

Validity of the Arabic version of the sexual health inventory for men among Egyptians

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The objective of this study is to assess the validity of Arabic version of the abridged International Index of Erectile Function among a sample from the Egyptian populace. Two groups were included in this study. Group A included 68 patients complaining of erectile dysfunction (ED) >1 y, who failed oral treatment and accepted intracavernous self-injection. All patients of group A were previously clinically diagnosed as having ED. Group B included 68 men not complaining of ED and not suffering from any major chronic or acute illness. The mean (s.d.) age of all 136 patients was 52 ± 5.7 y. Candidates of both groups were requested to complete the Sexual Health Inventory for Men (SHIM) questionnaire. Cronbach's alpha coefficient was used to assess the internal consistency of the SHIM. The items of maintenance ability, erection confidence, maintenance frequency, erection firmness and intercourse satisfaction showed an overall ICC of 0.92. Internal consistency for the whole scale was 0.91. In conclusion, the Arabic version of the SHIM administered to 136 Egyptian men proved to be reliable and valid. It also showed a high degree of specificity and sensitivity among the Egyptian population.

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Introduction

The 15-item International Index of Erectile Function (IIEF) questionnaire, developed and validated by an international body of experts, has been widely used in studies of erectile dysfunction (ED).^{1,2} The IIEF is valid, reliable, efficient, and simple to use in clinical trials of ED therapy.^{1,2} The need to develop a simple and suitable diagnostic tool for everyday office use led to the development of an abbreviated five-item form of the original index: the IIEF-5 also known as the Sexual Health Inventory for Men (SHIM).³ The SHIM showed desirable psychometry between those with and without ED living in the United States and United Kingdom. The validity of the United States version of the SHIM in a clinical trial setting was later confirmed in an independent

study.⁴ The objective of this study is to assess the validity of the Arabic version of the SHIM using a sample of Egyptians.

Patients and methods

The SHIM is a five-item scale in which each item is scored from 0 to 5 on four items and 1 to 5 on one item. It includes four of the six items from the original erectile function domain of the IIEF and includes items on maintenance ability, erection confidence, maintenance frequency, and erection firmness in addition to a single item on intercourse satisfaction.³ Among men in a relationship with a partner, including those men who have an opportunity but no desire to attempt sexual activity or intercourse, disease grades of ED on SHIM scores were categorized as follows: severe ED (SHIM score: 1–7), moderate ED (8–11), mild-to-moderate ED (12–16), mild (17–21), and no ED (22–25). A cutoff value of 21 was chosen so that patients with scores of 21 or less were classified as having had ED while patients with scores above 21 were not.³ The Arabic version of the SHIM was translated using the

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back-translated technique.⁵ During the translation process, simple formal Arabic was adapted to make the questionnaire clear and understandable.

Study groups

Two groups were included in this study. All patients in both groups had regular sexual activity for at least 6 months prior to the study. Group A included 68 patients complaining of ED >1 y, who failed oral treatment and accepted intracavernous (IC) self-injection after an initial satisfactory response to IC injection of 1–2 ml trimix solution. Each 1 ml trimix contained 13 mg papaverine, 10 µg PGE1, and 0.4 ml phentolamine. Patients were advised to use the IC injection 1–2 times per week 15 min before sexual intercourse. All patients of group A were previously clinically diagnosed as having ED.

Group B included 68 men not complaining of ED and not suffering from any major chronic or acute illness. They were all directed on continuing their regular sexual intercourse activity rate (average 2/week) during the study. The mean (s.d.) age of all 136 patients was 52 ± 5.7 y. No statistical differences regarding age, rate of hypertension or diabetes could be detected between both groups. Table 1 demonstrates the demographic and clinical characteristics of all patients.

Questionnaire administration

Candidates of both groups were requested to complete the SHIM. Subjects in Group A completed the SHIM before and 6 weeks after the initiation of continuous self-injection for their ED. Subjects in Group B completed the SHIM on two occasions, at baseline and at 6 weeks later. Assisted guidance was available, if needed, during questionnaire administration.

Data analysis

Cronbach's alpha coefficient was used to assess the internal consistency of the SHIM.⁶ The intra-class correlation coefficient (ICC), as computed by Deyo *et al*,⁷ was used to assess the reliability of the

questionnaire. They (Deyo *et al*)⁷ reported that ICC values range from 1 (totally reliable) to 0 (totally unreliable). As part of our assessment on sensitivity and specificity of the SHIM, we also compared the mean pretreatment and post-treatment scores of Group A vs Group B. Additional corrected part-whole correlations, where the item of interest is correlated with the sum score excluding this item, were computed.

