Translation and Adaptation of the Geriatric Depression Scale among Bangladeshi Population

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Introduction:

Significant change in demography with increased proportion of elderly people has brought in the problem of physical, psychological and social issues of the older people.[1] Depression is widespread among elderly persons, affecting one in six patients treated in general medical practice and an even higher percentage of those in hospitals and nursing homes.[2] In an epidemiological survey on mental illness in Bangladesh, the prevalence of psychiatric disorder is 16.1% and depression is 6.4%.[3] According to the Bangladesh census , the number of the elderly was about 6.1 million in 2000 but it is predicted to be doubled by the year 2025.The average life expectancy in Bangladesh was 56.1 in 1991 where as it will reach 70 in2025.[4] Prevalence rates of depression in large samples of community-resident elderly of 13-18% had been found.[5] This population comprises only 11.9% of the population but accounts for nearly one fourth of all suicides.[6] Depression is the most prevalent psychiatric disorder found in different study in our country as well as abroad. It has been frequently reported that general practitioners are unaware of many of the psychiatric problems elderly people living in the community.[7]

The Geriatric Depression Scale (GDS) is a 30-item self-report assessment designed specifically to identify depression in the elderly. The items may be answered yes or no, which is thought to be simpler than scales that use a five-category response set. It is generally recommended as a routine part of a comprehensive geriatric assessment. One point is assigned to each answer and corresponds to a scoring grid. Recognition of the prevalence of depression among older people prompted the development of the geriatric depression scale in 1982-83. Yes/no responses are thought to be more easily used than the graduated responses found on other standard assessment scales such as the Beck Depression Inventory, the Hamilton rating scale for depression, or the Zung self-rating depression scale. Depression scales are either interviewer-administered

or by self-report means. The GDS is a self-report assessment developed in 1982 by Yesavitch J.A. and colleagues. A self-report assessment is easier and quicker to administer, though an interviewer-administered test is generally more sensitive and specific-another reason for using more than one tool to obtain an accurate diagnosis. There is some controversy over whether the GDS is reliable for depression screening in individuals with mild or moderate dementia. Several studies have shown good agreement with observer ratings of depression, whether or not the patient had dementia.[8] GDS was collected from free encyclopaedia http://en.wikipedia.org/wiki/Geriatric_Depression_Scale (Appendix-I).

Depression in the older adults and the elderly not only limit their normal enjoyment of life but also takes a heavy toll on health. This scale has translated in 27 language versions [9]. Although, Geriatric Depression Scale (GDS) in English is available for screening depression among elderly worldwide, there is a lack of local version of GDS to spot on the symptoms of depression and subsequently helping this neglected older group in Bangladesh.

A recent review on translated questionnaires required for quantitative survey did not find any strict guidelines followed in translation process.[10] Guidelines have been discussed by Flaherty and colleagues to check for five equivalences (content, semantic, technical, criterion and conceptual equivalence) while translating questionnaires from one language to another.[11]

The content, semantic, technical equivalences are mostly related with translation process and thus discussed here [12] . Content equivalence ensures that all questions asked have salience in the local context and culture. Semantic equivalence is stressed both in terms of the denotative (i.e. literal) meaning and connotative (i.e. emotional) meaning of the word while translating a question from one language to another.[13]

Technical equivalence ensures that the method of instrument of application is appropriate in the second culture. In these cultures, interview methods of data

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collection could be more suitable and practical. The current paper based on translation and adaptation process of the English language Geriatric Depression Scale (GDS) into Bangla. This study was aimed to describe the process of translating English language GDS into Bangla, the national language of the Bangladeshi people, and do a piloting to assess its suitability. Therefore such Bangla version would be available in different hospital, nursing home, clinics at government and non-government level. Early diagnosis and treatment of mental illness particularly depression with physical illness in old age group will reduce sufferings of the patients and their caregivers as well as decrease load of health service centres.

Appendix-I

The Geriatric Depression Scale (GDS) is a 30-item self-report assessment used to identify depression in the elderly.

