

URDU TRANSLATION AND CROSS-CULTURAL VALIDATION OF INTERNATIONAL CONSULTATION ON INCONTINENCE QUESTIONNAIRE PEDIATRIC LOWER URINARY TRACT SYMPTOMS

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Abstract

Background: The ICIQ-CLUTS is a self-administered 12-item screening questionnaire for pediatric LUTS. There are two versions: one for children and one for parents/carers. This tool has been translated into many languages, but no Urdu version is available.

Objective: The aim was to translate the ICIQ-CLUTS into Urdu and determine its reliability.

Methods: A cross-cultural translational process was used to develop the Urdu version of the ICIQ-CLUTS. This four-step process involved initial forward translation by two bilingual translators, resulting in two translated versions. These versions were then reconciled, and the reconciled translation was back-translated into English. A final forward translation was made after expert review. The translated version was then administered to 40 participants in a cross-sectional study using convenient sampling, ensuring a diverse and representative sample.

Results: Split-half reliability method was used to assess the reliability of the Urdu version of the ICIQ-CLUTS parent-reported questionnaire. The questionnaire, consisting of 10 questions, was divided into two equal parts: a and b. The Cronbach Alpha values for part a and part b were 0.606 and 0.636, respectively. These values indicate that the Urdu version of the ICIQ-CLUTS parent-reported questionnaire is a reliable tool for assessing lower urinary tract symptoms in children aged 5 to 18.

Conclusion: The findings of this study underscore the importance of the Urdu version of ICIQ-CLUTS as a valid and reliable tool. Its use in clinical settings can significantly enhance our understanding and management of lower urinary tract symptoms in children.

Introduction

Lower urinary tract symptoms are prevalent and a cause of distress in children. It has a broad impact on their lives and reduces their efficiency. It affects not only the children but their parents as well. Parents of these children get into an anxious state and think of themselves as if they lack nurturing skills¹. In 1988, at the first Meeting of the Scientific Committee of the First International Consultation on Incontinence (ICI), a decision was made to establish an interdisciplinary team whose duty was to form a well-structured and valid patient-reported outcome measure (PROM) to use by the patients having incontinence of urine. In 1999, the team formed The ICI Questionnaire for treatment and diagnostic purposes, which also met all the prerequisites for research. The International Consultation on Incontinence Questionnaire (ICIQ), in its 22nd year, continued its aim to develop a well-documented and brief questionnaire that patients must complete to assess their urine and fecal incontinence symptoms².

The International Consultation on Incontinence Questionnaire-Pediatric Lower Urinary Tract Symptoms (ICIQ-CLUTS) is an examination questionnaire for pediatrics. It has been accepted and translated into multiple languages other than English. It is an examination tool with two versions: parent-reported and child-reported. It is highly particular and sensitive in ruling out the presence of lower urinary tract infections. To assess the severity of lower urinary tract symptoms, it would be better to consider both measured urine and combined³. The lower urinary tract consists of the urinary bladder, urethra, and urethral and has the following essential functions: storage and expelling out of the body. The urine produced by the upper urinary tract is stored in the urinary bladder; it is later passed on to the urethra to expel the body. Abnormality, pain, or any other cause that disturbs normal function leads to lower urinary tract symptoms. These symptoms include infection, storage problems, irritation, obstruction, and sometimes leakage. Now, ICIQ tools are used all over the medical and research fields⁴.

Lower urinary tract symptoms are widely present in females and children of specific age. During early-stage assessment and follow-up, practitioners use these questionnaires. The results gained from these questionnaires help the practitioner make treatment plans accordingly. According to the International Children's Continence Society Guidelines, lower urinary tract symptoms include abnormal filling and emptying of the bladder presenting as a sudden urge to micturate, bedwetting either day or night, and frequent micturating without any prior infection^{5,6}. A strong relation was found between lower urinary tract symptoms, incontinence, costiveness, and psychological symptoms. However, most types of incontinence occur regardless of co-morbid behavioral issues, which means that behavioral disturbances do not increase the risk for incontinence⁷.

