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Factors associated with depressive symptoms in older adults in context of social vulnerability

Fatores associados a sintomas depressivos em idosos inseridos em contexto de vulnerabilidade social

Factores Asociados a los síntomas depresivos en ancianos en contexto de alta vulnerabilidad social

Letícia Souza Didoné[I]
ORCID: 0000-0003-2198-1760

Isabela Thaís Machado de Jesus[I]
ORCID: 0000-0002-3752-8867

Ariene Angelini Santos-Orlandi[I]
ORCID: 0000-0002-3112-495X

Sofia Cristina Iost Pavarini[I]
ORCID: 0000-0001-9359-8600

Fabiana de Souza Orlandi[I]
ORCID: 0000-0002-5714-6890

Letícia Pimenta Costa-Guarisco[I]
ORCID: 0000-0002-2687-5310

Aline Cristina Martins Gratão[I]
ORCID: 0000-0002-8508-0251

Karina Gramany-Say[I]
ORCID: 0000-0002-2451-8109

Marcia Regina Cominetti[I]
ORCID: 0000-0001-6385-7392

Grace Angélica de Oliveira Gomes[I]
ORCID: 0000-0003-0600-2093

Marisa Silvana Zazzetta[I]
ORCID: 0000-0001-6544-767X

[I] *Universidade Federal de São Carlos. São Carlos, São Paulo, Brazil.*

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Corresponding author:
Marisa Silvana Zazzetta
E-mail: marisazazzetta@yahoo.com

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ABSTRACT

Objective: To identify factors associated with depressive symptoms in the elderly inserted in a context of high social vulnerability. **Methods:** A cross-sectional study was carried out with 302 elderly people enrolled in Primary Care. We used a sociodemographic questionnaire, Geriatric Depression Scale, Mini Nutritional Assessment, Shor-form-6D Quality of Life Questionnaire and Medical Outcome Study Scale. For data analysis, a logistic regression was performed considering two groups, with and without depressive symptoms. **Results:** A good perception of the quality of life (OR: 0.21) and receiving emotional support (OR: 0.98) were presented as protective factors for depression, have risks of malnutrition (OR: 4.87), belong to the female sex OR: 1.88) and living alone (OR: 2.34), indicated a predictor factor for depression. **Conclusion:** Quality of life and social support were identified as protective factors for depressive symptoms while being at risk of malnutrition, living alone, reporting pain and being female are predictors.
Descriptors: Depression; Aged; Vulnerable Population; Nursing Care; Geriatric.

RESUMO

Objetivo: Identificar fatores associados a sintomas depressivos em idosos inseridos em contexto de alta vulnerabilidade social. **Métodos:** Estudo transversal realizado com 302 idosos de comunidade cadastrados em Unidades de Saúde da Família. Utilizou-se questionário sociodemográfico, Escala de Depressão Geriátrica, Mini Avaliação Nutricional, Questionário de Qualidade de Vida *Short-Form*-6D e Escala de Medical Outcome Study. Para análise de dados foi realizada regressão logística, considerando dois grupos, com e sem sintomas depressivos. **Resultados:** Uma boa percepção da qualidade de vida (OR: 0,21) e receber apoio emocional (OR: 0,98) se apresentaram enquanto fatores protetores à depressão; e ter riscos de desnutrição (OR: 4,87), pertencer ao sexo feminino (OR: 1,88) e morar só (OR: 2,34) indicaram fator preditor para a depressão. **Conclusão:** Qualidade de vida e suporte social foram identificados como fatores protetores para sintomas depressivos, enquanto estar sob risco de desnutrição, morar sozinho, relatar dor e ser do sexo feminino são fatores preditores.
Descritores: Depressão; Idoso; Vulnerabilidade Social; Enfermagem Geriátrica; Geriatria.

