

# Geriatric Depression Scale for community-dwelling older adults in Nepal

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## ABSTRACT

**Purpose.** To evaluate the use of the Geriatric Depression Scale (GDS) and the GDS Short Form (GDS-15) in community-dwelling Nepalese older adults.

**Methods.** Cross-sectional samples of 247 male and 242 female Nepalese older adults aged  $\geq 60$  years who lived with at least one married son, were able to communicate in Nepali, and were not cognitively impaired were included. Data were collected in September 2006 using face-to-face structured questionnaires. Depressive symptoms were measured using the GDS. The GDS-15 scores were then calculated.

**Results.** The GDS and GDS-15 had a good Cronbach's alpha ( $r=0.964$ ,  $p<0.001$ ). After a one-week interval, the intraclass correlation coefficients for GDS and GDS-15 were 0.75 and 0.86, respectively. The correlations between cut-off points of both scales were high. Life satisfaction index was negatively correlated with the GDS scores ( $r= -0.745$ ,  $p<0.001$ ) and with the GDS-15 scores ( $r= -0.562$ ,  $p<0.001$ ), indicating divergent validity. The GDS showed a 6-factor model, whereas the GDS-15 showed a 2-factor model with a good fit (GFI=0.928, AGFI=0.903, RMSEA=0.062). Depression was significantly more severe with increasing age ( $p<0.001$ ), female gender ( $p<0.001$ ), widows/widowers ( $p<0.001$ ), and illiteracy ( $p<0.001$ ).

**Conclusion.** The GDS and GDS-15 were reliable and valid instruments to measure depression among community-dwelling Nepalese older adults.

**Key words:** Aged; Depression; Nepal

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## BACKGROUND

Prevalence of late-life depression is consistent across countries and cultures and has a negative effect on quality of life.<sup>1</sup> Having reliable instruments to screen for depression is important, as early diagnosis and treatment of depression reduces medical costs and institutionalisation.

The Geriatric Depression Scale (GDS) is a widely used instrument to identify depression in older adults.<sup>2</sup> The GDS has been translated into 27

languages<sup>3</sup> and has a good internal consistency and test-retest reliability. It was developed specifically to measure affective and motivational/cognitive components of depression in older adults.<sup>4</sup> It is a 30-item scale that uses a yes-no response for a possible score of 0 to 30. Higher scores denote higher levels of depression.

A shorter version—the GDS-15—contains 15 items.<sup>5</sup> In a study of 35 respondents, the correlation between the GDS-15 and GDS was 0.84.<sup>5</sup> The GDS-15 has been validated with geriatric

inpatients,<sup>6</sup> outpatients,<sup>7</sup> primary care patients,<sup>8</sup> and community-dwelling older adults.<sup>9</sup> The GDS-15 is an adequate substitute for the GDS to screen for late life depression,<sup>10</sup> and has good internal consistency reliability and an acceptable criterion-related validity.<sup>11</sup> It has been used to measure depression among community-dwelling older adults in Asian countries.<sup>12</sup>

Establishing the reliability and validity of instruments to measure depression in developing countries is needed.<sup>13</sup> This study aimed to evaluate the use of the GDS and GDS-15 among community-dwelling older adults in Nepal. The GDS was administered to Nepali older adults and the GDS-15 scores were calculated from the original GDS.<sup>14</sup> There is a need for the shortened version of the GDS.<sup>15</sup>

## METHODS

This cross-sectional study used a face-to-face structured questionnaire, based on data collected from a survey that examined intergenerational relationships between older adults and their married sons in Nepal.<sup>16</sup> Data were collected by 10 researchers in September 2006.

Persons aged  $\geq 60$  years who lived with at least one married son, were able to communicate in Nepali, and were not cognitively impaired were included. Only one older adult from each household was selected based on their willingness to participate.

Of 1539 persons aged  $\geq 60$  years in a population of  $>25\ 000$ , 92 were un-contactable, 43 refused to provide data, 332 were not living with a married son, 86 refused to participate, 101 could not communicate well in Nepali, 58 terminated the interview, and 338 had  $>1$  older adult in the household. The remaining 247 men and 242 women (mean $\pm$ SD age, 69.9 $\pm$ 8.1 years) were successfully interviewed.

