

# Translation and cross-cultural adaptation of the Nepali version of the International Consultation on Incontinence Questionnaire-Urinary Incontinence Short Form

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## ABSTRACT

**Background:** The International Consultation on Incontinence Questionnaire Urinary Incontinence Short Form (ICIQ-UI SF) is a questionnaire for evaluating the frequency, severity, and impact on quality of life of persons with Urinary incontinence. Urinary incontinence is a stigma, and a Nepali version of the ICIQ-UI SF will help to screen for incontinence, and be valuable for clinicians, researchers, and for persons with urinary incontinence.

**Methods:** After receiving ethical clearance and permission from ICIQ, the translation and cross-cultural adaptation was conducted using the ICIQ module protocol. This incorporated initial translation of the questionnaire, backward translation with involvement of ICIQ. The necessary adjustments were made during a meeting with the reconciliation expert team. After the approval from the ICIQ, interviews were conducted with eight women with urinary incontinence for conceptual equivalence. After cognitive debriefing, the comments were checked and proofreading of the questionnaires for comprehensibility, readability and accuracy of the grammar were done. Final typesetting and formatting were checked to match the original ICIQ-UI SF.

**Results:** The ICIQ-UI SF was successfully translated and cross-culturally adapted while maintaining the characteristics of the original source.

**Conclusions:** Through translation, review from the experts and interviews conducted with Nepalese women experiencing urinary incontinence, a relevant and comprehensive ICIQ-UI SF was developed to use in Nepal. The questionnaire will be of great value for clinical use and future studies involving Nepalese women.

**Keywords:** Linguistic translation; Nepal; outcome measure; urinary incontinence; women's health.

## INTRODUCTION

Urinary incontinence (UI) is involuntary leakage of urine which is a common and distressing condition in women, affecting physical, social, and mental

wellbeing; and significantly impacts quality of life.<sup>1</sup> The reported prevalence varies due to different definitions, populations, sampling procedures and assessment tools.<sup>2-7</sup> Without means of standardized assessment tools, there is a high risk that UI stays under-reported

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and consequently under-treated.<sup>5</sup> The International Consultation on Incontinence Questionnaire Urinary Incontinence Short Form (ICIQ-UI SF) is the internationally most frequently used assessment tool which evaluates frequency, volume of leakage, and overall impact of UI.<sup>5</sup> ICIQ-UI SF is translated into more than 50 different languages with good reliability, validity and responsiveness.<sup>8-14</sup> However, a Nepali version of the questionnaire is missing. Hence, this study aimed to translate and cross-culturally adapt the ICIQ-UI SF into Nepali to provide a contextually aligned, validated, and reliable assessment tool for clinical and research purpose in Nepal.

## METHODS

Authorization to translate the ICIQ-UI SF was approved from ICIQ ([www.iciq.net](http://www.iciq.net)). Ethical approvals were obtained from the Institutional Review Committee (IRC-KUSMS 133/23) and the Nepal Health Research Council (NHRC 228/2023). The aims of the translation were to retain linguistic equivalence, view the cultural appropriateness or relevance, and assess if the Nepali items measured the same construct as in the English language version. All translators and reviewers were fluent in the source (English) and target (Nepali) languages. The translation process involved standard ICIQ recommended methodology<sup>15</sup> and is summarized in Figure 1 and described below.