RESUMEN

Objetivo: Identificar factores asociados a los síntomas depresivos en ancianos insertados en contexto de alta vulnerabilidad social. **Métodos:** Estudio transversal realizado con 302 ancianos de comunidad registrados en Unidades de Salud de la Familia. Se utilizó cuestionario sociodemográfico, Escala de Depresión Geriátrica, Mini Evaluación Nutricional, Cuestionario de Calidad de Vida Shor-form-6D y Escala de Medical Outcome Study. Para el análisis de datos ha sido realizada regresión logística considerando dos equipos, con y sin síntomas depresivos. **Resultados:** Una buena percepción de la calidad de vida (OR: 0,21) y recibir apoyo emocional (OR: 0,98) se presentaron como factores protectores a la depresión, tener riesgos de desnutrición (OR: 4,87), pertenecer al sexo femenino (OR: 4,87) OR: 1,88) y vivir solo (OR: 2,34), indicaron factor indicador para la depresión. **Conclusión:** La calidad de vida y el apoyo social han sido identificados como factores protectores para los síntomas depresivos en cuanto estar bajo el riesgo de desnutrición, vivir solo, relatar el dolor y ser del sexo femenino son factores indicadores
Descriptores: Síntomas Depressivos; Anciano; Vulnerabilidad Social; Enfermería Geriátrica; Geriatría.

INTRODUCTION

Old age becomes increasingly representative in Brazil[1]. By considering only the municipality of São Carlos, individuals aged 60 and over already represent 11% of the population[2], while in the national population, they correspond to 13% (IBGE 2018). The support of Unidades de Saúde da Familia (Family Healthcare Units) for the elderly population is fundamental for the prevention of diseases, health promotion, especially those residing in a context of high social vulnerability. Known as the absence or lack of support from social institutions and associated with the fragility of a group's socioeconomic situation, social vulnerability consists of exposure to the risk of exclusion, lack of material resources, information, opportunities, and rights. It is possible to observe it through social and individual factors, such as education, income, education, access to services, among others[3-5].

The aging process can cause functional losses, increasing vulnerability to chronic illness - for example, depression. Currently, such disease is considered a severe public health problem, as it directly affects the functional capacity of humans and the number of people diagnosed[6-8]. Studies characterize it by a set of psychological and physiological symptoms such as persistent sadness, anhedonia, altered appetite and sleep, low self-esteem, insecurity, restlessness, feelings of worthlessness, guilt, anxiety to the point of thinking or practicing self-injury and even suicide[9-10]. It is a complex result of the interaction of biopsychosocial factors. People who have experienced adverse events in their lifetime, such as bereavement, violence, unemployment, are more likely to develop the disease[10-11].

According to the World Health Organization (WHO), 300 million people of all age groups are affected worldwide by depression and are considered a critical global public health problem[12]. The number of people with anxiety and depression disorders is growing, especially in low-income countries. Brazil is considered the most depressed country in Latin America, with approximately 11.5 million people diagnosed[10-13]. By 2030, researches estimate that depression will be the most common disease in the world, affecting more people than any other condition, such as heart disease[10]. It is noteworthy that depression in the elderly is difficult to diagnose because, erroneously, its symptoms are easily confused with somatic complaints of a normal aging process. Prepared by the World Health Organization, the 2013-2020 Mental Health Action Plan stresses the importance of promoting mental well-being and preventing mental disorders, providing care, improving recovery, and promoting human rights[14-15]. In 2015, the United Nations (UN) adopted the 2030 agenda for Sustainable Development, with 17 objectives. Among them, health and well-being are present, and their guidelines point to a commitment to reduce premature mortality from noncommunicable diseases by one third through prevention and treatment, as well as to promote mental health and well-being. To the same end, the UN also emphasizes a more careful look at the developing countries with investment in health and emphasizes early screening for the reduction or management of health risks[16]. Therefore, identifying factors associated with depressive symptoms in the elderly in the context of high social vulnerability is important.

OBJECTIVE

To identify factors associated with depressive symptoms in the elderly in a context of high social vulnerability.

METHODS

Ethical aspects

The study derived from the research entitled "Tool for monitoring fragility levels and associated factors in the elderly attended by the Family Health Support Center (NASF) in the municipality of São Carlos". We respected all ethical precepts, according to resolution 466/12 of the Conselho Nacional de Saúde (National Health Council).