This study was approved by The Institutional Review Board of the Graduate School of Medicine, University of Tokyo and the Kathmandu Municipality office. Verbal informed consent was obtained from each participant. Participants could withdraw from the interview at any time.

The GDS was translated into Nepali from English by the first author. It was reviewed by 3

Nepali graduate students at the University of Tokyo, Japan. It was then back translated into English by a professional Nepali-English translator. All versions were checked for any differences and were corrected by the first author. Pilot testing was conducted on a sample of 50 Nepali older adults. Descriptive statistics from the pilot study and the feedback from the interviewee and interviewers were used to revise and finalise the questionnaire. Test-retest reliability was conducted with 10 older adults after a one-week interval.

Descriptive statistics and the gender distribution of depression were analysed. T-tests or ANOVA were conducted for patient age, gender, marital status, literacy, as well as GDS and GDS-15 scores. The internal consistencies of the GDS and GDS-15 were computed with Cronbach alpha reliability coefficients. Divergent validity was evaluated by correlating the scores on the life satisfaction index (Nepali version)<sup>17</sup> with the GDS-15 and the GDS scores. Severity of depression was analysed using the widely used cut-off scores for levels of depression of the GDS and GDS-15. Levels of depression between the GDS and GDS-15 were correlated. Intraclass correlation coefficients were calculated for test-retest reliabilities. Exploratory factor analysis was used to analyse the construct validity of the GDS-30 and GDS-15.

## RESULTS

54% of the respondents were married, 46% were widowed, and 57% were illiterate. The mean GDS and GDS-15 scores were 11.3 and 5.6, respectively (**TABLE 1**). 54.6%, 26.2%, and 19.2% of the older adults were categorised as having low (0-9), moderate (10-19) and severe (20-30) depression based on the GDS,<sup>18</sup> whereas 57.3%, 27.4%, and 15.3% of older adults were categorised as having low (0-5), moderate (6-10), and severe (11-15) depression based on the GDS-15<sup>11</sup> (**TABLE 2**). Correlations between GDS and GDS-15 in terms of low, moderate, and severe depression were 0.906, 0.740, and 0.815, respectively ( $p < 0.001$ ). Depression was significantly more severe with increasing age ( $p < 0.001$ ), female gender ( $p < 0.001$ ), widows/widowers ( $p < 0.001$ ), and illiteracy ( $p < 0.001$ ) [**TABLE 1**].

The correlation between overall scores of the GDS and GDS-15 was high ( $r = 0.964$ ,  $p < 0.001$ ).

**TABLE 1**  
**Mean Geriatric Depression Scale (GDS) and GDS-15 scores**

Variables	No. (%) of subjects	Mean±SD GDS scores	p Value	Mean±SD GDS-15 scores	p Value
Overall	489	11.3±8.0	<0.001	5.6±4.1	<0.001
Age (years)*					
60-69	254 (51.9)	10.1±7.6		5.0±4.1	
70-79	163 (33.3)	12.1±7.6		6.0±4.0	
≥80	72 (14.7)	13.7±7.7		6.6±3.9	
Gender†			<0.001		<0.001
Male	247 (50.5)	9.7±7.5		4.9±3.8	
Female	242 (49.5)	12.9±8.2		6.3±4.2	
Marital status†			<0.001		<0.001
Married	264 (54.0)	9.3±7.6		4.7±3.8	
Widowed	225 (46.0)	13.5±7.9		6.7±4.1	
Education level*			<0.001		<0.001
Illiterate	277 (56.6)	13.3±8.1		6.7±4.2	
No schooling but literate	67 (13.7)	9.5±6.7		4.5±3.1	
High school	109 (22.3)	9.1±7.7		4.5±3.9	
College and above	36 (7.4)	5.7±4.1		3.0±1.9	
Financial satisfaction			<0.001		<0.001
Dissatisfied	84 (17.2)	-		-	
Fair	241 (49.3)	-		-	
Satisfied	164 (33.5)	-		-	
No. of chronic illness*			<0.001		<0.001
0	100 (20.4)	8.7±6.8		4.2±3.3	
1	266 (54.4)	10.9±7.7		5.5±4.0	
≥2	123 (25.2)	14.0±8.8		6.9±4.5	

\* ANOVA

† Independent samples *t* test

**TABLE 2**  
**Geriatric Depression Scale (GDS) and GDS-15 score ranges**

Depression	Score range (%)	
	GDS	GDS-15
Low	0-9 (54.6)	0-5 (57.3)
Moderate	10-19 (26.2)	6-10 (27.4)
High	20-30 (19.2)	11-15 (15.3)

The internal consistencies (evaluated by Cronbach alpha reliability coefficients) for the GDS and GDS-15 were 0.928 and 0.862, respectively. To measure the test-retest reliability (stability) after a one-week interval ( $n=10$ ), the intraclass correlation coefficients for the GDS and GDS-15 scores were 0.75 and 0.86, respectively.

