Validation of the Arabic Geriatric Depression Scale (GDS-5) among the Lebanese Geriatric Population

Summary

Objective
Translate the Geriatric Depression Scale (GDS-5 items) to Arabic for use in elderly patients in Lebanon, to check its validity and reproducibility compared to the original version of the questionnaire.

Methods
This case-control study was conducted between June and August 2016 and included 500 patients aged more than 60 years old.

Results
Strong positive correlations (p < 0.001 for all items of the scale) were found between each item of the scale and the total scale. The mean inter-item correlation for our scale was 0.49, higher than that of the original scale (0.36). The internal consistency reliability (Cronbach’s alpha) for the total GDS scale was $\alpha = 0.734$, compared to 0.83 and 0.901 for the Arabic GDS-15 and GDS-30 respectively.

Conclusions
These preliminary results suggest that the Arabic version of the GDS has promising psychometric properties and can be used to estimate the overall severity of depression in the elderly population of Lebanon. Because it is short and easy to administer, it is recommended to be used as a routine screening test to identify depression among older adults in all Arabic-speaking populations, including the Gulf and most North African countries, and in all Arab immigrants around the world.

Key words
GDS • Short • Geriatric • Arabic • Elderly

Introduction
Worldwide, depression is considered as a significant public health concern and one of the illnesses with the greatest burden for persons, relatives, and the general public. It is also considered the most prevalent mood disorder among elderlies. It is predicted to be the second leading cause of disability by the year 2020 according to the World Health Organization. On the basis of previous studies of geriatric depression in many countries, the prevalence of depressive disorders is 12.9-21.2% in the community setting and 26.0-37.7% in geriatric homes, whereas it is estimated to be about 22.4% among the elderly population of Iran. In Lebanon, the percentage of persons with major depression was 9.9%. Projecting lifetime risk to age 75 years gave a risk of major depression of 17.2%.

Another problem in the assessment of geriatric depression and other dis-
orders experienced by the aged is that the elderly are typically more resistant to psychiatric evaluation than younger patients. Consequently, one needs to design the items comprising a scale to fit this population. There are numerous depression rating scales currently available. These have been subject to several reviews and include: Hamilton Rating Scale for Depression (HRS-D), Zung Self-Rating Depression Scale (SDS), Beck Depression Inventory, Phenomena of Depression Scale, Grading Scale for Depressive Reactions, Psychiatric Judgment of Depression Scale, NIMH Collaborative Depression GDS, SAD-GLAD, Verdum Depression Rating Scale, CES-D, SCL-90 Profile of Mood States, and the MMPI Depression Scale. The Short Form is easier to use by physically ill and mildly to moderately demented patients who have short attention spans and/or feel easily fatigued.

In Lebanon, the Arabic version of the GDS and were both validated among elderlies. This study aimed at examining the psychometric properties of the Arabic version of the GDS-S version of this scale among Lebanese population, assess its validity and reliability among institutionalized and non-institutionalized geriatrics.

Methods
Study design
This case-control study was conducted between June and August 2016. All patients were 60 years and above. Two-hundred and fifty cases were chosen from three nursing homes in three districts in Lebanon. After receiving approval from the nursing homes’ administration, the questionnaire was distributed to the patients, after obtaining a verbal informed consent. On the other hand, 250 controls were randomly chosen from the general population.

Geriatric Depression Scale
The GDS was translated from English to Arabic through an initial translation and back translation process. The English version was translated into Arabic by a mental health specialist, then this translation was translated again into English by another specialist. Upon completion of this process, the translators compared the English versions of GDS to determine whether the variables had the same meaning. One trained person was responsible for the data collection, via a personal interview with each patient. This person was independent of the study.

The GDS contains 5 dichotomic, self-report items used for scoring, that tap into common topical concerns of depression among older adults and help clinicians identify areas of concern for the patient. Participants were asked to rate symptoms of depression by indicating if they had experienced each symptom during the past week or not. Possible scores range from 0 to 5.

Sample size calculation
Using the Epi info program for the calculation of the minimal sample size needed for our study, with an acceptable margin of error of 5% and an expected frequency of depression of 9.9% for 4 million inhabitants in Lebanon, the results showed that we need 274 cases to be enrolled in the study.

Statistical analysis
Data analysis was performed using the SPSS software, version 22. To confirm the Geriatric Depression Scale questionnaire construct validity in the Lebanese population, a factor analysis was launched for the 5 items of the questionnaire, using the principal component analysis technique, with a varimax rotation since the extracted factors were found to be significantly correlated. The Kaiser-Meyer-Olkin measure of sampling adequacy and Bartlett’s test of sphericity were ensured to be adequate. The retained number of factors corresponded to Eigenvalues higher than one. Moreover, Cronbach’s alpha was recorded for reliability analysis for the total score and for subscale factors.

Results
GDS validity checking
Out of all the items asked in the questionnaire, all var-

<table>
<thead>
<tr>
<th>Question</th>
<th>Item</th>
<th>Answer</th>
<th>Loading factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you prefer to stay home, rather than going out and doing new things?</td>
<td>12</td>
<td>Yes/no</td>
<td>0.891</td>
</tr>
<tr>
<td>Do you feel pretty worthless the way you are now?</td>
<td>17</td>
<td>Yes/no</td>
<td>0.792</td>
</tr>
<tr>
<td>Do you often get bored?</td>
<td>4</td>
<td>Yes/no</td>
<td>0.720</td>
</tr>
<tr>
<td>Are you basically satisfied with your life?</td>
<td>1</td>
<td>Yes/no</td>
<td>-0.603</td>
</tr>
<tr>
<td>Do you often feel helpless?</td>
<td>10</td>
<td>Yes/no</td>
<td>0.544</td>
</tr>
</tbody>
</table>
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Friedman et al., 2005; Malakouti et al., 2006), compared high as 0.94 (Fountoulakis et al., 1999; Lam et al., 2004; α reliability with Cronbach’s GDS-15 have all reported a high internal consistency whereas validation studies of the short version of the cy reliability for the total GDS-5 scale was = 0.734, α coefficient and factor analysis. The internal consisten-
tions (p < 0.001 for all items of the scale) were found
strong positive correla-
tions (< 0.3). These preliminary results suggest that the Arabic version of the GDS-5 has promising psychometric prop-
erties. Based on this study, health care professionals and researchers can readily use the GDS-5 score to estimate the overall severity of depression in geriatric patients in Lebanon. Because it is short and easy to administer, it is recommended to be used as a routine screening test to identify depression among older adults in all Arabic-speaking populations, including the Gulf and most North African countries, and in all Arab immigrants around the world.

Limitations
Although the preliminary results of this study are promising, further research should explore the psychometrics of the Arabic GDS in future larger studies, including older adults with psychiatric conditions. Future studies should also investigate the extent to which self-report administration is comparable to oral administration of the GDS. However, since this scale was studied on nursing home geriatrics and elderly living in their own houses, our results can be extended to the general pop-
ulation.

Conclusions
These preliminary results suggest that the Arabic version of the GDS-5 has promising psychometric properties. Based on this study, health care professionals and researchers can readily use the GDS-5 score to estimate the overall severity of depression in geriatric patients in Lebanon. Because it is short and easy to administer, it is recommended to be used as a routine screening test to identify depression among older adults in all Arabic-speaking populations, including the Gulf and most North African countries, and in all Arab immigrants around the world.

Conflict of interest
None to declare.

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