

Validation of the amharic translation of international prostate symptom score in Ethiopian Patients

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Abstract

Objective: To validate the Amharic translation of International Prostate Symptom Score (IPSS) in Ethiopian patients.

Method: A prospective observational hospital based study was conducted to assess the harmonized Amharic translation of IPSS. The validity and reliability of the symptom score is assessed for its psychometric properties in 56 patients with Benign Prostatic Hyperplasia (BPH) and 73 controls from February to August 2000 in Tikur Anbessa Hospital.

Results: The mean age for patient group is 65.6 years while for controls it is 30.3 years. Construct validity has correlation coefficient of 0.59. Cronbach's alpha for internal consistency is 0.88. Intraclass correlation to determine test re-test is 0.80. Area Under Receiver Operating Characteristic curve to test discriminatory power of the symptom score between normal and patients is 0.91 (95 % CI 0.85 to 0.96). The mean difference of score before and after operative intervention is 13.2 ($p < 0.001$).

Conclusion: The translated version of International Symptom Score is valid to assess severity of symptoms in Ethiopian patients with BPH. [*Ethiop. J. Health Dev.* 2001;15(3):203-208]

Introduction

Benign Prostatic Hyperplasia (BPH) in old age is a commonly encountered disease that causes bladder outlet obstruction in men. There is a wide variation in the prevalence of clinically diagnosed BPH in different studies, mainly due to lack of universally accepted case definition (1). Until about a decade ago, the occurrence and natural history of BPH were not well characterized. Urologic measures such as prostate size, urowflow, and urinary symptom complex overlap to varying degrees to give a sound result in a clinically suspected BPH patient (2). As demographic changes may result in large number of population in old ages an increase in the prevalence of BPH is expected (1).

An International Consultation conference on BPH in 1991, recommended use of the scoring system - International Prostate Symptom Score (IPSS) as an instrument to quantify BPH related lower urinary tract symptoms. Originally the American Urological Association developed it. IPSS has a seven-symptom index with the addition of one disease specific quality of life question. The index is used to assess the severity of symptoms among patients who present with clinical picture suggestive of BPH. However it is not recommended for patient screening (3). Since then IPSS has been used as instrument to conduct community based prevalence study (4) and a basis for clinical outcome measurement to compare treatment results for different therapeutic modalities of BPH (5,6).

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In Ethiopia, the diagnosis of BPH is predominantly made by clinical presentation of the patient. Most of these patients come late for medical help with clear indication for surgical

intervention (7). The symptom score is beneficial for pre-operative evaluation of patients who come early in the course of their illness and for post treatment follow up. Clinically significant bladder outlet obstruction due to benign prostatic hyperplasia has been difficult to diagnose and quantify the degree of severity precisely. No single parameter so far seems to be efficient (8).

IPSS as a self-administered instrument is considered to be easier to use and may prevent bias in interviewing technique (9). Although not widely practiced it is suggested to apply interview technique to illiterate patients (10).

It is appropriate and as well widely recommended to study validation of the scoring system among patients from a spectrum of educational, cultural and socioeconomic background (11). So far there is no report of such study from African set up.

The objective of this study is therefore to validate the use of the translated IPSS among Ethiopian patients who present with lower urinary tract symptoms suggestive of Bladder Outlet Obstruction (BOO).

Patients and Methods

This is a prospective observational hospital based study of validity and reliability of IPSS Amharic (IPSS Amh). Amharic is the commonly spoken language in the study area. The study was conducted in the surgical department of Tikur Anbessa hospital under Addis Abeba University Medical Faculty for five months from April to August 2000.

Adult male patients presenting with lower urinary tract symptoms and who are being investigated for bladder outlet obstruction secondary to BPH were included in the study. In this study BPH was defined by the clinical diagnosis, which includes lower urinary tract symptoms and enlarged prostate as detected by digital rectal examination. In all cases the surgeon confirmed the diagnosis.

Exclusion criteria

1. All patients operated for prostatic diseases previously, or had any procedure performed on urethra
2. All patients who have urethral stricture.
3. Patients with spinal cord injury or who had operation on the spine
4. Diabetics, paraplegics or those who have diseases known to affect bladder emptying mechanism.
5. Patients who had catheter for more than two weeks

All patients who fulfilled the inclusion criteria were enrolled in the study.

