

Original Research Article

Linguistic Validation of Incontinence Severity Index (ISI) Questionnaire in Bengali Language

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ABSTRACT

The objective of the study was to conduct a linguistic validation of the Incontinence Severity Index (ISI) questionnaire for Bengali language to capture the concepts of the original English-language version of the questionnaire and to examine if it is readily understood by the women with urinary incontinence. This study adopted cross sectional pilot study design between the October, 2019 to February, 2020 at Centre for the Rehabilitation of the Paralyzed (CRP), Bangladesh. This study recruited twenty (20) native-Bengali speaking residence of Bangladesh who reported urinary incontinence. The respondents were selected purposively for this study. The mean age of the respondents was 43.95; $sd \pm 11.23$. The Bengali-ISI questionnaire is conceptual and culturally adaptive to answer the two consequent items of the questionnaire. The results of the study suggested that the Bengali-ISI questionnaire captured the concepts of the original English version of the questionnaire. The Bengali-ISI was apparently understandable and recognized as an integral data collection material to measure the severity of the urinary incontinence among the Bangladeshi community women. However, further study would conduct to determine the psychometric properties of the Bengali-ISI questionnaire to measure the severity of urinary incontinence in the context of Bangladesh.

Introduction

Urinary Incontinence can be defined as an involuntary leakage of urine. Urinary Incontinence is highly prevalent among the women and it has a significant effect on the health-related quality of life. Among the different types of urinary incontinence, stress urinary incontinence (SUI) is the most frequent type of incontinence defined as the involuntary leakage of urine on physical exertion such as on coughing, sneezing and laughing. The other type of urinary incontinence defined as the urge urinary incontinence where the leakage yields with the sudden desire to urinate (Aoki, et al., 2017). A survey conducted in Bangladesh stated that about 68.4% women were suffering with urinary incontinence (Nipa, et al., 2017). Previously, Medical, Epidemiological and Social Aspects of Aging questionnaire was translated and adapted in the context of Bangladesh to ensure the diagnosis of type of urinary incontinence (Nipa, et al., 2019). However, the severity of urinary incontinence among the Bangladeshi women has not been determined yet. Furthermore, there was no Bengali-translated measurement tool to measure the

severity of urinary incontinence of the native Bengali speaking women. Therefore, the present study accomplished the linguistic validation of Bengali version ISI questionnaire to measure the severity of urinary incontinence.

The Incontinence Severity Index (ISI) is a subjective questionnaire, which is used to measure the severity of urinary incontinence in terms of frequency and amount. To ensure the non-invasive measurement of severity of urinary incontinence, ISI questionnaire is used extensively; nevertheless, it also requires translating the questionnaire in the specific language of the target group of people. Therefore, the present study highlights the linguistic validation of the ISI questionnaire to ensure the conceptual validation of the Bengali-ISI correspondent with the original English version.

Literature Review

The term linguistic validation is the process through which a questionnaire is translated in a specific language by ensuring the meaning and concept is as similar as the original version. The translated questionnaire should be comprehended by the target group of people as well (Diokno, et al., 1986).

Essentially, there are two most important steps needed to be performed for using a published questionnaire in different languages. The first step is the translation from the source language to the target language. Another one is testing of psychometric properties of the newly translated questionnaire. For translation, all procedures should be properly performed based on the international published guideline. Ultimately, the translation process should be ensured equivalence with the original version and cultural appropriateness (Epstein, et al., 2015). One of the most frequently used guidelines for the process of cross-cultural adaptation of self-report questionnaires was developed by Varni (Varni, 2002). The process of cross-cultural adaptation consists of six steps, including 1) translation, 2) synthesis, 3) back translation, 4) expert committee review, 5) pretesting and 6) submission of documentation to the developer or coordinating committee for appraisal of the adaptation process, respectively. In this step, all of the reports and forms need to submit to the committee keeping track of the translated version to ensure whether all steps have been completely performed and fully documented.

The Incontinence Severity Index (ISI) is a two- items- questionnaire, which is used to measure the frequency and the volume of leakage. The first item is frequency of urinary incontinence. On the other hand, the second item measures the volume of urinary incontinence. The value of the scale is considered for 1 to 12 items resulting from eight levels multiplicative score. On the other hand, the severity of urinary incontinence expressed as “Slight” considering the score scores 1 and 2, “Moderate” taking into account of scores 3, 4, and 6, “Severe” in view of scores 8 and 9 or “Very severe” considering the score 12 (Akhtar, et al., 2017).

Methodology

Study Design

The current study followed a cross sectional study design. It was conducted from October, 2019 to February, 2020 with twenty native Bengali speaking respondents suffering from urinary incontinence who attended at the outpatient unit at the Centre for the Rehabilitation of the Paralysed (CRP).

Study Population

For the pre-testing of the pre-final version of the Bengali translated ISI questionnaire, the current study included 20 respondents who were native speakers suffering from urinary incontinence.