Lower urinary tract symptoms can make someone more prone to infections related to the urinary tract and could be a reason for poor response to vesicoureteral reflux treatment. It is pertinent for the practitioner to rule out after having a detailed and thorough patient history. For example, neurogenic bladder, any neurological disease, or some medications can alter the making of a diagnosis. Nocturnal Enuresis, Inconsistency, Urinary incontinence during the daytime, and Bowel incontinence are some disorders in children¹⁰. Its rate of occurrence decreases as the age progresses and the child enters teenage and adult life. Again, the rate increases in old age because incontinence and lower urinary tract symptoms are highly related to psychology-related issues¹¹.

In growing children, incontinence issues are more prevalent¹². Hypertonic bladder, hypotonic bladder, habitual postponement of urine, effort incontinence, enuresis risorius, and nighttime incontinence are all possible issues in children with lower urinary tract dysfunction. Holding urine for a long time may cause a urinary tract infection, termed habitual postponement of urine. On the other hand, hypotonic bladder is a condition in which the bladder is not fully emptied. Enuresis risorius is a condition that is

not so common and involves leakage of urine after laughing. Both conditions, effort incontinence and enuresis risorius, are idiopathic¹³. Usually, children develop bladder and bowel control by age before the fourth birthday. The frequency of incontinence is four times higher in intellectually disabled children as compared to an average child. Therefore, lower urinary tract symptoms are more common in these children¹⁴.

A substantial negative impact is being posed by lower urinary tract symptoms on the health system of every country, especially the already fragile system of Pakistan. These questionnaires are valid and reliable in their constructed language, and so is the ICIQ-CLUTS questionnaire (parent-reported). It has been translated and validated in many other languages except Urdu, even though more than 230 million people speak this language¹⁵. The literature suggests that the ICIQ-CLUTS is a valid measure for assessing the lower urinary tract symptoms in the pediatric population. Many translated versions of various modules of the ICIQ are present and are valid and reliable. However, there is no evidence of the Urdu translation and validation of the ICIQ-CLUTS questionnaire parent reported. The study aims to find the Urdu translation and validation of the reported ICIQ-CLUTS-parent, which would be more feasible to use in the Pakistan community.

Methods

The study was a cross-cultural translation and validation study conducted at the community and pediatric urology OPD of Mother and Children Complex, DHQ Hospital Sheikhupura, from August 2022 to December 2022, six months after the approval of the synopsis. A total of 40 parents of children with lower urinary tract symptoms participated in the study, selected through a non-probability convenience sampling technique. Inclusion criteria comprised parents of children aged 5-18 who were proficient in Urdu. Exclusion criteria involved parents of children with intellectual disability (i.e., an intelligence quotient (IQ) < 70) and any organic type of incontinence, neurological or anatomical problems of the lower

urinary tract, neuropathies, post-operative children, and uncontrolled insulin-dependent diabetes. The International Consultation on Incontinence Questionnaire Pediatric Lower Urinary Tract Symptoms (ICIQ-CLUTS) was used as the primary tool. The methodology employed a mixed-method approach, including forward translation by linguistic specialists, reconciliation of items by experts, backward translation, and review of translations. Pre-testing and cognitive interviewing were conducted before finalizing the translated questionnaire. Data collection involved inviting eligible caregivers/parents to participate and administering the ICIQ-CLUTS questionnaire. Data analysis was performed using SPSS version 21, assessing internal consistency and reliability through Cronbach's alpha and inter-class correlation coefficient. Content validity was determined using the Content Validity Index, and a factor analysis was conducted.

