

Factors associated with depressive symptoms in the elderly of a family health unit in Vitória, Espírito Santo



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ABSTRACT

Objective: To verify the prevalence and factors associated with a disability unit for assisted elderly (USF) in Vitória-ES. Method: Cross-sectional study

carried out with a probability sample of 241 elderly people enrolled in a USF. Information was collected regarding sociodemographic profile, life habits and health conditions (independent variables). The rapid version of the Geriatric Depression Scale-15 was used to identify depressive GDS. Pearson's Chi-Square test and Logistic Regression were performed, with Odds Ratio calculation, the dependent variable was unusual symptoms. Results: The prevalence of 75 black years old was 2 years old, most elderly women (64.4%), up to 75 years old (72.2%), and self-declared brown or (74.7%). After the multivariate analysis of negative health, factors associated with depressive symptoms were white disease, inability to leave home alone, and risk of falling. Conclusion: The results point to the need to promote adequate conditions for this health, aiming at functional independence, better prevention measures in the development of individual and decompensated actions. For this, education in health groups is suggested, which address topics such as prevention of encouraging falls and the practice of physical activities, educational practices oriented towards knowledge/facing barriers and independence education.

Keywords: Health of the Elderly, Depression, Family Health Strategy, Public Health, Cross-Sectional Studies.

1 INTRODUCTION

Depression is a growing epidemiological challenge with a major impact on quality of life, associated with high levels of disability (VELOSO et al., 2018; OLAWA et al., 2018). According to the International Classification of Diseases - ICD-11, it is a common mental disorder, characterized by symptoms such as sadness, loss of interest and absence of pleasure, accompanied by cognitive symptoms that impair the functionality of the individual (WHO, 2019). Brazil is the country with the highest prevalence of depression in Latin America and the second highest in the Americas, frequently appearing at the end of the third decade of life (BRASIL, 2022b).



The aging process is accompanied by physical and mental changes that make this population more susceptible to depression (VELOSO et al., 2018). Poor physical health is a primary risk factor for the disease, given its direct association with disability and dependence (ABRANTES et al., 2019). For these reasons, in Brazil, the elderly have the highest prevalence of depression, recorded between the years 2010 and 2019 (BRASIL, 2022a).

Consequently, this condition becomes a significant concern in this population, with a prevalence ranging between 4.5% and 74.5%, configuring itself as a public health problem (FAVERI et al., 2021; ROCHA; BEZERRA; GINA, 2021; ABRANTES et al., 2019; MENEGUCI et al., 2019). This scenario is aggravated by rapid global aging, particularly evident in Latin America and the Caribbean, where more than 8% of the population was 65 years or older in 2020. Projections indicate that this percentage will double by 2050 and exceed 30% by the end of the century. This phenomenon generates additional challenges, such as lack of access to essential resources and barriers to social integration (BRASIL, 2022b).

Among the health conditions related to the onset of depressive symptoms, the risk of falling is one of the most discussed in the literature. Falls are one of the main causes of disability among the elderly, presenting outcomes such as fractures, hospitalizations and functional dependence, factors that directly influence physical health and social participation (RAHMAN et al., 2020). In this sense, studies such as that of Veloso et al (2018), show that socially participatory elderly tend to have a better cognitive performance, postponing the development of depressive symptoms.

The context in which the elderly are inserted, considering their life habits, can also contribute to the appearance or delay of depressive symptoms, since it is related to physical and mental well-being (FAVERI et al., 2021). Defined as choices and customs experienced by individuals, life habits include issues such as smoking, alcoholism, physical activity, leisure activities, food and social relationships (FERREIRA; MEIRELES; FERREIRA, 2018). A national study correlated unhealthy habits with the presence of depression, concluding that tobacco, low physical activity and high alcohol intake patterns were longitudinally associated with the disease (BARROS et al., 2021).

Understanding the complex interaction between life habits, health conditions and depressive symptoms, especially in the elderly population, Cristiano et al (2020) conducted a survey with individuals from a Family Health Unit – USF of Vitória and found a prevalence of 22.2% for depression. From the reanalysis of this database, this study proposes to carry out a new research with the objective of verifying the prevalence and factors associated with depressive symptoms in the elderly assisted by a Family Health Unit in Vitória – Espírito Santo.



