



Original article

Factors related to depression in elderly patients attending primary health care centres in Chiclayo (Peru)[☆]



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ABSTRACT

Objectives: The aim of this work is to evaluate the factors related to depression in older adults seen in the health centres of Chiclayo.

Methods: An observational, prospective, analytical study that included adults over 60 years of age residing in the Chiclayo district (Peru). The abbreviated depression scale of Yesavage was used. Univariate analysis was performed, presented as frequencies and percentages, as well as bivariate analysis using chi-squared. Adjusted logistic regressions were calculated for age and gender.

Results: A total of 302 older adults participated in this study. The median age was 73 years. It was found that 30.8 % had depressive signs, and 18.2 % had some degree of cognitive deterioration. Just over half (160, 52.98 %) had a socio-familial risk, and 29 (9.60 %) were detected in the dependent functional assessment. There was an association in the analysis of depression, age group, cognitive impairment, socio-family assessment ($P < .05$). In the multivariate analysis adjusted for age and gender, cognitive deterioration and socio-family assessment continued to be risk factors.

Conclusions: Depression is associated with a deficiency in the cognitive state, with familial partner risk being an influential factor that may be preventable.

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Factores relacionados con depresión en adultos mayores atendidos en atención primaria de salud en Chiclayo

R E S U M E N

Palabras clave:

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Objetivos: El objetivo de este trabajo es evaluar los factores relacionados con la depresión en adultos mayores de los centros de salud de Chiclayo, Perú.

Métodos: Estudio observacional, prospectivo y analítico que incluyó a adultos mayores de 60 años que residían en el distrito Chiclayo (Perú). Se usó la escala de depresión de Yesavage abreviada. Se realizó un análisis univariado con datos presentados en frecuencias y porcentajes, y otro bivariado mediante la prueba de la χ^2 . Se calcularon las regresiones logísticas ajustadas por edad y sexo.

Resultados: Participaron en total 302 adultos mayores. El promedio de la edad fue 73 años. Se encontró que el 308% presentaba manifestaciones depresivas; el 182%, con algún grado de deterioro cognitivo. Hubo 160 (52,98 %) que tenían un riesgo sociofamiliar; en la valoración funcional dependiente, se detectó a 29 (9,60 %). Se halló asociación en el análisis de depresión, grupo etáreo, deterioro cognitivo y valoración sociofamiliar ($p < 005$). En el análisis multivariado ajustado por edad y sexo, el deterioro cognitivo y la valoración sociofamiliar continuaron siendo factores de riesgo.

Conclusiones: La depresión se asocia con deficiencia en el estado cognitivo, y el riesgo sociofamiliar es un factor influyente que se puede prevenir.

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Introduction

The increase in life expectancy is one of the most important social changes in this century.¹ It brings with it an increase in older adults around the world who, due to ageing, suffer affective, physical and social losses that mostly lead to negative attitudes about themselves or life,^{1,2} so it is important to evaluate the physical and mental condition of this population.

Depression is characterised by the presence of sadness, loss of interest and low self-esteem, which can be persistent and not caused by an external factor,² and can lead from impaired quality of life to suicide.^{3,4} The literature indicates that depression has a higher prevalence in older adults than in young people,⁵ and leads to other diseases in older adults, when it is preventable in primary care.^{3,5}

In a worldwide systematic review, the global prevalence of depression in older adults is 13.5 %, ⁴ very similar to a primary study such as the EURODEP (Depression among Older People in Europe), which found a global prevalence of depression of 12.3 % (women, 14.1 %; men, 8.6 %).⁶ These studies are mainly of European and developed countries, but these prevalences may vary compared to other regions such as South America.

Depression in older adults should always be diagnosed, evaluated and treated to improve the quality of life of these patients.⁷ For this reason, it is important to know the risk factors associated with depression in older adults, to make health promotion and prevention measures possible for this age group as from primary care.

The general objective of this study is to evaluate the factors associated with depression in older adults at two health centres in La Victoria, Chiclayo, attended in 2016 as outpatients.

Material and methods

Participants

An observational, analytical, prospective study was carried out between January and December 2016, surveying people over 60 years of age who attended two health centres (Fernando Carbajal Segura El Bosque and La Victoria Sector II) in La Victoria, Chiclayo, Peru, which serve a large population of older adults.

From a total of 1250 registered older adults, the sample was obtained to calculate proportions, with an expected proportion of 35 %, ⁷ a precision of 5% and a confidence interval of 95 %. A minimum of 274 participants were obtained. A rejection rate of 10 % was assumed, so the final sample was 301 older adults. A simple random sampling method was used from the patient register of the health centres in question. Adults over 60 years of age who were followed up in the established zone were included and those who suffered from a mental disorder that prevented answering the questions were excluded.