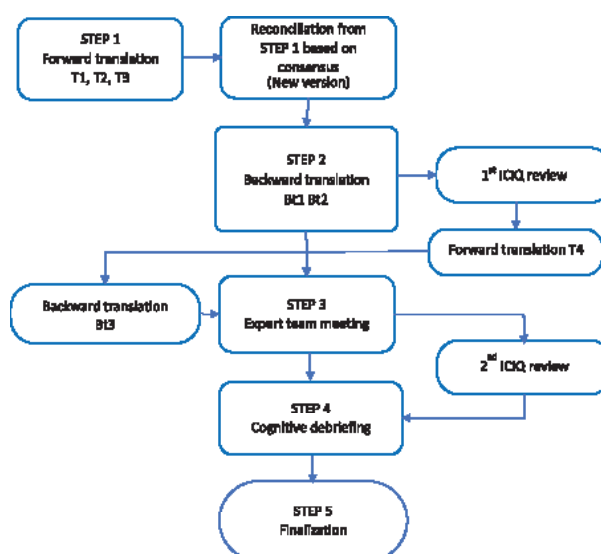
### STEP 1: Forward translation

Three native Nepali speaking translators with experience of translating questionnaire content and scales from English to Nepali, independently translated the ICIQ-UI SF from English into Nepali. All translators were living in Nepal at the time of translation, two were working in the healthcare sector (one community physiotherapist and one practicing nurse in a hospital). One was working as a clerk without knowledge of medical terminologies.

For reconciliation of the forward translation, the three translators consulted with the primary investigator in a committee meeting to transform the questionnaire into a single Nepali version. During this process, comparisons, conceptual equivalence, comprehensibility, and clarity of questionnaire were discussed. Items were assessed and the following were decided on: 1) the best with the clarity of the terminologies of the three translations was retained, 2) a merged version of all three translations was created, or 3) a new version was made when the forward translations were considered sub-optimal based on the consensus of the translators.

### STEP 2: Backward translation

Two native Nepali speaking translators (one working in Australia as a nurse for >10 years and one working in the United States as a caretaker in geriatric home >10 years) backward translated the ICIQ -UI SF from Nepali back to English. An online committee meeting was conducted to discuss the reconciled backward translated versions into English. Both backward translators were blinded to the original English version of the ICIQ-UI SF. An English final version after the committee meeting was sent to the ICIQ-UI SF instrument developer for consideration as part of the backward translation where inconsistencies and discrepancies were identified. After that the questionnaire from the forward translation (Nepali version) was again returned to the third backward translator (a community worker who had moved to Australia).



**Figure 1. Translation process of the ICIQ-UI SF. T1= Translator 1; T2= Translator 2; T3= Translator 3; T4= Translator 4; Bt1= Backward translator 1; Bt2= Backward translator 2; Bt3=Backward translator 3**

### STEP 3: Team meeting

A reconciliation expert team meeting was conducted with a midwife nurse, physiotherapy director, and public health officer from Kathmandu University Hospital, Dhulikhel, Nepal, to evaluate the backward translated ICIQ-UI SF reviewed version and the version from the third backward translator. The primary investigator noted inconsistencies and discrepancies in the backward translations and added comments for the final revision. This committee worked on the formatting and revision of the documents; changes were made according to discrepancies with the necessary adjustments to maintain the cultural aspects. This final

backward translated version was again sent to the ICIQ developer team for further feedback for acceptance of the revised version of the questionnaire. After final formatting and processing the questionnaire was ready for the cognitive debriefing.

#### STEP 4: Cognitive debriefing

Cognitive debriefing for validation of the translated questionnaire was completed at Kathmandu University Hospital, Dhulikhel, Nepal using the semi structured ICIQ-UI SF guide (Table 1). Eight women who were visiting the hospital physiotherapy outpatient department for treatment of UI were invited for face-to-face interviews. Inclusion criteria was to speak and understand Nepali language. All signed an informed consent before participation. The number was considered adequate for saturation of information.<sup>16, 17</sup>

The primary aim was to evaluate the comprehensibility of the instructions, items, and response options as per the recommendations of the ICIQ and the consensus-based standards for the selection of the health measurement instruments (COSMIN).<sup>16</sup> The secondary aim was to assess the relevance and cultural appropriateness of the items and response options. The participants were asked what the items meant to them and the interviewer confirmed afterwards if the patients' understanding of each item was correct based on what the items meant in English.

