to overcome some of the well-known pitfalls of translating questionnaires. Sperber argued that this technique could minimise methodological problems common to cross-cultural research by introducing an innovative step in the validation process (Fig. 1) (Sperber et al. 1994; Sperber 2004).
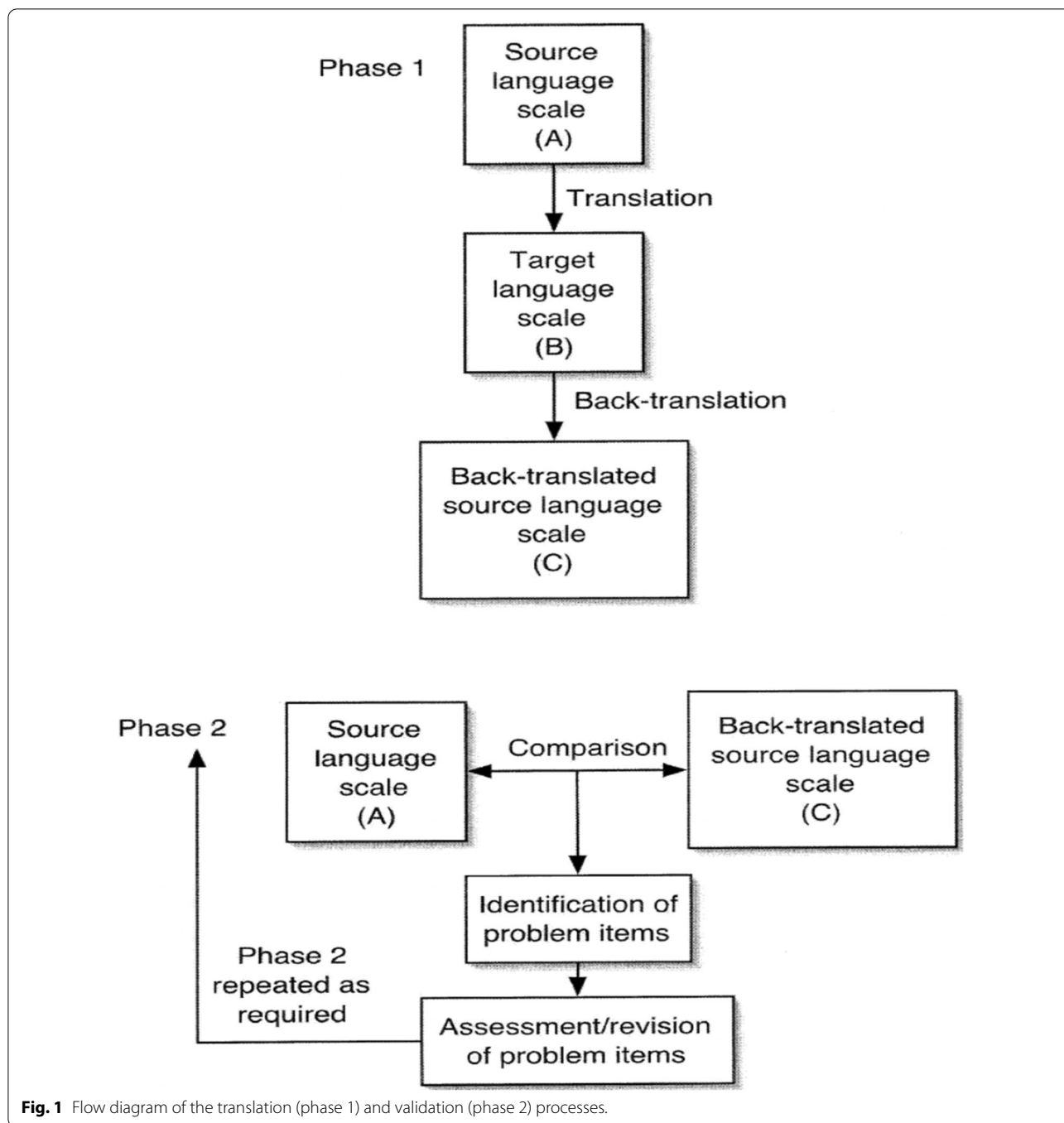
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Fig. 1 Flow diagram of the translation (phase 1) and validation (phase 2) processes.

