

Validation Study of Telugu Version of Geriatric Depression Scale (Gds-30)

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Abstract:

Background: For assessing depression in the elderly in the community population regional language instruments are immensely valuable. This study describes the translation of Geriatric depression scale (GDS-30) into telugu language and its validation in an urban community.

Aim : To translate, validate and examine the effectiveness of telugu version of geriatric depression scale (GDS-30).

materials and methods : The telugu version of GDS was administered to people in an urban community who are aged 60 years and above. Prior to the application of the instrument, people participating in the study were screened by a consultant psychiatrist using ICD-10 diagnosis. ROC (receiver operating characteristics) analysis was carried out to compare the diagnostic fulfillment of the scale. Sensitivity and Specificity of the instrument and the optimal cut off scores for depression were determined.

Results : A total of 50 subjects formed the original sample (male : female = 21 : 29). Total 29 subjects suffered from depression with 12 having mild depressive symptoms and the rest 17 suffered from severe depression. The optimal cut-off score for depression was 11, differentiating subjects who do not have depression from that who are mildly depressed. Sensitivity and specificity of GDS-30 was 96.6% and 95.2% respectively. The area under ROC curve was 0.957.

Conclusion : The telugu version of GDS (GDS-30) can be a useful, culturally agreeable, simple to use, sensitive and valid instrument for assessment of depression in elderly population.

Keywords: Depression, Elderly, Geriatric Depression Scale, GDS-30, Sensitivity, Specificity.

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I. Introduction

Over the last decade the geriatric population living in developing countries has increased by 80% compared with mere 40% in the developed nations. In 2011 there were 98 million senior citizens in India and the number is expected to swell to 143 million by 2021, with 51% being women¹. Depression is one of the most common psychiatric conditions seen in geriatric population. Depression is associated with high risk of morbidity and mortality, increased utilization of healthcare services, self-neglect, reduced treatment compliance and higher risk of suicide which are often unrecognized². In the elderly depressive symptoms are typically attributed to the intrinsic process of ageing and are easily missed by the clinicians³. Timely identification of depression in the elderly age group can help in treating them beforehand and the sufferer's outcome can be improved significantly⁴.

Most of the elderly don't look for help for their depression, screening instruments can be of much help in this sub sect of population. Several scales for evaluating depressive symptoms have been developed and many of them have been applied for screening such symptoms in the general population.

The Geriatric Depression Scale (GDS-30) is one of the most common instruments to screen depression in elderly. Several studies have showed that the GDS provides valid and reliable measures^{5, 6, 7}. First developed in English by Yesavage et al (1983), the original GDS comprise 30 items and has been especially created for screening depression in elderly using a questionnaire that leaves out somatic complaints. Its advantage includes easily understandable questions with little room for different answers. It can be self administered or administered by a trained interviewer⁸. The scale can be utilized in the clinical as well as research setting. Usage both globally and in different cultures, GDS requires translation and validation in different languages. The GDS has been translated into many languages including Arabic, Chinese, Brazilian, Sinhalese etc^{9, 10}. Telugu is an Indian language spoken in Andhra Pradesh, Pondicherry Union territory and Andaman and Nicobar Islands¹¹.

Approximately 70 million people of the world speak Telugu language and considering this number as significant a Telugu version of the scale is required. Instrument in this language can deal with many culturally subtle issues and would be of immense help to those people who speak only Telugu as their first language.

Hence the purpose of the present study is to discuss the translation and validation of Telugu version of GDS- 30.

II. Materials and methods

The 30 item GDS scale was translated to Telugu by two bilingual experts whose first language is Telugu and who are psychiatrists independently. Both of them prepared single Telugu translated version by mutual consent on the use of pertinent words. Then this telugu version of the scale was pilot tested by 3 psychiatrists in a small sample of elderly subjects (n=10) recruited from the hospital setting to assess for any difficulties in understanding the questions. by taking into account the suggestions received from the pilot study relevant changes in the vernacular items were made in the telugu version in the items 5,15 and 19.

Back translation of the scale was then done by a professional translator to assess whether the Telugu version of scale is similar to the English version which was checked by the bilingual psychiatrist. The back translation of the scale was comparable with the original version and translation was assumed adequate. The final translated version of the scale is in appendix 1.

A cross sectional study was carried out in an urban community in the city of Visakhapatnam Andhra Pradesh. the study sample comprised a convenient sample drawn from the source population in the period between July 1st 2018 to December 31st 2018.