Life satisfaction index<sup>17</sup> was negatively correlated

with the GDS scores ( $r= -0.745$ ,  $p<0.001$ ) and with the GDS-15 scores ( $r= -0.562$ ,  $p<0.001$ ), indicating divergent validity.

Principal component factor analysis with varimax rotation was used to evaluate construct validity of the GDS (**TABLE 3**) and GDS-15 (**TABLE 4**). The varimax rotation showed 6 factors for the GDS with an eigenvalue of  $>1$  explaining 57.48% of the variance

**TABLE 3**  
**Factor structure of the Geriatric Depression Scale (GDS)**

Factor No.	Factor	Factor component					
		1	2	3	4	5	6
G1	Basically satisfied with life (not)	0.745	0.191	0.066	0.073	-0.016	-0.014
G9	Feel happy most of the time (do not)	0.733	0.345	0.140	0.178	-0.082	0.053
G7	In good spirits most of the time (not)	0.730	0.286	0.129	0.138	-0.078	0.127
G15	Think it is wonderful to live now (do not)	0.692	0.184	-0.019	0.121	0.213	-0.127
G16	Often feel downhearted and blue	0.635	0.459	0.117	0.095	0.126	-0.059
G19	Find life exciting (do not)	0.572	0.333	0.346	0.139	-0.104	0.002
G22	Feel that your situation is hopeless	0.566	0.448	0.175	0.180	0.105	0.026
G27	Enjoy getting up in the morning (do not)	0.540	0.128	0.127	0.190	0.190	-0.002
G11	Often get restless and feel fidgety	0.504	0.486	0.120	0.130	-0.068	0.082
G10	Often feel helpless	0.495	0.435	0.126	0.265	-0.060	0.107
G5	Hopeful about the future (not)	0.419	0.218	0.335	0.149	0.052	0.025
G13	Frequently worry about the future	0.125	0.730	0.140	0.110	0.038	0.061
G8	Afraid something bad will happen to you	0.230	0.691	0.110	0.188	-0.103	0.130
G4	Often get bored	0.284	0.652	0.206	0.194	0.047	0.055
G6	Bothered by thoughts that cannot be out of head	0.267	0.641	0.230	0.119	0.013	0.141
G18	Worry about the past	0.273	0.620	-0.007	0.098	0.148	-0.167
G24	Frequently get upset over little things	0.533	0.575	0.009	0.058	0.214	-0.056
G25	Frequently feel like crying	0.334	0.573	-0.008	0.033	0.230	-0.110
G3	Feel that life is empty	0.423	0.472	0.331	0.078	-0.018	-0.033
G26	Have trouble concentrating	0.045	0.080	0.791	0.073	0.086	0.068
G20	Hard for you to start new projects	0.104	0.159	0.774	0.144	0.002	-0.064
G21	Feel full of energy (not)	0.375	0.261	0.476	0.408	0.063	-0.028
G17	Feel pretty worthless the way you are now	0.341	0.095	0.457	0.116	0.148	0.174
G14	Have more memory problem than most	0.157	0.143	0.023	0.762	-0.036	0.013
G30	Mind not as clear as it used to be	0.156	0.151	0.153	0.740	0.170	-0.058
G2	Dropped many interests and hobbies	0.130	0.089	0.132	0.542	0.008	0.197
G29	Easy to make decisions (not)	0.237	0.243	0.268	0.505	0.401	-0.100
G12	Prefer to stay home rather than going out	-0.074	0.071	0.195	0.169	0.694	-0.049
G28	Prefer to avoid social gatherings	0.217	0.032	-0.098	-0.072	0.571	0.385
G23	Think most people are better off than you	-0.053	0.055	0.070	0.100	0.050	0.856

(TABLE 5). Factor loadings of  $\geq 0.4$  were obtained for each item. The factor analysis of GDS-15 showed 2 factors with eigenvalues of  $>1$ , explaining 47.11% of the variance (TABLE 5). The GDS-15 showed a good fit in the model (GFI=0.928, AGFI=0.903, RMSEA=0.062), whereas the GDS did not.