2 METHODS

This is a secondary analysis of the database of a cross-sectional observational study with a quantitative approach, carried out at the Luiz Castellar da Silva Family Health Unit (FHU) in Vitória-ES. The sample of this study consists of elderly (aged 60 years or older), enrolled in the territory of the FHU studied, registered in the Welfare Network and assisted by the Family Health Strategy.

For sampling, a sample size calculation was performed for different prevalence's, based on the number of elderly registered in the FHU in April/2018 with a margin of error of 0.05 and an estimated proportion of 0.5 with an increase of 30% for possible losses, *the desired N* was 246 elderly and the *N reached* was 241 elderly . Only those who agreed to sign the Free and Informed Consent Form (ICF) were considered for the primary study. The selection was made in a simple random way where the elderly were organized in alphabetical order and according to the micro-area in which they reside, and then randomly drawn 2 out of 3 elderly. The elderly who were unable to answer the questionnaire, those who were unable to access due to family refusal or restriction, were excluded from the study; cases of death and/or migration to another region, prior to the interviews/evaluations; and for the excerpt of this project, those whose data pertinent to the outcome analyzed are missing or inconsistent.

The data was collected between April and June 2018, by previously trained researchers. The interviews and evaluations were carried out in the homes of the elderly through the Community Health Agents, with prior scheduling and at a convenient time for the interviewee and consisted of the application of a semi-structured questionnaire and scales designed to assess the conditions, determinants of health and functionality of these individuals. The information obtained by the semi-structured questionnaire allowed to trace the sociodemographic, health and life habits of the elderly.

The dependent variable, depressive symptoms, was assessed using the Geriatric Depression Scale (GDS), the most widely used instrument to assess depressive symptoms in the elderly. In Brazil, its original version is composed of 30 binary questions (yes/no), however, Almeida and Almeida (1999) reduced and validated the scale to 15 questions, considering the items that most strongly correlated with the diagnosis of depression according to the ICD-10 criteria, and maintaining the same format of answers. This reduced version (GDS-15) was used in this study and can be self-applied or performed by a trained interviewer, taking a maximum of 15 minutes for its application. Its variation ranges from zero (absence of depressive symptoms) to fifteen points (maximum score of depressive symptoms) and is considered cutoff score ≥ 6 determinant for the presence of depressive symptoms in the elderly (ALMEIDA; ALMEIDA, 1999)

The independent variables analyzed in this study were: individual and sociodemographic characteristics (gender, age, race, marital status and schooling); life habits (tobacco use, alcohol use, physical activity and leisure-time activity) and health conditions (self-perceived health, multimorbidity, polypharmacy, risk of falls and ability to leave the house alone).



Self-perception of health was investigated through the following question: "In general, how do you evaluate your health?", and the elderly can answer between the following options: very bad; bad (considered as negative perception of health) regular, good and very good (classified as positive/regular perception of health) (SUZANA et al., 2021). Multimorbidity was determined by the presence of two or more chronic diseases, and polypharmacy by the daily use of five or more medications (SUZANA et al., 2021).

The risk of falls was assessed by the Tinetti Gait and Balance Assessment Scale, proposed in 1986 by Mary Tinetti and adapted for the Brazilian population by Gomes (TOMAZ et al., 2021). Through observation, the examiner classifies aspects of balance in conditions such as standing, turning, and the quality of gait by speed, symmetry of steps, among others. The scale has a maximum score of 28 points, scores below 19 indicate high risk of falling, and between 19 and 24 points, indicate moderate risk (TOMAZ et al., 2021).

The descriptive analysis for categorical variables was reported through tables of absolute and relative frequencies. The bivariate association between the outcome variable (depressive symptoms) and the exposure variables (other variables) was verified by Pearson's chi-square test. In the multivariate form, the strength of association was tested by Logistic Regression with calculation of the *Odds Ratio* (OR). The variables with *p-value* lower than 0.2 in the bivariate analysis were inserted into the Logistic Regression model. A significance level of $p < 0.05$ and a confidence interval of 95% were adopted.

The primary study of which this research is an integral part, entitled "Health conditions and functionality of the elderly assisted by the family health strategy in Vitória-ES", was presented and approved by the CEP/EMESCAM, under nº 2.142.377. In all stages of the research, the norms established in the Guidelines and Regulatory Standards for Research Involving Human Beings of Resolution 466/12 were respected.

