

Prevalence of Depression Symptoms among the Elderly Population of Southern Iran

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Received: 23 October 2012

Revised: 20 January 2013

Accepted: 16 May 2013

Abstract

Background: The purpose of this study was to determine the prevalence of depression symptoms and the effect of various demographic characteristics on its severity in an elderly population in Fars province, southern Iran.

Methods: This cross-sectional study was conducted during May and September 2009. A sample of 1461 men and women, aged more than 60 years were selected using a multistage stratified random sampling method. Levels of depression symptoms were measured using the Geriatric Depression Scale (GDS). Data were analyzed using SPSS software. Also, analysis of variance (ANOVA) and correlation analysis were performed to find the correlation between the variables and GDS score.

Results: Overall, 1443 people completed the questionnaire. The prevalence of the symptoms mild to moderate depression (GDS: 5-10) was 51.1%, while that of severe depression symptoms (GDS >10) was 19.7%. There were significant relationships between sex, marital status, educational level, occupation, residential place and the GDS scores.

Conclusion: The prevalence of depression symptoms was high among the elderly in Fars Province. Therefore, if properly trained, primary care teams could help these patients.

Please cite this article as: Moradi F, Joulaei H, Saffari M, Zare N, Fallah Zadeh MH. Prevalence of Depression Symptoms among the Elderly Population of Southern Iran. *J Health Sci Surveillance Sys*. 2013;1(1):14-18.

Keywords: Depression; Elderly; Prevalence; Iran

Introduction

The world's population is growing older. Currently, about two thirds of the elderly are living in developing countries.¹ According to the last Iranian census data carried out in 2010, 8.26% of the population were older than 65 years and it is estimated that by 2020, Iran will have an elderly population of about 14.7%.²

In 2005, the World Health Organization (WHO) ranked depression as the fourth most urgent health problem in the world.³ The disability caused by depression is comparable to or even more than those caused by hypertension, chronic pain, diabetes mellitus, and coronary artery diseases.⁴

The prevalence of major depression ranges from 0.9-42% among the white elderly men and women. The prevalence of clinically relevant depression symptoms varies between 7.2-49%, and the lack of recognition and treatment of

depression in the elderly is widespread.⁵ Excess disability, mortality, and morbidity associated with depression in the last years of life have been well established.⁶⁻⁸

Various studies show that the cost of depression among the elderly is very high and only few old people with depression are detected and/or treated.⁹⁻¹¹ Elderly patients may not be aware of their symptoms. Depression is also likely to be easily missed in the presence of a physical illness.¹²

Depression in the elderly carries a worse prognosis compared with the younger age group in terms of persistence and recurrence, with an increased mortality rate and higher risk of suicide.¹³ Although many patients with depression respond favorably to treatment modalities, early detection and treatment of depression and its symptoms is beneficial.¹⁴

Most studies on elderly depression have been conducted in industrial countries. To the best of our knowledge, no published data about the prevalence of elderly depression exists in a developing country like Iran. Therefore, the aim of this study was to evaluate the prevalence and the severity of depression symptoms among the elderly population of Fars province, southern Iran. The effect of various demographic characteristics on such symptoms was also assessed.

Methods

This cross-sectional study was conducted during May 2009 and September 2009. A sample of 1461 men and women, aged above 60 years were selected from rural and urban areas of Fars province, southern Iran. Each urban healthcare center and rural health house was selected as a cluster and samples were chosen in proportion to urban and rural population after multistage random sampling. Elderly people above 60 years old living in Fars province were included in our study while affliction with underlying physical or mental health problem was used as the exclusion criterion of the study.

