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ORIGINAL ARTICLE

DEPRESSION AMONG THE ELDERLY IN THE COMMUNITY, IN DAY CARE CENTERS, AND IN GERIATRIC HOMES

DEPRESSÃO ENTRE IDOSOS DA COMUNIDADE, DOS CENTROS-DIA E RESIDENTES EM LARES GERIÁTRICOS

DEPRESIÓN ENTRE ANCIANOS EN LA COMUNIDAD, EN CENTROS DE DÍA Y EN RESIDENCIAS GERIÁTRICAS

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ABSTRACT

Objective: investigate the prevalence of depressive symptoms among the elderly and possible associated factors. **Method:** observational, descriptive, and quantitative study, with a cross-sectional approach. The sample consisted of 861 elderly individuals, in the community, in day care centers, and in geriatric homes in Coimbra, Portugal. For data collection, we used a structured questionnaire, addressing the sociodemographic characteristics and the place of residence, and the Geriatric Depression Scale - short version (GDS-15). **Results:** 65% of participants were women, 43.1% were at the age group from 75 to 84 years, 71% had from 1 to 5 years of schooling, 42.4% were widowed, 39.8% were living in geriatric homes, and 52.7% had a depressive symptomatology. **Conclusion:** the high prevalence of depressive symptoms (52.7%) and their relation to the associated factors (gender, age group, schooling, marital status, and place of residence) emphasize the need to seek further knowledge regarding depression, to provide means for the development of public policies and priority actions that can guarantee the best health care for the elderly population. **Descriptors:** Aging; Elderly; Depressive Symptomatology.

RESUMO

Objetivo: investigar a prevalência de sintomas depressivos entre idosos e possíveis fatores associados. **Método:** estudo observacional, descritivo e quantitativo, de corte transversal. A amostra foi constituída por 861 idosos, na comunidade, em centros-dia e em lares geriátricos em Coimbra, Portugal. Na coleta dos dados, foi utilizado um questionário estruturado, acerca das características sociodemográficas e do local de residência, e a Escala de Depressão Geriátrica - versão reduzida (GDS-15). **Resultados:** 65% dos participantes eram do sexo feminino, 43,1% encontravam-se na faixa etária de 75 a 84 anos, 71% apresentavam escolaridade de 1 a 5 anos, 42,4% eram viúvos, 39,8% residiam em lares geriátricos e 52,7% apresentavam sintomatologia depressiva. **Conclusão:** a elevada prevalência de sintomas depressivos (52,7%) e sua relação com os fatores associados (sexo, faixa etária, escolaridade, estado civil e local de residência) enfatizam a necessidade de buscar maior aprofundamento no que tange à depressão, para subsidiar o desenvolvimento de políticas públicas e ações prioritárias que possam garantir o melhor cuidado em saúde para a população idosa. **Descritores:** Envelhecimento; Idosos; Sintomatologia Depressiva.

RESUMEN

Objetivo: investigar la prevalencia de síntomas depresivos entre ancianos y posibles factores asociados. **Método:** estudio observacional, descriptivo y cuantitativo, con un abordaje transversal. La muestra estuvo constituida por 861 ancianos, en la comunidad, en centros de día y en residencias geriátricas en Coimbra, Portugal. Para la recogida de datos, se utilizó un cuestionario estructurado, sobre las características sociodemográficas y el lugar de residencia, y la Escala de Depresión Geriátrica - versión corta (GDS-15). **Resultados:** 65% de los participantes eran mujeres, 43,1% estaban en la franja etaria de 75 a 84 años, 71% tenían de 1 a 5 años de escolaridad, 42,4% eran viudos, 39,8% vivían en residencias geriátricas y 52,7% presentaban sintomatología depresiva. **Conclusión:** la alta prevalencia de síntomas depresivos (52,7%) y su relación con los factores asociados (sexo, franja etaria, escolaridad, estado civil y lugar de residencia) enfatizan la necesidad de buscar un mayor conocimiento acerca de la depresión, para subsidiar el desarrollo de políticas públicas y acciones prioritarias que garanticen la mejor atención de salud a la población anciana. **Descriptor:** Envejecimiento; Ancianos; Sintomatología Depresiva.

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INTRODUCTION

Population aging is a global reality, with repercussions in the health, economic, and social fields, therefore, the growth of elderly population represents a concern worldwide. We know that aging is a life-course phase, where changes in the physical, psychological, and social aspects take place. However, they emerge differently in each individual.