III. Data Analysis

All analysis were carried out using SPSS version 23.0 software. Statistical significance was set at $p < 0.05$. Receiver Operator Characteristic (ROC analysis) was carried out to assess the diagnostic performance of the GDS-30. the optimal cut-off scores for depression and the sensitivity and specificity were determined.

IV. Results

The study sample consisted of 50 elderly subjects. The age and sex distribution of the sample are shown in the table 1. there was a female preponderance (n=29, 58%) in the sample. The majority of the subjects (n=26, 52%) were between 60-64 years of age. The optimal cut off score of GDS-30 was 11 in differentiating non depressed from mildly depressed. The sensitivity and specificity of the GDS-30 was 96.6% and 95.2% respectively. Area under the curve was 0.957 (95% CI 0.000 to 1.000) Table 2

V. Discussion

In developing countries mere emphasis has to be placed in diagnosing depression in geriatric population. In this aspect validating instruments in regional settings is of supreme importance.

Geriatric Depression scale shows promise as a measure of depression among geriatric patients as suggested by Yesavage et al. (1983)⁸. our current study results indicate that the telugu version of GDS-30 is a valid measure for screening depression in the elderly in the local population. Validity of this instrument performed at a respectable level making use of standard psychometric criteria.

The sensitivity rate for the study population who are having depression and specificity rates are more or less equal in the current study as reported by Brink et al (1982)¹². In the current study the sensitivity and specificity are 96.6% and 95.2% respectively with a cut off score of 11, a sensitivity rate of 96.6% for those with depression, indicates that the GDS-30 was successful in diagnosing depression in the study population.

High sensitivity rates for detecting depressive features on self-report measures is an uncommon finding compared to other studies where the results showed medium sensitivity rates. Gallagher, Breckenridge, Steinmetz, & Thompson, (1983) The specificity rates for the current study were as high as reported by Brink et al (1982)¹⁴. the specificity has been found to be lower than sensitivity in our study, which has been found similar in several studies (Gallagher et al 1983; Oliver & Simmons 1984) .¹⁵

While the sensitivity for those with depressive features and specificity in the current study are high, there are many factors which might explain this high level. First it may be that the GDS-30 is overly sensitive to rating or monitoring depression and subjective wellness. The instrument may be sensitive to the items like sadness, low satisfactory levels, sensitive to the life events like loss of spouse, ill health, loss of home etc. Secondly the reason for high specificity may be that the study sample reported higher number of depressive features. Next the sample size (n=50) is small in this study which may have led to high rates of sensitivity and specificity. Finally, the reason for the high rates may be due to more number of illiterates in the study population (64%), interviewer and respondent bias, and the intrinsic property of the scale to perform diversely in various settings.

VI. Strengths and limitations

This is the first kind of study to validate the Telugu version of GDS-30 in a community sample. The translation and validation were done using standard procedures.

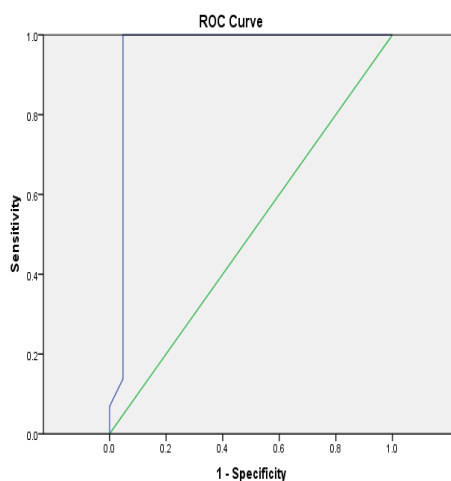
One of the limitations of the study is that the test and retest reliability not done. Also due to lack of bilingual elderly subjects in the study population concurrent validity of the English and the Telugu version of the scale could not be done. Next the sample size is small (n=50) and the results in the present study cannot be generalized to a larger population. A larger sample size would have given more accurate results. Lastly as the majority of the population was illiterate interviewer bias could not be eliminated.

In summary, study results suggest that the GDS-30 is a handy and useful instrument in screening for depression among elderly. Whether the screened subjects require treatment or not, may require further assessments. The results in this study indicate that the current version (Telugu) of GDS-30 is a good screening instrument to identify persons who need clinical evaluation for depression.

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Appendix:1



Diagonal segments are produced by ties.