**Table 1. The The International Consultation on Incontinence Questionnaire Urinary Incontinence Short Form interview guide for cognitive debriefing.**

1. *How easy or difficult did you find the questionnaire to complete?*
2. *Were there any words, phrases or terms that were unfamiliar, ambiguous or difficult to understand? If so, which and why?*
3. *Were the items clear? If not, which ones and why?*
4. *Were the instructions clear? If not, which ones and why?*
5. *Did you object to answering any items? If so, which ones and why?*
6. *Were any of the response categories unclear, inappropriate, or inadequate to allow you to express what you felt? If so, which ones and why?*
7. *Are there any further comments you would like to make or items you would like to ask about?*

#### STEP 5 Finalization

After cognitive debriefing, the comments were

checked, and proofreading of the questionnaires for comprehensibility, readability, and accuracy of grammar were done. Final typesetting and formatting to match the ICIQ-UI SF format of questionnaires were completed. (Appendix I ICIQ-UI SF Nepali version)

## RESULTS

During the translation process, several linguistic differences and grammatical preferences for the same statement were noted among the translators. The use of complex phrases or words, as well as semantic errors, are some of the most common errors that can threaten construct validity or equivalence between languages during the translation process. Therefore, adaptations were made to imply the meaning of words and the sentences in the original version. These adaptations were discussed during the synthesis meeting and the review committee meeting with the experts. The inclusion of native Nepali speaking translators, as well as the piloting of the translated version on Nepalese women, ensured that the final version was at the correct linguistic level, while maintaining the content validity through the rigorous review involving the ICIQ developer team. The key issues and solutions during the translation process is presented in Table 2.

During the translation process, "How often do you leak" item no 3 was translated into Nepali language as "तपाईंको कति पटक पिसाब चुहिन्छ" which exactly means "how many times do you leak?". The word "often" in the question is an adverb which also means frequency so in Nepali translation, with the clarity in the question was obtained even without an adverb. During translation process inconsistency was noted in item no 4. Inconsistencies were discussed and corrected in the expert team meeting as "हामीजान्नु चाहन्छौ, तपाईंको कतिजति पिसाब चुहिन्छ जस्तो लाग्छ सामान्यतया तपाईंको कति जति पिसाब चुहिन्छ ? (सुरक्षाको लागी तपाईं केहि प्रयोग गरे वा नगरे पनि) ?" । In the same item, the exact meaning of the word "protection" could not be matched in Nepali so the expert committee adapted the word "सुरक्षा" for "protection". The translators suggested to add e.g., pad and/or cloth for clarity of the word meaning "सुरक्षा"। The English words "usually" was also discussed to provide meaningful and desired questions in accordance with the original ICIQ-UI SF as "सामान्यतया"। This word when translated in English means generally, but the expert committee decided to keep as it is a synonym word in Nepali. In English "You" is used as a general pronoun for any person but in Nepali the use of pronouns varies, such as "त, तिमी, तपाईं यच हजुर", depending on the respect you must give to elder or younger persons. Through consensus the pronoun "तपाईं" was decided, as

when speaking to a patient or any unknown person it is expected to speak respectfully. In item no 5, “interfere” was interpreted and translated as “असर” which means “affects” is considered by experts as the synonym word and retained it. In the response options in item no 6, it was discussed whether adding the pronoun “you” in the Nepali translation as sentences appeared incomplete but consensus from the expert meeting decided against adding “you”.

For all items, words describing quantity such as “small, moderate, or a large amount” or ranging between 0 “not at all” and 10 “a great deal” were considered subjective and best words were discussed and decided with harmonization during the expert team meeting. For description of frequency, “never- urine does not leak” in item 6 and “never” in item 3, the translators and experts discussed and suggested to keep those similar; in Nepali “कहिल्यै -पिसाब चुहिदैन” and “चुहिदैन” as both options have same sentence but the meaning with regard to the questions “when” and “how often” was different.

All the discrepancies in the meaning between the original and backward translated version were discussed in the expert team meeting and the final text was decided.

