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Gac Med Mex. 2016;152:395-9

Depression in older adults with extreme poverty belonging to Social Program in Ciudad Juarez, Chihuahua, Mexico

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Abstract

Objective: *To identify depression in older adults living in extreme poverty beneficiaries of social program in City Juarez, Chihuahua.* **Material and methods***: Analytical study in 941 adults > 60 years, studied variables: age, sex, marital status, education and work, extreme poverty, place of residence, asylum. Yesavage Geriatric scale was used. Statistical tests: χ^2, IC < 95%, p < 0.05. The analysis was performed with SPSS 20.0.* **Results:** *Prevalence of depression 45.48%, in women 46.75%. Older adults who do not work, incomplete education, living in asylum, have hypertension and pulmonary diseases increase depression risk (p < 0.05).* **Conclusion:** *Older Adults program beneficiaries living in extreme poverty depression is greater than that reported in the literature. The support granted by the Mexican Government to social programs that benefit older adults should be planned strategically with aims on improving the long-term health.* (Gac Med Mex. 2016;152:395-9)
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KEY WORDS: *Depression. Extreme Poverty. Older adults. Social programs.*

Introduction

The population is rapidly increasing in the world, and the number of people aged 60 years or older is expected to increase three-fold by the year 2100. Approximately 20% of older adults (OAs) aged 60 years suffer from some mental or neural disorder, with depression being the main cause of disability among mental disorders all over the world, and not being adequately diagnosed or treated by medical services[1]. The American Psychiatric Association defines depression as a condition where a person feels discouraged, sad, hopeless, without motivation or disinterested in life in general. These feelings may last a short period of time, but when they prevail for more than 2 weeks and interfere with daily activities such as taking care of the family, spending time with friends, going to work or going to school, there is most likely a major depressive disorder present[2]. In the OA, depression has a series of negative consequences on comorbidities (ischemic heart disease, heart failure, osteoporosis and poor health self-perception) and on functional capacities (physical and social disability), as well as increased use and costs of medical services and health care[2,3]. The relationship of depression with poverty in OAs has been identified in several studies, with prevalence ranging from 2.5 to up to 40%, and these prevalences are associated with negative perception of health, job loss, unemployment, incomplete or inexistent basic education, living alone, being homeless, alcoholism and smoking among other factors[4,5].

In Mexico, 10% of the population is expected to be OAs by 2010, and ageing index will be 31%, with a

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Date of reception: 25-03-2015
Date of acceptance: 02-09-2015

rate of dependence on the family of 9%, and this is why ageing and mental health conditions are issues that the country has to address urgently. OAs lack adequate economic income to live in a dignified way, since 1 out of every 10 lives in extreme poverty, which makes them vulnerable; therefore, this issue has to be considered a Public Health problem in Mexico[6,7]. Among the causes identified in the *Distrito Federal* IMSS users, there was a prevalence of 21.7%, with more women affected, at ages > 75 years, with financial problems present, and separated or divorced status were identified factors[8,9]. Depression in OAs has been associated with cognitive deterioration and functional dependence[10]; undernourishment has been a risk factor in OAs, preferably in women[11].

Depression care in OAs who live in extreme poverty has not been addressed or contemplated in social programs and, therefore, it is important identifying it with its associated factors in order to implement a wellbeing and health strategy to the benefit of this population. Hence, the purpose of this study was to identify poverty-associated depression in OAs living in extreme poverty and who are beneficiaries of a social program in Ciudad Juárez, Chihuahua.

Material and methods

The study was carried out in beneficiaries of a social program for 60-year old OAs entitled "*Vive a Plenitud*" ("Live Life to the Fullest") in Ciudad Juárez, Chihuahua from January 1 through December 31, 2012. The program is part of the OA life conditions and wellbeing evaluation project.

Study design

Analytical study, where 941 OAs aged 60 years or more living in extreme poverty were surveyed and included by means of probabilistic sampling with 99% reliability and 1% margin of error; patient selection was randomly made using the beneficiary census. OAs with a history of any previously-diagnosed mental illness were excluded.

Study development

Health-disease variables, which were established by means of physical exams and diagnosed according to the ICD 10.0, were recorded.

