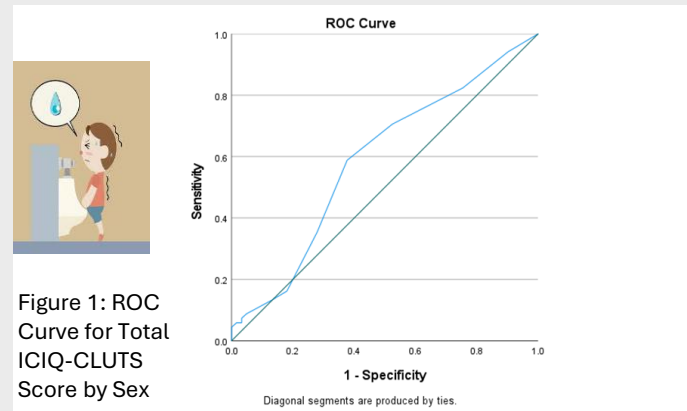# Validity and Reliability of the Persian ICIQ-CLUTS: The Questionnaire for Lower Urinary Tract Symptoms in Children

Salehi-Pourmehr H[1], Lotfi B[2], Hajebrahimi S[2], Mahmoudi A[3], Eivazzadeh khosroshahi H[3], Mostafaei H[4], Hajebrahimi R[3], Taghizadeh S[3]

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## Background

Lower urinary tract symptoms (LUTS) are prevalent in children and impact their well-being. The International Consultation on Incontinence Questionnaire-Childhood Lower Urinary Tract Symptoms (ICIQ-CLUTS) is a valuable screening tool. This study aimed to translate the ICIQ-CLUTS into Persian and evaluate its psychometric properties (validity and reliability) for use in Iranian children.



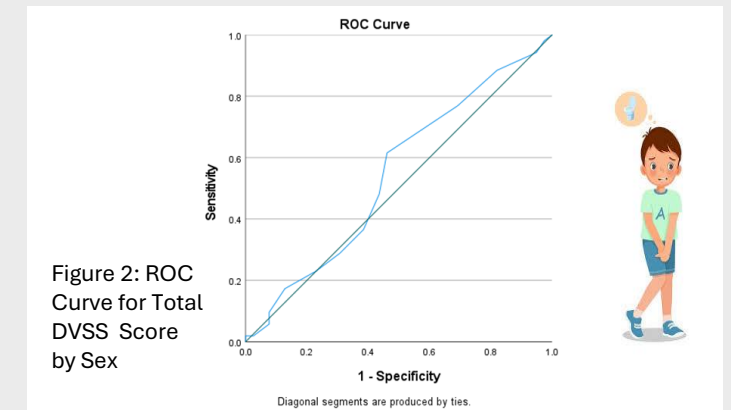Figure 1: ROC Curve for Total ICIQ-CLUTS Score by Sex

## Methods

This methodological study was conducted over 12 months. Participants included children aged 5-18 years with or without LUTS, recruited through purposive sampling from pediatric/urology clinics. The ICIQ-CLUTS was translated into Persian using a standardized forward-backward translation method, with expert review. Face validity was assessed by 20 participants. Content validity was evaluated qualitatively by experts and quantitatively using the Content Validity Ratio (CVR) and Content Validity Index (CVI). Construct validity was assessed via exploratory factor analysis (EFA). Criterion validity was assessed by correlating ICIQ-CLUTS scores with the Dysfunctional Voiding Symptom Score (DVSS) using Pearson's correlation. Internal consistency was determined by Cronbach's alpha. Test-retest reliability was evaluated in 30 participants over a 15-day interval using the Intraclass Correlation Coefficient (ICC). Statistical analysis was performed using SPSS version 26.

## Results

A total of 131 participants completed the ICIQ-CLUTS. Face validity was established through participant feedback. Content validity assessment yielded acceptable CVR and CVI values. Cronbach's alpha for the Persian ICIQ-CLUTS was 0.746, indicating acceptable internal consistency. EFA revealed a strong single-factor structure, supporting construct validity. Criterion validity was demonstrated by a significant positive correlation between ICIQ-CLUTS and DVSS scores ($p < 0.001$, $r = 0.55$). Test-retest reliability showed significant ICC values, indicating good stability over time. The sensitivity and specificity of the questionnaire were 58.8% and 62.3%, respectively.



Figure 2: ROC Curve for Total DVSS Score by Sex

## Implications

The Persian version of the ICIQ-CLUTS demonstrates acceptable face and content validity, acceptable internal consistency, good construct validity, and adequate criterion validity and test-retest reliability in Iranian children. These findings suggest that the translated questionnaire is a valid and reliable tool for screening LUTS in Persian-speaking pediatric populations. The psychometric properties are comparable to those reported in validations of other language versions.