Study Design, location, and period

This study is a cross-sectional study guided by the STROBE tool, whose data collection was performed from January to October 2016, through home interviews with trained and qualified interviewers. All research participants accepted the invitation freely and informed and registered their consent through the Informed Consent Form.

Population, inclusion and exclusion criteria

The study consisted of a sample of 302 elderly registered in five Unidades de Saúde da Familia (Family Healthcare Units) of a broad region, characterized by a high index of social vulnerability, according to the Índice Paulista de Vulnerabilidade Social (Paulista Social Vulnerability Index[17]. We interviewed all the elderly ((n = 302) who met the following inclusion criteria: individuals aged 60 or older, living in neighborhoods in a context of high social vulnerability, and registered in the Unidade de Saúde de Família (Family Healthcare Unit).

We used as exclusion criterion: elderly who did not reach the cut-off number, 13 points, in the Mini-Mental State Examination[18].

Data Collection Instruments

Sociodemographic data - A section with a semi-structured interview that aimed to collect sociodemographic data regarding gender, age, ethnicity, education, marital status, family income, number of people with whom they live, health perception, and report of pain for over six months.

Geriatric Depression Scale (GDS-15) - To assess depressive symptoms, we used the Geriatric Depression Scale (GDS-15), which consisted of 15 questions that track depressive symptoms. Individuals with reaching 0 to 5 points we considered "without depression index," from 6 to 11 points "presence of mild depressive symptoms" and 11 to 15 points "presence of severe depressive symptoms"[19].

Mini Nutrition Assessment (MNA) - To assess the risk of malnutrition, we applied the Mini Nutrition Assessment (MNA), a questionnaire that considers self-perceived health and nutritional status reported by the elderly themselves. The sum of MNA scores

goes up to 30 points if the score is higher than 23.5 points, the patient is in a normal state of nutrition if it is lower a nutritional intervention is recommended because the elderly may need a prescription of nutritional supplements[20].

Quality of Life Questionnaire *Short-Form*-6D (SF-6D) - To verify the perception of quality of life, we applied the Quality of Life Questionnaire *Short-Form*-6D (SF- 6D), which, through 10 questions, assesses eight domains, namely: functional capacity, global limitation, physical aspects, emotional aspects, social aspects, pain, mental health, and vitality. The single score ranges from 0 to 1, with 0 being the worst quality of life, and 1, the better state of health[21].

Medical Outcome Study Scale (MOS) - In the Social Support assessment, focusing on emotional support, we used the *Medical Outcome Study* (MOS) scale, consisting of 19 self-rated questions, which evaluate five dimensions. : material, affective, emotional, information support, and positive social interaction. The scale has no cutoff score: the lower the score presented, the lower the social support level of the[22] dimensions.

Katz and Lawton Scale - To assess the basic activities of daily living, we used the Katz Index of Independence in Activities of Daily Living (ADL), which assesses six functions: bathing, dressing, toileting, transferring, continence and feeding[23]. The score ranges from 0 to 6 points, with 0 being independent in all six functions. To assess the Instrumental Activities of Daily Living (IADLs), we used a questionnaire that considers seven instrumental activities, namely: using the telephone, traveling, shopping, preparing meals, doing housework, taking medications, and managing money. The score ranges from 7 to 21 points, where the higher the score, the higher the independence: 0 to 7 points, total dependence; 8 to 14 points, partial dependence; and 15 to 21 points, independence[22-23].

International Physical Activity Questionnaire - To measure the level of Physical Activity (FA), we used the *International Physical Activity Questionnaire* - IPAQ - long-version. The questionnaire is divided into four components: job-related physical activity, transportation physical activity, domestic physical activity, and leisure physical activity. The questions refer to last week's physical activity (last seven days) and measure the number of days and time spent on moderate and vigorous activity in each of the components: those who performed 150 minutes or more of PA during the week were classified as active. , while those who performed less than 150 minutes were rated as insufficiently active[24].