#### Content validity

Content validity and acceptance were evaluated in the cognitive debriefing in face-to face interviews with the eight women who had completed the ICIQ-SF UI questionnaire in Nepali. The mean age of the women who participated was 45 years (range 31 - 54) and number of children ranged between 2-8 (mean 3.5). Most had according to the ICIQ-SF UI mild to moderate UI ((item 3: mean 1.5 (range 1-4); item 4, mean 2 (range 2-6); item 5, mean 3.9 (range 1-8)) where five had stress UI, two had mixed and one had urge UI. The participating women found the instrument clear, easy to understand and to complete (questions 1-4, Table 1). For acceptance (question 5, Table 1) only one woman was a bit reluctant to answer. For appropriateness and adequacy (question 6, Table 1) there were no disagreements. For questions

and comments (question 7, Table 1) the women had no further questions and did not suggest any changes to the questionnaire. They acknowledged the importance of the questions in daily clinical practice and stated the needs and necessity. Therefore, including item description, which has been recommended by the International Society for Pharmacoeconomics and Outcomes Research (ISPOR) Principles of Good Practice for the Translation and Cultural Adaptation of Patient-Reported Outcomes (PRO) Measure, to avoid ambiguity and conceptual inequivalence, was not necessary in this version.<sup>18</sup>

## DISCUSSION

This study successfully translated and cross-culturally adapted the ICIQ-UI SF questionnaire into Nepali. The Nepali version of the ICIQ-UI SF was reported comprehensible and easy to complete. However, some adaptations were needed to imply the meaning of words and sentences. The rigorous translation and cross-cultural adaptation process ensured that the final questionnaire was appropriate for Nepalese women with UI visiting the hospital, some with low level literacy. This confirmed that the questionnaires did not require high-level reading skills.<sup>17</sup> The Nepali version of ICIQ-UI SF thus demonstrated good content validity similar to translations of ICIQ-UI SF to several other different languages.<sup>8, 12-14</sup>

Although we had good agreement between the translators and reviewers for most of the items, some of the difficulties emerged in the translation of some of the items. During our translation process, we had difficulty in translation with item no. 4. The representative from ICIQ developer team took part in backward translation and indicated the inconsistency in the translation of item no. 4 with the original questionnaire. Hence, the expert committee discussed and made it consistent with the original version. The difficulties related to the translation of the item no 4 was reported in validation of Portuguese version,<sup>19</sup> where they mentioned the translated item no 4 was grammatically and semantically correct but found difficulty in the comprehension while pretesting for which adaptation was made.

**Table 2. The key issues of The International Consultation on Incontinence Questionnaire Urinary Incontinence Short Form translation and solution.**

