



Depression and nutritional status of elderly participants of the Hiperdia Program

Depressão e estado nutricional de idosos participantes do Programa Hiperdia

Depresión y estado nutricional de ancianos participantes del Programa Hiperdia

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Objective: evaluate the relationship between depression and nutritional status of elderly enrolled in the Hiperdia Program. **Methods:** cross-sectional study in 91 elderly submitted to nutritional assessment and a structured questionnaire for screening depression, the Geriatric Depression Scale. **Results:** there was prevalence of women, 60-65 years old. There was minimal or moderate depression in 61.5% and severe depression in 2.2%. Proportionally high values of waist circumference were identified (91.8%) and overweight (67.6%) in elderly patients with minimal or moderate depression. **Conclusion:** there is an increasing imbalance in the nutritional status among women with a risk of developing cardiovascular disease, as well as overweight. Elderly are under health risk related to depression. This suggests that despite being inserted in a program for control of chronic diseases, they must be accompanied by the health team to improve their quality of life. **Descriptors:** Aged; Elderly Nutrition; Depression; Health of the Elderly; Nursing.

Objetivo: avaliar a relação da depressão com o estado nutricional de idosos cadastrados no Programa Hiperdia. **Métodos:** estudo transversal com 91 idosos, submetidos à avaliação nutricional e aplicação de questionário estruturado para a triagem de depressão, a Escala de Depressão Geriátrica. **Resultados:** houve prevalência de mulheres de 60 a 65 anos de idade. Observou-se depressão mínima ou moderada em 61,5% e 2,2% de depressão grave. Proporcionalmente, foram identificados valores elevados de circunferência da cintura (91,8%) e sobrepeso (67,6%) em idosos com depressão mínima ou moderada. **Conclusão:** Existe maior desequilíbrio no estado nutricional entre as mulheres, como risco de desenvolver doença cardiovascular, além de excesso de peso. Os idosos apresentaram risco a saúde, relacionados à depressão sugerindo que apesar de estarem inseridos em programa de controle de doenças crônicas, devem ser acompanhados pela equipe de saúde para melhoria da qualidade de vida desses indivíduos. **Descritores:** Idoso; Nutrição do Idoso; Depressão; Saúde do Idoso; Enfermagem.

Objetivo: evaluar la relación de la depresión con el estado nutricional de ancianos inscritos en el Programa Hiperdia. **Métodos:** estudio transversal con 91 ancianos, submetidos a la evaluación nutricional y aplicación de cuestionario estructurado para detección de depresión, la Escala de Depresión Geriátrica. **Resultados:** hubo predominio de mujeres de 60-65 años de edad. Se observó depresión mínima o moderada en 61,5% y 2,2% de depresión severa. Proporcionalmente, se identificaron valores altos de circunferencia de la cintura (91,8%) y sobrepeso (67,6%) en ancianos con depresión mínima o moderada. **Conclusión:** hay mayor desequilibrio en el estado nutricional en mujeres como riesgo de desarrollar enfermedades cardiovasculares, además del sobrepeso. Los ancianos presentaron riesgo para salud, relacionado con la depresión, sugiriéndose que a pesar de quedaren insertados en programa de control de enfermedades crónicas, deben ser acompañados por el equipo de salud para mejorar la calidad de vida de estas personas. **Descriptor:** Anciano; Nutrición del Idoso; Depresión; Salud del Anciano; Enfermería.

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Introduction

The aging process brings morphological, functional and biochemical changes that alter the organism Metabolic Syndrome of the individual⁽¹⁾. The proportion of Brazilians aged 60 and older increased from 9.7% in 2004 to 11.3% in 2009. The elderly population increased by 3.3% from 2008 to 2009 while population growth in general was 1%⁽²⁾.

In addition to the most assiduous non-transmissible chronic diseases such as diabetes and hypertension, various disorders can affect elderly and, among these, depression stands out as it has displayed increasing prevalence in society leading to serious consequences for quality of life of affected individuals⁽³⁾. This is a disorder of affective or mood nature, with strong functional impact at any age and multifactorial nature, involving many aspects of biological, psychological and social order and representing a relevant public health problem⁽⁴⁾.