Tools

The following variables were evaluated:

- Affective state: the Yesavage depression scale - short form (sensitivity, 81.1 %; specificity, 76.7 %). This evaluates the presence or absence of manifestations of depression.⁸
- Cognitive assessment: abbreviated Pfeiffer questionnaire (sensitivity, 85.7 %; specificity, 79.3 %). This consists of 10 questions on orientation, memory and simple calculations.⁹
- Functional assessment: Katz index validated in Spanish (reproducibility coefficient=0.94; correlation coefficient=0.94).

cient = 0.73). Six functions present in activities of daily living were evaluated.⁹

- Social assessment of older adults. This assesses a group of aspects that allow us to get a general idea of the family, social and economic situation of the older adult, classified as good, fair or poor.

Data collection and analysis

The data were collected taking as a source the interview with the older adult and other variables (mainly epidemiological data, age, sex and origin). The researchers collected the data in a single day, in coordination with the heads of the facilities and using the medical record number to localise the data.

The data were tabulated in a database in Microsoft Excel 2013[®] and statistically processed with the STATA v.12.1 program. Quantitative data were presented as measures of central tendency and standard deviations, after verification of the normal distribution with the Shapiro-Wilk test. Qualitative data (affective, functional, cognitive, nutritional and social status) were summarised as proportions and percentages. For the bivariate analysis, the chi square test and Fisher's exact test were used for categorical variables. A multivariate analysis was performed adjusting the associated variables in the bivariate for age and sex, with a multivariate logistic regression using the Poisson family, with the log link function. The confidence interval and the p values obtained from the model were reported. A p value <0.05 was considered statistically significant.

Ethical aspects

The study received the approval of the ethics committee of the Hospital Regional de Lambayeque [Lambayeque Regional Hospital]. In addition, the heads of each of the health facilities gave permission to carry out the research, and the anonymity of the information collected was preserved.

Results

In total, 302 older adults were evaluated, with a median age of 73 (range, 60–95) years. The frequency of depression was 30.8 %. It was also found that 247 patients (81.8 %) had normal cognitive function. The most frequent comorbidity was arterial hypertension (45.7 %). The other categories are detailed in [Table 1](#).

In the bivariate analysis regarding the factors associated with depression, the patients with cognitive deficits had a risk of having a manifestation of depression 2.35 times greater than those without cognitive deficits (95 % CI 1.72–3.21). Additionally, patients over the age of 80 had a 52 % higher risk of depression than those aged <60–69 years. Social problems and social risk were risk factors for depression (prevalence ratio [PR] = 4.19 and 1.85, respectively). Other results are detailed in [Table 2](#).

In the multivariate analysis, a possible interaction between cognitive status and social family assessment was evaluated with the Mantel-Haenszel test in the model adjusted for age and sex, which was not statistically significant. Cognitive

Table 1 – Characteristics of older adults in the district of La Victoria, Chiclayo (n = 302).

Female	192 (63.6)
Male	110 (36.4)
Age	
60–64 years	56 (18.5)
65–69 years	56 (18.5)
70–74 years	52 (17.2)
75–79 years	72 (23.9)
≥80 years	66 (21.9)
Age (years)	73 (60–95)
Cognitive status	
Normal	247 (81.8)
Mild	35 (11.6)
Moderate	11 (3.6)
Severe	9 (3)
Affective status	
Without manifestations of depression	209 (69.2)
With manifestations of depression	93 (30.8)
Functional assessment	
Dependent	29 (9.6)
Independent	273 (90.4)
Nutritional status	
Underweight	57 (18.9)
Normal weight	159 (52.7)
Overweight	52 (17.2)
Obesity	34 (11.2)
Social family assessment	
Good situation	103 (34.1)
Social risk	160 (53)
Social problem	39 (12.9)
Comorbidities	
None	79 (26.16)
Arterial hypertension	138 (45.7)
Type 2 diabetes mellitus	36 (11.9)
Osteoarticular problems	109 (36.1)

Values express n (%) or median (interval) with non-normal distribution (Shapiro-Wilk <0.05).

impairment was a risk factor for depression (PR = 1.86; 95 % CI, 1.32–2.63). The social family assessment was also a risk factor, in contrast to the functional assessment ([Table 3](#)).

Discussion

The study found that 30 % of older adults have depression, a finding similar to those in countries such as Spain (29.3–35 %),^{7,10} Colombia (29.5 %),¹¹ or Mexico (28.9 %),¹² but well above those of other studies in the European population, in which it was close to 12 %.^{3,6} Major depression can occur due to family, social or financial problems, and it has been seen in studies that the probability of suffering from dementia at an advanced age doubles if the patient is depressed.^{13,14} In a study carried out in Spain, it was found that the main emotional support for elderly patients is the family, which benefits their physical and psychological health.¹⁵

It must be taken into account that elderly patients also suffer from chronic diseases, such as high blood pressure, diabetes mellitus, etc., which impair their health. In a case-

Table 2 – Bivariate analysis of the affective status and other variables in older adults in the district of La Victoria, Chiclayo.

