



URDU TRANSLATION AND CROSS-CULTURAL VALIDATION OF INTERNATIONAL CONSULTATION ON INCONTINENCE QUESTIONNAIRE OVER ACTIVE BLADDER (ICIQ- OAB)

Amon¹, Zainab Hassan², Mehwish Ikram³, Iqra Ishtiaq⁴, Ramza Hayat⁵, Syed Ali Hussain⁶

1. Department of Rehabilitation Sciences, Riphah International University, Lahore
2. School of Health Sciences, University of Management and technology Lahore
3. Department of Physical Therapy, Riphah International University, Lahore
4. Department of Physical Therapy, PSRD College of Rehabilitation, Lahore
5. Department of Rehabilitation, Cambridge Medical Rehabilitation Centre, KSA
6. Department of Rehabilitation, Shifa Tameer e Millat University, Islamabad

Corresponding author: **Zainab Hassan**, School of Health Sciences, University of Management and technology Lahore. E-mail: Zainab.hassan@umt.edu.pk

Abstract

Background and objective: The International Consultation on Incontinence Questionnaire-Overactive Bladder (ICIQ-OAB) is a brief questionnaire to assess the overactive bladder in both males and females. The purpose was to translate the ICIQ-OAB into the Urdu language and also determine the validity and reliability in pregnant females.

Material and Methods: A standardized method of forward and backward translations was adopted. Translation of the ICIQ-OAB into the Urdu language was done by two bilingual translators. A panel of experts reviewed the Urdu and English versions and a pilot study was carried out as a pre-test. A sample of 120 patients, female pregnant women with irritating voiding symptoms was used for validity and reliability. Content and discriminant validity was determined. Convergent validity was determined by correlating the ICIQ-OAB with the International Consultation on Incontinence Questionnaire Urinary Incontinence Short Form (ICIQ UI-SF).

Results: 120 patients participated in this study and internal consistency was determined by Cronbach's alpha coefficient i.e. 0.791. Content validity ranged from 0.93 to 0.97. Test-retest reliability was determined by the Intraclass correlation coefficient (ICC) with presented results i.e. 0.903. Convergent validity was determined by correlating the ICIQ-OAB and ICIQ UI-SF by Spearman's rho correlation coefficient; the result was 0.9 which confirmed the validity of the study.

Conclusion: The Urdu version of ICIQ-OAB has good content, convergent, construct validity, and test-retest reliability.

Key Words: ICIQ-OAB, Validity, Reliability, Urdu.

DOI Number: 10.48047/nq.2023.21.6.NQ23150

NeuroQuantology2023;21(6): 1482-1489



Introduction:

Overactive bladder (OAB) is interrupted as urgency, either with or without urgency, urinary incontinence and usually integrated with frequency and nocturia. Overactive Bladder is narrated by compulsory detrusor constrictions during the filling stage, which might be unconstrained [1]. International Continence Society characterized the overactive bladder as a urinary direness generally joined by an expansion of urinary recurrence and nocturia with or without urinary incontinence without other nearby illnesses [2]. Numerous human lives in the world are affected by this common disorder; the overactive bladder [3]. The prevalence of this disorder is considered to be 13% to 16% all over the world; however, it is required to rise to greater values owing to the aging of the population [4]. A survey conducted in Pakistan that 12.8% of women are affected by the overactive bladder which is less common in men [5].

The prevalence of OAB varies between different populations and depends on age, gender, race, and ethnic group. Meanwhile, it is highly prevalent in the world and is more frequent among women and elders [6]. The American National Overactive Bladder Evaluation study proved that 16.5% of the population have symptoms of OAB [3] Overactive bladder (OAB) has been estimated by populace-based examinations in many countries of the world [7].

Concerning this condition, it can affect an individual's physical and social functioning including sleeping patterns, social relationships, and working life. Patients suffering from OAB usually experience a negative influence of urge incontinence on quality of life and concern for health. Patients' distress from this condition insight into the low quality of life in contrast to community controls, even though they are not suffering from incontinence [6, 8, 10]. Many risk factors can be the cause of OAB such as age,

obesity, multiparty, any obstetrical history, or late pregnancy. OAB is the most prevalent disorder that is increased with an increase in age in both genders and very deep effect on the quality of life [8-10].