Given the importance of this disease, the systematic evaluation of elderly through validated mechanisms of simple to application can improve the detection of cases of depression. Thus, the Geriatric Depression Scale, one of the most widely used instruments for depression screening in elderly and with valid and reliable measures⁽⁵⁻⁸⁾, proves to be important for tracking this specific population.

Elderly have a significant increase in the incidence of diseases compared to the general population. This brings a framework of complex infirmities marked by chronic and multiple pathologies that persist for years, requiring permanent care. It is estimated that 85% of them have some form of chronic disease related to change of nutritional status⁽⁶⁾.

Considering the relationship between depression and factors associated with nutritional status, this study aims to evaluate the relationship of depression with the nutritional status of elderly enrolled in Hiperdia Program.

Method

This is a cross-sectional, descriptive epidemiological study with quantitative approach carried out in Inhuma municipality in the state of Piauí, Northeast Brazil. The sample consisted of all elderly aged at 60 years or above, enrolled and treated at the program for control of hypertension and diabetes mellitus (HIPERDIA).

We opted to collect data through the period of one month (July 2013) including all the days of consultation in a Family Health Strategy Unit. Ninety-one elderly were interviewed at random. The inclusion criteria was: patients of both sexes, aged at 60 years or above, registered in the Hiperdia program and those who had no difficulty in communicating. Wheelchair users and elderly with sequels were excluded due to the difficulty of assessing weight and height data.

Anthropometric (weight, height, waist circumference and body mass index) and clinical (systolic and diastolic blood pressure) parameters were collected through a structured questionnaire, appropriate calibrated equipment and trained researchers, and the Geriatric Depression Scale with 15 items was applied.

An electronic scale with a capacity of 150kg, previously calibrated, was used to obtain the person's weight. A tape measure was fixed on a wall in order to check the person's height in centimeters. The Body Mass Index (BMI) was calculated from the ratio between total body weight in kilograms and height in meters squared. The assessment of nutritional status was performed using the body mass index, using the cutoff points for elderly as recommended⁽⁹⁾. That allows for changes in body composition proper of aging, namely, underweight BMI <22kg/m², eutrophy BMI between 22 and 27kg/m² and overweight BMI >27kg/m².

The measurement of waist circumference was made using measuring tape by encircling the person at the natural waist line, in the narrowest area between the chest and hips. Woman's waist circumference \geq

80,0cm and man \geq 94,0cm indicates increased risk for cardiovascular disease⁽¹⁰⁾. The measurement of systolic and diastolic blood pressure was carried out in two moments (one-minute interval) using a digital device. Presented values correspond to the average of the two determinations of the VI Brazilian Guidelines on Hypertension⁽¹¹⁾.

Was used the Geriatric Depression Scale with 15 items⁽⁸⁾ with dichotomous responses to verify depression. The score varies as follows: \geq 05 points: no depression; 6 to 10: minimal or moderate depression; and \geq 11 severe depression.

Statistical analysis was performed using Stata software (version 9.0). We used the chi-square test and Fischer's exact test for nominal qualitative variables and compare the variables of the elderly. Was considered the significance level of $p < 0.05$. The study was approved by the Ethics Committee of the Federal University of Piauí with Protocol No. 476,265.

Results

Among 91 elderly evaluated, 67.0% were females. There was a higher proportion of seniors aged between 60 and 65 years (33.0%), followed by 71 to 76 years (24.2%). Elderly with minimal or moderate depression corresponded to 61.5% of the interviewed, while 2.2% had severe depression. According the evaluation of depression by gender, there was statistically significant difference between them ($p = .014$), with a predominance of females in minimal or moderate depression (70.4%) and severe depression (3.3%) (Table 1).

Table 1 - Prevalence of depression in elderly evaluated according to Geriatric Depression Scale, by gender

Geriatric Depression Scale	Male	Female	Total
	n (%)	n (%)	n (%)
Prevalence of depression			* $p=0.014$
Normal	17 (56.7)	16 (26.2)	33 (36.3)
Minimal or moderate	13 (43.3)	43 (70.5)	56 (61.5)
Severe	-	2 (3.3)	2 (2.2)

* Fischer's exact test

There were no statistically significant differences between body mass of males and females. Yet, similar frequency of 40.7% was observed between overweight and eutrophy in the elderly. Underweight was observed in 18.6% of the elderly, with higher proportion of males (23.3%).