For GDS, the first factor had an eigenvalue of 10.70, explaining 35.66% of the variance and consisting of 11 items that could be labelled as 'sad mood' (TABLE 5). Items loading onto the first factor were related to life satisfaction, happiness, feeling

sadness, hopefulness, helplessness, restlessness, and perceptions about how it feels to be alive. The second factor had an eigenvalue of 1.94, explaining 6.47% of the variance and consisting of 8 items relating to past, present and future. Items loading on this factor were fear about the future, worry, emptiness, boredom, troublesome thoughts, emotional upset, and crying. The third factor had an eigenvalue of 1.26, explaining 4.21% of the variance and consisting of 4 items relating to functioning. The items on this factor included concentrating, starting projects, energy, and worthlessness. The fourth factor titled 'lack of

**TABLE 4**  
**Factor structure of the Geriatric Depression Scale-15**

Factor No.	Factor	Factor component	
		1	2
G9	Feel happy most of the time (not)	0.822	0.060
G7	In good spirits most of the time (not)	0.801	0.052
G1	Basically satisfied with life (not)	0.753	-0.041
G22	Feel that your situation is hopeless	0.741	0.211
G10	Often feel helpless	0.716	0.219
G15	Think it is wonderful to be alive now (not)	0.692	-0.034
G3	Feel that life is empty	0.684	0.172
G4	Often get bored	0.639	0.290
G8	Afraid something bad will happen to you	0.621	0.214
G21	Feel full of energy (not)	0.572	0.402
G2	Dropped many interests and hobbies	0.187	0.635
G12	Prefer to stay home rather than going out	0.003	0.522
G23	Think most people are better off than you	-0.076	0.515
G14	Have more memory problems than most	0.309	0.479
G17	Feel pretty worthless the way you are now	0.385	0.420

**TABLE 5**  
**Total variance explained of the Geriatric Depression Scale (GDS) and GDS-15**

Factor component	Eigenvalue	% of variance	Cumulative %
GDS			
1	10.697	35.655	35.655
2	1.94	6.466	42.121
3	1.264	4.213	46.334
4	1.193	3.978	50.312
5	1.094	3.646	53.958
6	1.057	3.522	57.48
GDS-15			
1	5.789	38.595	38.595
2	1.277	8.514	47.109

motivation' had 4 items and an eigenvalue of 1.93, explaining 3.98% of the variance. The items were related to decision-making, hobbies and interests, and memory. 'Social withdrawal' was the fifth factor and had an eigenvalue of 1.09, explaining 3.64% of the variance. The sixth factor included only one item and had an eigenvalue of 1.06, explaining 3.52% of the variance.

For GDS-15, the first factor with an eigenvalue of 5.79 explained 38.59% of the variance (TABLE 5). It described affective aspects of depression

and included spirit, life satisfaction, hopelessness, emptiness, boredom, fear of bad things, and energy level. The second factor with an eigenvalue of 1.28 explained 8.51% of the variance. Its 5 items could be described under the heading 'social engagement and cognition' and included items regarding interests and hobbies, social isolation, memory, and worthlessness.

## DISCUSSION

This study explored the psychometric properties of the GDS and the GDS-15 in older adults in

Nepal. In community-dwelling Asian immigrants in the United States, the mean GDS score was 15.0 among Japanese, 12.4 among Vietnamese, and 11.1 among Indian older adults.<sup>19</sup> A comparative geriatric assessment between community-dwelling older adults in Asian countries reported a mean GDS-15 score of 5.4 among Koreans and 3.4 among Japanese.<sup>12</sup>