Results

This section contained statistical analysis to help determine the psychometric properties and frequencies of the data utilized by 30 parents of Children with lower urinary tract infections who participated in the study. This section includes "Content Validity Index CVI," "Content Validity Ratio CVR," data frequencies, and their tabular presentations. The translated questionnaire was rated by 5 experts using the Content Validity Index. The experts rated it according to four diverse elements: relevance, simplicity, clarity, and ambiguity. The rating was according to a 4-point scale (ordinal). The average of each scale was measured for each item. Then, the average of all the questions rated by experts was calculated, which helps determine the CVI of the Urdu-translated version of the ICIQ-CLUTS Questionnaire, Parent Reported. Cronbach's Alpha measured the reliability and internal consistency of the Urdu Version of the questionnaire. Further tests were also applied and included in this section. The Intra Class Correlation Coefficient was also included for the reliability measure, item-total statistics, and discriminant validity of the Urdu version of the

reported ICIQ-CLUTS Questionnaire. Factor Analysis of the Urdu Version was also performed. Total Variance Explained was calculated along the scree plot to depict the reliability of the translated

tool. A component matrix was also described to show the correlation among all the Urdu-translated items in the parent-reported ICIQ-CLUTS Questionnaire.

Table 1: Frequency and Percentage of Demographic

Variable	Age	Frequency	Percent
Age	5 to 9 years	21	52.5
	10 to 14 years	15	37.5
	15 to 18 years	4	10.0
Gender	Girl	17	42.5
	Boy	23	57.5
	Total	40	100.0

Table 2: Reliability statistics (Cronbach's alpha) of Urdu Version of ICIQ-CLUTS (parent-reported)

Reliability Statistics			
Cronbach's Alpha	Part 1	Value	.606
		N of Items	5 ^a
	Part 2	Value	.636
		N of Items	5 ^b
	Total N of Items		10
Correlation Between Forms			.260
Spearman-Brown Coefficient	Equal Length		.413
	Unequal Length		.413
Guttman Split-Half Coefficient			.412

a. گزشتہ 4 ہفتوں کے دوران، کیا آپ کے بچے کو پیشاب کی نالی کا انفیکشن تھا؟ آپ کا بچہ کتنی بار بستر گیلا کرتا ہے؟ آپ کا بچہ دن کے دوران خود کو کتنی بار گیلا کرتا ہے؟ آپ کا بچہ دن کے دوران کتنی بار پیشاب کرتا ہے؟ جب آپ کے بچے کو پیشاب کرنے کی ضرورت ہوتی ہے، تو کیا اسے فوری طور پر ٹوائلٹ میں جلدی کرنا پڑتا ہے؟

b. کیا آپ کا بچہ اپنے پیروں کو پار کر کے پیشاب کرنے کو ملتوی کرنے کی کوشش کرتا ہے، بیٹھنا، وغیرہ؟ کیا آپ کے بچے کو پیشاب شروع کرنے کے لئے دھکا دینا پڑتا ہے؟ کیا آپ کا بچہ خود کو گیلا کرتا ہے جبکہ وہ پیشاب کرنے کے لئے جلدی کر رہا ہے؟ کیا آپ کے بچے کو پیشاب کرنے کے لئے ہاتھ روم میں جلدی کرنا پڑتا ہے یہاں تک کہ اگر وہ تھوڑی دیر پہلے چلا گیا ہو؟ آپ کے بچے کو کتنی بار آنتوں کی نقل و حرکت ہوتی ہے؟

Our study used the split-half reliability method to assess the reliability of the Urdu version of the ICIQ-CLUTS parent-reported questionnaire. The questionnaire, consisting of 10 questions, was divided into two equal parts: a and b. The Cronbach Alpha values for part a and part b were 0.606 and 0.636, respectively. These values indicate that the Urdu version of the ICIQ-CLUTS parent-reported questionnaire is a reliable tool for assessing lower urinary tract symptoms in children aged 5 to 18.