3 FINDINGS

The prevalence of depressive symptoms was 24.5%. Regarding the characteristics of the population studied, most of the sample was composed of women (61.4%), up to 75 years of age (72.2%), and self-declared brown or black (74.7%). More than half of the elderly interviewed (58.1%) had four years or less of education and lived with a partner (60.6%). Regarding life habits, 12.9% were smokers, 22% reported consuming some type of alcoholic beverage and 62.2% reported practicing leisure activities, while only 32.4% practiced physical activity and 79.7% left home alone. Regarding health conditions, 35.7% had polypharmacy, 90% had a positive self-perception of their health, 64.7% had at least two chronic diseases, characterizing multimorbidity, and 49.4% were at risk for falls.



Table 1 shows the bivariate association between the dependent variables and the outcome. The variables that were associated with depressive symptoms were: age group older than 75 years ($p=0.029$), *white race* ($p=0.002$), not practicing physical activity ($p=0.009$), *not leaving home alone* ($p<0.001$), polypharmacy ($p<0.001$), *negative self-perception of health* ($p<0.001$), multimorbidity ($p=0.014$) and risk of falling ($p<0.001$).

Table 1: Bivariate association between individual and sociodemographic characteristics, health conditions and lifestyle habits with depressive symptoms in elderly people attached to a Family Health Unit in Vitória-ES, 2018.

Variables	No depressive symptoms n=182		With depressive symptoms n=59		p
	n	(%)	N	(%)	
Gender					
Male	70	75,3	23	24,7	0,943
Female	112	75,7	36	24,3	
Age					
60-74	143	79,0	38	21,0	0,027
>75	39	65,0	21	35,0	
Race					
White (a)	38	61,3	24	38,7	0,002
Brown\Black (a)	144	80,4	35	19,6	
Schooling					
Up to 4 years	105	75,0	35	25,0	0,878
From 5 to 11 years	44	74,6	15	25,4	
Over 11 years old	33	78,6	9	21,4	
Marital status					
With partner (a)	116	79,5	30	20,5	0,078
No partner	66	69,5	29	30,5	
Tobacco use					
Yes	22	71,0	9	29,0	0,557
No	157	75,8	50	157	
Alcohol use					
Yes	45	84,9	8	15,1	0,069
No	136	72,7	51	27,3	
Practice of leisure activity					
Yes	114	76,0	36	24,0	0,823
No	68	74,7	23	25,3	
Practice of physical activity					
Yes	67	85,9	11	14,1	0,009
No	114	70,4	48	29,6	
Leave home alone					
Yes	162	84,4	30	15,6	<0,001
No	19	39,6	29	60,4	
Polifarmácia					
Yes	53	61,6	33	38,4	<0,001
No	129	83,2	26	16,8	
Self-perception of health					
Positive/Regular	177	81,6	40	18,4	<0,001
Refusal	5	20,8	19	79,2	
Multimorbidade					
Yes	110	70,5	46	29,5	0,014
No	72	84,7	13	15,3	
Risk of falling					
Yes	72	60,5	47	39,5	<0,001
No	110	90,2	12	9,8	

Pearson Chi-Square Test (χ^2).

Source: own authorship



In the multivariate analysis (Table 2), after controlling for confounding factors, it was found that elderly who self-declared themselves white obtained almost four times the chance of presenting depressive symptoms, when compared to those who self-declared themselves black or brown ($OR=3.980$, $p=0.001$), in the elderly who did not go out alone it was observed three times the chance than in the independent elderly for this activity ($OR=3.034$, $p=0.012$), those who self-perceived their health negatively had ten times the chance ($OR=10.506$, $p<0.001$) when compared to those who self-perceived their health positively, and those who recorded risk of falling had four times the chance of having depressive symptoms than those who did not indicate such risk ($OR=4.451$, $p=0.001$).

Table 2: Multivariate association between individual and sociodemographic characteristics, health conditions and lifestyle habits with depressive symptoms in elderly people attached to a Family Health Unit in Vitória-ES, 2018.

