

# Arabic version Geriatric Depressive Scale -15 For Iraqi Elderly Dwellers in Al-Najaf City: Validity and Reliability

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## ABSTRACT

The Geriatric Depression Scale (GDS-15) is regarded as the most widely used screening tools and easy to administer. The Geriatric Depressive Scale -15 short version was translated to the Arabic language by a researcher and was assessed by psychiatric specialists, then retranslated to the English language by an English language specialist, and after acceptance of the last form, and elderly was selected (samples size was ( $n=279$ ) elderly persons (138 male and 141 female) form hospitals and general community setting, each elderly was assessed by using GDS-15 and then assessed by using the ICD-10 criteria for major depressive episode to detect presence or absence of depression. The average age of study group were (71.84) years, diagnosis of major depression according to Arabic GDS-15 short version for Iraqi elderly (44.4% for positive and 55.6 for negative) and according to ICD-10 criteria for depression (38% for positive and 62% for negative). Also, the study found that Arabic GDS-15 for Iraqi elderly had high specificity and sensitivity and interrater reliability ( $k= 0.72$ ). This type of Arabic version GDS-15 is valid and reliable in the assessment of depression among Iraqi elderly dwellers in Alnajaf city for different marital status, educational levels, residencies, and occupations.

**Keywords:** *Elderly, depression, Arabic, Iraqi, GDS-15, validity, reliability.*

## INTRODUCTION

Iraqi elderly was suffer from may stressful events like wars, terrorism, and as we now that the rate of depression was higher in elderly than in other age groups, so it is important to assess presence or absence of this serious disorder to prevent its consequences and prevent or decrease disability and prevent premature mortality. In late life of any person; one of the most common psychiatric disorders is depression, where it is important subject in all age groups (especially elderly), its effect appears in several aspects of elder life; as a part of depressive symptoms like disturbance of sleep and appetite, self-neglect, wishes and attempt to die, psychomotor retardation. These symptoms make the

person not adherent to health centers or medication when he/she had chronic physical illnesses, which increase the suffering of the patient and the caregiver<sup>1,4</sup>. Depression is more common in elderly, with a prevalence about 10% in 65 years age and older, and up to 30% in inpatient that had at least a mild form of depression<sup>2,5</sup>, it reaches up to 15-30% in elderly that found in community residents and nursing home patients<sup>1,5</sup>; where old person was more prone to be exposed to frequent stressful events, losses, bereavement, decrease support, isolation, physical disability, medical conditions and medications<sup>1,6</sup>. As well as poverty increase in a patient with mental illness with increase age was reported<sup>1,7-9</sup>, which heighten the level of suffering and may increase suicide. The high rate of suicide was reported in elderly<sup>1,10</sup>. Researchers defined elderly as those persons that aged 60 or 65 years, this study depends on age 65 years and above as elderly persons<sup>1,2,11</sup>. The assessment of an elderly person for depression usually had difficulty and challenge, due to co-morbidities that usually occurs in such age group like cognitive decline and dementia, or sensory impairment<sup>12</sup>.

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Hence, it is crucial to recognize this problem, assessment of severity, and treatment, to prevent its consequences to prevent or decrease disability and prevent premature mortality. Although many screening tools were used to identify depression in elderly, the Geriatric Depression Scale (GDS) is regarded as the most widely used. The GDS was a depressive scale in 30-items or questions with (yes/no) answer in its original form<sup>13</sup>, also found in 15-items, 8-items and 4-items<sup>14</sup>, GDS 15-items were depended in this study. The aim of our study is to assess the effectiveness of Geriatric Depressive Scale-15 Arabic version in the detection of depressive disorder in Iraqi elderly.