Table 3: Summary item statistics of Urdu version of ICIQ-CLUTS questionnaire parent reported

Summary Item Statistics							
	Mea n	Minimum	Maximum	Range	Maximum / Minimum	Varian ce	N of Items
Part 1	1.96 5	1.625	2.200	.575	1.354	.048	5 ^a

Item Means	Part 2	2.740	2.425	3.175	.750	1.309	.102	5 ^b
	Both Parts	2.353	1.625	3.175	1.550	1.954	.233	10
Item Variances	Part 1	.744	.635	.862	.226	1.356	.007	5 ^a
	Part 2	.863	.715	.969	.253	1.354	.018	5 ^b
	Both Parts	.803	.635	.969	.333	1.525	.015	10
Inter-Item Correlations	Part 1	.239	-.058	.525	.583	-.9098	.034	5 ^a
	Part 2	.266	.027	.428	.401	15.764	.016	5 ^b
	Both Parts	.170	-.217	.525	.742	-2.423	.027	10

This table analyzes summary item statistics of the Urdu version of the ICIQ-CLUTS questionnaire parents reported.

DISCUSSION

The study was conducted with permission from the ICIQ websites committee, which developed this questionnaire. This questionnaire has two versions: child and parent. The parent version was used, translated, and validated in this study. After the study, statistical analysis was done to determine the reliability of the questionnaire. Later, it was found that the Urdu version of the ICIQ-CLUTS questionnaire parents reported is a valid and reliable tool for ruling out lower urinary tract symptoms and their implications. It was concluded that this tool can be used without hesitation in clinical practices; it is feasible and understandable.

The International Consultation on Incontinence Committee pioneered the establishment of a committee whose duty was to gather all information regarding incontinence, what has been done, and what has not been done in this specific area of health and research. The committee's task was to review the already available tools and questionnaires regarding urinary issues and their impacts on people's well-being. The core purpose of all this scrutiny was to discover the weaknesses and gaps in the existing literature and overcome these deficiencies. Resultantly, the committee reached a consensus and developed ICIQ-CLUTS modules. All

necessary assessment criteria were fulfilled in these modules, and various questionnaires were developed. Practitioners and researchers widely accepted these questionnaires. ICIQ-CLUTS has developed different questionnaires to assess lower urinary tract dysfunction in all genders: males, females, and children. ICIQ-CLUTS is one of the questionnaires that were used. It has two versions: child and parent. It is well-recognized among practitioners and researchers and is used for assessment purposes¹⁶.

Sureshkumar formulated a parent-reported questionnaire to test the frequency and possible causes of urinary incontinence in the pediatric population. There was no question related to fecal incontinence in this questionnaire. The drawback of this questionnaire was that it did not differentiate between normal and abnormal urinary behaviors. There were few tools at that time that could help diagnose urinary tract dysfunction and relate it to the child's quality of life and well-being. For making a good and accurate diagnosis, a need to develop a well-structured questionnaire was required. Keeping these points in mind, various tools have been developed until now, and ICIQ-CLUTS is one of them¹⁷.

Parental Questionnaire: Enuresis/Urinary Incontinence is a parent-reported questionnaire designed and used in 1994 in German and other languages. This questionnaire assesses children's urinary habits, bowel habits, and behaviors. This is the first questionnaire of its type used by

clinicians and practitioners. Further future studies conducted after forming this questionnaire have considered more questions. The Dysfunctional Voiding Score System and International Consultation on Incontinence Questionnaire are among these. Pediatric Lower Urinary Tract Symptoms (ICIQ-CLUTS) are famous. ICIQ-CLUTS consists of two versions: child and parent-reported. These questionnaires are among the most valid and reliable tools for measuring urinary incontinence and lower urinary tract dysfunctions in children¹⁸.

Data collection was complex due to the need for different setups, resulting in a limited sample size. In future studies, it is recommended that the sample size be more significant to ensure more robust findings. Additionally, data collection should involve various cities across the country to enhance the diversity and representation of the sample. Furthermore, including the maximum population from different areas in further studies would aid in generalizing the results to a broader context.

Conclusion

The Urdu version of the International Consultation on Incontinence Questionnaire Pediatric Lower Urinary Tract Symptoms parent reported is a valid and reliable tool for assessing lower urinary tract symptoms in children aged 5 to 18.

Disclaimer

The abstract of this study was not presented, nor has it been published. It is a part of my Masters thesis.

Conflict of Interest

None

Funding Disclosure

None

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