Characteristics	Bivariate analysis		Raw model		
	With depression	Without depression	PR	95 % CI	p
<i>Age group</i>					
60–69 years	36 (32.14)	76 (67.86)	1		
70–79 years	32 (23.02)	107 (76.98)	0.71	0.47–1.07	0.107
≥80 years	25 (49.02)	26 (50.98)	1.52	1.03–2.24	0.033
<i>Gender</i>					
Male	31 (28.2)	79 (71.8)	1		
Female	62 (32.3)	130 (67.7)	1.14	0.79–1.64	0.461
<i>Cognitive status</i>					
Without cognitive impairment	61 (24.7)	186 (75.3)	1		
With cognitive impairment	32 (58.2)	23 (41.8)	2.35	1.72–3.22	<0.001*
<i>Functional assessment</i>					
Independent	81 (29.7)	192 (70.3)	1		
Dependent	12 (41.4)	17 (58.6)	1.39	0.87–2.23	0.166*
<i>Social family assessment</i>					
Good situation	17 (16.5)	86 (83.5)	1		
Social risk	49 (30.6)	111 (69.4)	1.85	1.13–3.03	0.014*
Social problem	27 (69.2)	12 (30.8)	4.19	2.59–6.79	<0.001
<i>Nutritional assessment</i>					
Normal	47 (29.38)	113 (70.63)	1		
Underweight	11 (44)	14 (56)	1.50	0.9–2.48	0.116
Overweight	24 (28.92)	59 (71.08)	0.98	0.65–1.49	0.941
Obesity	11 (32.35)	23 (67.65)	1.10	0.64–1.90	0.727
<i>Comorbidities</i>					
Arterial hypertension	48 (34.8)	90 (65.2)	1.26	0.90–1.77	0.169
Diabetes mellitus	10 (27.8)	26 (72.2)	0.89	0.51–1.55	0.682
Osteoarticular problems	35 (32.1)	74 (67.9)	1.06	0.75–1.51	0.709

RP: prevalence ratio.
* Chi square test.

Table 3 – Factors associated with the affective status of older adults in a city in Peru.

Characteristics	Adjusted model		
	PRa	95 % CI	p
<i>Cognitive status</i>			
Without cognitive impairment	1		
With cognitive impairment	1.86	1.32–2.63	<0.001
<i>Social family assessment</i>			
Good situation	1		
Social risk	1.66	0.99–2.78	0.055
Social problem	3.42	2.03–5.76	<0.001
<i>Functional assessment</i>			
Independent	1		
Dependent	1.36	0.86–2.16	0.190

PRa: prevalence ratio adjusted for age and gender with generalised linear models, using the Poisson family. Significance threshold, $p < 0.05$.

control study in the Netherlands, it was investigated whether antihypertensive treatment had any positive influence on cognitive function, but it was found that it did not.¹⁴ In this study, patients with and without chronic illnesses were equally likely to suffer from depression. This differs from some studies that found an association in older adults between depression and

some chronic diseases, such as hypertension^{3,16} and cancer³, and some other risk factors not evaluated in this study, such as lack of physical activity and poor quality of life.^{7,10,11,17} This can be explained because patients with physical dependence, poor quality of life, lack of physical activity and chronic diseases suffer from a prior state of stress, which can lead to depression.⁶ In our study, some questions were answered by simple yes/no, so there may be information biases that could lead to error when analysing this variable, which differs from the literature and its interpretation may not be valid.

A higher frequency of depression was found in women, although both genders have the same probability of suffering it, which was similar to a study in a hospitalised population older than 60 years³ and unlike others in which being a woman had a greater risk of depression (one with a population older than 75 years³ and a systematic review⁴).

A strong association was found between cognitive impairment and depression (PR = 1.86), similar to other studies,^{7,12,18} which can be explained because cognitive impairment can be due to neurological, vascular or inflammatory lesions.¹³ Over time, cognitive decline can lead to increased depression and should be evaluated in older adults so as to prevent the progression of depression. It should be taken into account that depression has been associated with psychiatric illnesses such as obsessive-compulsive disorder, regardless of cognitive status,¹⁸ therefore promoting measures that prevent depres-

sion must be considered essential. In this study, patients with a mental disorder were not included, so the conclusions may not be extrapolated to that group of patients.

The strengths of this study are its use of validated tests for the use of data and the inclusion of more factors that may be associated with depression, in addition to the fact that being a randomised study in one district means the results can be extrapolated to a population similar to ours. The study's limitations are not having studies that associate social family risk for discussion, not including physical activity as a variable, and being a cross-sectional study that cannot give causality. In addition, another limitation may be information bias, as some older adults may not have reported depression for various reasons, thus the prevalence could be underestimated.

Conclusions

The factors associated with depression are advanced age, impaired cognitive status and social family risk. The latter are modifiable factors, so promoting health and a better social and family environment should be started at an early age, as well as stimulating older adults to improve their cognitive development and carry out physical activities.

Conflicts of interest

The authors have no conflicts of interest to declare.

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