## MATERIALS AND METHOD

It is a cross sectional study that conducted on Jun 2016 through Dec 2016 in Iraq Annajaf Al-Ashraf city center, The Geriatric Depressive Scale -15 short version<sup>13</sup> was translated to Arabic language by a researcher and was assessed by psychiatric specialists, where they gave their notes and after correction of the scale language to be more understandable by the native Arabic language Iraqi persons, then retranslated to English language by an English language specialist and also reassesses by psychiatric specialist, and after acceptance, the last form of the Arabic language of GDS-15 short version was adopted to be assessed in comparison with ICD-10 criteria for major depressive episode as standard. The samples were selected (persons aged 65 years or above) from both outpatient (in Al-Hakeem general hospital and Al-Sader medical city) and community setting, the samples size was ( $n=279$ ) elderly persons (138 male and 141 female). All selected subjects are provided a verbal consent to participate in this study. Each elderly person was given Geriatric depression scale short version in a paper. The patient would read the scale by his own and respond by indicating the statement which best describes how he/she has been felt over the past weeks. For those how can't administer the test by their own either because they were illiterate or that they had a poor vision, the interviewer would read the scale on his paper, allowing the patient to respond by indicating the statement which best describes how he/she has felt over the past weeks. Then each elderly person clinically interviewed by the investigator using the ICD-10 criteria for the major depressive episode to detect presence or absence of depression. Elderly with cognitive impairment or dementia as assessed with the Mini-Mental Status Examination score  $\leq 23$ , unwilling to participate in this

study, having a hearing impairment, using antidepressant and/or mood stabilizer medication, with a recent CVA in the last month, and suffering from psychotic or manic symptoms. All those elderly are excluded at beginning of this study. Data of all patients were entered and analyzed by using SPSS version 24 software for windows; where, sensitivity, specificity, accuracy, the predictive value of positive, the predictive value of negative, the percentage of false positive, the percentage of false negative, interrater reliability (Kappa), percent agreement, and other calculations were evaluated.

## RESULTS AND DISCUSSION

The average age of study group was (71.84) years ranges from 65 to 83 years. Where the average age for male and female are (72.8) and (70.8) years respectively. However, the elderly in study samples were high in the age group 65-69 years (38%). female and male samples were approximately equal (49.5% for male and 50.5% for female), while 57.7% of the samples were married. the percentage of samples that living in the rural area is 52% which is dominant. illiterate level of samples education was more than other levels which are 28.3%. Most female were housewives, and most of the male were retired. Distribution of diagnosis of major depression according to Arabic GDS-15 short version for Iraqi elderly (44.4% for positive and 55.6 for negative) and according to ICD-10 criteria for depression (38% for positive and 62% for negative). The difference percentage in (diagnosis or exclusion) of depression between Arabic GDS-15 for Iraqi elderly and ICD-10 criteria according to the distribution of variables was shown in Table 1. Also, the study found that Arabic GDS-15 for Iraqi elderly had high specificity and sensitivity and interrater reliability ( $k= 0.72$ ) as shown in Table 2. By using appropriate statistical methods to measure validity and reliability of this study, the results showed that the Arabic version of GDS-15 which used in assessing depression has excellent characteristics as a screening scale for detection of depression in Iraqi elderly dwellers in Alnajaf city. Although, it's necessary to use this assessment scale for conducting a national epidemiological study for elderly in the whole Iraq from north to south to cover all accents. Having an Arabic version of GDS-15 for the elderly is a helpful instrument in the assessment the presence of depression or treats it as a co-morbid condition. The validity of this study showed a high sensitivity, specificity, accuracy, positive and negative predictive values as (83.8%, 90.6%, 86%,

93.5%, 77.4%) respectively, and this reveals that this scale had a good validity and goes with finding of other language versions like Iranian version (Seyed et al. 2006)<sup>15</sup>, Indian version (Ewe, 2004)<sup>16</sup>, Korean version (Jae and Maeng, 2004)<sup>17</sup>, German version (Bach et al. 1995)<sup>18</sup>, and Arabic version that used to evaluate older adult in Lebanon (Monique et al. 2008) in cut/off point 5/6 (this research study used different cut/off points for GDS-15 starting from 3/4 and ending at 8/9, it differs from this study in that this research study the cut/off point 6 and more and also differ in an accent that used)<sup>19</sup> also it differs in specificity (0.76) at 5/6 cut/off point, where its much lower than this study (90.6) and this may be due to effect of sample size, different culture of assessed

elderly or using another slandered (which use DSM-IV criteria). However, it goes with the finding of the Greek version specificity 95.24<sup>20</sup>. According to distribution of variables, the differences of diagnosis and exclusion of depression between Arabic GDS-15 for Iraqi elderly and ICD-10 criteria of Major depressive disorder, the study result show relative similarity and no significant difference in effect of independent variables (sex, marital state, education level, residency and occupation) on the effectiveness of scale assessment, While it dislikes the result shown by (Iranian version) where it found that level of education affect the result of scale<sup>15</sup>. The socio-economic state was not examined in this study and need to be assessed.

