



Abstract #633: Turkish Versions of the Interstitial Cystitis Symptom Index (ICSI) and Interstitial Cystitis Problem Index (ICPI): Linguistic and Psychometric Validation

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Hypothesis/Aims of study

To validate the Turkish versions of the Interstitial Cystitis Symptom Index (ICSI) and Interstitial Cystitis Problem Index (ICPI) for use in Turkish speaking patients with Bladder Pain Syndrome/Interstitial Cystitis (BPS/IC).

Methods and Materials

After linguistic validation of the original Interstitial Cystitis Symptom Index (ICSI) and Interstitial Cystitis Problem Index (ICPI) into the Turkish language, Turkish versions of ICSI and ICPI were self-administered to all participants. Test-retest reliability (intraclass correlation coefficient) was evaluated at 2 weeks intervals in the BPS/IC group. In the control group, patients completed ICSI and ICPI only once. Internal consistency was evaluated using Cronbach's alpha. Mean scores of ICSI and ICPI were compared between BPS/IC and control groups to examine discriminant validity. Criterion validity was examined via investigating the correlations between bladder diary (at least 3 days) results (24-hour frequency and nocturia) & VAS (Visual Analogue Scale) scores and results to the corresponding questions in ICSI and ICPI. All numerical variables were investigated using visual (histograms, probability plots) and analytic methods (Kolmogorov-Smirnov/Shapiro-Wilk's test) to determine whether or not they were normally distributed. Chi-square test or Fisher exact test was utilized to compare the proportions between groups. Student t-test and Mann Whitney U test was utilized to compare the results between groups. Spearman correlation test was performed to evaluate the correlations between variables. A p value of less than 0.05 was considered to indicate statistical significance. Statistical analysis was performed using the SPSS, v16.0 (SAS Institute, Cary, NC).

Results

Results of 79 BPS/IC patients and 50 controls were analyzed. Of 79 BPS/IC patients, 67 patients completed the retest. Mean age was 43.24±13.99 years in the BPS/IC group and 38.42±13.47 years in the control group. Female to male ratio was higher in BPS/IC group than the control group (72/7 and 40/10 in BPS/IC and control groups, respectively) but the difference was not statistically significant (p=0.055). Demographic characteristics (age, female-male ratio, education status) of BPS/IC patients and controls were similar (p>0.05). Both indices showed high internal consistency (Cronbach's alpha for ICSI and ICPI was 0.879 and 0.923, respectively). The test-retest reliability of ICSI and ICPI was high for total scores and subdomains of both indices. (Intraclass correlation coefficient was 0.722 for ICSI and 0.777 for ICPI) (Table 1) Mean scores were significantly higher for both indices when BPS/IC group was compared with the control group (p<0.001 for both ICSI and ICPI). Relatively high and statistically significant correlations were found between 24-hour frequency, nocturia, VAS scores and relevant questions in the indices. (p<0.05)

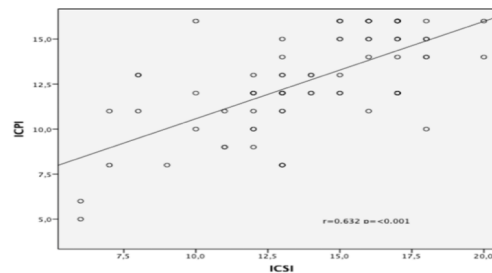
Table 1. Intraclass correlation coefficient and Cronbach alpha for the Interstitial Cystitis Symptom Index (ICSI) and Interstitial Cystitis Problem Index (ICPI)

ICSI				
Measure	Index/Domain	Sample size (n)	Test value	95% CI
Intraclass correlation coefficient	ICSI score	67	0.722	0.586-0.818
	Urinate with little or no warning (Q1)	67	0.579	0.397-0.716
	Urinate <2 hr after you finished urinating (Q2)	67	0.645	0.484-0.765
	Getting up at night to urinate (Q3)	67	0.689	0.542-0.796
	Pain or burning in your bladder (Q4)	67	0.687	0.539-0.794
Cronbach α*	ICSI score	196	0.879	
ICPI				
Measure	Index/Domain	Sample size (n)	Test value	95% CI
Intraclass correlation coefficient	ICPI score	67	0.777	0.661-0.857
	Frequent urination during the day (Q1)	67	0.576	0.392-0.715
	Getting up at night to urinate (Q2)	67	0.650	0.487-0.769
	Need to urinate with little warning (Q3)	67	0.745	0.616-0.835
	Burning, pain, discomfort, or pressure in your bladder (Q4)	67	0.603	0.426-0.736
Cronbach α*	ICSI score	196	0.923	

*Cronbach α is reported for pooled responses of both groups at baseline and endpoint.

Statistically significant, strong correlation was observed between ICSI and ICPI scores. (p<0.001, r=0.632, 95% CI: 0.451-0.749) (Figure 1)

Figure 1. Turkish versions of ICSI and ICPI total scores are correlated at r=0.632, p<0.001 (95% CI; 0.451-0.749).



Interpretation of results

BPS/IC is a chronic and debilitating medical condition characterized by bladder pain, increased urinary frequency and urge to urinate. The disease has a significant negative impact on patients' quality-of-life and objective evaluation of symptoms and treatment response is critical for proper management of the disease. (1) Current international guidelines recommend the use of reliable symptom-scoring instruments for the basic evaluation and therapeutic monitoring of patients with BPS/IC. (2) ICSI and ICPI are valid, reliable, and responsive measures to evaluate the change of symptoms in patients with BPS/IC, developed by O'Leary and Sant in 1997. (3) ICSI was also validated in another large study and both indices gained worldwide popularity. (1) There is no validated instrument to evaluate BPS/IC symptoms in the Turkish language. Our results are consistent with previous studies evaluating the validity of the English version of ICSI and ICPI and showed that Turkish versions of both indices are reliable, consistent and valid instruments for use in Turkish speaking populations.

Conclusions

Turkish versions of ICSI and ICPI are reliable, consistent and valid instruments to evaluate symptoms of Turkish speaking patients with BPS/IC.

References

- Lubeck DP, Whitmore K, Sant GR, Alvarez-Horine S, Lai C. Psychometric validation of the O'Leary-Sant interstitial cystitis symptom index in a clinical trial of pentosan polysulfate sodium". Urology 2001;57:62-66
- Malde S, Palmisani S, Al-Kaisy A, Sahai A. Guideline of guidelines: bladder pain syndrome". BJU Int 2018;122:729-743.
- O'Leary MP, Sant GR, Fowler FJ, Jr., Whitmore KE, Spolarich-Kroll J. The interstitial cystitis symptom index and problem index". Urology 1997;49:58-63.