ORIGINAL RESEARCH

Cross-Cultural Adaptation of Filipino Version of Farhat's Dysfunctional Voiding Symptom Score (DVSS) Questionnaire

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Objective: To evaluate the reliability and validity of Filipino version of Farhat's Dysfunctional Voiding Symptom Score (DVSS) questionnaire

Materials & Methods: Farhat's DVSS was forward translated to Filipino and back translated to English. The translated questionnaire underwent a pre-test test to 43 patients and evaluated. Then a re-test was done to 60 patients divided into two groups, Group 1 consisted of children with voiding dysfunction and Group 2 consisted of children without voiding dysfunction.

Result: None of the participants in the pre-test answered "I did not understand". The pre-test results had undergone Cronbach alpha with 0.812 and the re-test results' Cronbach alpha was 0.747. A high degree of stability was found with intraclass correlation coefficient (ICC) of 0.747 ($p<0.001$; 95% CI: 0.639-0.832).

Conclusion: The cross-cultural adaptation process of the DVSS questionnaire to be used on Filipino children was successfully completed. The Filipino version of DVSS is acceptable as an accurate diagnostic tool with cross-cultural variety.

Key words: dysfunctional voiding sytom score (DVSS)

Introduction

Dysfunctional voiding, as defined by the Standardization Committee of Internaltional Children's Continence Society, is a urodynamic entity characterized by an intermittent and/or fluctuating uroflow rate due to involuntary intermittent contractions of the striated muscle of the external urethral sphincter or pelvic floor during voiding in neurologically normal individuals. It is an entirely different term from the term voiding dysfunction, which is a generalized name that has been popularized to denote any abnormality related to bladder filling and/or emptying. Briefly, dysfunctional voiding is a term applied to neurologically intact children that requires uroflow measurements. The term cannot be applied unless repeat uroflow measurements show curves with a staccato pattern or unless verified by invasive urodynamic investigation. Note that the term describes malfunction during the voiding phase only. It says nothing about the storage phase. Dysfunctional voiding means dysfunction during voiding. Of course, it is entirely possible for a child to experience dysfunctional voiding as well as storage symptoms such as incontinence.[1]

Farhat, et al. described a validated symptom scoring Dysfunctional voiding symptom score (DVSS), for wetting and functional disorders in

children. This includes 10 quantitative and qualitative urological variables assessed by age-appropriate questions for children to grade dysfunctional voiding in children. The 10 dysfunctional voiding parameters were assigned scores of 0 to 3 according to prevalence, and possible total scores ranged from 0 to 30. The optimum cut-off scores were 6.026 (sensitivity 92.77% and specificity 87.09%) for females and 9.02 (sensitivity of 80.95% and specificity of 91. 30%) for males.[3]

Since this instrument was written in English and no similar validated questionnaire about this theme in Filipino, cultural adaptation is necessary. The aim of the study is to translate and culturally adapt the questionnaire into Filipino language

This study aimed evaluate the validity & reliability of Filipino version of Farhat's Dysfunctional Voiding Symptom Score (DVSS)

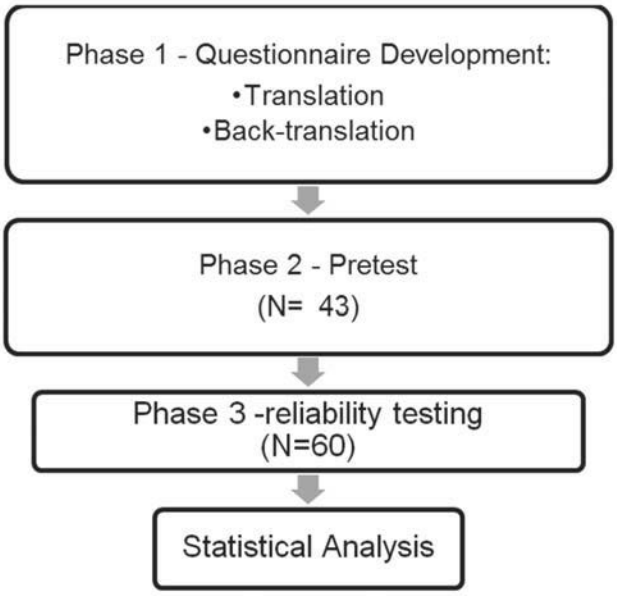

Figure 1. Methodology

Sample Size

A minimum sample of 20 patients each responding to 10 items of the questionnaire is needed to achieve 90% power to detect the difference between the coefficient alpha under the null hypothesis of 0.70 and the coefficient alpha under the alternative hypothesis o 0.90 using the 2-sided F-test with 95% confidence (Appendix A).

Sampling Design

The study employed a convenience sampling design in recruiting patients to participate in the study.