Results analysis and statistics

We coded the study data and organized it in a database, in double entry and comparison of values, using the Microsoft Excel program. We performed the treatment and data analysis through the statistical program SPSS 20.0 for Windows (Statistical Package for the Social Science). For the analysis of sociodemographic characterization and description of the instrument scores, we used descriptive statistics as measures of central tendency (simple frequency, mean, median, minimum and maximum), and dispersion measures (standard deviation). To verify the association of depression with sociodemographic data, quality of life, social support, nutrition, and presence of pain, we performed multivariate regression. We applied univariate regression with the dependent variable being the presence of depressive symptoms according to the GDS-15 scale, considering two groups, with depression and without depression. Of the variables analyzed in the univariate regression model (method *forward*), we maintained the variables that presented $p \leq 0.2$. The numerical variables included continuously were: age, years of schooling, social support domains (affective, emotional support, social interaction, information, and positive interaction), basic and instrumental activities of daily living and physical activity assessment. The variables with $p \leq 0.05$ remained in the multivariate model, being adjusted for the variables "gender," "living alone," "quality of life," "social support" and "nutrition". The significance level for the statistical tests of 5% ($p < 0.05$) was adopted.

Chart 1 - Categorization of independent variables used for understanding in regression analysis, São Carlos, Brazil, 2015

Independent variable	Encoding	Categories
Gender	Gender	Male = 0 (Ref.) Female = 1
Nutritional assessment	Nutritional risk	Normal = 0 (Ref.) Risk of malnutrition = 1
Living alone	Living alone	Not living alone = 0 (Ref.) Living only = 1
Health perception	Health perception	Excellent / Very good = 0 (Ref.) Good = 1 Fairly = 2
Quality of life	Quality of life perception	Good = 0 Bad = 1 (Ref.)
Pain	Pain reporting	Yes = 0 No = 1 (Ref.)

RESULTS

The study included 302 elderly, with a mean age of 69.59 years (SD = 7.407), mostly female (56.6%), white (41.3%), with partners (58, 3%) and level of education from 1 to 4 years (50.6%). As for income, the elderly stated that they earn enough to live (51.1%). The elderly live on average with two people in the house, and only 15% of respondents live alone. Of the total participants, 111 had depressive symptoms, either mild or severe, showing "good" perception of the quality of life (50.3%). Regarding social support, the highest average was affective support (88.39%), risk of malnutrition (52.3%), and pain reporting for more than six months (74.1%). Most of the individuals did not have a dependence on basic and instrumental activities of daily living nor have a considerable level of physical activity (greater than 150 minutes/week), as shown in Table 1.

As it is possible to observe in Table 3, having a good perception of quality of life (OR: 0.21; 95% CI: 0.12–0.38) and receiving emotional support (OR: 0.98; 95% CI: 0.97 –0.99) presented as protective factors against depression, while being at risk of malnutrition (OR: 4.87; 95% CI: 1.71–13.85), belonging to the female gender (OR: 1.88; 95% CI: 1.10–3.20) and living alone (OR: 2.34; 95% CI: 1.05–5.21) indicated a predictor of depression.

Table 1 - Descriptive variables of elderly registered in Unidades de Saúde da Família (Family Healthcare Units) of a neighborhood in a context of Social vulnerability in the interior of the state of São Paulo, Brazil, 2015 (N = 302)