**Table 1. Depression status according to Arabic GDS-15 and ICD-10 criteria distributed by demographic variables of the study subjects.**

Variable	Depression				No depression				
	GDS		ICD-10Q		GDS		ICD-10Q		
	No.	%	No.	%	No.	%	No.	%	
Age (year)	65 - 69	33	21.3	35	20.2	73	58.9	71	67.0
	70 - 74	65	41.9	70	40.5	28	22.6	23	21.7
	75 - 79	25	16.1	34	19.7	18	14.5	9	8.5
	≥ 80	32	20.6	34	19.7	5	4.0	3	2.8
Sex	Male	95	61.3	102	59.0	43	34.7	36	34.0
	Female	60	38.7	71	41.0	81	65.3	70	66.0
Marital status	Single	20	12.9	21	12.1	3	2.4	2	1.9
	Married	78	50.3	87	50.3	83	66.9	74	69.8
	Divorced	23	14.8	27	15.6	6	4.8	2	1.9
	Widow	34	21.9	38	22.0	32	25.8	28	26.4
Residency	Urban	81	52.3	92	53.2	64	51.6	53	50.0
	Suburban	43	27.7	46	26.6	37	29.8	34	32.1
	Rural	31	20.0	35	20.2	23	18.5	19	17.9
Education	Illiterate	28	18.1	31	17.9	51	41.1	48	45.3
	Read and write	21	13.5	27	15.6	24	19.4	18	17.0
	Primary	24	15.5	27	15.6	13	10.5	10	9.4
	Secondary	37	23.9	36	20.8	11	8.9	12	11.3
	Institute	25	16.1	27	15.6	14	11.3	12	11.3
	College or higher	20	12.9	25	14.5	11	8.9	6	5.7
Occupation	Unemployed	20	12.9	21	12.1	9	7.3	8	7.5
	Housewife	35	22.6	40	23.1	72	58.1	67	63.2
	Government employee	16	10.3	20	11.6	13	10.5	9	8.5
	Worker	8	5.2	8	4.6	1	0.8	1	0.9
	Retired	60	38.7	65	37.6	23	18.5	18	17.0
	Other	16	10.3	19	11.0	6	4.8	3	2.8

**Table 2. Cross-tabulation and validity of Arabic GDS-15 and ICD-10 criteria**

GDS	ICD-10 Q			
	Depression		No depression	
	No.	%	No.	%
Depression	145	(83.8)	10	(9.4)
No depression	28	(16.2)	96	(90.6)
Total	173	(100.0)	106	(100.0)
Measure of Agreement (Kappa) = 0.720				
Percent agreement = 86.4%				
measurement of Validity of GDS				
	Level		95%CI	
Sensitivity	83.8%		%89 - %77	
Specificity	90.6%		83% - 95%	
Accuracy	86%		82% - 90%	
Predictive value of positive	93.5%		88% - 97%	
Predictive value of Negative	77.4%		69% - 84%	
Percentage of false positive	9.4%		5% - 17%	
Percentage of false Negative	16.2%		11% - 23%	

**CONCLUSION**

This type of Arabic version GDS-15 is valid and reliable in the assessment of depression among Iraqi elderly dwellers in Alnajaf city for different marital status, educational levels, residencies, and occupations.

**Financial Disclosure:** There is no financial disclosure.

**Conflict of Interest:** None to declare.

**Ethical Clearance:** All experimental protocols were approved under the University of Kufa, Department of Psychiatry\ Al-Hakeem General Hospital, Iraq and all experiments were carried out in accordance with approved guidelines.

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