Materials and Methods

Permission to translate the DVSS into Filipino was obtained from one of the DVSS's authors, Dr. Walid Farhat. This study consisted of three phases: 1) Questionnaire Development, and 2) Pretest and 3) Reliability testing.

In Phase 1, the translation of instrument into Filipino was done by Sentro ng Wikang Filipino and was back-translated by a separate Filipino literary expert. Subsequently, it was submitted to two pediatric urologist specialists in the country with proficiency in both English & Filipino to undergo face validity.

In Phase 2, the pretest was carried out to verify the cultural adequacy of the instrument, & the answer "I didn't understand the question" was added to all of the items. Data collection was conducted to 43 participants who answered the instrument. If pre-test data analysis will show that "I didn't understand the question" is above the 15th percentile, it will warrant to change of intrument's content & will need a new pre-test.

In phase 3, Reliability testing was conducted by administrating the questionnaire to 60 children aged 5-18 years old in pediatric urology outpatient clinic. They completed the edited questionnaire based on the pre-test phase & obtain another set of reliability measures using cronbach's alpha coefficient. The patients were divided into two groups. Group 1 comprised of male and female patients between 5-18 years old who were recruited consecutively from the pediatric urology clinic. Group 1 patients have symptomatic dysfunctional voiding based on inclusion criteria of history of daytime urinary incontinence, history of abnormal voiding habits or history of urinary tract infections. Group 2 patients comprised of patients with no history of urological complaints

or fluid/electrolyte imbalance problems who were recruited from clinics outside of urology. Study exclusion criteria consisted of boys with posterior urethral valves, and patients with spina bifida occulta with neurogenic bladder.

Subjects were asked to provide written informed consent prior to enrollement & corresponding assent for children aged 7-12 year old. Only questionnaires completely answered will be included in the study.

Questionnaire data were recorded in commercial statistical software (Excel for Microsoft Windows). Descriptive statistics were used to describe the sample, to verify the content validity of the adapted instrument, & to determine the pretest results. Statistical analyses using SPSS IBM software for windows were:

1) Independent T-Test: to compare the scores of groups 1 & 2
2) Cronbach's coefficient alpha: to verify reliability. Cronbach alpha values > 0.70 were established as constituting evidence of satisfactory internal consistency.

The study was conducted from January 2015 to September 2015.

Results

There was a total of 103 participants who participated in the study. Forty three participants (23 males, 20 females) participated in the Phase 2 (Pre-Test) of the study. The translated questionnaire underwent & completed face validity by two pediatric urologists. There were 60 participants (31 males, 29 females) in Phase 3 (Reliability testing) of the study. The female-to-male ratio of group 1 is 1:1 (15 female, 16 male), and 1.9:1(19 female, 10 male) in group 2. Group 1 patients have a mean score of 2.03 ± 1.64 (Range:0 - 7) and group 2 with mean score of 10.24 ± 3.67 (Range: 4 - 17) as expected. The mean scores of the two groups were statistically significant ($p<0.0001$).

In the Phase 2 (Pre-test phase), none answered the "I didn't understand the question".

The cronbach coefficient alpha for the test (Table 1) was 0.7442. The translated questionnaire is found in Appendix.

Discussion

It is manifested by combinations of incontinence, urgency, frequency, urinary tract infections with or without fecal incontinence or constipation and upper tract damage.[3,8] Dysfunctional voiding can occur from 1 year old up to beyond puberty.[3] The DVSS was recommended by the original author to capture a numerical score to grade dysfunctional voiding symptom to reflect disease severity, monitor and precisely quantify the efficacy of different

Table 1. Cronbach coefficient alpha.

Test scale = mean(unstandardized items)

Item	Obs	Sign	item-test correlation	item-rest correlation	average interitem covariance	alpha
Q1 |	103	+	0.6556	0.5601	.1937306	0.7064
Q2 |	103	+	0.5542	0.4314	.2025959	0.7209
Q3 |	103	+	0.5794	0.4029	.1899629	0.7256
Q4 |	103	+	0.6061	0.4485	.1873982	0.7168
Q5 |	103	+	0.3815	0.1832	.2219869	0.7606
Q6 |	103	+	0.6912	0.5630	.176029	0.6974
Q7 |	103	+	0.5138	0.3632	.2042034	0.7296
Q8 |	103	+	0.5212	0.4106	.2096791	0.7251
Q9 |	103	+	0.5851	0.5051	.2098219	0.7199
Q10 |	103	+	0.5532	0.3749	.1946084	0.7302
Test scale |					.1990016	0.7442

treatment modalitieis such as bladder retraining, biofeedback therapy or pharmacological therapy.[3] Current methods of diagnosis include voiding diaries, uroflowmetry, urodynamic studies, radiologic imaging.[8]

No parent or child in both groups suggested any significant modifications to wording or inclusion of questions in the final DVSS questionnaire either during or following their completion of it. There was statistically significant difference between the scores of the patients thought to have dysfunctional voiding and those considered to void normally ($p<0.0001$).