According to data concerning 2011 from the National Institute of Statistics (INE)¹ of Portugal, there is an estimated proportion of 19% of individuals ≥ 65 years. This value contrasts with the 8% registered in 1960 and the 16% in 2000. The population aging rate also reflects this tendency, as in 2011 the figure presented in the country was 129, something which means that, today, Portugal has an elderly population greater than its young population.

Due to the tendency of growth in the elderly population, today, Portugal faces a reality that gains a significant social prominence, such as the decreased birth and mortality rates², resulting in greater longevity. Given these issues, there is a need to develop strategies to improve quality of life among this aging population.

With the changes observed in the Portuguese society, either on the demographic or family level, there was a need to create new intervention ways, by adjusting the current social needs, emphasizing greater dynamics in the social support provided at home, as well as in structures for interaction, fighting social isolation and social exclusion, thus preventing or delaying the institutionalization of an elderly individual.³

Over the period from 1998 to 2006, the home support service showed the highest growth rate (75.5%), followed by the day care center (40.6%) and the geriatric home (28.4%). The average use rate within this period was 88.2%, highlighting that the highest occupation percentage was related to the geriatric home, reaching values greater than 95%.³

Often associated with chronic diseases, depression emerges as a major public health issue, due to its negative impact on quality of life and because it poses an increased risk of suicide.⁴ Depression is common among the elderly, but it is frequently misdiagnosed or inadequately treated.

Depression is characterized as a multifactorial disorder in the affective or mood area, which has a strong functional impact and involves numerous aspects of

biological, psychological, and social order. Among the main symptoms, there is depressed mood and loss of interest or pleasure in almost all activities.⁵

Depression is regarded as the fourth largest incapacitating agent in relation to social functions and other daily life activities, causing about 850,000 deaths each year⁶; it is considered as the most prevalent mental illness worldwide, with an expectation for 2020 as the second global cause of inability.⁷

Taking into account the social and clinical context where an elderly individual is within, the emergence of depressive signs and symptoms may be confused with pathological changes derived from aging, as a consequence, there is a need for better evaluation and understanding on this disease by professionals who care for the elderly.^{8,9}

Stressing the need for research on depression, a study¹⁰ conducted with users of a rural/urban health center in a municipality in northern Portugal, of both sexes and aged from 18 to 99 years, revealed that 40 to 45% of subjects had some degree of emotional-affective disorder (depression, anxiety, and stress), and that, regarding depression, a prevalence of 40.52% was observed, and 12.24% had a severe or very severe level.

Given the relevance of the theme, this article aims to investigate the prevalence of depressive symptoms among the elderly and possible associated factors, in order to provide results that can help explaining the mechanisms that cause depression, collaborating to health practices, minimizing the prevalence of this disease, and promoting a better quality of life for the elderly.

METHOD

This is an observational, descriptive, and quantitative study with a cross-sectional approach. It was conducted in the city of Coimbra, Portugal. We chose to include in the study all elderly individuals who met the inclusion criteria established, with a total sample of 861 people, in geriatric homes, day care centers, and the community, from the rural and urban zones, of both genders, considering as elderly individuals, according to the World Health Organization (WHO), those aged ≥ 65 years in developed countries.

For collecting data, we used a structured questionnaire, on sociodemographic characteristics, place of residence, and the depressive symptoms scale. The interviews were conducted by researchers from the Research Unit in Health Sciences - Nursing, of the Nursing School of Coimbra, Portugal.

The presence of depressive symptoms was evaluated by means of the Geriatric Depression Scale with 15 items (GDS-15), a short version of the original scale designed by Sheikh & Yesavage et al. in 1986, which contains 15 negative/affirmative questions, using the Portuguese version validated by Apóstolo.¹¹

For managing data, we used the software *Statistical Package for the Social Sciences (SPSS)*, version 16.0. After concluding the collection, data were entered into a database of this statistical software. The analysis was performed by using a descriptive and analytical statistical approach. For the descriptive approach, we performed the distribution of absolute and relative frequencies for categorical variables and descriptive measures such as mean, median, mode, and standard deviation for continuous variables.