- Socio-demographic: Age, sex, marital status, level of education and occupation.
- Socioeconomic: Extreme poverty.
- Place of residence: Own house, living with relative or friend, senior citizen's home.

Healthcare personnel was trained to estimate depressive symptoms of the Yesavage geriatric rating scale; this rating is one of the most widely used to identify depression in OAs, and the abbreviated version is comprised by 15 items, with scores higher than 6 to 9 points establishing the presence of mild depression and scores of 10 or higher being indicative of established depressive disorder[12-14].

Statistical analysis

Descriptive statistics and univariate analysis were used to describe variable distribution and the chi-square test was used to assess risk (OR). In order to estimate the effect of results, 95% confidence intervals (CI) were calculated, and statistical significance was considered with a p-value < 0.05. Data were analyzed with the SPSS program (Chicago Ill, 20.0 for Windows).

Ethical considerations

Authorization was obtained from the Social Development Ministry of the Government of the State of Chihuahua, and from the health research investigation and ethics local committee with the registry R-2012-801-3. Informed consent was requested from the OAs participating in the study.

Results

The prevalence of depression was 45.48% in OAs, with women being more affected (46.75%); with regard to age, the 60-69-year age group was the most affected with 58.82%, followed by 90-year old OAs, with 50.00%, without statistically significant differences. Widowed marital status was the most frequent (46.95%), followed by singles (45.73%). Among the studied OAs, 5.5% had some remunerated job at the time of the survey, and those who do not work have statistically significant differences conferring higher risk for depression (Table 1).

According to Yesavage's depression scale, mild depression was found in 37.4% of women and in 36.8% of men. Established depression was recorded in 9.3% of women and in 6.7% of men; however, no statistically significant differences were identified (p = 0.15) both for mild and established depression (Table 2).

Table 1. Socio-demographic characteristics

Older adult characteristics		Depression		No depression	
		n (428)	%	n (513)	%
Sex	Male	162	43.55	210	56.45
	Female	266	46.75	303	53.25
Age	60-69	10	58.82	7	41.18
	70-79	249	43.84	319	56.16
	80-89	152	47.20	170	52.80
	≥ 90	17	50.00	17	50.00
Marital status	Single	75	45.73	89	54.27
	Married	102	44.93	125	55.07
	Divorced/Separated	16	34.78	30	65.22
	Widowed	223	46.95	252	53.05
	Cohabitating	12	41.38	17	58.62
Employed	Yes	16	30.70	36	69.23
	No	412	43.78*	477	50.69

*p < 0.05.

Table 2. Yesavage's depression scale by sex

Affective state	Male		Female			
	n	%	n	%	χ^2	p < 0.05
Mild depression	137	36.83	213	37.43	1.36	0.24
Established depression	25	6.72	53	9.31	1.99	0.15
Total	162		266			

Depression was contrasted as a risk according to the OAs level of education, with depression being found in 34.81% of those without any education and in 62.38% of those with some level of incomplete education; statistical concordance was found in the risk for depression (p = 0.002 and p = 0.03) (Table 3).

With regard to the place of residence, OAs living in senior citizen's homes experience more depression with 68.8% and a p-value = 0.04, with similar figures for those who live in somebody else's home (45.4%) and in their own home (44.8%). When living in senior citizen's homes, the risk for depression is higher (Table 4).

High depressive state figures were found in people with arterial hypertension (AHT) and heart conditions, with 64.25% of them showing depression with statistically significant differences and with a p-value of 0.02. However, in the case of diabetes mellitus, there was no statistical difference; with regard to pulmonary disease, the statistical analysis determined that there is special risk for the development of depression (p = 0.01) (Table 5).

Discussion

Depression is one of the most common psychiatric disorders in OAs. Different epidemiological community-based studies in the world and in Mexico describe depression prevalences ranging from 2 to 27%, with depression most significant symptoms occurring in OAs living in the community, although higher prevalence has been reported in hospitalized and institutionalized OAs. In the program-beneficiary OAs

Table 3. Level of education and its correlation with depression

Level of education	n	%	χ^2	p < 0.05
None	149	34.81	9.18	0.002
Basic, incomplete*	267	62.38	4.56	0.03
Basic, complete†	5	1.17	1.80	0.17
Post-basic‡	7	1.64	1.69	0.19

*Incomplete or complete primary school with incomplete junior high school education.
†Complete junior high school education.
‡High school education or more.