Variables	Categories	n (%)	Mean (sd)	[Min-Max]	Median
Gender	Male	131 (43.3)			
	Female	171 (56.6)			
Age			69.59 (7.407)	60-98	68
	60 – 69	163 (54.0)			
	70 – 79	102 (33.8)			
	≥ 80	37 (12.2)			
Ethnicity	White	125 (41.3)			
	Pardo(brown) / Mulatto / Caboclo	114 (37.7)			
	Black	54 (17.8)			
	Yellow(Asian)	5 (1.6)			
	Does not know	2 (0.6)			
	Did not answer	2 (0.6)			
Marital Status	With partner	163 (58.3)			
	Without partner	102 (33.8)			
	Did not answer	1 (0.3)			
Schooling	Illiterate	104 (34.4)			
	1–4 years of study	153 (50.6)			
	Five years or more	45 (14.9)			
Family Income			1751.09 (971.422)	70–8000	1600
Number of members in the same house			2.90 (1.59)	10–1	2
Lives only	Yes	48 (15.8)			
	No	254 (84.1)			
Depressive symptoms	Without symptoms	198 (65.3)			
	Mild	86 (28.4)			
	Serious	9 (3)			
	Did not answer	10 (3.3)			
Quality of life perception	Yes	152 (50.3)			
	No	149 (49.3)			
	Did not answer	1 (0.3)			
Social Support	Material support		88.13 (24.13)	0–100	100
	Affective support		88.39 (23.60)	0–100	100
	Emotional interaction		84.70 (25.36)	0–100	100
	Social interaction support		83.10 (27.61)	0–100	100
	Information support		83.04 (27.29)	0–100	100
Nutritional assessment	Normal	135 (44.7)			
	At-risk	158 (52.3)			
	Did not answer	9 (2.9)			
Pain reporting	Yes	224 (74.1)			
	No	68 (22.5)			
	Did not answer	10 (3.3)			
Dependency on Activities of Daily Living			0.72 (1.62)	0–12	0
Dependency on Instrumental Activities of Daily Living			2.46 (3.57)	0–14	1
Physical Activity level			919.91 (1.513)	0–118.20	420

Note: Table 1 shows the independent variables that we analyzed using univariate logistic regression to verify an association with depression.

Table 2 - Univariate logistic regression analysis for depression in elderly residents of neighborhoods in a context of social vulnerability in São Carlos, Brazil, 2015

Variables	Category	*p* value	OR *	Min	Max
Gender	Male	Ref.	-	-	-
	Female	0.009	0.53	0.33	0.85
Age	Continuous variable	0.855	0.99	0.96	1.02
Schooling (years)	Continuous variable	0.900	1.00	0.89	1.13

To be continued

Table 2 (concluded)

Variables	Category	*p* value	OR *	Min	Max
Quality of life	Continuous variable	0.000	0.00	0.00	0.03
Material support	Continuous variable	0.022	0.98	0.97	0.99
Affective support	Continuous variable	0.002	0.98	0.97	0.99
Emotional support	Continuous variable	0.001	0.98	0.97	0.99
Social interaction support	Continuous variable	0.000	0.97	0.96	0.98
Information support	Continuous variable	0.003	0.98	0.97	0.99
Nutritional assessment	Risk of Malnutrition Normal	Ref. 0.918	- 0.963	- 0.47	- 1.97
Pain reporting	Yes	0.353	1.40	0.68	2.86
	No	Ref.	-	-	-
Living alone	Yes	0.060	1.96	-	-
	No	Ref.	-	-	-
Instrumental activities of Daily Living	Continuous variable	0.084	1.13	0.98	1.30
Activities of Daily Living	Continuous variable	0.005	1.08	1.02	1.15
Physical Activity level	Continuous variable	0.096	1.00	1.00	1.00

*Note: * OR (Odds Ratio) = Factors associated with depression. CI 95% OR = 95% confidence interval for the risk ratio. Ref.: Reference Level.*

Table 3 - Multivariate logistic regression analysis for depression in elderly residents of neighborhoods in a context of social vulnerability in São Carlos, Brazil, 2015

Variables	Category	*p* value	OR*	95%CI Mín	95%CI Máx
Quality of life	Continuous variable	0.000	0.21	0.12	0.38
Emotional support	Continuous variable	0.005	0.98	0.97	0.99
Nutritional Assessment	Normal	Ref.	-	-	-
	Malnutrition Risk	0.003	4.87	1.71	13.85
Gender	Male	Ref.	-	-	-
	Female	0.020	1.88	1.10	3.20
Living alone	No	Ref.	-	-	-
	Yes	0.036	2.34	1.05	5.21
Pain reporting	No	Ref.	-	-	-
	Yes	0.331	1.42	0.69	2.89

*Note: * OR (Odds Ratio) = Factors associated with depression. CI 95% OR = 95% confidence interval for the risk ratio. Ref.: Reference Level.*

DISCUSSION

Literature corroborates the sociodemographic data found among the elderly in the present study, that is, a predominantly female, married elderly community, with average years of schooling from one to four years, income from one to two minimum wages[25-28].