Items	Forward translation Synthesis (T1, T2,T3)	T4	Expert committee meeting	Final translation
3. How often do you leak urine?	प्राय जस्तो तपाइलाई कतिको पिसाब चुहिन्छ ? (एउटा बाकसमा चिन्ह लगाउनुहोस)	तपाईंको पिसाब कति पटक सम्म चुहिन्छ एक कोठामा √ लगाउनुहोस)	तपाईंको कतिपटक पिसाब चुहिन्छ? (एउटा बाकसमा चिन्ह लगाउनुहोस)	तपाईंको कति पटक पिसाब चुहिन्छ? (एउटा बाकसमा चिन्ह लगाउनुहोस)
4. We would like to know how much urine you think leaks. How much urine do you usually leak. (whether you wear protection or not)?	तपाईंको कति जति पिसाब चुहिन्छ जस्तो लाग्छ, हामी जान्न चाहन्छौ । सामान्यतया तपाईंको कति जति पिसाब चुहिन्छ ? (सुरक्षाको लागि तपाईं केहि प्रयोग गर्नु हन्छ ? जस्तै कपडा, प्याद) (एउटा बाकसमा चिन्ह लगाउनुहोस)	हामी जान्न चाहन्छौ तपाईंको पिसाब कति चुहिन्छ जस्तो लाग्छ ? अकसर कति मात्रामा तपाईंको पिसाब चुहिन्छ? (के तपाईं सुरक्षाको लागि केहि प्रयोग गरे वा नगरे पनि)? (एउटा कोठामा √ गर्नुहोस)	हामीजान्न चाहन्छौ, तपाईंको कतिजतिपिसाब चुहिन्छ जस्तो लाग्छ।सामान्यतयातपाईंको कतिजति पिसाब चुहिन्छ ? (सुरक्षाको लागी तपाईं के हि प्रयोग गरे वा नगरे पनि)?(एउटा बाकसमा चिन्हलगाउनुहोस)	हामीजान्न चाहन्छौ, तपाईंको कतिजति पिसाब चुहिन्छ जस्तो लाग्छ। सामान्यतया तपाईंको कतिजति पिसाब चुहिन्छ ?(सुरक्षाको लागी तपाईं केहि प्रयोग गरे वा नगरे पनि)? (एउटा बाकसमा चिन्ह लगाउनुहोस)
5. Overall, how much does leaking urine interfere with your everyday life?	समग्रमा पिसाब चुहिनाले दैनिक जिवनमा कतिको असर परिरहेको छ ? कृपया एउटा अंकमा गो लो लगाउनु होला । ०(कति पनि छैन) र १० (अत्याधिक)	समग्रमा, पिसाब चुहिनाले दैनिक जिवनमा कतिका असर पार्दछ ? कृपया ० (पर्देन) देखि १० अति धेरै पर्छ) नं. सम्मको अंकमा गोलो घेरा लगाउनुहोस)	समग्रमापिसाबचुहिनाले तपाईंकोदैनिकजिवनमाकतिको असर परिरहेको छ ? कृपया एउटा अंकमागोलो लगाउनु होला । ० -कतिपनि छैन) र १० (अत्याधिक)	समग्रमा पिसाब चुहिनाले तपाईंनिक जिवनमा कतिको असर परिरहेको छ ? कृपया एउटा अंकमा गोलो लगाउनु होला । ० - (कतिपनि छैन) र १० (अत्याधिक)
6. When does urine leak? (Please tick all that apply to you) <ul style="list-style-type: none"> <li>• never - urine does not leak</li> <li>• leaks before you can get to the toilet</li> <li>• leaks when you cough or sneeze</li> <li>• leaks when you are asleep</li> <li>• leaks when you are physically active/exercising</li> <li>• leaks when you have finished urinating and are dressed</li> <li>• leaks for no obvious reason</li> <li>• leaks all the time</li> </ul>	पिसाब कहिले चुहिन्छ ? (तपाईंलाई मिल्ने जति सबैमा चिन्ह लगाउनुहोस ।) <ul style="list-style-type: none"> <li>◆ कहिल्यै चुहिदैन</li> <li>◆ तपाइ शौचालय पुग्न अगाडि नै चुहिन्छ ।</li> <li>◆ तपाईंले खोक्दा वा हाछ्युं गर्दा चुहिन्छ ।</li> <li>◆ तपाईं निदाउनु भएको बेला चुहिन्छ ।</li> <li>◆ तपाईं शारीरिक सक्रियता/ कसरत गर्दा चुहिन्छ ।</li> <li>◆ पिसाब गरेर लुगा लगाई सकेपछि ।</li> <li>◆ कुनै स्पष्ट कारण विना नै चुहिन्छ ।</li> <li>◆ जति बेला नि चुहिन्छ ।</li> </ul>	पिसाब कतिबेला चुहिन्छ ?(कृपया तपाईंलाई मिल्ने सबैमा √ लगाउनुहोस) <ul style="list-style-type: none"> <li>◆ कहिल्यै पनि पिसाब चुहिदैन</li> <li>◆ शौचालय पुग्न अघिनै चुहिन्छ</li> <li>◆ खोक्दा वा हाछ्युं गर्दा चुहिन्छ</li> <li>◆ सुतिरहेको बेलामा चुहिन्छ</li> <li>◆ शारीरिकरूपमा सकृय हुदां वा कसरत गर्दा चुहिन्छ</li> <li>◆ पिसाब फेरेर लुगा लगाई सके पछि चुहिन्छ</li> <li>◆ बिना कारण चुहिन्छ</li> <li>◆ सधैं चुहिन्छ</li> </ul>	पिसाबकहिले चुहिन्छ ? (तपाईंलाई मिल्ने जति सबै माचिन्ह लगाउनुहोस।) <ul style="list-style-type: none"> <li>◆ कहिल्यै -पिसाबचुहिदैन</li> <li>◆ तपाईं शौचालय पुग्न अगाडि नै चुहिन्छ ।</li> <li>◆ तपाईंले खोक्दा वा हाछ्युं गर्दा चुहिन्छ ।</li> <li>◆ तपाईं निदाउनु भएको बे ला चुहिन्छ।</li> <li>◆ तपाईं शारीरिक सक्रियता/ कसरत गर्दा चुहिन्छ ।</li> <li>◆ पिसाब गरेर लुगा लगाई सकेपछि ।</li> <li>◆ कुनै स्पष्ट कारण विना नै चुहिन्छ ।</li> <li>◆ जति बेला नि चुहिन्छ ।</li> </ul>	पिसाब कहिले चुहिन्छ ? (तपाईंलाई मिल्ने जति सबै मा चिन्ह लगाउनुहोस।) <ul style="list-style-type: none"> <li>◆ कहिल्यै -पिसाब चुहिदैन</li> <li>◆ तपाइ शौचालय पुग्न अगाडि नै चुहिन्छ ।</li> <li>◆ तपाईंले खोक्दा वा हाछ्युं गर्दा चुहिन्छ ।</li> <li>◆ तपाईं निदाउनु भएको बेला चुहिन्छ ।</li> <li>◆ तपाईं शारीरिक सक्रियता/ कसरत गर्दा चुहिन्छ ।</li> <li>◆ पिसाब गरेर लुगा लगाई सकेपछि ।</li> <li>◆ कुनै स्पष्ट कारण विना नै चुहिन्छ ।</li> <li>◆ जति बेला नि चुहिन्छ ।</li> </ul>