Results

This technique consisted of two subscales measuring the comparability of the language and the similarity of the interpretations. Each item was rated on a scale of 1 (extremely comparable/similar) to 7 (not at all comparable/similar) points for both subscales of the PUF symptom scale. Items with a mean score > 3 on the comparability subscale or > 2.5–3 the interpretability subscale were considered problematic and required a review (Sperber 2004).

Items' ratings for language comparability had mean scores ranging from 1.3 (Standard Deviation (SD) 0.00) to 2.03 (SD 0.71) (Table 1). These scores indicated that the original English and back-translated English

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Table 1 Comparability of the language

Comparability of the language

Original item	Item of back-translated version	Mean ± SD
1. How many times do you go to the bathroom during the day?	1. How many times you urinate during the day?	1.4 ± 0.71
2a. How many times do you go to the bathroom at night?	2a. How Many times you wake up to urinate at night?	2.03 ± 0.71
b. If you get up at night to go to the bathroom, does it bother you?	b. If you wake up at night to urinate, does that bother you?	1.4 ± 0.71
3. Are you currently sexually active? YES___NO___	3. Are you currently sexually active? (Yes)(no)	1.36 ± 0.00
4a. IF YOU ARE SEXUALLY ACTIVE, do you now or have you ever had pain or symptoms during or after sexual intercourse?	4a. If you are sexually active, do you complain now or have you ever had a pain or other symptoms during or after the sexual intercourse?	1.33 ± 0.0O
b. If you have pain, does it make you avoid sexual intercourse?	b. In case of pain, do you avoid sexual intercourse?	1.46 ± 0.71
5. Do you have pain associated with your bladder or in your pelvis (vagina, labia, lower abdomen, urethra, perineum, testes, or scrotum)?	5. Do you have bladder or pelvic pain (vagina, labia lower abdomen, urethra—Urinary Tract, perineum 'area between the vulva and anus', testicles, or scrotum)?	1.3 ± 0.00
6. Do you still have urgency after you go to the bathroom?	6. Does the urge to urinate continue after urinating?	1.63 ± 0.00
7a. If you have pain, is it usually:	7a. If you have pain, is it usually:	1.53 ± 0.71
b. Does your pain bother you?	B. Does your pain bother you?	1.56 ± 0.0O
8a. If you have urgency, is it usually:	8a. If you have an urgent urge to urinate, is it....	1.4 ± 0.00
b. Does your urgency bother you?	b. Does Urine urgency bother you?	1.56 ± 0.00

versions were extremely comparable in language and did not show discrepancies in meaning. Hence, revisions and reviews of this subscale were not required.

Items' ratings for similarity of interpretation had mean scores ranging from 1.3 (SD 0.71) to 2.13 (SD 0.00), as shown in Table 2, implying that the experts thought the items of both versions had extremely similar meanings and that they understood the questions of both versions

in the same way, with no discrepancies. Consequently, a re-evaluation was not required.

Discussion

The PUF symptom scale was introduced by C. Lowell Parsons in 2002, as a tool for the detection of IC (Parsons et al. 2002). At that time, the PUF symptom scale was validated using the intravesical PST (Parsons et al.