This study was approved by the Ethics Committee of Shiraz University of Medical Sciences and a written informed consent was obtained from each participant. A team of trained interviewers filled in two questionnaires on socio-demographic characteristics, and the Geriatric Depression Symptoms scale (GDS) for each person. The GDS is a 15-item questionnaire consisting of yes/no questions about the presence or absence of depression symptoms in the elderly population.^{15,16} The GDS score ranges from zero (absence of depression symptoms) to 15 (serious depression symptoms).^{17,18} In the present study,

scores of 5-10 represented mild to moderate depression symptoms and scores >10 were used to define severe depression symptoms. This scale was based on behavioral and cognitive aspects of depression. It had been translated into Persian. It was also validated for an Iranian population by previous researchers.¹⁹

Data analysis was done using SPSS software, version 10. The mean scores of GDS between men and women and also between rural and urban areas were compared using t-test. To compare other demographic data, we used one-way ANOVA with post hoc Dennett's test. Correlation coefficient was used to assess the relative correlation of age and GDS score. A probability of $P < 0.05$ was considered as statistically significant.

Results

A total of 1461 elderly people were enrolled in this study and the interview questionnaires were completed by 1443 participants (response rate: 98.8%). From these, some 688 (52%) of participants were female. The mean [\pm SD] age was 69.96 ± 7.04 years. The mean [\pm SD] GDS score was 6.8 ± 3.8 . About 70.8% of the participants had scores over the scale of 5 Depression symptoms were mild (score 5-10) in 51.1% and severe (score more than 10) in 19.7% of the participants. There was a significant correlation between the patients' age and GDS score ($r = 0.11$, $P \leq 0.001$).

Analysis of factors affecting GDS showed that all of the variables had a significant correlation effect. Significant depression symptoms were more common among participants who were women, highly educated or illiterate, housewives, unemployed, divorced or widowed, older, and

Table 1: GDS Scores of elderly people with various socio-demographic characteristics

Characteristics	Number	GDS* Score		Statistic	ANOVA P value
		Mean	SD*		
Age group					
60-64	474	6.58	3.71	F=4.73	P \leq 0.001
65-69	381	6.51	3.80		
70-79	275	7.04	3.88		
80-85	187	7.48	3.75		
85+	126	7.79	3.85		
Education					
High	17	3.11	1.86	F=24.49	P \leq 0.001
Diploma/high school	87	4.03	2.77		
Elementary	659	7.14	3.72		
Illiterate	680	7.07	3.85		
Job					
Unemployed	243	7.37	3.86	F=12.3	P \leq 0.001
Un-skilled	396	6.03	3.78		
Retired	134	6.25	3.53		
Housewife	670	7.32	3.76		

GDS, Geriatric Depression Scale; SD, Standard Deviation

Table2: Prevalence of depression symptoms among the elderly in different countries using the GDS

Author	Country	Age (years)	Number	Prevalence (%) of depression symptoms
Rokke et al. 1998	USA	≥60	1724	5
Rozzini et al. 1996	Italy	>80	56	48
Mozley et al. 2000	UK	≥65	308	45
Chiu HC et al. 2005	Taiwan	-		20.1 U-12.8R
Blay SL et al. 2007	Brazil	≥60	7040	22
Coanatra HA et al. 2008	Pakistan	≥65	402	22.9
Kulaksizoglu et al. 2005	Turkish	≥70	1067	16
Sulaiman A et al. 1999	Saudi Arabia	≥60	7970	39
Stek et al. 2004	The Netherland	≥85	599	15

GDS, Geriatric Depression Scale

those who lived in rural areas (Table 1). According to Table 1, scores increased by age. Therefore, a correlation existed which was calculated by Pearson correlation coefficient. Although scores were statistically significant in subgroups, they were not actually significant because the sample was large in size.

Discussion

Epidemiological studies show that depression is common among the elderly population, and the prevalence rate was very high in a systematic review of community-based studies (0.4-35%).²⁰ On the other hand, several studies have confirmed that GDS, even its shortened versions, is a valid scale in many languages.^{13,15-19} Table 2 shows the prevalence of depression symptoms evaluated by GDS score in the elderly population of different countries.

In the present study, the prevalence of depression symptoms was more than that in other studies. Cultural differences, various educational background, social support and economic capability, as well as variations in the accessibility and quality of medical services for the elderly partly explain the different prevalence rates. These results are in the same line with those of another study in which a high prevalence rate of 66% as well as a significant association for depressive symptoms due to medical conditions of the elderly was evident.²⁰ However, the mean GDS score in the present study was less than that in other studies.²¹⁻²³

Consistent with other studies, the prevalence of depression symptoms increased with age.^{14, 21, 22, 24-26} This may be explained by their reduced physical activity and the greater vulnerability of older people to stress and physical diseases. On the other hand, a recent similar study found no meaningful difference in depressive scores among the age range.²⁰ This did not agree with the present results.