Results

Table 2 contains the validity and reliability of the questionnaire in Group B, a stable cohort of patients without ED. Internal consistency was high in all items of SHIM. Reliability of the test was assessed by another administration after a 6-week interval. The items of maintenance ability, erection confidence, maintenance frequency, erection firmness, and intercourse satisfaction showed an overall ICC of 0.92. Internal consistency for the whole scale was 0.91.

Table 3 shows the mean differences of all the five items on SHIM within each of the two groups.

Table 2 Reliability of the SHIM (Group B):^{a,b}

	Corrected part-whole correlations	Mean test score	Mean retest score	Mean difference
Maintenance ability	0.74	5	4.88	0.12
Erection confidence	0.71	5	4.93	0.07
Maintenance frequency	0.82	4.99	4.91	0.08
Erection firmness	0.80	5	4.91	0.09
Intercourse satisfaction	0.89	5	4.94	0.06

^aInternal consistency (0.91).

^bICC (0.92).

Table 3 Sensitivity and specificity of all five items of SHIM

Sensitivity (Group A)	Mean difference*
Maintenance ability	2.93
Erection confidence	2.6
Maintenance frequency	3.18
Erection firmness	3.18
Intercourse satisfaction	3.5
Total score	15.67
Specificity (Group B)	Mean difference**
Maintenance ability	0.12
Erection confidence	0.07
Maintenance frequency	0.08
Erection firmness	0.09
Intercourse satisfaction	0.06
Total score	0.41

**P* < 0.05.

***P* > 0.05.

Table 1 Patient characteristics

Item	Group A	Group B
Age (y)	52.2 ^a	51.8
Hypertension	2 (2.94%)	0
Diabetes	3 (4.4%)	0

^aThe mean.

Table 4 Discriminant validity of the SHIM

Item	Mean test score (Group A)	Mean test score (Group B)	Mean difference	95% Confidence interval*	
				Lower	Upper
Maintenance ability	2.03	5	2.97	3.13	2.80
Erection confidence	1.81	5	3.19	3.32	3.05
Maintenance frequency	1.51	4.99	3.48	3.62	3.348
Erection firmness	1.57	5	3.43	3.54	3.30
Intercourse satisfaction	1.5	5	3.5	3.65	3.34
Total score	8.41	24.9	16.49	15.28	14.04

* $P < 0.05$.

Significant changes were observed in all items concerning group A. On the other hand, no significant changes were observed concerning group B.

Table 4 quantifies the discriminant validity of the SHIM, by evaluating mean differences between groups. All the five items showed highly significant differences ($P < 0.05$).

Discussion

Owing to a wide variety of Arabic language dialects, an acceptable sexual dysfunction questionnaire needs to be valid, reliable, and simple to use. In the present era of effective oral drug therapy for ED, ICI therapy remains an effective second-line treatment option. The ICI home therapy program was used to assess the sensitivity and specificity of the test as it gives immediate improvement of erectile function. Concerning group A patients, the long duration of their complaint together with their oral ED treatment failure add considerable evidence to their clinical diagnosis. All subjects were involved in a relationship, prior to and after test administration, so that they had a regular opportunity to have sexual activity. This adds to the validity of the scores. The 6-week interval was imposed to allow for maximum effect of ICI therapy. Patients using ICI home therapy showed significant ($P < 0.05$) improvement in their test results after 6 weeks of continuous administration. This improvement was evident in all the five items covering maintenance ability, erection confidence, maintenance frequency, erection firmness, and intercourse satisfaction. The high specificity and sensitivity of the administered test convey that changes in SHIM scores may reflect meaningful detection of ED. They also demonstrate that scores obtained using the SHIM are reliable. There was no statistical significance observed in scores of group B patients (control group) after test–retest administration. These results add to the reliability and validity of our test.

Cronbach's alpha coefficient was used to assess the internal consistency of the test. The internal consistency shows the resulting values of Cronbach's alpha for the scale when individual items are excluded from the analysis. The intraclass correlation coefficient (test–retest reproducibility) for the five items of the Arabic translation of the SHIM was excellent (0.92). The high alpha coefficient also indicated a high internal consistency (0.91). Results obtained in our study were either similar or higher than those previously reported. Quek *et al*⁸ reported a relatively high internal consistency in their evaluation of the Malay version of the IIEF-15. Similarly, Wiltink *et al*⁹ reported a high overall internal consistency (0.95) of the German version of the IIEF-15. However, they suggested that the test may be limited by its focus on sexual activity in partnership. We think that limitations of our study may be pertained to the small sample sizes.

In conclusion, the Arabic version of the SHIM administered to 136 Egyptian men proved to be reliable and valid, including a high degree of specificity and sensitivity among a sample from the Egyptian population.

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