Table 2 Similarity of interpretation

Similarity of interpretation

Original item	Item of back-translated version	Mean ± SD
1. How many times do you go to the bathroom during the day?	1. How many times you urinate during the day?	1.43 ± 0.71
2a. How many times do you go to the bathroom at night?	2a. How Many times you wake up to urinate at night?	2.13 ± 0.00
b. If you get up at night to go to the bathroom, does it bother you?	b. If you wake up at night to urinate, does that bother you?	1.43 ± 0.00
3. Are you currently sexually active? YES___NO___	3. Are you currently sexually active? (Yes)(no)	1.46 ± 0.71
4a. IF YOU ARE SEXUALLY ACTIVE, do you now or have you ever had pain or symptoms during or after sexual intercourse?	4a. If you are sexually active, do you complain now or have you ever had a pain or other symptoms during or after the sexual intercourse?	1.46 ± 0.71
b. If you have pain, does it make you avoid sexual intercourse?	b. In case of pain, do you avoid sexual intercourse?	1.53 ± 0.00
5. Do you have pain associated with your bladder or in your pelvis (vagina, labia, lower abdomen, urethra, perineum, testes, or scrotum)?	5. Do you have bladder or pelvic pain (vagina, labia, lower abdomen, urethra—Urinary Tract, perineum 'area between the vulva and anus', testicles, or scrotum)?	1.43 ± 0.00
6. Do you still have urgency after you go to the bathroom?	6. Does the urge to urinate continue after urinating?	1.5 ± 0.00
7a. If you have pain, is it usually:	7a. If you have pain, is it usually:	1.36 ± 0.71
b. Does your pain bother you?	B. Does your pain bother you?	1.3 ± 0.71
8a. If you have urgency, is it usually	8a. *If* you have an urgent urge to urinate, is it....	1.43 ± 0.00
b. Does your urgency bother you?	b. Does Urine urgency bother you?	1.36 ± 0.71

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2002), which detects bladder epithelial abnormalities that are associated with IC (Parsons et al. 2002). A total of 382 patients were divided into three test groups and one control group; they were screened using both the PUF symptom scale and the PST (Parsons et al. 2002). This experiment showed a correlation between a high PUF symptom scale and a high likelihood of having a positive PST (Parsons et al. 2002). The PUF symptom scale has been used worldwide for screening IC/BPS in patients with chronic pelvic pain that is associated with urinary or sexual symptoms and for monitoring the treatment responses of patients already diagnosed with IC/PBS (Pape et al. 2019; Rosenberg et al. 2007; Cheng et al. 2012; Kushner and Moldwin 2006; Brewer et al. 2007).

There have been several successful attempts to translate the PUF symptom scale to different languages. Yet, there is no validated Arabic version of the PUF symptom scale. Therefore, we translated the PUF symptom scale to Arabic and validated its accuracy. As this Arabic version showed seemingly reliable results and almost identical meanings between the items on the original and back-translated versions, it can be considered a useful tool for urology and gynaecology patients in all Arabic-speaking countries, as well as Saudi Arabia.

Although the results obtained were within the acceptable range, a few points raised by some of the raters necessitated revisions. First, few of the English native speakers found that the original English version had some colloquial terms, i.e. 'using the bathroom at night'. Those raters requested elaboration on the exact meaning of using the toilet to urinate, not to defecate. Thus, in the Arabic version, which was back-translated, we clarified the language, as shown in items 1, 2a and 2b (Table 1). Second, the Arabic word for perineum is not a common word used by the general public; therefore, a description was added to explain the anatomical location of the perineum, as shown in item 5 (Table 1).

Conclusions

The proposed Arabic version of the PUF symptom scale is considered to be valid and accurate version in meaning and interpretation of the English version. Therefore, it can be utilised in diagnosing and managing Arabic-speaking patients with IC/PBS. Moreover, it will aid in conducting further research projects concerning IC/PBS amongst Arabic-speaking patients.

Abbreviations

IC/PBS: Interstitial cystitis/painful bladder syndrome; LUTS: Lower urinary tract symptoms; PUF: Pelvic pain and urgency/frequency; PST: Potassium sensitivity test; ATA: American Translators Association; SD: Standard deviation.

Supplementary Information

The online version contains supplementary material available at https://doi.org/10.1186/s42269-022-00942-6.

Additional file 1. The original English version of pelvic pain and urgency/frequency (PUF) patient symptom scale as published by Parsons et al in 2002[12].

Additional file 2. The translated and validated Arabic version of the pelvic pain and urgency/frequency (PUF) patient symptom scale.

Declarations

Ethics approval and consent to participate
Not applicable.

Consent for publication
A written consent was obtained by email from Professor Parsons on 28/12/2021 to use the English version of PUF symptom scale for Arabic translation.

Competing interests
The authors declare that they have no competing interests.

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