Validation of an Arabic translation of the Zung Self-Rating Depression Scale

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BACKGROUND: Depression is a common condition in primary care medicine in all population groups. We wanted to validate an Arabic translation Zung Self-Rating Depression Scale for Arabic speakers as it has been validated in a number of other languages.

METHODS: The hospital translation service translated the English version into Arabic, which was verified by back translation. This version was tested in a pilot study with 40 bilingual Arabic-English clinicians and Arabic linguistic experts. Revised questions were subjected to another translation-back translation and the final version tested in a clinical trial with 240 consenting bilingual English-Arabic speakers. The subjects were randomly assigned to answer either the English or Arabic version of the Zung questionnaire first, ensuring that subjects had no access to previous answers when answering the questionnaire in the other language. The scores obtained were tested for agreement using the kappa statistic.

RESULTS: We found substantial agreement between the scores obtained from the two questionnaires. The kappa measurement of agreement was 0.652 (95% confidence interval, 0.571–0.732)

CONCLUSION: We believe the Arabic translation of the English Zung Self-Rating Depression Scale is valid and reliable, and will be useful to practitioners who would like to use this tool in Arabic-speaking patients.

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The Zung self-rating depression scale has been widely used in many different populations around the world for the quantitative description of depression as an emotional disorder.^{1,2,3} First published in 1965, the scale has been shown to be effective in cross-cultural settings in studies conducted by W.W.K. Zung in Japan, Australia, Czechoslovakia, England, Germany and Switzerland.¹ Zung's original publication was followed by a series of reports that described its validity and reliability on the basis of investigations performed in Sweden, Germany, Spain, England, USA and Czechoslovakia.³ One of the authors (REK) has experience with the Zung scale as part of a research project that used this instrument to study depressive symptoms in Zulu and Xhosa speakers.⁴ We have had this translated into Arabic and have found it a useful tool in clinical practice over the last few years. We were interested in performing research on depression in our diverse practice population (the hospital attracts a large number of health care workers from all parts of the globe) and were also interested in a practical and useful instrument for our Arabic-speaking patients. This study was performed to formally test whether our translation was valid and accurate and produced scores similar to the English version.

Methods

The original English questionnaire was given to our professional translation service at the hospital. The translation staff are professional postgraduate-trained bilingual English-Arabic speakers with at least five years practical translation experience in a medical setting. The supervisor assigned a translator to the project and the English version was translated into Arabic. The translated document was then back translated into English and the supervisor verified accuracy. We obtained permission from Eli Lilly and Company to use and translate their questionnaire.

A pilot study was conducted with 40 subjects, who included a number of medical doctors and Arabic-speaking linguistic experts to gain their input as to the accuracy of translation. All agreed that the literal translation was accurate, but that the language used in some of the questions would not reflect accurate day-to-day Arabic colloquial usage. Objections were also raised to question number six, which some thought might offend cultural and religious sensitivities. Accordingly, adjustments were made and the accuracy of the new version was verified by the translation service once again (Addendum 1 and 2).

The translator-approved version was tested in consenting bilingual English-Arabic speakers who were randomly assigned to answer either the English or Arabic version of the Zung questionnaire first. Once they had completed the questionnaire, it was collected and the questionnaire in the other language (either English or Arabic) was given to the subject. This ensured that they had no access to previous answers when answering the questionnaire in the other language. Two hundred and forty subjects answered both questionnaires. The raw score was translated into a Self-Rating Depression Scale (SDS) Index. The 20 items on the questionnaire relate to a specific characteristic of depression. The 20 items together comprehensively delineate the depressive disorders as they are widely recognized. The raw score for each of the 20 items was converted to an SDS Index, using the scale described by Zung.¹ The scores are then grouped in 4 different categories (Table 1).

Agreement between the two questionnaires was assessed with the kappa coefficient, and a 95% confidence interval was constructed for kappa. The kappa coefficient was interpreted conventionally as: <0 poor agreement, 0–0.20 slight agreement, 0.21–0.40 fair agreement, 0.41–0.60 moderate agreement, 0.61–0.80 substantial agreement and 0.81–1 almost perfect agreement.¹¹ Data were analyzed using SPSS 10.0 for Windows.

Table 1. Categories of the Self-Rating Depression scale.

Group	SDS Index	Equivalent Clinical Global Impressions
I	Below 50	Within normal range, no psychopathology
II	50–59	Presence of minimal to mild depression
III	60–69	Presence of moderate to marked depression
IV	70 and over	Presence of severe to extreme depression

Results

We found substantial agreement between the scores obtained when comparing the two questionnaires. The kappa measurement of agreement was 0.652 (95% confidence interval 0.571–0.732) (Figure 1).