A higher prevalence rate of depression

symptoms was found among women. This was consistent with other reports from other countries.^{5,14,21,24,27,28} The fact that women were at a higher risk of mental disorders may be attributed to the robust effect of biological factors or social inconvenience experienced more by them than men.^{21,26,29} However, the type of such social problems might differ between various cultures. Likewise, poor education and unemployment are expected to be associated with depression symptoms. Social and cultural constraints in such groups limit their coping ability when faced with stress, which may be considered as one of the main factors confirming the result of other studies.^{24,30, 31}

It was also found that depression symptoms were more in divorced and widowed groups, which was consistent with previous reports.^{14, 26,29,31} These groups experienced more losses and were more dependent which could be associated with depression. It was also assumed that among this population, acceptance of divorce was a negative social taboo, especially for women.

The most important limitation of the present study was the fact that depression was not formally diagnosed, because GDS questionnaire was a screening instrument for depressive symptoms in the elderly, not a diagnostic procedure. According to the present results, although the scores were statistically significant in the subgroups, they were not actually significant because the sample was large in size. The difference between scores was about 1 point and this did not transfer the patient from one mental status to the next one.

Conclusion

The symptoms of depression are common among the elderly population of Southern Iran, which warrants efficient policy making to address this health system issue in order to detect and treat depression in the elderly.

Acknowledgements

We would like to thank the Health Policy Research Center of Shiraz University of Medical Sciences for the grant given to this study. The authors are grateful to all health workers for their support in data collection. We also would like to thank Mohsen Varzande for his collaboration to improve the English manuscript with his changes.