The correlations between the GDS and GDS-15 were high ( $r=0.964$ ,  $p<0.001$ ), which was comparable to another study reporting a correlation of 0.84.<sup>5</sup> The alpha reliability of the GDS and GDS-15 scores was 0.923 and 0.862, respectively, which was comparable to the original studies,<sup>4,5</sup> and studies in India,<sup>13</sup> Iran,<sup>20</sup> Saudi Arabia,<sup>21</sup> and Turkey.<sup>22</sup> Internal consistency of 0.70 for newly developed instruments and 0.80 for established instruments is considered the minimal acceptable level of internal consistency.<sup>23</sup> Similarly, the test-retest reliability (intraclass correlations coefficient) was acceptable (0.75 for GDS and 0.86 for GDS-15). A coefficient of  $>0.70$  is regarded as an acceptable level of stability.<sup>24</sup>

Higher levels of depression lead to lower quality of life.<sup>25</sup> The life satisfaction index correlated negatively with the GDS and GDS-15, indicating divergent validity.

There were significant differences in the levels of depression associated with age, gender, marital status, literacy and chronic illnesses. Increasing age significantly correlated with increased levels of depressive symptoms. In a Korean study, increased age was positively associated with depression in an urban sample, but negatively associated in a rural sample.<sup>26</sup> Females were significantly more depressed than males.<sup>1,27</sup> This could be due to the patriarchal society in Nepal. Older adults who had less education reported significantly higher levels of depression. Higher education results in higher social status, well-paid jobs, and pensions. Less education and unemployment were associated with higher depressive symptoms in late life.<sup>25</sup> Divorced and widowed older adults reported significantly higher levels of depression.<sup>28,29</sup> Older adults with more chronic diseases were also more depressed.<sup>25</sup>

The variances explained in the factor analysis for both the GDS and GDS-15 were comparable to those reported in previous studies.<sup>7,20,30</sup> The GDS-15

is a frequently used measure of depression because it takes less time than the GDS and has shown good internal consistency and validity.<sup>10,11</sup> Further research involving measurement of depression in late life among Nepalese should consider using the GDS-15, as older adults may fatigue easily.

As our sample included only older adults living with their married son, this could be regarded as a limitation reducing generalisability to other populations. This sample was selected because living with a son is a cultural norm and almost 80% of older adults live in a joint family in Nepal. Older adults living with their children might not feel lonely and get adequate support and report lower levels of depression. On the other hand, close relationships are more likely to attribute to conflict and stress, so that higher levels of depression may result. Future studies on GDS should be focused on overall community-dwelling older adults, irrespective of their living arrangements. The GDS-15 was appropriate to measure depression in Nepalese older adults and can be an adequate substitute for the GDS.

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## REFERENCES

1. Beekman AT, Copeland JR, Prince MJ. Review of community prevalence of depression in later life. *Br J Psychiatry* 1999;174:307-11.
2. Peach J, Koob JJ, Kraus MJ. Psychometric evaluation of the Geriatric Depression Scale (GDS): supporting its use in health care settings. *Clin Gerontol* 2001;23:57-68.
3. Yesavage JA. <http://www.stanford.edu/~yesavage/GDS.html>. Accessed 14 November 2010.
4. Yesavage JA, Brink TL, Rose TL, Lum O, Huang V, Adey M, et al. Development and validation of a geriatric depression screening scale: a preliminary report. *J Psychiatr Res* 1982;17:37-49.
5. Sheikh JJ, Yesavage JA. Geriatric Depression Scale (GDS): recent evidence and development of a shorter version. In: Brink TL, editor. *Clinical gerontology: a guide to assessment and intervention*. New York: Haworth Press; 1986:165-73.
6. Pomeroy IM, Clark CR, Philp I. The effectiveness of very short scales for depression screening in elderly medical patients. *Int J Geriatr Psychiatry* 2001;16:321-6.
7. Herrmann N, Mittman N, Silver IL, Shulman KI, Shear NH, Busto UE, et al. A validation study of the Geriatric Depression Scale short form. *Int J Geriatr Psychiatry* 1996;11:457-60.
8. D'Ath P, Katona P, Mullan E, Evans S, Katona C. Screening, detection and management of depression in elderly primary care attenders. I: The acceptability and performance on the 15 item Geriatric Depression Scale (GDS15) and the development of