Controls were selected from male patients who came to the same hospitals for other illness and were between 18 to 49 years of age. For practical purposes those who came to the same department for minor procedures or were attending their sick relatives were enrolled in the study.

Based on previous studies (11,12), significant level of .05 and power of 0.8, to achieve correlation of 0.5, the necessary sample size was calculated to be minimum of 36 for patient group, for calculation of correlation coefficient, for test re-test.

Three persons who know well both languages translated the English version of IPSS questionnaire into Amharic. The investigators checked the translations for similarity in wording and meaning. Subsequently two independent persons translated it back to the original version to countercheck similarity in wording and meaning.

A format that includes general characteristics and clinical information was filled out for each patient. The translated IPSS questionnaire was given to the patient with instruction. Patients filled the same symptom score one week later. If the patient was unable to read or write a close family member who was able to read and understand the questions, was asked to assist the patient. Data was recorded on the format

by only one of the investigators. Scores were classified as mild (0-7), moderate (8-19), and sever (20-35).

All patients and controls were informed about the purpose of the study and were included in the study when they gave verbal consent. Basically the study is observational which only took part of patient's time during the interview.

Statistical analysis for evaluation of psychometric measurements was used. Hence, internal consistency was assessed by Cronbach's alpha coefficient, reliability was assessed using test-retest and discriminatory power by calculating the area under Receiver Operating Characteristic (ROC) curve. Data analysis was performed using SPSS version 9.0.

The study was conducted after the proposal was approved by the Department of Surgery, Faculty of Medicine, Addis Ababa University.

Results

Fifty-six patients and seventy-three controls, a total of one hundred and twenty nine individuals participated in this study. The age range for the patient group was 42 to 86 years with a mean of 65.6 years. Controls had age range of 18 to 48 with a mean age of 30.3 years. Table 1 shows the age and mean and score distribution of the study subjects. Sever

Table 1: Age and symptom score in 56 BPH patients and 73 controls for validity study of international prostate symptom score in Tikur Anbessa Hospital from April to August 2000.

	Patients	controls
Mean age (SD)	65.7(9.77)	30.3(9.3)
IPSS Score		
Mild (0-7)	7	53
Moderate (8-19)	11	16
Severe (20-35)	38	4
Total	56	73

symptoms were found more frequently among patients compared to controls 38(67.8%) versus 4(5.47%). On the other hand mild symptoms were more common among controls, 53(72.6%) as compared to patients, 7(12.5%). Construct validity, correlation of all items 1-7 with quality of life item was 0.59. Internal consistency for IPSS Amh including all 8 items was 0.88, based on statistical calculation of Cronbach's alpha. Test re-test reliability was assessed in 41 patients who responded to the second test, using Intraclass correlation, which is 0.80 ($P < 0.01$). The Pearson's product moment coefficient for test re-test is 0.68($p < 0.01$). This value for individual items in the symptoms score ranges from 0.21 for item 5 (weak stream) to 0.79 for item 7 (nocturia). The area under ROC for the whole instrument is 0.91 (95% CI 0.85 to 0.96) (Figure 1). Sensitivity was 88 % and specificity 73 % using 7 as a cut off point. Sensitivity to change was assessed in 15 patients who had transvesical prostatectomy.

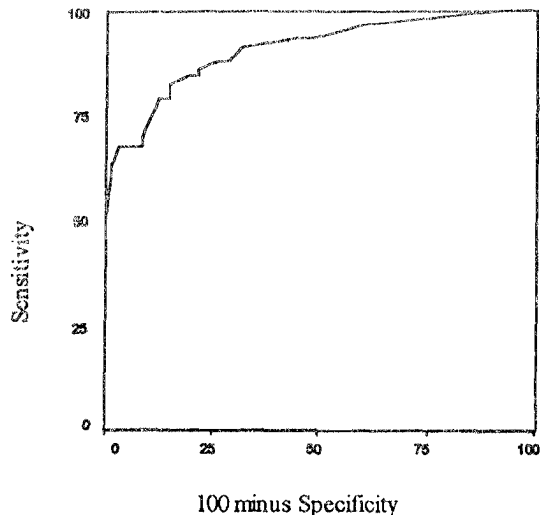


Figure 1: Plots of area under receiver operating characteristic curve to show discriminatory power of IPSS in 56 BPH patients with 73 controls in Tikur Anbessa Hospital, from April to August 2000.