In this study, we found evidence that quality of life and social support (emotional support) are protective factors for depressive symptoms. It is possible to find similar data in the international[29-30] and national[31] literature. Two studies, conducted in Hong Kong with Chinese elderly in the community, identified through WHOQOL-BREF that poor quality of life was significantly associated with depression. The authors stated that a good quality of life becomes a protective factor for depressive symptoms[29-30]. A recent study conducted in Passo Fundo-RS, with 313 older women, evaluated the prevalence of depressive symptoms in older women who attended a referral center, and only 7.1% of the older women had symptoms. According to the authors, the low percentage of older women with depressive symptoms in this context reflects the importance of being more socially, culturally and accessing information and interaction media, which differs from the elderly inserted in a context of social vulnerability, which is the case of the elderly in this study. This fact is because, in contexts of poverty, there is often a scarcity of these information resources and an overload of health professionals[31-33].

A predictor of depressive symptoms that the present study identified is the risk of malnutrition. Loss of appetite is a symptom of the disease. A study of the FIBRA (Estudo de Fragilidade em Idosos Brasileiros – Study of Fragility in Brazilian Elderly) group with older people in the community described that most of them who reported reduced appetite were underweight, at risk of malnutrition, and one of the interference factors pointed out was depression[34]. There are also reports in the literature that food monotony generates nutrient deficiencies that can compromise mood. In a literature review, scholars considered that vitamin B12 deficiency generates a decrease in serotonin, norepinephrine, and dopamine so that the subject with this deficiency has depressive symptoms. Nor did they rule out the lack of vitamin B12 as a consequence of depression. In 1989, Robins cited that the most common causes of malnutrition in the elderly are "9 D", one of which was depression[35-36].

A literature review stated that depression is more prevalent in women than in men, regardless of age group[37], which corroborates being a predictor factor stated in the present study. It is possible to link the higher prevalence of depressive symptoms in the elderly female population to several factors, such as hormonal variations during the life cycle (pregnancy and menopause), living longer than men, experiencing more traumatic events, such as mourning, empty nest, among others[38].

In the present study, to live alone associated with depressive symptoms as a predictor factor. According to a study, healthy family ties can help in coping with the undesirable consequences associated with depression. It is noteworthy that it is essential to have a good quality of the family relationship and good social support[38].

Reporting pain and depressive symptoms have been themes commonly associated, especially regarding chronic and low back pain, to the elderly in the community. A study conducted in Minas Gerais concluded that, due to the presence of pain and depressive symptoms, there is a delay and worsening in treatment. Insomnia and sleep problems have also been reported in the elderly who feel pain and have depressive symptoms, corroborating the

present study, which points out "pain reporting" as a predictor of depressive symptoms[39].

Study Limitations

The present study has as its limitation the cross-sectional design itself, as it does not make it possible to conclude the causes of the relations found. Also, the scarcity of recent literature on the theme can affect the discussion of the results of nutrition in the elderly with depressive symptoms.

Contributions to nursing, health, or public policy

It is important to track and know factors that may be protective and predictors for possible screening and prevention of depression. Depression is a public health problem that affects thousands of people. The more accurate the multifactorial look at symptoms by primary care health services, the more likely they are to prevent risks and health problems arising from depression.

CONCLUSION

It was possible to identify the quality of life and social support as protective factors for depressive symptoms, while being at risk of malnutrition, living alone, reporting pain, and being female are predictive factors.

Tracking down depressive symptoms in the elderly by primary care professionals favors early diagnosis and treatment, aiming to prevent pathology-related injuries and risks.

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