Scale questions

1. Are you basically satisfied with your life?
2. Have you dropped many of your activities and interests?
3. Do you feel that your life is empty?
4. Do you often get bored?
5. Are you hopeful about the future?
6. Are you bothered by thoughts you can't get out of your head?
7. Are you in good spirits most of the time?
8. Are you afraid that something bad is going to happen to you?
9. Do you feel happy most of the time?
10. Do you often feel helpless?
11. Do you often get restless and fidgety?
12. Do you prefer to stay at home, rather than going out and doing new things?
13. Do you frequently worry about the future?
14. Do you feel you have more problems with memory than most?
15. Do you think it is wonderful to be alive now?
16. Do you feel pretty worthless the way you are now?
17. Do you often feel downhearted and blue?
18. Do you worry a lot about the past?
19. Do you find life very exciting?
20. Is it hard for you to get started on new projects?
21. Do you feel full of energy?
22. Do you feel that your situation is hopeless?
23. Do you think that most people are better off than you are?
24. Do you frequently get upset over little things?
25. Do you frequently feel like crying?
26. Do you have trouble concentrating?
27. Do you enjoy getting up in the morning?
28. Do you prefer to avoid social gatherings?
29. Is it easy for you to make decisions?
30. Is your mind as clear as it used to be?

Methods:

This was a cross-sectional study conducted at Department of Psychiatry, Bangabandhu Sheikh Mujib Medical University (BSMMU) over April-July '09. Sixty subjects who were generally looking healthy and aged 57 years and above were identified and enrolled in the study to assess the suitability of the Bangla translation compared to English GDS. Three translation methods were employed: forward translation, committee translation and back translation.[14-16] **Forward translation:** The principal investigator (SA) whose mother language was Bangla has translated the GDS from English to Bangla. This preliminary Bangla version of the GDS was then made available to a local expert committee for discussion. **Committee translation**: A bilingual local expert committee was formed at the beginning of the research. The committee comprised of a psychiatrist, three psychologist, a general practitioner, and two non mental health professionals. The committee sat over several meetings and worked extensively on the preliminary Bangla GDS to develop an intermediate workable Bangla version of the GDS and named as Bangla Geriatric Depression Scale (GDS-B).Repeated searches were made from an English to Bangla dictionary for the appropriate wording whilst equal attention was given to retaining the connotative meaning of the word to ensure that the GDS was easily understandable by all classes of people in Bangladesh. **Back translation**; This intermediate Bangla version was translated from the target language to its source language by an experienced translator who was unaware of the research and had no knowledge about the GDS. The back translated version was then reviewed by one native English speaking to check for congruence with the original English version.

Pilot testing: Pilot testing was carried out on three stages as follows: (a) self administration of both GDS and GDS-B, (b) interview and self administration of the GDS-B, (c) interviews only with the GDS-B. These three stages of piloting of GDS-B were under taken sequentially to make the scale comprehensible, culturally acceptable and usable for geriatric group of people in Bangladesh.

In the first phase, both English and Bangla GDS were introduced among 20 literate persons who had good understanding of both the languages. In second phase, Bangla version of GDS was administered among 20 people who had good knowledge of Bangla where both self reported and interview techniques of administration of questionnaire were applied. Finally, 20 illiterate (only can speak in Bangla) subjects were interviewed using the Bangla version of GDS to check the suitability of this

screening tool in the local context. A convenience sampling strategy was adopted for each of stages as described in more detail below.

Self administration of both GDS and GDS-B: Envelopes containing the GDS and GDS-B questionnaires were serially numbered from 1-20. Ten male and ten female of 57 and above living in our surroundings were selected conveniently. The participants were all graduates, fluent in both in English and Bangla and were unaware of this study. The GDS was administered in the morning and GDS-B was applied in the evening on the same day. It was ensured that the volunteers didn't discuss items with each other while they were completing the questionnaires.

Interview and self administration of the GDS-B: Old age people of 57 years old and above, after giving informed consent twenty male and twenty female were recruited. The GDS-B was administered to participating geriatric people by an interviewer followed by self administration of the GDS-B on the same day. Before self-administration of the GDS-B it was ensured that the participant could read and understood the instructions at the beginning of the Bangla questionnaires.

Interviews only with the GDS-B: Another group of geriatric people of same age range were administered the GDS-B by using interview technique only. Two team members completed a total 61 interviews. During the interview, one team member conducted the interview while the other observed the session and took notes. Notes were taken on how easily the interviewer was interacting with the respondents, whether and how many times any questions had to be repeated, what was the reactions of the respondents after listening to the questions. whether the respondents needed any clarifications on any questions

whether the interviewer used a different word from that on the printed version.

In addition to administration of GDS-B items the following questions were asked from all respondents:

Did he/ she understand all the words?

Did she know what was being asked?

Did he / she have any question s about it?

How could be the questions be made clearer?

Did any of the questions make him / her uncomfortable?

