

# The Persian ICIQ-N and ICIQ-Nqol are valid, reliable, and culturally adapted tools for assessing nocturia and its quality-of-life impact in Persian-speaking populations.

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## Background

Nocturia, particularly when occurring  $\geq 2$  times nightly, significantly reduces quality of life. Validated patient-reported outcome measures such as the ICIQ-N and ICIQ-Nqol are essential to quantify its impact. This study aimed to translate and validate these questionnaires into Persian and evaluate their psychometric properties.

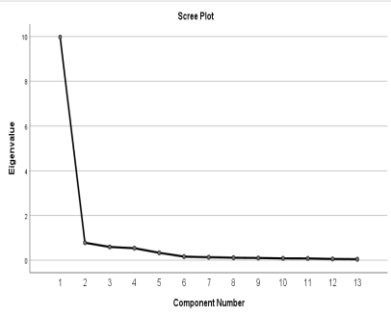


Figure 1. Scree Plot for questions of the International Consultation on Incontinence Questionnaire Nocturia Quality of Life (ICIQ-Nqol) questionnaire

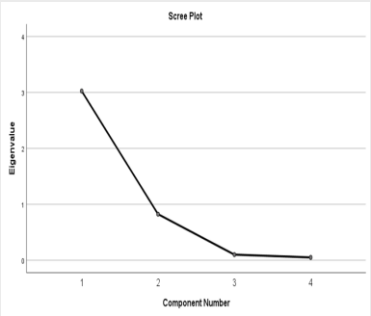
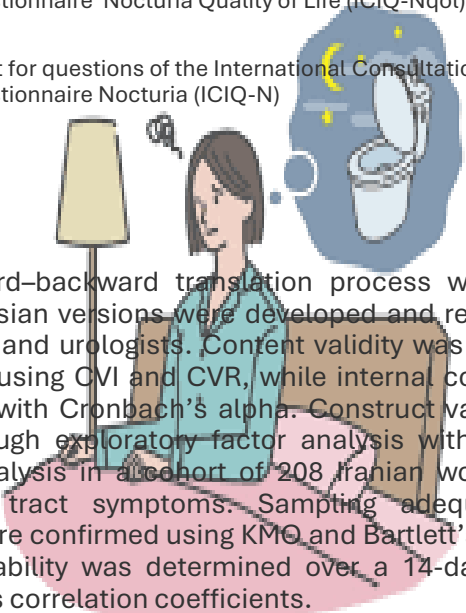


Figure 2. Scree Plot for questions of the International Consultation on Incontinence Questionnaire Nocturia (ICIQ-N)

## Methods

Using a forward-backward translation process with expert review, the Persian versions were developed and reviewed by the ICIQ group and urologists. Content validity was examined by ten experts using CVI and CVR, while internal consistency was assessed with Cronbach's alpha. Construct validity was evaluated through exploratory factor analysis with principal component analysis in a cohort of 208 Iranian women with lower urinary tract symptoms. Sampling adequacy and factorability were confirmed using KMO and Bartlett's test, and test-retest reliability was determined over a 14-day interval using intraclass correlation coefficients.



## Results

The Persian translations demonstrated high content validity, with all items achieving acceptable CVI and CVR values. Exploratory factor analysis revealed a single dominant component for both questionnaires. Cronbach's alpha for the ICIQ-N was 0.888 and for the ICIQ-Nqol was 0.986, indicating excellent internal consistency. Test-retest reliability was also high, with ICC values of 0.869 (95% CI: 0.817-0.905) for the ICIQ-N and 0.974 (95% CI: 0.968-0.979) for the ICIQ-Nqol. Descriptive analysis of ICIQ-Nqol responses highlighted that while a subset reported minimal bother, a significant proportion experienced severe impact on concentration, energy, productivity, and daily life, often leading to fluid restriction and worry about condition worsening.

Index	Value	95% Confidence Interval
Nocturia (ICIQ-N) questionnaire		
Cronbach's Alpha for nocturia	0.888	
Interclass Correlation Coefficient (ICC)	0.869	0.817-0.905
Nocturia QOL (ICIQ-Nqol) questionnaire		
Cronbach's Alpha for Quality of Life	0.986	
Interclass Correlation Coefficient (ICC)	0.974	0.968-0.979

## Implications

The main finding of this study is that the Persian ICIQ-N and ICIQ-Nqol are valid, reliable, and culturally appropriate tools for assessing nocturia and its quality-of-life impact in Persian-speaking populations. Overall, these validated instruments provide essential resources for clinicians and researchers. Their availability enables accurate symptom assessment, supports individualized treatment strategies, and facilitates standardized data collection, thereby advancing both clinical care and cross-cultural research in nocturia.