Among elderly, 83.5% had abdominal obesity and, therefore, presented risk for cardiovascular disease. There was a higher prevalence in females (91.8%) compared to males (66.7%), with statistically significant difference between genders ($p=0.002$), as shown in Table 02.

Table 2 - Nutritional profile of elderly according to the parameters of Body Mass Index and Waist Circumference

Nutritional profile	Male	Female	Total
	n (%)	n (%)	n (%)
Body Mass Index			* $p=0.737$
Underweigh	7 (23.3)	10 (16.4)	17 (18.6)
Eutrophy	12 (40.0)	25 (41.0)	37 (40.7)
Overweigh	11 (36.7)	26 (42.6)	37 (40.7)
Total	30	61	91 (100.0)
Waist circumference classification			* $p=0.002$
With risk of cardiovascular disease	20(66.7)	56 (91.8)	76 (83.5)
No risk of cardiovascular disease	10(33.3)	5 (8.2)	15 (16.5)
Total	30(100.0)	61 (100.0)	91(100.0)

*Fischer's exact test

There was no significant relationship between nutritional profile of elderly and the prevalence of depression. However, there was higher proportion of elderly with minimal or moderate depression with risk for cardiovascular disease (61.8%) and overweight elderly had minimal depression or moderate (67.6%).

Table 3 - Prevalence of depression in elderly related to the anthropometric parameters

Anthropometric variables	Geriatric Depression Scale - 15			
	Normal	Minimal/moderate	Severe	Total
	n (%)	n (%)	n (%)	n (%)
Cardiovascular diseases				* $p=0.790$
With risk	27 (35.0)	47 (61.8)	2 (2.7)	76 (100)
No risk	6 (40.0)	9 (60.0)	-	15 (100)
Body Mass Index				* $p=0.71$
Underweight	8 (47.0)	9 (53.0)	-	17 (100)
Eutrophy	14 (37.9)	22 (59.4)	1 (2.7)	37 (100)
Overweight	11 (29.7)	25 (67.6)	1 (2.7)	37 (100)

* Fischer's exact test

As noted in Table 4, there is higher prevalence of elderly with borderline blood pressure (21.9%) and 38.5% of elderly with hypertension, and women present proportionally higher blood pressure levels.

Table 4 - Classification of Diastolic and systolic blood pressure, according to gender of elderly

Blood pressure	Sex		Total n (%)
	Male n (%)	Female n (%)	
Excellent	9 (30.0)	9 (14.7)	18 (19.8)
Normal	4 (13.3)	14 (23.0)	18 (19.8)
Limitrophe	3 (10.0)	17 (27.9)	20 (21.9)
Light	6 (20.0)	8 (13.1)	14 (15.4)
Moderate	-	2 (3.3)	2 (2.2)
Severe	-	2 (3.3)	2 (2.2)
Isolated Systolic	8 (26.7)	9 (14.7)	17 (18.7)
Total	30 (100.0)	61 (100.0)	91 (100.0)

Discussion

Living alone or in institutions, the sense of abandonment, loss of autonomy and self-care, social isolation and signs of depression are responsible for the lack of interest in daily activities, among them the preparation of meals and the act of eating⁽⁶⁾. Furthermore, elderly may opt for processed food and those easier to prepare, rich in fats and sugars and poor in micronutrients, causing both malnutrition and overweight⁽¹²⁾.

In Brazil, the presence of depression among elderly has increased during the past few years. As depression affects the quality of life in a negative way, this is considered today one of the most common psychiatric problems typical of this phase of life⁽¹³⁾. The results of this survey identified large numbers of minimal or moderate depression, especially in women, and a low percentage of severe depression.

Studies evaluating the presence of depression and its risk factors among elderly showed that

approximately 6.3 women to every man experience some depressive symptoms⁽¹⁴⁻¹⁵⁾, what is in agreement with the higher prevalence of depression symptoms in women obtained in our study.

The prevalence of depression found in the present study is high compared with other studies with elderly^(12,16). High prevalence of depression in this population group attests the need for a more comprehensive investigation as they experience physiological changes typical of the age. Furthermore, non-diagnosed and/or improperly treated depression in patients with preexisting conditions, such as hypertension and diabetes mellitus, tends to have a more lasting or recurrent flow, requiring an effective intervention, through a multidisciplinary team⁽³⁾.