Sampling Procedure

The study used the purposive sampling procedure. The inclusion criteria considered the women suffering from urinary incontinence, age ranged 18-60 years of age. The study included those women who had the ability to read and were willing to participate. In addition, pregnant women, women with any neurological conditions which might affect the bladder function or women with any psychological complications were excluded from the study.

The translation and cross-cultural adaption process

English version of ISI questionnaire was translated according to the linguistic validation framework of Mapi research institute validation process (Varni, 2002). The details of translation process are as follows (Figure 1).

a. Step 1: Forward translation

The translation of the ISI questionnaire from the English to Bengali language was performed by two bilingual translators who were experienced in translating health related questionnaires. These two bilingual translators were considered two clinical physiotherapists with five years of experience.

b. Step 2: Synthesis of the translation

Both the translators of forward translation compared their translation and one senior clinical physiotherapist formed the third version of the translation.

c. Step 3: Backward translation

The third version translated again by two bilingual translators who were experienced in translating health related questionnaires in English. Two lecturers, from the Bangladesh Health Professions Institute (BHPI), were invited to do the backward translation. The two bilingual translators of this stage were totally blinded to the English version of ISI questionnaire. Comparing of the original English version and the backward translation, the researcher compared the original English to the backward translation and agreed or do question on each item in the backward translation.

d. Step 4: Revision by expert committee

The Bengali version from the previous step was considered for the cross-cultural adaptation. Then the researcher discussed with all translators regarding the amendment of forward and backward translation or left the translation as it was based on the justification. Sequentially, a new harmonized translation was created. The expert committee included two forward translators, two backward translators and one senior clinical physiotherapist.

e. Step 5: Test for pre-final version

The pre-final Bengali version was determined in a pilot testing in order to ensure that the equivalence of adapted version remains stable in applied situation. Twenty participants were recruited to read and answer the Bengali version of ISI questionnaire and were questioned on its conceptual clarity. The participants were in between the ages of 18-60 years. All the respondents were women with urinary incontinence. When all the participants reported that they can understand all the items of the newly formulated Bengali version of ISI questionnaire, then the translation was remained same without further modification.

f. Step 6: Submission of documentation to the developer or coordinating committee:

For appraisal of the adaptation process, the members of ethical review committee of Centre for the Rehabilitation of the Paralyzed (CRP) were included. All the documents were submitted to the expert committee including the research monitoring and evaluation officers at the Centre for the Rehabilitation of the Paralyzed (CRP) in order to verify the adaptation process.

Study Procedure

To conduct the study, at first ethical approval had been taken from the Ethical Review Committee of the Centre for the Rehabilitation of the Paralyzed (CRP). The respondents were asked about the Bengali-ISI questionnaire at the baseline of the interview and captured all the information regarding whether they understood the questionnaire or faced any difficulty to make a sense of the questionnaire. Meanwhile, the data collectors identified the proper paraphrase and conceptual words to ensure the suitable wording to understand.

Results and Discussion

To measure the linguistic validation of the Bengali-ISI questionnaire, about twenty respondents were included in the current study. The mean age of the respondents was 43.95; $sd \pm 11.23$ with the minimum age 28 years and maximum age 60 years of age. The socio-demographic status of the respondents is presented (Table 1).

In a previous study stated that linguistic validation needs to do to assure that the target language as likely as the meaning of original language (Steffen, 1998). In addition, the significance of the data collection material can be assured by the linguistic validation of the questionnaire in a target language. The equivalence of the Bengali-ISI questionnaire was assured by conducting the synthesis of forward translation, reconciliation and revision by the expert committee. Consequently, the final version of the questionnaire affirmed by the pre-final version by asking the open-ended questions regarding the questionnaire and requesting feedback from the participants.

Incontinence Severity Index (ISI) is a two-item-questionnaire including the two precise questions regarding frequency and amount of urinary incontinence. Among the 20 respondents, no one faced any difficulties to answer these two items of the questionnaire. The interviewers identified that, respondents of the present study didn't face any comprehension, conceptual or cultural adaptive difficulties to answer the two consequent items of the questionnaire. The results of the study suggested that the Bengali-ISI questionnaire captured the concepts of the original English version of the questionnaire. The Bengali ISI was apparently understandable and recognized as an integral data collection material to measure the severity of the urinary incontinence among the Bangladeshi community women. The original English version and Bengali version of ISI questionnaire is shown (Table 2).

The Incontinence Severity Index (ISI) was translated and validated by a Scottish group in Spanish language demonstrated with its reliability and responsiveness were also good (Hanley, et al., 2001). This questionnaire has received the highest recommendation from the second and third International Consultation on Incontinence (Sandvik, et al., 2006).

Conclusion

The fact that different countries have different languages and cultures might have an influence on the understanding of the questions of the measurement tool. This is why, it is necessary to translate the original English version of the ISI questionnaire into Bengali language. In addition, further study would conduct, testing of psychometric properties for the Bengali version of ISI questionnaire to verify the quality of the newly translated version for obtaining the precision outcomes in further research.