Conflict of Interest: None declared

References

- 1 WHO (EMRO). Regional strategy for health care of the elderly in Eastern Mediterranean region 2005. <http://www.emro.who.int/dsaf/dsa542>.
- 2 Mostafavi F, Abedi H, Mohd H. Condition Affecting the Elderly Primary Health Care in Urban Health Care Centers of Iran. *Research Journal of Medical Sciences* 2009; 3(6): 202-213.
- 3 Chattat R, Ellena L, Cucinotta D, Savorania G, Mucciarelli G. A study on the validity of different short versions of the Geriatric Depression Scale. *Arch Gerontol Suppl* 2001; 7: 81-86.
- 4 Akiskal HS. Mood disorders: historical introduction and conceptual overview. *Comprehensive textbook of psychiatry*. 8th edition. Edited by: Sadok VA. Philadelphia, Williams and Wilkins, 2005; 1552-1572.
- 5 Djernes JK. Prevalence and predictors of depression in populations of elderly: a review. *Acta Psychiatr Scand* 2006; 113(5):327-87.
- 6 Blay SL, Andreoli SB, Fillenbaum GG, Gastal. Depression morbidity in latter life: prevalence and correlates in a developing country. *Am J Geriatr Psychiatry* 2007; 15(9):790-9.
- 7 Zubenko G S, Mulsant B H, Sweet R A, Pasterbak R E, Tu X M. Mortality of elderly patients with psychiatric disorders. *Am J Psychiatr* 1997; 154: 1360-1368.
- 8 Penninx BW, Geerling SW, Deeg DJ. Minor and major depression and the risk of death in older persons. *Arch Gen Psychiatry* 1999; 56:889-895.
- 9 Tylee A, Katona C L E. Detecting and managing depression in older people. *Br J Gen Pract* 1996; 46(405): 207-208.
- 10 Unutzer J, Patrik D L, Simon G. Depressive symptoms and cost of health services in HMO patients aged 65 years and older: A 4 year's prospective study. *JAMA* 1997; 277(20):1618-1630.
- 11 Katon W J, Schoenbaum M, Fan M Y. Cost effectiveness of improving primary care treatment of late depression. *Arch Gen Psychiatr* 2005; 62(12):1313-1320.
- 12 Tylee A, Freeling Kerry S, Burns T. How does the content of consultations affect the recognition by general practitioners of major depression in Women? *Br J Gen Pract* 1995; 45(400): 575-581.
- 13 Cattell H, Jolly DJ. One hundred cases of suicides in elderly people. *Brit J Psychiatr* 1995; 166: 451-457.
- 14 Sulaiman A, Al-Shammari, Abdulla Al-Subaie. Prevalence and correlates of depression among Saudi elderly. *Int J Geriatr Psychiatry* 1999; 14: 739-747.
- 15 Sheikh J L, Yesavage J A. Geriatric Depression Scale (GDS): recent evidence and development of a shorter version. *Clin Gerontol* 1986; 5: 165-173.
- 16 Vinkers D J, Gussekloo J, Stek M L, Westendorp R G, Van Der Mast R C. The 15-item Geriatric Depression Scale detects changes in depressive symptoms after a major negative life event. The Leiden 85-plus Study. *Int J Geriatr Psychiatry* 2004; 19: 80-84.
- 17 Gori C, Appollonio I, Riva G P, Spiga D, Ferrari A, Trabucchi M. Using a single question to screen for depression in the nursing home. *Arch Gerontol Geriatr Suppl* 1998; 6: 235-240.
- 18 Cheng S, Chan A C M. A brief version of the Geriatric Depression Scale for the Chinese. *Psychol Assess* 2004; 16: 182-186.
- 19 Malakouti SK, Fatollahi P, Mirabzadeh A, Salavati M, Zandi T. Reliability, Validity and factor structure of the GDS-15 in Iranian elderly. *Int J Geriatr psychiatry* 2006; 21: 588-593.
- 20 Javadpour A, Mehri E. Depressive symptoms among Iranian elderly inpatients: prevalence and correlates. *Indian journal of gerontology* 2013; 27 (1): 29-37.
- 21 Beekman AT, Copeland JR, Prince MJ. Review of community prevalence of depression in later life. *Br J Psychiatr* 1999; 174:307-11
- 22 Ganguli M, Dube S, Johnston J, Pandav R, Chandera V, Dodge H. Depressive symptoms, Cognitive impairment and Functional impairment in a rural elderly population in India. *Int J Geriatr psychiatry* 1999; 14: 807-820.
- 23 Mui A C. Geriatric Depression Scale as a community screening instrument for elderly Chinese immigrants. *Int Psychogeriatr* 1996; 8(3):445-458.
- 24 Liu CY, Wang SJ, Teng EL, Fuh JL, Lin CC, Lin KN, et al. Depressive disorders among older residents in a Chinese rural community. *Psychol Med* 1997; 27(4):943-949.
- 25 Palsson SP, Ostling S, Skoog I. The incidence of first-onset depression in a population followed from the age of 70-85. *Psychol*

- Med2001; 31:1159-1168.
- 26 Wang JJ. Prevalence and correlates of depressive symptoms in the elderly of rural Communities in Southern Taiwan. *J Nurs Res*2001;9: 1-12.
- 27 Rozzini R, Boffelli S, Franzoni S, Frisoni GB, Trarucchi M. Prevalence and predictors of depressive symptoms in a nursing home. *Int J Geriatr Psychiatry* 2006; 11: 629-634.
- 28 Cole MG, Dendukuri N. Risk factors for depression among elderly community subjects: a systematic review and meta-analysis. *Am J psychiatry* 2003; 160(6):1147-1156.
- 29 Abolfotouh MA, Daffallah A A, Khan MY. Psychosocial assessment of geriatric subjects in Abha City .Saudi Arabia .*East Mediator Health J*2002; 7:481-491.
- 30 Stek ML, Gussekloo J, Beekman ATF, Van Tilburg W, Westendorp RGI. Prevalence, correlates and recognition of depression in the oldest old: The Leiden 85-plus study. *J Affect Disor*2004; 78:192-200.
- 31 Woo J, Ho SC, Wong EM. Depression is the predominant factor contributing to moral as measured by the Philadelphia Geriatric Morale Scale in elderly Chinese aged 70 years and over. *Int J Greiatr Psychiatry* 2005; 20(11):1052-1059.