The ICIQ-OAB is a brief questionnaire with a high psychometric capacity to specifically assess the overactive bladder in both males and females. It comes from the ICIQ class of the ICS, fully validated and capable of providing incontinence [11]. This questionnaire is a simple, more accurate tool to measure the symptoms and quality of life in overactive bladder patients. It has been translated into different 20 Languages all over the World and was originally available on the ICIQ website [12]. To use the questionnaires in other languages and cultures need to be submitted to the international translation and cultural adaptation rules for the target language [11-16]. However, up to date, there is no validated Urdu version of the overactive bladder questionnaire available. The results of this study will be helpful for the government and private health sectors to draw attention to this serious health issue and reduce the burden of overactive bladder in the population of Pakistan. The purpose of this study is to translate the ICIQ overactive bladder into the Urdu language and to validate it in the Urdu-speaking pregnant women population in Lahore Pakistan.

Methods:

Ethical Concerns

The study was approved by the research ethical committee of Riphah International University Islamabad (Lahore Campus) with the reference number REC/RCR & AHS/21/0518. The permission for the translation and validation of ICIQ-OAB in Urdu was taken from the ICIQ Group. The ICIQ-OAB was translated into Urdu According to standardized international and ICIQ guidelines. The whole protocol was divided

into two stages; Urdu translation and validation [17-18].

The study design was descriptive including translation and cultural adaptation, the clinical presentation of tools, validation, and test-retest reliability. As a sample 120 pregnant patients were selected, complaining of irritative voiding symptoms, frequency, urgency, and incontinence. Female patients were admitted to Mayo Hospital Lahore Pakistan 2021. All the data were collected from June 2021 to Dec 2021. All participants signed the Informed consent forms and received a copy.

Translation Process

After receiving legal permission from the ICIQ authorities, two independent translators translated the original version into Urdu and both translators were fluent in English and Urdu. Version 1 was drafted after the expert panel review (experts in women's health physical therapy >5 Years' experience), and Version 1 of Urdu ICIQ-OAB was translated into English by two independent translators (Back Translation).

After reviewing the results of both translations version 2 was drafted. Version 2 was applied to the patients as a pilot study with the symptoms of overactive bladder to assess the clarity and objectivity of the questions. After the final approval, the final version was applied to the study population sample.

ICIQ-OAB

The ICIQ-OAB questionnaire investigating the symptoms related to the overactive bladder through the four basic questions 1 and 2 was demographic data of the patient's question 3a look over the urinary frequency, question 4a look over the presence of nocturia, and question 5a and question 6a look over the urgency and urge incontinence respectively. All questions were compromising the quality of life.

ICIQ UI-SF

ICIQ-UI SF consists of six questions. The first two are just demographics while others are related to urine leakage, its frequency, and amount. Bother scores are also interpreted with each question scored from 0 to 10 and questions scored from 0 to 5. Total scores ranged from 0 to 21 [19-21].

Content Validity Index (CVI)

Content Validity Index was determined on four subscales according to Waltz and Bausell's method. Each subscale was further classified into four ordinal points also used in previous studies to assess the content validity of the experts' opinions who were not involved in the whole translation process (four physical therapists and two urologists) [22-24].

Statistical Analysis

Data analysis was done by using the SPSS version 25. Statistical methods included the descriptive statistical analysis of the variables was performed using frequencies, means, and standard deviations. As a general rule accuracy should not be less than 0.8 points, and values above the 0.6 incidents the consistency. Internal consistency is considered excellent if it is $\alpha > 90$, good at $\alpha > 80$, acceptable $\alpha > 70$, and below it is considered poor. [25, 26]

Test-retest reliability was calculated with the intraclass correlation coefficient which is allowed to say whether this tool is reliable or not. ICC values were taken by week 1 and 2 readings with a 95% confidence interval. In general, a value less than 0.5 is considered poor, 0.5 to 0.75 is moderate and > 0.75 shows good reliability. While the 0.90 and above are considered excellent reliability and all values depend on the time interval between two readings [27].

Convergent validity was observed using spearman's rho correlation to verify the existence of a correlation between the variable. Correlation coefficients are ranged from -1 to +1. Below 0.40 is considered weak and close to zero is poor, while > 0.70 shows a strong

relationship, and close to 1 is considered very strong [28].

Results

Translation Process

First, two Urdu versions were compared to draft version 1 after the expert's opinion. Version 1 was translated back and two versions were drafted and one final backward translation was finalized.

Content Validity

By using the CVI method of Waltz and Bausell content validity index was measured after translation. The content validity index for each item includes questions, how often do you pass urine is 0.95 CVI, during the night how many times get up for urine CVI is 0.97, rush to the toilet to urine CVI is 0.95 and leak urine before getting to toilet CVI is 0.93.