In the analytical approach, we conducted a bivariate analysis by using Pearson’s chi-square test (χ^2) to observe any possible associations between the independent and dependent variables, determining the relations 2 by 2 between the variables. Then, we conducted an analysis by means of statistical modeling techniques, more specifically, we chose a binary logistic regression. Through the established strategy of associations between the dimensions under study (sociodemographic ones, place of residence, and depressive symptomatology), we designed 5 explanatory models of binary logistic regression, introducing the variables in block form, remaining in the subsequent model only those that had statistical significance ($p < 0.05$) in the previous model.

The exit criteria for all variables introduced in each model was $p < 0.1$. In the end, we came to a regression model with only the variables of greater statistical significance. After the analysis of self-correlation of independent variables, the method adopted to introduce the variables in the models was *ENTER(SPSS 16.0)*. We regarded as a significant level $p < 0.05$ and the confidence interval (CI) was 95%.

This article is linked to the project “Affective and emotional states among the elderly”, approved by the Research Ethics Committee of the Research Unit in Health Sciences - Nursing (UICISA-E) of the Nursing School of Coimbra, under the Registration 11-11/2010. This approval has ensured the respect for human dignity and the development of research in accordance with the ethical standards. The elderly individuals who agreed to participate in the research have signed the free and informed consent term, containing information on the research procedures and its objectives.

RESULTS

Out of the 861 elderly participants in the study, we observe in Table 1 that 65% were women, 43.1% were at the age group from 75 to 84 years, and 71% had from 1 to 5 years of schooling. Regarding the marital status, 42.4% were widowed, 39.8% were living in geriatric homes, and 52.7% showed depressive symptoms.

Table 1. Distribution of the elderly, according to sociodemographic variables, place of residence, and depressive symptomatology. Coimbra, 2013.

Study variables	N	%
Gender		
Male	301	35
Female	560	65
Total	861	100
Age group (years)		
65-75	251	29.2
75-85	371	43.1
≥ 85	239	27.8
Total	861	100
Schooling (years of study)		
1-5	611	71
5-9	25	2.9
9-12	24	2.8
≥ 12	21	2.4
Illiterate	178	20.7
Not computed	2	0.2
Total	861	100
Marital status		
Married or marriage-like relationship	500	34.8
Single	72	8.4
Widowed	365	42.4
Separated/divorced	124	14.4
Total	861	100
Place of residence		
Geriatric homes	343	39.8
Day care centers	218	25.3
Community	300	34.8
Total	861	100
Depressive symptomatology		
Without depression	378	43.9
With depression	454	52.7
Not computed	29	3.4
Total	861	100

In the bivariate analysis, as for the distribution of depressive symptomatology and the independent variables (sociodemographic ones and place of residence), assuming a significance level equal to 0.05 (5%), it is observed in Table 2 that all of them were associated when crossed, because the *p* value in all cases was < 0.05.

Table 2. Depressive symptomatology distribution, according to sociodemographic variables and place of residence. Coimbra, 2013.

Depressive symptomatology				
Variables	Present	Absent	Total	<i>P</i> value
Gender				
Male	137	154	291	0.0015
Female	317	224	541	
Total	454	378	832	
Age group (years)				
65-75	107	129	236	0.0032
75-85	209	152	361	
≥ 85	138	97	235	
Total	454	378	832	
Marital status				
Single	42	27	69	0.00000
Married	124	164	288	
Divorced	79	37	116	
Widowed	209	150	359	
Total	454	378	832	
Schooling				
(years of study)				
1-5	326	261	587	0.00408
5-9	10	14	24	
9-12	8	15	23	
≥ 12	5	16	21	
Illiterate	105	71	176	
Total	454	378	831	
Place of residence				
Geriatric home	208	128	336	0.0002
Day care center	120	97	217	
Community	126	153	279	
Total	454	378	832	

Upon completion of the bivariate analysis by using the software *SPSS*, version 16.0, logistic models were simulated in order to predict the depressive symptomatology based on the characteristics under analysis. At this step, the data set was partitioned into two subsets, one for modeling with 732 records, and another for validation of the adjusted model with 100 records. The entry of variables into the simulated models was made by using the ENTER method, starting from the

simplest model, with an only independent variable, up to the most complete, with all independent variables included in the final model.

In Table 3, we observe that, for the model chosen for depressive symptomatology, the variables marital status and age had a significance level > 0.05, nevertheless, they were kept in the model by increasing the assertiveness to predict the depressive symptomatology.

Table 3. Estimation of coefficients and significance of the variables used in the logistic model chosen to explain the variable depressive symptomatology. Coimbra, 2013.