	<i>P</i>	<i>OR</i>	<i>95% C.I. para OR</i>	
			<i>Inferior</i>	<i>Superior</i>
Age group (> 75 years)	0,847	0,815	0,396	2,232
Race (White)	0,001	3,980	1,738	9,114
Marital Status (Single)	0,402	1,397	0,639	3,054
Baby (Yes)	0,695	0,804	0,271	2,387
Physical activity (Yes)	0,128	0,488	0,194	1,229
Goes out alone (No)	0,012	3,034	1,271	7,239
Polypharmacy (Yes)	0,421	1,396	0,619	3,145
Self-perception of health (Negative)	<0,001	10,506	3,098	29,630
Multimorbidity (Yes)	0,367	1,514	0,615	3,725
Risk of falling (Yes)	0,001	4,451	1,856	10,672

OR: Odds Ratio; Source: own authorship

4 DISCUSSION

This study identified that 24.5% of the elderly assisted by a family health unit in Vitória-ES present depressive symptoms. The value is within the average of national population-based studies using the GDS-15, where prevalence's between 12.6% and 74.5% were found for the same age group (ROCHA; BEZERRA; GINA, 2021; ABRANTES et al., 2019; MENEGUCI et al., 2019). Compared to other countries, the value is below the reported prevalence (37.38% to 57.94%) (RAHMAN et al., 2020). The variations found can be explained by methodological differences and socioeconomic and regional changes in sample characteristics (BARROS et al., 2021; ROCHA; BEZERRA; GINA, 2021; MENEGUCI et al., 2019)

In relation to the bivariate analysis, there was an association between depressive symptoms and the variables age, race, practice of physical activity, leaving home alone, polypharmacy, self-perception of health, multimorbidity and risk of falls, however, only the variables race, leaving home alone, self-



perception of health and risk of falling remained as factors associated with depression in the multivariate analysis and, therefore, they will be discussed below.

In the association between race and depression, self-declared white elderly individuals obtained four times the chance of presenting depressive symptoms when compared to black or brown individuals. These results are in line with previous studies that also indicated a more frequent diagnosis of depression in white people compared to black and brown people (SACIOTO; CASTRO, 2021). One possible explanation lies in the disparity in access to and use of health services, since white individuals consult professionals more regularly than their black and brown peers (SACIOTO; CASTRO, 2021) However, the justifications underlying this association remain inconclusive and require further analysis, so further studies and longitudinal investigations are suggested.

As for health conditions, being unable to leave the house alone presented three times the chance for the presence of depressive symptoms. Among the possible hypotheses for this association are, the fear of going out alone linked to the risk of falling, the functional limitation and the architecture and geography of the community studied, factors that reduce social participation and contribute to the emergence of depressive symptoms.

The fear of leaving home alone is most often preceded by a history of falling, due to the functional impairments of age. When associated with depression, the very symptomatology of the disease, such as weight and energy loss, discouragement and sadness accentuate the functional impairments, a justification that corroborates the findings of this study, which identified an association between the risk of falling and depression ($OR=4.451$; $p=0.001$) (SERRANO-CHECA et al., 2020; CHOI et al., 2019). Another hypothesis for this association is that episodes of falls in old age commonly result in severe injuries that require hospitalization and long recovery periods, causing reduced independence and functional limitations and withdrawal from social activities (RAHMAN et al, 2020; CHOI et al., 2019).

Functional limitation is both a consequence of falls and other diseases that affect the elderly population (TOMAZ et al., 2021). When needing help for activities of daily living, the elderly develop the feeling of powerlessness, in addition to feeling useless, bored and unhappy, characteristics used to identify depression in the GDS-15, preferring to remain at home than to request help to leave, abandoning social life and healthy habits, such as the practice of physical activity, further aggravating the depressive condition (AKOSILE et al., 2018; ABRANTES et al., 2019).

The hypothesis of community architecture was raised because the FHU studied is located in a region with precarious socioeconomic conditions, evidenced by the architectural and geographical condition of the neighborhood, composed of hard-to-reach hills and steep streets and sidewalks. It is known that the reduction in the functionality of the long-lived added to the precarious sociodemographic conditions lead to psychosocial illness, a fact that can be explained by the greater



independence of individuals in neighborhoods of better social conditions (CABRAL et al., 2019). Thus, locations where the elderly can move more independently have higher rates of positive perception of health, physical activity and leisure, as well as greater access to health services, protective factors for the development of depression (ORSTAD et al., 2018).