These questions were asked to explore whether the participants comprehended the items and content of the items of GDS-B clearly and does the concepts of items of GDS-B and method of administration of scale are culturally acceptable

Results:

Both sexes (male 50% and female 50%) participated in the study. About 40% were in 57-60 years age group and 48% were in 61-68 years age group. Of the participants 13.3% were from primary school level. Regarding financial support 32% were dependent on their children and 5 % had suicidal intent. The Pearson's co relation coefficient was to determine the relationship between the GDS and GDS-B total scores. A highly significant correlation was found between GDS and GDS-B total scores.(Correlation coefficient was .597 and significance at .01 level) Figure1 shows the scatter plot of total GDS and GDS-B scores that were positively correlated. Bland and Altman argued that the co relation coefficient only provides an impression about the strengths of association between two variables but it was unable to predict about the agreement between two variables. Therefore the Bland and Altman test was carried out to measure the agreement between the English and Bangla versions of GDS (Fig.-2).The Bland and Altman approach is based on a simple calculation technique together with graphical representation of data. It helps in determination of the level of agreement between two sets of scores when comparing a new measurement technique, in this case Bangla GDS with an established one i.e. the English GDS. The mean difference between English and Bangla GDS score was 0.40 (SD=6.30). The formula given for the limits of agreement was: mean difference $\pm 2SD$. The Bangla version of the GDS could thus be 15points above and -12 points below the English version. As can be seen in fig.-2, the scores of all respondents, except for one fall within the limits of agreement, supporting a high level of agreement between two scores.

The geriatric group participating in this part of the pilot study had a minimum 5 years of school education. A significantly high correlation was observed between the total scores obtained by self-administration and those obtained through interview using the GDS-B scale.

The Pearson's co relation coefficient was .741 at a 0.01 level of significance. Fig.-3 shows a scatter plot of the total GDS-B scores using the two different techniques of data collection. Finally, the Bland and Altman calculation was also carried out to measure the level of agreement between the two methods (self-administration and interview). the mean difference between self-administration and interview GDS-B scores was - 0.05 (SD=3.5) Applying the Bland and Altman formula, the limits of interview scores in the GDS-B scale may be 8 points above and – 6

points below the self-administered GDS-B scores (figure-4). The scores of all respondents, except for one, fell within the limits of agreement. These findings again support a greater level of agreement between self-administration and interview scores.

All respondents responded positively except one who thought "Am I mad". During interview they like to talk but 3 became a little bit irritable when they were asked for fill up the questionnaire for 2nd half but didn't refuse. To ensure semantic equivalence (both denotative and connotative meaning) item no. 3, 11, 17, 19 needed more review. About the word "future" 2 respondents told god knows.

Table-I

Self reported GDS and GDS-B scale agreement

		Total self GDS scores	Total self GDS-B scores
Total self GDS scores.	Pearson Correlation	1	597**
	Sig. (2-tailed)		.005
	N	20	20
Total self GDS-B scores	Pearson Correlation	.597**	1
	Sig. (2-tailed)	.005	
	N	20	20

**. Correlation is significant at the 0.01 level (2-tailed).

Table-II

Self completed and Interview methods of GDS-B scale agreement

Correlations

		Total GDS scores	Total GDS-B scores
Total GDS scores	Pearson Correlation	1	.741**
	Sig. (2-tailed)		.000
	N	20	20
Total GDS-B scores	Pearson Correlation	.741**	1
	Sig. (2-tailed)	.000	
	N	20	20