		B	Standard error	Wald statistics	Degrees of freedom	Significance level	Exp(B)	CI with 95% for EXP(B)	
								Lower	Higher
Step 1	Marital status	0.047	0.072	0.415	1	0.519	1.048	0.909	1.207
	Gender	-0.386	0.153	6.394	1	0.011	0.68	0.504	0.917
	LocalR	-0.299	0.093	10.274	1	0.001	0.742	0.618	0.89
	Schooling	-0.847	0.273	9.617	1	0.002	0.429	0.251	0.732
	Age	0.063	0.108	0.344	1	0.557	1.065	0.862	1.317
	Constant	2.237	0.618	13.092	1	0	9.368		

According to Table 4, the assertiveness of the adjusted model is around 80% for the model chosen. This means to state that for a sample independent from that used for model generation, but having the same

characteristics, if we classify patients according to criteria of this model, in 80% of cases the answer for depressive symptomatology will be correct. As pointed out in the results for 100 patients in Table 4.

Table 4. Result of the multivariate analysis for association of independent and dependent variables. Coimbra, 2013.

Observed		Predicted		Assertiveness percentage
		Depressive symptomatology		
		Without depression	With depression	
Depressive symptomatology	Without depression	17	28	37.8
	With depression	12	43	78.2
				60

The cutoff is 0.500.

The independent variables under analysis, gender, age group, schooling, marital status, and place of residence, are statistically related to depressive symptomatology and they may be used in further studies.

DISCUSSION

The results of this study show, as for the variable gender and its association with the depressive symptomatology, that women had a higher frequency (69.82%). This fact has been proved by many publications concerning the epidemiology of depression among the elderly.^{10,12-15}

A study¹⁵ stands out, conducted with 443 Portuguese elderly people in health centers of the Council of Matosinhos; individuals reinforce the considerations mentioned above, and it was concluded in the end of the study that elderly women had 3.8 times greater risk of suffering from depression.

Regarding the variable age and its association with the depressive symptomatology, it has been observed that the highest proportion of elderly people affected by disease indicated were those aged from 75 to 85 years (46.04%). Depression tends to increase with age progression and

the highest peak lies between 70 and 79 years.¹⁶ However, there is not well-documented consensus in the world literature on the age group with the highest prevalence of this disease.¹⁵

As for the variable marital status, the result found was a higher number of widowed individuals with depressive symptomatology (46.03%), corroborating other studies, which point out that loneliness or mourning due to the death of a spouse in old age may be a risk factor for developing depressive symptoms.^{15,17} Perhaps, the presence of a companion decreases the prevalence of these symptoms.

In this analysis, it was observed, as for schooling and its association with depression, that the higher frequency of depressive symptoms was described among those elderly people with up to 5 years of study (71.80%). A fact very described in the literature, where a correlation is pointed out between less education and more depressed elderly people.^{18,19}

Concerning the place of residence and the depressive symptomatology, the highest frequency found was among the elderly who are living in geriatric homes (45.82%),

confirming the importance of social life for these individuals, in the family bosom.²⁰

It has been observed, in the multivariate analysis, that the independent variables are statistically related to the depressive symptomatology, as seen in other studies.^{5,17,19-21}

In general, the results of this study are consistent with data found in the national and international literature, which point out growing and significant prevalence of depression among the elderly and its association with sociodemographic factors. Therefore, faced with this scenario, strategies aimed at identifying the factors associated with depression may help professionals from the health services, in multidisciplinary/interdisciplinary teams, understanding the reality of these individuals, thus favoring earlier diagnosis and interventions.

CONCLUSION

Despite the limitations of this study, such as the fact that the sample under analysis is too narrow to be able to represent the population of Portugal, the high prevalence of depressive symptomatology (52.7%) becomes clear among the population investigated, as well as the fact that the independent variables analyzed, gender, age group, schooling, marital status, and place of residence, are statistically related to the depressive symptomatology.

The increased prevalence emphasizes the need for further information on this disease, in order to provide means for developing public policies and priority actions that can ensure the best health care for this population.

We emphasize the need for campaigns that provide explanation on depressive symptomatology, avoid misconceptions, improve the resources adopted for adequate prevention, diagnosis, and treatment, thus, they may provide means for priority policies that not only plan care, but also stimulates people to seek the health services earlier, facilitating the recognition and early treatment of depression.

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Depression among the elderly in the community...

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