- short versions. *Fam Pract* 1994;11:260-6.
9. de Craen AJ, Heeren TJ, Gussekloo J. Accuracy of the 15-item geriatric depression scale (GDS-15) in a community sample of the oldest old. *Int J Geriatr Psychiatry* 2003;18:63-6.
  10. Almeida OP, Almeida SA. Short versions of the geriatric depression scale: a study of their validity for the diagnosis of a major depressive episode according to ICD-10 and DSM-IV. *Int J Geriatr Psychiatry* 1999;14:858-65.
  11. Wancata J, Alexandrowicz R, Marquart B, Weiss M, Friedrich F. The criterion validity of the Geriatric Depression Scale: a systematic review. *Acta Psychiatr Scand* 2006;114:398-410.
  12. Sakagami T, Okumiya K, Ishine M, Wada T, Kita T, Kawakita T, et al. Comprehensive geriatric assessment for community-dwelling elderly in Asia compared with those in Japan: II. Hongchon in Korea. *Geriatr Gerontol Int* 2005;5:107-14.
  13. Ganguli M, Dube S, Johnston JM, Pandav R, Chandra V, Dodge HH. Depressive symptoms, cognitive impairment and functional impairment in a rural elderly population in India: a Hindi version of the geriatric depression scale (GDS-H). *Int J Geriatr Psychiatry* 1999;14:807-20.
  14. Yap MT, Thang LL, Traphagan JW. Introduction: aging in Asia—perennial concerns on support and caring for the old. *J Cross Cult Gerontol* 2005;20:257-67.
  15. Tang WK, Wong E, Chiu HF, Lum CM, Ungvari GS. The Geriatric Depression Scale should be shortened: results of Rasch analysis. *Int J Geriatr Psychiatry* 2005;20:783-9.
  16. Gautam R, Saito T, Kai I. Leisure and religious activity participation and mental health: gender analysis of older adults in Nepal. *BMC Public Health* 2007;7:299.
  17. Gautam R, Saito T, Kai I. Correlates of life satisfaction among older Nepalese adults living with a son. *Biosci Trends* 2008;2:187-92.
  18. Khattri JB, Nepal MK. Study of depression among geriatric population in Nepal. *Nepal Med Coll J* 2006;8:220-3.
  19. Mui AC, Kang SY, Chen LM, Domanski MD. Reliability of the Geriatric Depression Scale for use among elderly Asian immigrants in the USA. *Int Psychogeriatr* 2003;15:253-71.
  20. Malakouti SK, Fatollahi P, Marabzadeh A, Salavati M, Zandi T. Reliability, validity and factor structure of the GDS-15 in Iranian elderly. *Int J Geriatr Psychiatry* 2006;21:588-93.
  21. Al-Shammari SA, Al-Subaie A. Prevalence and correlates of depression among Saudi elderly. *Int J Geriatr Psychiatry* 1999;14:739-47.
  22. Ertan T, Eker E. Reliability, validity, and factor structure of the geriatric depression scale in Turkish elderly: are there different factor structures for different cultures? *Int Psychogeriatr* 2000;12:163-72.
  23. Nullally JC. *Introduction to psychological measurement*. New York: McGraw-Hill; 1978.
  24. Streiner DL, Norman GR. *Health measurement scales. A practical guide to their development and use*. 2nd ed. Oxford: Oxford University Press; 1995.
  25. Blazer DG. Depression in late life: review and commentary. *J Gerontol A Biol Sci Med Sci* 2003;58:249-65.
  26. Kim JM, Shin IS, Yoon JS, Stewart R. Prevalence and correlates of late-life depression compared between urban and rural populations in Korea. *Int J Geriatr Psychiatry* 2002;17:409-15.
  27. Alvarado BE, Zunzunegui MV, Beland F, Sicotte M, Tellechea L. Social and gender inequalities in depressive symptoms among urban older adults of Latin America and the Caribbean. *J Gerontol B Psychol Sci Soc Sci* 2007;62:S226-36.
  28. Phifer JF, Murrell SA. Etiologic factors in the onset of depressive symptoms in older adults. *J Abnorm Psychol* 1986;95:282-91.
  29. Murphy E. Social origins of depression in old age. *Br J Psychiatry* 1982;141:135-42.
  30. Sheikh JI, Yesavage JA, Brooks JO 3rd, Friedman L, Gratzinger P, Hill RD, et al. Proposed factor structure of the Geriatric Depression Scale. *Int Psychogeriatr* 1991;3:23-8.