**. Correlation is significant at the 0.01 level (2-tailed).

Fig.-3: *Scatter plot of GDS-B self and interview scores*
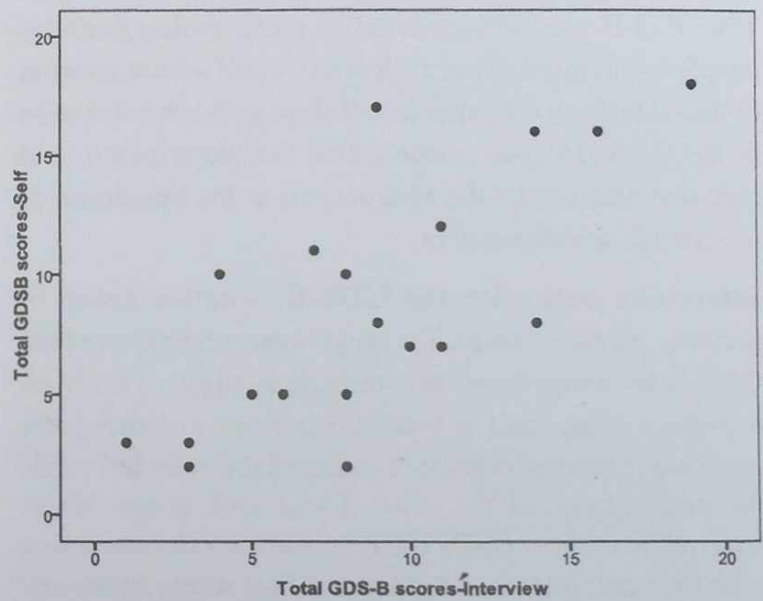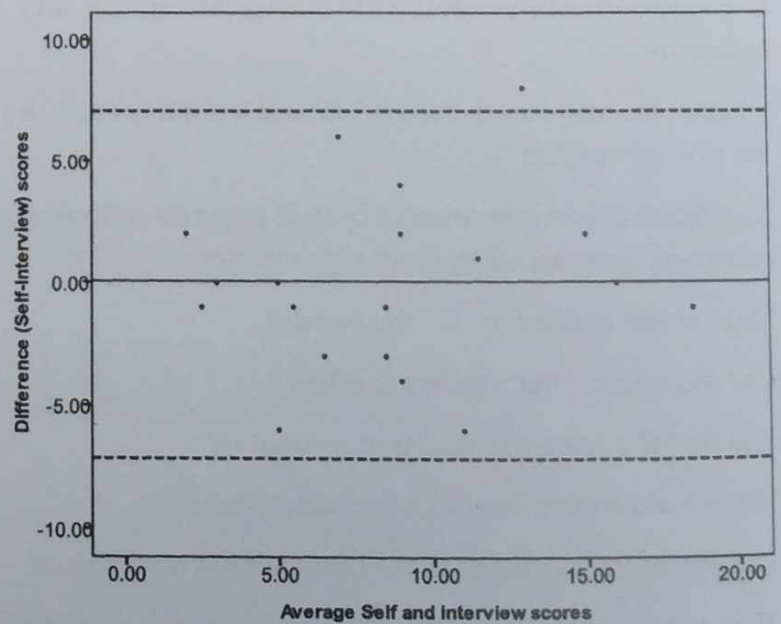

Fig.-1: *Scatter plot of GDS and GDS-B scores*

Fig.-4: *Bland-Altman calculation of GDS-B scores in a sample of Bangladeshi geriatric people*

Discussion:

The development of Bangla version of Geriatric Depression scale would be very useful in our country. People in Bangladesh are usually concerned about only physical health of this specific age group but do not think about their mental health. There were many studies conducted in our country on old age group but ignoring their mental health. We thoroughly discussed about the translation procedure of Geriatric Depression scale here. The formation of multidisciplinary research consultative group encouraged them to do further research work in this field. Translation, back translation, piloting had proved the importance of developing the Bangla version of GDS for screening GDS in geriatric population in Bangladesh. The pilot study showed that it worked well, although minor changes had to make in finalizing the Bangla version to increase the technical equivalence.

Forward translation is inexpensive and less time consuming method of translation compared to other method of translation, for example, committee. In our study, the preliminary translation developed from forward translation helped in stimulating discussion among members of the local expert group in committee translation stage. Not only these processes save time, it also provided an opportunity to assess and critique the preliminary translation of the GDS. The local multidisciplinary expert committee had long standing practical experience in translating questionnaires for use in the field situation and had a good reputation within the community. Both these factors impacted positively in maintaining the quality of the Bangla translation of the GDS scale. Indeed, the quality of translation depends heavily on qualification, knowledge and cultural experience of the translators as well as their awareness about the research goal concepts of interest and purpose of the time.

In committee translation, more emphasis was given on thematic translation rather than word to word translation can often be in adequate in addressing linguistic and cultural differences. It was noted by the committee that item 11 and 19 in the English GDS were relatively difficult to express in Bangla language. Through using sequential stages of piloting, namely the self- administration of the two language versions, both self- administration and interview administration of the Bangla version and interview administration of the Bangla version alone, it was possible to refine and improve the translation procedure.

The concurrence of each respondent between the two versions of GDS showed a significant correlations (p<0.01) in the first phase. Results of the second phase of GDS confirmed the technical equivalence of this scale. The Bland-Altman test also showed a high degree of agreement between the self reported and interview methods of application of Bangla GDS scale. Thus, Bangla version of self-reported GDS scale can be applied by using interview technique in Bangladesh culture(Appendix-II).

Conclusion:

The result of this study indicates that the GDS-B scale is very much useful and suitable screening measure of depression among old age group. However broad based research needs to be carried out to test the validity of this translated GDS for sound application of this measure among the senior population in Bangladesh.

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