Table 2: Sensitivity to change mean scores before (pre-op) and after (post-op) transesical prostatectomy in 15 patients in Tikur Anbessa Hospital from April to August 2000.

Item	Pro-op Mean (SD)	Post-op Mean (SD)	Mean difference	Effect size
1	2.9(1.97)	1.13(1.31)	1.77	0.9
2	4(1.32)	2.47(1.41)	1.53	1.16
3	3.47(1.67)	0.93(1.44)	2.54	1.52
4	3.47(1.78)	1.93(1.69)	1.54	0.87
5	3.6(1.67)	1.13(0.8)	2.47	1.48
6	3.4(1.7)	0.8(1.33)	2.6	1.53
7	4.2(1.05)	3.47(1.02)	0.73	0.7
8	5.47(0.72)	2.07(1.95)	3.4	4.72
1-7	25(8.59)	11.8(6.56)	13.2	1.54

Table 2 shows the mean difference for each item and effect size. The pre-operative mean score is 25(SD 8.90) and the postoperative mean score 11.8 (SD 6.79). The over all effect size is 1.54, mean difference 13.2 ($P < 0.001$), 95% confidence interval 6.87 to 19.5.

Discussion

The IPSS Amh is valid in our patients although the reliability is mildly weak. The multi-lingual nature and low literacy rate in our study population could have reflected in low reliability results. There is much similarity in age distribution and study results in this study and other studies done in Europe and USA (11, 13) (see table 3). Considering the acceptable value of 0.70 for the internal consistency our result is 0.88, which shows the homogeneity of the items of the IPSS Amh. The total symptom score is moderately correlated with quality of life score, construct validity of 0.59. Test re-test was assessed using two correlation coefficients, Intraclass correlation and Person's Product Moment Correlation. the intraclass correlation coefficient is similar for the Spanish and American studies but slightly lower for our study. The same low result is seen in product moment correlation in our study. The low reliability result can be

explained by a number of factors. The low literacy rate in the study population may reflect on patients understandings of the questions. The Spanish study excluded all who are illiterate. In addition they assigned a trained personnel to assist patient in responding to the questions. Since this study is designed to use the symptom score for our patients, no extra person was involved to assist patients. Our result might have improved if a trained staff had assisted the patients in responding to the questions. Furthermore, items with weak correlation result such as item 5 (weak stream) need to be revised linguistically to produce more reliable result. Another option to solve the low reliability result is to convert the self report to interview as suggested by previous study (10). Although this is not the initial objective for designing the symptom score, it may benefit our patients, who are not able to read. Discriminatory power between BPH patients and controls was assessed using area under Receiver Operating Characteristic curve. Although there is no study to date which describes the symptom score in urethral stricture, it is probable that these patients have higher symptom score. Therefore undetected cases of urethral strictures in the controls could affect our result. Even considering occurrence

Table 3: Comparison of the psychometric properties of the Amharic translation of international prostate symptom score with American Urological Association (AUA) and Spanish studies (IPSS Sp).

	AUA	IPSS Sp	IPSS Amh
Sample size	150	127	129
Mean age of patient (SD)	64(9)	65.8(8.3)	65.7(9.77)
Internal consistency			
Cronbach's alpha	0.85	0.79	0.88
Test re-test reliability			
ICC	0.92	0.92	0.80
Product moment	-	0.87	0.68
Discriminatory power			
(ROC \pm SE)	0.85(\pm 0.03)	0.92(\pm 0.02)	0.91(\pm 0.03)
Sensitivity to change			
Mean difference (P-value)	10.5(p<0.001)	16	13(p<0.001)
Effect size	1.44	2.52	1.54

ICC = Intraclass correlation

ROC = Receiver Operating Characteristic curve

AUA = American Urological Association (Symptom score)

IPSS Sp = International prostate symptom score in Spanish

IPSS Amh = International symptom score in Amharic

of this possibility we have high discriminatory power.

The last test is to measure clinical changes after a major intervention. The present result is shown to have better result than the American study. The reason for this may be all our patients had transvesical prostatectomy, which is believed to give a better symptom relief for the patient compared to transurethral resection of the prostate.

This is the first study of its kind in African set up. Taking into consideration the low literacy rate and the fact that the symptom score being relatively new clinical instrument in the study area, we recommend to further develop the symptom score by revising some of the items and to do study using interview technique.

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