Pilot Study

A pilot study was carried out to appraise the questionnaire's applicability. There was no change required after the application on 10 patients and a final version was drafted.

Discriminant Validity

Discriminant validity was determined by comparing the patients and healthy controls (20 individuals). That shows that there was a significant difference in their scores.

Demographics

120 healthy pregnant women participated in this study with Overactive Bladders. Overactive bladder questionnaires in Urdu with demographic data form presented to them including the age, education status, marital status, and employment status. (Shown in Table 1)

Internal Consistency, Validity, and Reliability

The reliability of this study was assessed by Cronbach's alpha coefficient with a general result of the overactive bladder questionnaire i.e.0.791. Test-retest reliability was determined by the Intraclass correlation coefficient with presented results i.e. ICC=0.903. Convergent validity was determined by comparing the ICIQ-OAB and ICIQ-UI SF by the spearman's rho correlation coefficient the result was 0.9 (Table 2).

Table 1: Summary of Demographic Characteristics of OAB Patients

Variable	Category	Frequency (n)	Percent (%)
Gender	Female	120	100
Marital Status	Married	115	95.8
	Separated	3	2.5
	Widow	1	.8
	Divorced	1	.8
Educational Status	Educated	65	54.2
	Uneducated	55	45.8
Education	None	55	43.3
	Middle	15	11.8
	Matric	23	18.1
	Intermediate	19	15.0
	Graduation	19	15.5
Employment	Permanent	41	34.2
	None	34	26.8
	Seasonal	45	37.5

Family Income	None	34	28.3
	Daily	41	34.2
	Monthly	45	37.5
Number of Children	1	22	18.3
	2	28	23.3
	More	50	58.4
Deliveries of Babies	None	26	21.7
	yes	19	15.8
	2	33	27.5
	3	27	22.5
	More	15	12.5
Normal and C-Section deliveries	Normal	45	37.5
	C –section	55	62.5
Any Urgency Treatment	Yes	49	40.8
	No	71	59.2
	No	36	30

Table: 2

Test-retest Reliability, Internal consistency and Validity			
Items	Intraclass Correlation Co-efficient (ICC)	Lower Bound	Upper Bound
Q3a	.930	.900	.951
Q4a	.837	.767	.887
Q5a	.875	.821	.913
Q6a	.743	.632	.821
Internal Consistency		Cronbach's Alpha	
N	4	0.791	
Convergent Validity		Spearman's rho correlation	
ICIQ-OAB and ICIQ-UI (SF)		0.909	

1486

Discussion

Questionnaires can help the physicians to assess bothering symptoms and eventually postulate treatment plans. The overall score entails the aggregate of all symptom scores that interpret daytime voiding frequency, nighttime voiding frequency, urgency, and Urge Urinary Incontinence (UUI).

The objective of this study was to translate the overactive bladder questionnaire into Urdu

language and to appraise the overactive bladder questionnaire in pregnant women. It is concluded that the Urdu version of the translation of the overactive bladder questionnaire has good reliability and validity in patients with overactive bladder. Content validity was above 0.90.

Discrimination validity was determined by the significant variance in scores between diseased and healthy controls.

The intraclass correlation was measured OAB between 1 and 2 weeks of four questionnaires (0.903), and convergent validity was (0.909), and the reliability is measured by Cronbach's alpha to find out the internal consistency OAB questionnaire for weeks 1 and 2, which is (0.791) which is considered good.

The ICIQ-OAB was evolved by the Bristol Urologic Institute and validated in different languages [11, 18]. The Portuguese version was drafted on the standardized process. The same method was used as in the current study in which ICIQ-OAB was correlated with the ICIQ UI-SF on 142 patients (both genders) with irritative symptoms. But in portuguese study, a four weeks gap was taken for test-retest. Internal consistency was 0.7 while the test-retest reliability was 0.91 and 0.95 when compared with both ICIQ-OAB and ICIQ UI-SF respectively [14].

The Persian version was drafted with the following standardized procedure of forwarding and backward translation steps and can measure the severity of symptoms in OAB patients. Modified content validity was determined that be >0.78 for all the questions. Kendall correlation coefficient was calculated for test-retest reliability that was 0.66. indicated the reliability of the questionnaire. The Persian version was a reliable tool for screening and treatment [15].