In the cognitive debriefing interview, the women with UI expressed that they found difficulty in the expression for the question “how much does leaking urine interfere with everyday life?”. As this question had the response in the form of a numeric rating scale and the women expressed “how much in numerical rating was difficult to tell. According to Pathak et.al<sup>20</sup> Nepalese population preferred the face rating and verbal rating scale over the numerical [pain rating] scale



and visual analogue scale as they discussed it could be due to the cultural reasons as numeric scale is uncommon among Nepali communities. This could also depend on the literacy of the women as in our interviews the women included studied below primary level.

Interpreting the challenge in assessing the impact of UI on daily life activities is complex. It's unclear whether the issue lies solely in the use of numerical rating scales or in the perception of UI as a normal occurrence or a treatable problem. In studies from Nepal, on uterine prolapse, pelvic floor issues seemed to be viewed as a typical consequence of childbirth. However, the respondents were not explicitly queried about the specific difficulties they encountered when responding to item 5.<sup>21-23</sup>

A strength of this study was that the translation and review team involved persons from medical backgrounds as well as non-medical backgrounds including the ICIQ developer team which supports the potential universality of the translation.<sup>15, 17, 24</sup> An additional strength was that women with UI were included for cognitive debriefing for the linguistic validation and cultural adaptation, and to secure patient involvement in research.<sup>25</sup> The risk of interviewer bias during the patient cognitive debriefing was mitigated by using the systematic and structured questions provided from the ICIQ developer team.<sup>15</sup>

Although the internal validity of the study was considered satisfactory, a potential limitation is the external validity with regard to many languages spoken in Nepal.<sup>26</sup> However, the most spoken language is Nepali, which is also the official language of Nepal.

As a significant correlation between ICIQ-UI SF score and urodynamic parameters have been found,<sup>27</sup> the Nepali version of the ICIQ-UI SF should be a reliable method for evaluation of assessment and treatment of UI in Nepalese women.

## CONCLUSIONS

The Nepali translation of the ICIQ-UI SF, assessing type, severity, and impact on activities in daily life of UI, were successfully translated and cross-culturally adapted into Nepali. The implication of the study is that Nepal now has a worldwide validated questionnaire for UI in Nepali that can be used for clinical purpose and future research in women's health.

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