Area Under the Curve

| Area | Std. Error ^a | Asymptotic Sig. ^b | Asymptotic 95% Confidence Interval | |
|------|-------------------------|------------------------------|------------------------------------|-------------|
| | | | Lower Bound | Upper Bound |
| .957 | .042 | .000 | .000 | 1.000 |

Cut-off Value for GDS Score is 11.0

Table 1 Distribution of Study Subjects according to the GDS Score (N = 50)

| GDS Score | |
|-----------|--------------|
| Mean (SD) | 14.62 (9.57) |
| Median | 13.00 |
| Range | 0 to 30 |
| IQR | 5.75-23.00 |

Table 2: Association between GDS Score and Gender (N = 50)

| Gender | Mean | SD |
|---|-------|------|
| Female | 17.93 | 9.03 |
| Male | 10.05 | 8.49 |
| Unpaired t Test, P Value = 0.003, Significant | | |

Table 3: Association between GDS Score and Depression (N = 50)

| GDS Score | Depression | | Total |
|--|------------|----|-------|
| | Yes | No | |
| >11 | 28 | 1 | 29 |
| <11 | 1 | 20 | 21 |
| Total | 29 | 21 | 50 |
| Chi-Square Test, P Value <0.001, Significant | | | |
| Sensitivity = 96.6% | | | |
| Specificity = 95.2% | | | |

Appendix 2

క్రితంవారంరోజులుగామీకెలాఅనిపిస్తోన్నదో √ గుర్తుపెట్టండి

1. మీజీవితంసంతృప్తికరంగాఉందా ?
2. మీచిన్న, చిన్నసరదాలు, వినోదంకోసంచేసేపనులువిడిచిపెట్టేసారా ?
3. జీవితంశూన్యంగా, వెలితిగాఅనిపిస్తోందా ?
4. తరచువిసుగుచెందుతున్నారా ?
5. భవిష్యత్తుబాగుంటుందని, ఆశాపూరితదృక్పథంతోఉన్నారా ?
6. వద్దనుకున్నాముసురుకునేఆలోచనలవల్లకలతచెందుతున్నారా ?
7. ఎక్కువసమయంఉత్సాహంగాగడుపుతున్నారా ?
8. మీకుజరగకూడనిదేదోజరుగుతుందేమోననేభయపడుతున్నారా ?
9. ఎక్కువసమయంసంతోషంగాగడుపుతున్నారా ?
10. తరచుగానిస్సహాయులుగాఉన్నట్లుఅనిపిస్తోందా ?
11. తరచుగాఅసహనంకలగటం, స్థిరంగాఉండలేకపోవటంజరుగుతుందా ?
12. బయటకువెళ్ళికోత్సవాపాకాలతోగడపటంకంటేఇంట్లోనేఉండిపోవటానికిఇష్టపడుతున్నారా ?
13. భవిష్యత్తుగురించినఆలోచనలకలతపెడుతున్నాయా ?
14. మిగిలినవారికంటేమీకుజ్ఞాపకశక్తితక్కువగాఉన్నట్లుఅనిపిస్తోందా ?
15. ఇప్పుడుజీవించిఉండటంఒకలద్దుతమైన, సంతోషదాయకమైనవిషయంగాభావిస్తున్నారా ?
16. తరచుగాదిగులుగా, బెంగగాఅనిపిస్తోందా ?
17. మీరుఇప్పుడున్నపరిస్థితిలోఏరకంగానుపనికీరాకుండాఉన్నట్లుఅనిపిస్తోందా ?

18. గతాన్ని తలచి ఎక్కువగా కలత పడుతున్నారా?
19. జీవితం ఆనందంగా, ఉద్వేగభరితంగా ఉన్నట్లు అనిపిస్తోందా?
20. కొత్త కార్యక్రమాలు చేపట్టటం కష్టమని భావిస్తున్నారా?
21. మీరు సంపూర్ణమైన శక్తి కలిగి ఉన్నారని అనిపిస్తోందా?
22. పరిస్థితులు నిరాశాజనకంగా ఉన్నాయని భావిస్తున్నారా?
23. చాలా మంది మీ కంటే మెరుగైన పరిస్థితిలో ఉన్నారనిపిస్తోందా?
24. చిన్న చిన్న విషయాలలో తరచుగా అలజడికి లోనవుతున్నారా?
25. తరచు దుఃఖం కలుగుతోందా?
26. ఏకాగ్రతకు దరటం కష్టంగా ఉందా?
27. ఉదయం నిద్రలేవగానే ఉల్లాసంగా ఉంటున్నారా?
28. సామాజిక పరమైన ఉత్సాహాలకు, నలుగురు చేరే కార్యక్రమాలకు వెళ్ళకపోతే బాగుంటుందనిపిస్తోందా?
29. మీ నిర్ణయాలు సులభంగా తీసుకోగలుగుతున్నారా?
30. మీ మనసు ఇదివరకు లాతేటగా ప్రసన్నంగా వుంటోందా?

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