Arabic version was drafted on standard methodology; the data was taken from multicenter. The translated Arabic version of ICIQ-OAB was used on 227 patients. 112 patients were complaining of symptoms, healthy without LUTS symptoms were 115. Also, patients with and without Bladder Outlet Obstruction (BOO) symptoms were included. The reliability assessment of the internal consistency was determined by using Cronbach's alpha test. With Spearman's correlation coefficient (r), the interdomain associations were assessed. The Mann-Whitney

test was used to assess the discrimination validity. In the Arabic language of the OAB questionnaire; the kappa value was from 0.482 to 0.75, and Cronbach's alpha value was 0.82; high internal consistency [16]. The limitation of the current study was; conducted on a specific population with weak bladder (pregnant women). In Pakistan rate of literacy rate is less, ICIQ-OAB is a self-administered questionnaire and there is a need to translate it into different local languages of specific areas. This study was conducted on Urdu speaking population and Urdu version can be used as a reliable questionnaire on the urgency, incontinence, and different bladder conditions patients in Urdu-speaking countries.

Conclusion

ICIQ-OAB is a self-reported questionnaire, the Urdu version will be used to assess the overactive bladder in an Urdu-speaking population. This questionnaire has been translated into many other languages in different countries around the world. Urdu version will be helpful in research, screening, and treatment in Pakistan for overactive bladder patients. It has good content, construct validity, and reliability.

Abbreviations

ICIQ-OAB: International Consultation on Incontinence Questionnaire Urinary Incontinence Overactive Bladder; ICIQ UI-SF: International Consultation on Incontinence Questionnaire Urinary Incontinence Short Form; CVI: Content Validity Index; ICC: Intra-class Correlation.

Authors' contributions:

Amon : Data collection, writing; Revised and accountable for all aspects

Zainab Hassan: Conception, Revised and accountable for all aspects

Mehwish Ikram: Revised and accountable for all aspects

Iqrahshtiaq: Interpretation of data Revised and accountable for all aspects.

Ramza Hayat: Revised and final review
Syed Ali Hussain: Revised and final review

Acknowledgments

Not Applicable.

Availability of data and material

The dataset used and analyzed during the current study is available from the corresponding author on reasonable request. It is not shown publicly due to privacy concerns.

Funding

No financial support was available for this study.

Ethics approval and consent to participate

The study protocol was approved by the Institutional Review Committee of Riphah International University Islamabad (Lahore Campus), Pakistan with reference no. REC & AHS/21/0518 and followed as per guidelines. All the participants provided written informed consent to participate in the study. All methods were carried out following relevant guidelines and regulations.

References

1. Abrams P, Andersson K-E, Birder L, Brubaker L, Cardozo L, Chapple C, et al (2010) Fourth International Consultation on Incontinence Recommendations of the International Scientific Committee: Evaluation and treatment of urinary incontinence, pelvic organ prolapse, and fecal incontinence. *Neurourol Urodynam* 29(1):213-40.
2. Ferreira LR, Gameiro MO, Kawano PR, Yamamoto HA, Guerra R, Reis LO, et al (2017) Schooling impacts on the overactive bladder diagnosis in women. *Intern Braz J Urol* 43:1129-35.
3. Rashid S, Babur MN, Khan RR, Khalid MU, Mansha H, Riaz S. (2021) Prevalence and associated risk factors among patients with overactive bladder syndrome in Pakistan. *Pakistan J Med Sci* 37(4).
4. Groenendijk IM, Scheepe JR, Noordhoff TC, Blok BF (2019) The validation of the Dutch OAB-q SF: An overactive bladder symptom

bother and health-related quality of life short-form questionnaire. *Neurourol Urodynam* 38(6):1775-82.

5. Salman M, Khan J, Khan A, Sulaiman S, Aslam Z, Asif N, et al (2019) Prevalence and predictors of lower urinary tract symptoms in Pakistani men: A cross-sectional study. *J Clin Urol* 12(4):307-13.

6. Sawaqed F, Suoub M (2021) Validating 7-items Overactive Bladder Symptom Score (OABSS) through Arabic linguistic version. *Sci Rep* 11(1):1-8.

7. Przydacz M, Golabek T, Dudek P, Lipinski M, Chlosta P (2020) Prevalence and bother of lower urinary tract symptoms and overactive bladder in Poland, an Eastern European Study. *Sci Rep* 10(1):1-12.

8. Willis-Gray MG, Dieter AA, Geller EJ (2016) Evaluation and management of overactive bladder: strategies for optimizing care. *Res Rep Urol* 8:113.