Regarding the nutritional profile of elderly evaluated through Body Mass Index, individuals surveyed had high incidence of overweight, with greater proportion of women. This is in line with a study conducted in Porto Alegre where among 304 elderly evaluated, 35% were overweight women⁽¹⁴⁾. This puts in evidence the reflection of nutritional transition in the studied population, where overweight is surpassing the prevalence of underweight.

Waist circumference is an important measure for assessing abdominal obesity. Studies suggest that excessive weight with central and widespread deposition of fat are predisposing factors for high blood pressure, a major cardiovascular risk factor⁽¹⁶⁻¹⁷⁾. In our findings, 83.5% of the sample was observed at risk for cardiovascular disease, with higher prevalence in women. Corroborating the presented data, another study reported higher incidence of high results in terms of waist circumference in women compared to men, proving that women are at greater risk of developing cardiovascular disease and metabolic disorders⁽¹⁷⁻¹⁸⁾.

Regarding anthropometric variables and the Geriatric Depression Scale, significant relationship

was not observed between nutritional status of elderly and depression. The results show a greater proportion of elderly with minimal or moderate depression with risk for cardiovascular disease and overweight, though.

Lifestyle changes figure as the main non-drug intervention to prevent or treat both psychological symptoms and physical aspects associated with Metabolic Syndrome. These changes need to include changes in dietary patterns, adoption of regular physical exercise as well as control on the use of tobacco and alcohol, and stress reduction. Individuals living an inactive lifestyle have twice the risk of developing depressive symptoms compared to those who engage in regular exercise⁽¹⁵⁾.

Estimates of adherence to treatment of non-transmissible chronic diseases are low, since complex treatment regimens and continuity of care require a lot of commitment from the patient. Decisive factors for non-adherence include the lack of social support, the presence of depression, anxiety and stress and the fact that it requires habits developed over many years with indispensable efforts to change. Therefore, an interdisciplinary team including a psychologist, a nutritionist and other health professionals is relevant in the sense to develop personal motivation, willingness, self-esteem and beliefs that may contribute to the maintenance of unhealthy habits⁽¹⁹⁾.

Maintaining adequate nutritional status of elderly is not an easy task due to associated factors such as non-transmissible chronic diseases or considerably high daily intake of drugs, socioeconomic status, or even depression that can also be related to inadequate nutritional status, either by increasing the overweight or weight loss of elderly⁽²⁰⁾.

The evaluation revealed a high prevalence of hypertension among elderly with hypertension and despite these being participants of the Program

for Control of Hypertension and Diabetes Mellitus, there is no adequate control of blood pressure. These results may be due to several factors such as lack of adherence to medications, poor diet, leading to increased blood pressure, among other factors, which could suggest that overweight with central and widespread deposition of fat are predisposing factors for elevated blood pressure.

Among the cardiovascular diseases, high blood pressure is the major cause of death worldwide⁽¹⁸⁾. In this study, a higher percentage of women followed in Hiperdia program was observed, this fact can be attributed to the typical higher interest of women to take care of their health reaching, consequently, greater longevity and higher prevalence of hypertension in women after age 60⁽¹⁹⁻²⁰⁾.

Conclusion

In conclusion, it was observed minimal or moderate depression in 61.5% elderly and severe depression among 2.2% elderly. There was a high prevalence of depression among women, with no association with the nutritional profile. However, women showed high levels of overweight and risk for cardiovascular disease. High values of waist circumference (91.8%) and overweight (67.6%) were identified in elderly with minimal or moderate depression. Elderly showed to be at risk to health related to depression suggesting that, despite being inserted into a program for chronic diseases control, they must be followed up by the health team in order to improve the quality of life of these individuals.

In this context, implementation of public policies directed to prevention and control in health programs, particularly related to depression, hypertension and diabetes, in addition to encouraging healthy eating habits, is necessary.

Collaborations

Freire JAP, Macêdo RC, Pereira MMV and Rufino MHO contributed to the study conception, collection, analysis and interpretation of data, writing of the article and final approval of the version to be published. Oliveira RKC and Nascimento LC contributed to writing of the article and final approval of the version to be published.

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