Table 4. Living in senior citizen's homes favors older adult depression

Place of residence	n	%	χ^2	p < 0.05
Senior citizen's home	11	68.75	3.55	0.04
With friend or relative	194	45.43	0.04	0.81
Own house	223	44.78	0.48	0.52

Table 5. Relationship of depression and chronic conditions

Condition	n	%	χ^2	p < 0.05
Hypertension and heart disease	275	64.25	4.97	0.02
Diabetes	85	19.87	0.35	0.55
Pulmonary disease	68	15.88	5.94	0.01

who live in extreme poverty, the problem is enormous, since nearly half the OAs were identified as having some type of depression, with this condition being recurrent in women and in program beneficiaries who live in senior citizen's homes[3,4,8,11,16].

Different studies refer that depression has been identified as one of the main causes of morbidity in OAs aged 80 years or older; in this age group is where many physical abilities are diminished and the individual is more vulnerable in terms of health, economy and socially, with access to healthcare systems and medical care being limited for most OAs, or they have no access to healthcare, and in particular to mental healthcare. In this study, chronic diseases have been identified as an increase in the risk for the occurrence of depression up to 6-fold higher than in those who refer not having comorbid chronic conditions[3,15,16]. Loss or lack of job can cause loss of interest in some daily activities, sleep disturbances, loss of appetite or hopelessness that produce permanent states of depression, thus contributing to a poor quality of life and to the generation of a negative health status[3,4,8,11,15-18].

Formal education among OAs has been identified in different studies as a protective factor in those who have completed more than 6 years of formal education with a decrease in the risk of experiencing cognitive deterioration or mental illnesses, particularly depression[4,10,11]. However, beneficiaries who had no access to formal education, or whose level of education was lower than 6 years, both men and women, were associated with risk for depression.

The support granted by the Mexican government to OA-benefit social programs should have a strategic planning for long-term health improvement as a goal that efficiently benefits OAs, since some cases of success in OA-protection social programs are the result of mental health care in marginalized populations that lack access to healthcare services and who are at extreme poorness. Affiliation to healthcare systems with an emphasis on mental health has demonstrated health improvement and adequate use of public resources[19-23].

Acknowledgements

To the Secretaría de Desarrollo Social del Gobierno de Chihuahua for the support lent for the conduction of the study.