9. De Boer TA, Slieker-ten Hove MC, Burger CW, Vierhout ME (2011) The prevalence and risk factors of overactive bladder symptoms and its relation to pelvic organ prolapse symptoms in a general female population. *Int Urogynecol J* 22(5):569-75.

10. Leron E (2018) Overactive Bladder Syndrome: Evaluation and Management. *Curr Urol* 11(3).

11. Abrams P, Avery K, Gardener N, Donovan J (2006) ICIQ Advisory Board. The international consultation on incontinence modular questionnaire: [www. iciq. net](http://www.iciq.net). *J Urol* 175(3):1063-6.

12. Coyne KS, Tubaro A, Brubaker L, Bavendam T (2006) Development and validation of patient-reported outcomes measures for overactive bladder: a review of concepts. *Urol* 68(2):9-16

13. McKown S, Abraham L, Coyne K, Gawlicki M, Piant E, Vats V (2010) Linguistic validation of the N-QOL (ICIQ), OAB-q (ICIQ), PPBC, OAB-S and ICIQ-MLUTSsex questionnaires in 16 languages. *Inter J Clinic Prac* 64(12):1643-52.

14. Pereira SB, Thiel RdRC, Riccetto C, Silva JMd, Pereira LC, Herrmann V, et al (2010) Validação do International Consultation on Incontinence Questionnaire Overactive Bladder (ICIQ-OAB) para a língua portuguesa. *Revista Brasileira de Ginecologia e Obstetrícia* 32(6):273-8.
15. Sari Motlagh R, Hajebrahimi S, SADEGHI-BAZARGANI H, Joodi Tutunsaz J (2015) Reliability and Validation of the International Consultation on Incontinence Questionnaire in Over Active Bladder to Persian Language. *LUTS: Low Urin Tract Symptoms* 7(2):99-101.
16. Taha D-E, Elbaset M, Hashem A, Nabeeh H, Ibrahim A, Pardoe MN, et al (2021) Validation of the Arabic linguistic version of the International Consultation on Incontinence Questionnaire-overactive bladder (ICIQ-OAB). *Afr J Urol* 27(1):1-5.
17. Wild D, Grove A, Martin M, Eremenco S, McElroy S, Verjee-Lorenz A, et al (2005) Principles of good practice for the translation and cultural adaptation process for patient-reported outcomes (PRO) measures: report of the ISPOR task force for translation and cultural adaptation. *Value Health* 8:94–104.
18. The International Consultation on Incontinence Modular Questionnaire. Validation protocol. http://www.iciq.net/validation_protocol.htm. Accessed 8 March 2022.
19. Timmermans L, Falez F, Mélot C, Wespes E (2013) Validation of use of the International Consultation on Incontinence Questionnaire-Urinary Incontinence-Short Form (ICIQ-UI-SF) for impairment rating: a transversal retrospective study of 120 patients. *NeurourolUrodynam* 32(7):974-9.
20. Saaqib S, Jameel A, Ghufuran M, Eusaph AZ. Predictors of Delay in Treatment of Urinary Incontinence Among Pakistani Women—A Cross-sectional Study.(pre-print)
21. Tamanini JTN, Dambros M, D'Ancona CAL, Palma PCR, Netto Jr R (2004) Validação para o português do " International Consultation on Incontinence Questionnaire-Short form"(ICIQ-SF). *Revista de saude publica* 38:438-44.
22. Waltz CF, Bausell RB (1981) *Nursing research: Design, statistics, and computer analysis*. FA Davis company.
23. Polit DF, Beck CT (2006) The content validity index: are you sure you know what's being reported? Critique and recommendations. *Res Nurs Health* 29:489-97.
24. Munir A, Ikram M, Rehman SS (2022) Urdu translation of Shoulder Pain and Disability Index (SPADI) and its validity and reliability on adhesive capsulitis patients. *BMC MusculoskeletDisord* 23(1):1-8.
25. Cronbach LJ (1951) Coefficient alpha and the internal structure of tests. *Psychometrika* 16(3):297–334.
26. Ikram M, Rehman SS, Sunnerhagen KS, Alt Murphy M (2021) Urdu translation and cross-cultural validation of the Fugl-Meyer assessment in people with stroke. *DisabilRehabil* 1-6.
27. Koo TK, Li MY (2016) A guideline of selecting and reporting intraclass correlation coefficients for reliability research. *J Chiro Med* 15(2):155–63.
28. Schober P, Boer C, Schwarte LA (2018) Correlation coefficients: appropriate use and interpretation. *AnesthAnalg* 126(5):1763–8.