Discussion

The Self-Rating Depression Scale is intended to rate depression as a disorder. It is not intended to differentiate the different types of depression, but only serves to quantitatively rate the intensity of depression regardless of the diagnostic label.⁵ Zung avers that a Self-Rating Depression Scale Index of 50 as the morbidity cutoff score would include 88% of depressed patients and miss 12% of them.⁶ The ability to predict therapeutic intervention by using only a Self-Rating Depression Scale Index of 60 was 87%.⁵

The Zung Self-Rating Depression Scale has been translated into numerous languages,^{2,3,4,5} including exotic languages such as Hmong.⁸ However, it is often not clear how or whether translations were validated. This study has gone further than most other translations of Zung questionnaires where mention is made of translation by collaborators, but the method of validation not discussed.^{2,3,4,5} In a Greek study,⁷ the scale itself was validated, but the translation process was not discussed in any detail. Likewise, it is unclear as to how the translation was performed. There are also articles concerning the Zung scale in non-English journals^{9,10} but how the translation is validated in these cannot be ascertained.

In our study, experienced professional medical translators not only performed a rigorous translation-back translation, but we subjected this to review by medical staff and linguistic scholars to ensure accuracy. When changes were made we subjected this again to scrutiny by the professional translation service. The questionnaire was then subjected to a field trial in our outpatient department. Our study

Figure 1. Percentage and number of subjects in each SDS Index group.

tested the accuracy of the translation by asking patients to answer the questionnaire in both languages, with randomization as to which questionnaire was answered first. The patients were given the second questionnaire immediately after they had handed in the first one. Thus they could not refer to their first answer. Because of the randomization and the fact that there are 20 questions with four possibilities, we think that recall of the answer would not influence the results. The results are statistically significant for substantial agreement between the scores obtained in English and Arabic questionnaires. We therefore believe that our translation is a valid and accurate

translation of Zung's original questionnaire and will be useful to practitioners who would like to use this tool in Arabic-speaking patients.

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ZUNG SELF-RATING DEPRESSION SCALE

Age in years	Gender M F	Nationality	Date	
Put a check mark-either a ✓ or an X in the box according to how it relates to your feelings DURING THE PAST WEEK. You must answer every question, please. I.e. there must be a check mark on every line.				
1. I feel downhearted, blue and sad.	None or a little of the time	Some of the time	Good part of the time	Most or all of the time
2. Morning is when I feel best				
3. I have crying spells or feel like it				
4. I have trouble sleeping through the night				
5. I eat as much as I used to				
6. I enjoy looking at, talking to and being with attractive women/men	None or a little of the time	Some of the time	Good part of the time	Most or all of the time
7. I notice that I am losing weight				
8. I have trouble with constipation				
9. My heart beats faster than usual				
10. I get tired for no reason				
11. My mind is as clear as it used to be	None or a little of the time	Some of the time	Good part of the time	Most or all of the time
12. I find it easy to do the things I used to do				
13. I am restless and can't keep still				
14. I feel hopeful about the future				
15. I am more irritable than usual				
16. I find it easy to make decisions	None or a little of the time	Some of the time	Good part of the time	Most or all of the time
17. I find that I am useful and needed				
18. My life is pretty full				
19. I feel that others would be better off if I were dead				
20. I still enjoy the things I used to do				
	None or a little of the time	Some of the time	Good part of the time	Most or all of the time

THANK YOU FOR PARTICIPATING! Do not place any marks below. This is for our use. Please place this sheet in the box provided.

No Raw Score Index Group Date entered

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Addendum 1. The English Questionnaire.

العمر	الجنس	الجنسية	التاريخ
ضع علامة ✓ أو × في كل مربع حسب الشعور خلال الأسبوع الماضي			
الرجاء الإجابة على جميع الأسئلة من فضلكم			
1. أشعر بالأسى والغم والحزن	أحد أو في معظم الوقت	بعض الأحيان	أحد أو في معظم الوقت
2. أجد الصباح هو الوقت الذي أشعر فيه بأفضل حالتي			
3. أكون غريباً في نفسي أو أكون غريباً			
4. أجد صعوبة في النوم أو أكون غريباً			
5. أأكل نفس الشيء الذي أأكلت سابقاً			
6. أجد أنني أستمتع بالناس الذين هم أجانب	أحد أو في معظم الوقت	بعض الأحيان	أحد أو في معظم الوقت
7. أجد أنني أضعف وزني			
8. أجد أنني أعاني من الإمساك			
9. قلبي ينبض أسرع من المعتاد			
10. أجد أنني أعاني من التعب			
11. ذهني واضح مثلما كان	أحد أو في معظم الوقت	بعض الأحيان	أحد أو في معظم الوقت
12. أجد أنني أجد من السهل القيام بالأشياء التي كنت أفعلها			
13. أجد أنني أعاني من التوتر ولا أستطيع أن أكون هادئاً			
14. أجد أنني أعاني من الشعور باليأس			
15. أجد أنني أعاني من الشعور بالعدوانية			
16. أجد أنني أجد من السهل اتخاذ القرارات	أحد أو في معظم الوقت	بعض الأحيان	أحد أو في معظم الوقت
17. أجد أنني أجد أنني مفيد ومطلوب			
18. حياتي جميلة وممتلئة			
19. أجد أنني أجد أنني سأكون سعيداً في المستقبل			
20. أجد أنني أجد أنني أستمتع بالأمور التي كنت أفعلها			

الرجاء أن تملأ هذا الاستبيان للشخص المسؤول .

No Raw Score Index Group Date entered

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Addendum 2. The Arabic Questionnaire.