Despite the advances of the region studied in relation to accessibility, through the construction of stairs with handrails and ramps, there is still difficulty for the elderly with functional decline, characteristic of senescence, to leave home alone, mainly due to the fear of falling, providing the restriction of activities offered by the FHU, such as physical exercise, prevention groups and control of comorbidities, in addition to the monitoring of the general state of health.

Another factor to be considered is the negative self-perception of health that, although subjective, is considered an important indicator of quality of life and well-being of the elderly, closely associated with the occurrence of depression (ABRANTES et al., 2019). This fact is consolidated by the results of this study in which the variable obtained the greatest association with depressive symptoms ($OR=10.506$; $p=0.001$). National studies show that elderly people satisfied with their health feel happy, useful and hopeful and that these attributes contribute to the acquisition of healthy habits and social activities, such as physical activity, promoting better mental health (RAHMAN et al., 2020; ABRANTES et al., 2019; AKOSILE et al., 2018; FERREIRA; MEIRELES; FERREIRA, 2018).

Thus, it is understood that unhealthy lifestyle habits, including the non-practice of physical activity, are closely related to worse mental health (FERREIRA; MEIRELES; FERREIRA, 2018). In the present study, the active elderly, in their majority, did not present depressive symptoms ($p=0.009$), although the association did not remain statistically significant in the multivariate analysis, it is known that physical activity is a protective factor for depression (SILVA et al., 2019).

It is already well established in the literature that elderly people with mobility limitations are more likely to develop depressive symptoms and be dissatisfied with life, the relationship is justified since being physically active tends to optimize functional capacity, increasing independence and making the individual more participative in society (BARROS et al., 2021; ABRANTES et al., 2019; JANTUNEN et al., 2019; FERREIRA; MEIRELES; FERREIRA, 2018).

In addition, within the framework of biomarkers, which are indicators of the presence and severity of a disease, depression has an impact on the availability of essential neurotransmitters such as serotonin and dopamine. These neurotransmitters are responsible for the mood fluctuations characteristic of this disorder. Therefore, it is crucial to point out that the practice of physical exercises is directly related to the disease. Physical exercise acts in a way that positively influences the production of these hormones, resulting in an improvement in the ability to cope with stress (SILVA et al., 2019).



The limitations of this research are related to the type of study, because a cross-sectional design shows only a punctual cut of the reality investigated and does not allow establishing a cause-effect relationship. Another pertinent limitation is the existence of memory bias, increasing age and depressive symptoms directly affect the cognitive functions of the individual, which may interfere with responses that required a recall effort. Therefore, further studies are suggested to analyze these associations through a longitudinal study to better understand the development of depressive symptoms in this population.

5 CONCLUSION

Through the above, it was evidenced that the factors associated with depressive symptoms in the elderly assisted by a Family Health Unit in Vitória – Espírito Santo are the white race, not leaving home alone, negative self-perception of health and risk of falls. These results indicate the need for an intersectoral, and multidisciplinary approach aimed at better health conditions for this population, thus, it is important to strengthen strategies for health promotion, prevention and treatment of both the identified factors and the depressive symptomatology.

It is recommended, therefore, the joint action between community health agents and professionals of the Health Unit in the elaboration and dissemination of activities, such as health education groups, that address themes such as the prevention of falls and the practice of physical activities to maintain functionality, independence and consequent protection or remission of depressive symptoms in the long-lived.

Regarding the elderly who do not leave home alone, it is proposed the planning and execution of a community-oriented walk, involving family members and caregivers, with the objective of mapping/knowledge of the possible existing obstacles, as a way of coping with the fear and risks offered by the local geography. In this way, the elderly will feel safer and prepared to leave home and will be able to participate in the activities proposed by the Family Health Unit and other places, ensuring their social participation and making them more independent, consequently bringing an improvement in self-perception of health.

Further studies with variables not studied, such as the genetic determinants of depression, are also suggested, which may better elucidate the associations between the white race and depressive symptoms. In addition, studies that address other Basic Health Units are also suggested, with the intention of identifying the prevalence of depression in the elderly in the city of Vitória-Espírito Santo.



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