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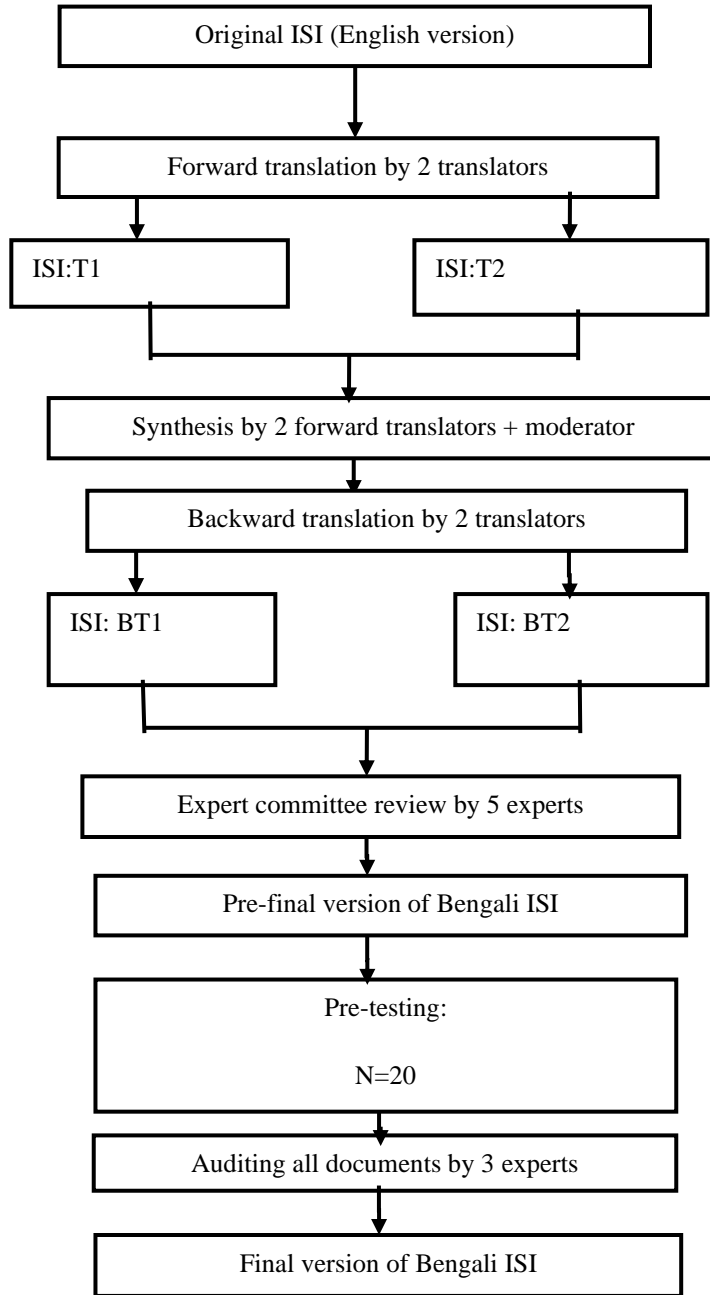
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Figure: 1: The translation process:



ISI=Incontinence Severity Index; T1= Forward Translator 1; T2=Forward Translator 2; BT1= Backward Translator 1; BT2= Backward Translator 2

Table 1: Socio-Demographic Characteristics of the Participants by the Target Language:

Characteristics	Number (n)	Percentage (%)
Occupation		
Housewife	14	70%
Service holder	3	15%
Teacher	2	10%
Garment's worker	1	5%
Living Place		
Urban	15	75%
Semi-urban	4	20%
Rural	1	5%
Educational Status		
Primary	7	35%
Secondary	5	25%
SSC Passed	4	20%
Masters	4	20%

Table 2: Incontinence Severity Index (ISI) Questionnaire:

Item	English Version	Bengali version
1.	How often do you experience urinary leakage? (Please check one)	১. কত ঘনঘন আপনার অনিয়ন্ত্রিত প্রস্রাব হয়? (অনুগ্রহ করে একটি উত্তর বাছাই করুন)
	___ Never, I do not leak urine	- কখনোই না, আমার প্রস্রাব পড়ে যায় না
	___ Less than once a month	- মাসে একবারের কম
	___ A few times a month	- মাসে কয়েকবার
	___ A few times a week	- সপ্তাহে কয়েকবার
	___ Every day and/or night	- প্রতিদিন এবং / অথবা প্রতিরাতে
2.	How much urine do you lose each time? (Please check one)	২. প্রতিবারে আপনার কি পরিমাণ প্রস্রাব বের হয়? (অনুগ্রহ করে একটি উত্তর বাছাই করুন)
	___ None, I do not leak urine	- না- আমার প্রস্রাব পড়ে যায় না
	___ Drops	- ফোঁটায় ফোঁটায় পড়ে
	___ Small Splashes	- অল্প ভিজিয়ে
	___ More	- অধিক পরিমাণে