Internal consistency was found to be satisfactory, as confirmed by the Cronbach's alpha coefficient of 0.74. George & Mallery (2003) provide the following rules of thumb: "_>0.9 - excellent, _>0.8 - good, _>0.7 - acceptable, _>0.6 - questionable, _>0.5 - poor, and _<0.5 - unacceptable". Deleting of question 5 ("I only go to the bathroom once or twice a day.") will increase the Cronbach alpha to 0.761. However seeing the importance of the question and that deleting it will only increase the cronbach alpha by a little, we've decided to retain the question.

The Filipino DVSS had similar internal consistency as to other translated versions, Calado et al translated to Portuguese and they had cronbach coefficient alpha of 0.76 for the pre-test & 0.77 for the retest.[2] When the same questionnaire was translated to 235 Chinese healthy children and 60 children with dysfunctional voiding, the translated Chinese DVSS had an alpha coefficient of 0.448 and test-retest reliability of 0.89.[12] It was also translated to Korean language, were they tested to 48 patients and obtained Cronbach alpha coefficient of > 0.8 in all of the 10 questions. They also noted that question number 5 only asked the total number of voiding per day, without specification of daytime or nighttime, and that there were no weight in multiple stressors in question 10 might have benefited from additional questions.[13] However since this study is only about translation and validation of a previous questionnaire and not development of a new one, such items could not be added or revised.

Recommendations

The study involved only subjects in a single institution, this may be a good representative of patients in Manila. Larger scale of patients of multiple institutions in other regions of the country is needed for the questionnaire to be applicable to Filipino patients in general. Test can also be done in other provinces in Visayas and Mindanao (different languages in Philippines).

Conclusion

The cross-cultural adaptation process of the DVSS questionnaire to be used on Filipino children was successfully completed. The Filipino version of DVSS is acceptable as an accurate diagnostic tool with cross-cultural variety.

Appendix C
Final Filipino Version of Dysfunctional Voiding Symptom Score
FARHAT'S VOIDING DYSFUNCTION SCORING SYSTEM

Patient Name: _____
Age/Gender: _____
Hospital Number: _____
Reason for Referral: _____
Date: _____

Over the Last Month	Almost Never (Hindi nangyayari) 0%	Less than half a time (Mas kaunti sa kalahati) pagkakataon) <50%	About half a time (kalahati ng 50%	Almost every time (Halos lagi) >50%
1. I have had wet clothes or wet underwear during the day *Nababasa ang aking damit or salawal sa umaga*	0	1	2	3

Over the Last Month	Almost Never (Hindi nangyayari) 0%	Less than half a time (Mas kaunti sa kalahati) pagkakataon) <50%	About half a time (kalahati ng 50%	Almost every time (Halos lagi) >50%
2. When I wet myself, my underwear is soaked. *Basang-basa ang aking salawal kapag naiihi ako*	0	1	2	3
3. I miss having a bowel movement everyday. *Hindi ako araw-araw dumudumi*	0	1	2	3
4. I have to push for my bowel movements to come out *Puwedeng: Umiire ako para mailabas ang aking dumi*	0	1	2	3
5. I only go to the bathroom one or two times each day *Ako I pumupunta sa Comfort room (CR) isa hanggang dalawang beses kada araw lamang.*	0	1	2	3
6. I can hold onto my pee by crossing my legs squatting or doing the "pee dance" *Napipigilan ko ang aking ihi sa pamamagitan ng "pag-cross" ng aking mga binti , pagiskwat o pagsayaw ng "pee dance"*	0	1	2	3
7. When I have to pee, I cannot wait *Hindi na ako makapagpigil kapag naiihi*	0	1	2	3
8. I have to push to pee *Kailangan kong umire para makaihi*	0	1	2	3
9. When I pee it hurts *Masakit tuwing umiihi ako*	0	1	2	3
10. Parents to answer. Has your child experienced something stressful like the example below? Para sa magulang. Nakaranas na ba ang iyong anak ng mga istress gaya ng mga sumusunod na halimbawa? • New baby. Bagong baby • New home Bagong Bahay • New school Bagong Paaralan • School problems Prolema sa Pag-aaral • Abuse (sexual/physical) Pang-aabuse (Sexual, pisikal) • Home problems (divorce/death) Problema sa bahay (diborsyo/kamatayan) • Special events (birthday) Espesyal na kaganapan (kaarawan) • Accident/injury Aksidente/pinsala • Others Mga iba	0	1	2	3

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