References

1. Organización Mundial de la Salud. La salud mental y los adultos mayores. Nota descriptiva Número 381. Septiembre 2013. [Consultado el 15 de enero de 2015]. Disponible en: http://www.who.int/mediacentre/factsheets/fs381/es/.
2. American Psychiatric Association. Practice guideline for the treatment of patients with major depressive disorder; 2010. Washington, DC: American Psychiatric Association; 2010. [Consultado el 15 de enero de 2015]. Disponible en: http://psychiatryonline.org/pb/assets/raw/sitewide/practice_guidelines/guidelines/mdd.pdf.
3. Aguilar-Navarro S, Ávila-Funes JA. La depresión: particularidades clínicas y consecuencias en el adulto mayor. Gac Med Méx. 2007;143(2): 141-6.
4. Thapa SB, Martínez P, Clausen T. Depression and Its Correlates in South Africa and Ghana among people aged 50 and above: Findings from the WHO Study on Global Ageing and Adult Health. J Psychiatry. 2014;17(6):2-6.
5. Chang-Quan H, Xue-Mei Z, Bi-Rong D, Zhen-Chan L, Ji-Rong Y, Qing-Xiu L. Health status and risk for depression among the elderly: a meta-analysis of published literature. Age Ageing. 2010;39(1):23-30.
6. Instituto Nacional de Estadística y Geografía INEGI. Encuesta Nacional sobre Salud y Envejecimiento en México. ENASEM 2012. [Consultado el 15 de enero de 2015]. Disponible en :http://www3.inegi.org.mx/sistemas/temas/default.aspx?s=est&c=17484.
7. Consejo Nacional de Población CONAPO. Anexo estadístico de pobreza en México 2012. [Consultado el 15 de enero de 2015]. Disponible en: http://www.coneval.gob.mx/Medicion/Paginas/Medición/Pobreza%202012/Anexo-estadístico-pobreza-2012.aspx.
8. García-Peña C, Wagner FA, Sánchez-García S, Gallo J. Depressive symptoms among older adults in Mexico City. J Gen Inter Med. 2008; 23(12):1973-80.
9. Sánchez-García S, Juárez-Cedillo T, Gallegos-Carrillo K, Gallo JJ, Wagner FA, García-Peña C. Frecuencia de los síntomas depresivos entre adultos mayores de la Ciudad de México. Salud Mental. 2010;35(1)71-7.
10. Mejía-Arango S, Miguel-Jaimes A, Villa A, Ruiz-Arregui L, Gutiérrez-Robledo LM. Deterioro cognoscitivo y factores asociados en adultos mayores en México. Salud Pública Méx. 2007;49(4):475-81.
11. Rodríguez-Tadeo A, Wall-Medrano A, Gaytan-Vidaña ME, Campos A, Ornelas-Contreras M, Novelo-Huerta HI. Malnutrition risk factors among the elderly from the US-Mexico border: the "one thousand" study. J Nutr Health Aging. 2012;16(5):426-31.
12. Yesavage J, BrinK TI, Rose TL, Lum O, Huang V, Adely M, et al. Development and validation of a geriatric depression screening scale: a preliminary report. J Psychiatr Res.1982-1983;17(1):37-49.
13. Bacca AM, González A, Uribe AF. Validación de la escala de depresión de Yesavage (versión reducida) en adultos mayores colombianos. Rev. Pensamiento Psicológico. 2010;1:53-60.
14. Martínez J, Onís MC, Dueñas R, Albert C, Aguado C, Luque R. Versión española del cuestionario de Yesavage abreviado (GDS) para el despistaje de depresión en mayores de 65 años: adaptación y validación. Medifam. 2002;12(10):620-30.
15. Al-Sabahi SM, Al Sinawi HN, Al Hinai SS, Youssef RM. Rate and correlates of depression among elderly people attending primary health care centres in Al-Dakhiliyah governorate, Oman. EMHJ. 2014;20(3): 181-9.
16. Organización Mundial de la Salud. Género y envejecimiento en las Américas. Hoja informativa; Programa mujer, salud y desarrollo. [Consultado el 15 de enero de 2015]. Disponible en: http://www1.paho.org/spanish/hdp/hdw/genderageingsp.PDF?ua=1.
17. Minicuci N, Maggi S, Pavan M, Enzi G, Crepaldi G. Prevalence Rate and Correlates of Depressive Symptoms in Older Individuals: The Veneto Study. J Gerontol A Biol Sci Med Sci. 2002;57(3):155-61.
18. Belló M, Puentes-Rosas E, Medina-Mora ME, Lozano R. Prevalence and diagnosis of depression in Mexico. Salud Pública Méx. 2005; 47(1):4-11.
19. Berenzon S, Lara MA, Robles R, Medina-Mora ME. Depresión: estado del conocimiento y la necesidad de políticas públicas y planes de acción en México. Salud Pública Méx. 2013;55(1):74-80.
20. Rubio G, Garfias F. Análisis comparativo sobre los programas para adultos mayores en México. Serie de Políticas sociales 161, CEPAL; 2010.
21. Wagner FA, González-Forteza C, Sánchez-García S, García-Peña C, Gallo JJ. Enfocando la depresión como problema de salud pública en México. Salud Mental. 2012;35(1):3-11.
22. Snowden LR. Poverty, safety net programs, and African Americans' mental health. Am Psychol. 2014;69(8):773-81. Disponible en: http://dx.doi.org/10.1037/a0037422.
23. Reyes-Morales H, Gómez-Dantés H, Torres-Arreola L del P, Tomé-Sandoval P, Galván-Flores G, González-Unzaga MA, et al. Necesidades de salud en áreas urbanas marginadas de México. Rev Panam Salud Pública. 2009;25(4):328-36.