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HEALTH BEHAVIORS AND ANTHROPOMETRIC VARIABLES AMONG OLDER ADULTS WITH AND WITHOUT HYPERTENSION

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ABSTRACT: The objective was to describe socioeconomic, demographic and morbidity and compare the prevalence and odds of prevalence of health behaviors, overweight, abdominal circumference and indicative of depression among those with and without hypertension. It is cross-sectional study of rural elderly. We conducted descriptive analysis, chi-square test and multiple binary logistic regression (p<0,05). Predominated, for both groups, age 60 ├70, married, 4 ├8 years, income of a minimum wage and living with their spouse. Elderly patients with hypertension had lower odds of prevalence for alcohol and smoking and higher odds of overweight, abdominal circumference inappropriate and indicative of depression compared to those without hypertension. Reinforces health actions directed to the rural elderly, through the cessation of smoking and alcohol consumption, weight control and reduction of abdominal circumference among those with hypertension.

DECRIPTORS: Hypertension. Elderly health. Rural population. Nursing.

COMPORTAMENTOS DE SAÚDE E VARIÁVEIS ANTROPOMÉTRICAS ENTRE IDOSOS COM E SEM HIPERTENSÃO ARTERIAL SISTÊMICA

RESUMO: Objetivou-se descrever as características socioeconômicas, demográficas e morbidades e comparar as prevalências e as chances de prevalência dos comportamentos de saúde, sobrepeso, circunferência abdominal e indicativo de depressão entre os idosos com e sem hipertensão arterial sistêmica. Trata-se de estudo transversal, com idosos da zona rural. Realizou-se análise descritiva, teste qui-quadrado e regressão logística binária múltipla (p<0,05). Predominou, para ambos os grupos, faixa etária de 60 ├70 anos, casados, 4 ├8 anos de estudo, renda de um salário mínimo e moram com o cônjuge. Os idosos com hipertensão arterial sistêmica apresentaram menores chances de prevalência para o etilismo e o tabagismo e maiores chances de sobrepeso, de circunferência abdominal inadequada e indicativo de depressão em relação aos sem hipertensão arterial sistêmica. Reforçam-se ações de saúde direcionadas aos idosos rurais, por meio da cessação de tabagismo e etilismo, controle do peso e diminuição da circunferência abdominal entre os com hipertensão arterial sistêmica.

DESCRITORES: Hipertensão. Saúde do idoso. População rural. Enfermagem.

CONDUCTAS DE SALUD Y LAS VARIABLES ANTROPOMÉTRICAS EN ADULTOS MAYORES CON Y SIN HIPERTENSIÓN

RESUMEN: Se objetivó describir las variables socioeconómicas, demográficas y morbilidades y comparar la prevalencia y las probabilidades de prevalencia de conductas de salud, exceso de peso, la circunferencia abdominal y los indicadores de depresión entre las personas con y sin hipertensión. Estudio transversal realizado con ancianos de zonas rurales. Se realizó un análisis descriptivo, prueba de Chi-cuadrado y regresión logística binaria múltiple (p<0,05). Predominaron en ambos grupos, edades de 60 ├70 años, casado, 4 ├8 años de estudio, ingresos de un salario mínimo y que vivían con su cónyuge. Los pacientes ancianos con hipertensión tenían menos probabilidades de prevalencia del consumo de alcohol y el tabaco y las probabilidades más altas de sobrepeso, circunferencia abdominal inapropiada e indicativo de depresión en comparación con aquellos sin hipertensión. Se refuerza la importancia de las acciones de salud dirigidas a los ancianos de zonas rurales, a través de la cesación del consumo de tabaco y alcohol, control de peso y reducción de la circunferencia abdominal entre las personas con hipertensión.

DESCRIPTORES: Hipertensión. Salud del anciano. Población rural. Enfermería.

INTRODUCTION

Population aging experienced by the world has led to greater longevity, which, in turn, has led to an increase in chronic noncommunicable diseases (CNCD) among elderly people. Currently, this group of diseases constitutes the leading causes of death among adults and elderly people, especially those of the circulatory system (29.4%).[1]

Systemic arterial hypertension (SAH) is the main risk factor for cardiovascular disease, has a high prevalence in the adult population and is difficult to control, generally due to the absence of symptoms.[2]

A study carried out in urban areas of 26 Brazilian states and the Federal District found a self-reported prevalent of SAH corresponding to 60.2% for people aged over 65 years, being greater for females (64.7%) than males (53.0%).[3] In a study conducted with elderly people in the urban area of Uberaba, Minas Gerais, the city in which the present study was performed, self-reported SAH represented 54.8% and was higher for females (66.5%) compared to males (33.5%).[4]

As seen, investigations with elderly people with SAH have been concentrated in urban areas, possibly due to the logistical difficulties of conducting data collection in rural areas.

Although the human aging process of urban and rural areas is similar, some specificities should be highlighted. In rural areas precarious infrastructure is observed, the people have lower socioeconomic status, and access to health services and transport is more difficult.[5] These aspects can impact on the health of elderly people with SAH that, associated with certain health behaviors, such as physical inactivity, intake of alcohol, smoking and high salt content in food, contribute to increased blood pressure (BP),[2] increasing the risk of comorbidities.

Treatment of SAH and control of BP require, among other things, adherence to positive health behaviors, namely: cessation of alcohol consumption and smoking, performance of physical activity and decrease of salt in meals.[6] It should be noted that these health behaviors are subject to changes through the work of health professionals. Therefore, it is necessary to comprehend the reality of this population, in order to stimulate behavioral changes,[7] as well as plan the most appropriate interventions for the rural area.

A national study verified that the low prevalence of physical activity, associated with being overweight and having SAH, in adults and elderly people of the rural area impacts on health and is an indicator of future complications.[8] In addition, the medication for SAH may, among the side effects, lead to depression.[2]

Based on the above and the lack of studies with elderly residents of the Brazilian rural area with hypertension,[9-10] the performance of the present study was proposed.

This study aimed to describe the socioeconomic and demographic characteristics and to compare the prevalence and the prevalence odds ratios of health behaviors (drinking, smoking, salt intake, physical activity), overweight, waist circumference and indicators of depression among elderly residents of a rural area, with and without SAH.

METHODS

This is part of a larger study conducted by the Public Health Research Group of the *Universidade Federal do Triângulo Mineiro*. This was a household survey type, analytical, cross-sectional and observational study.

The population consisted of 1,297 elderly people enrolled in the Family Health Strategy (FHS), which covers 100% of the rural area of the municipality. The inclusion criteria established were: to be aged 60 years or over, to reside in the rural area of Uberaba-MG, to present no cognitive decline. A total of 849 elderly people were interviewed, of whom 463 had SAH and 386 did not report this morbidity. Others were excluded due to change of address (117), cognitive decline (105), refusal to participate (75), not being located after three attempts by the interviewer (57), death (11), hospitalization (3) and other reasons (80).

Data collection took place between June 2010 and March 2011 and was carried out by 14 duly guided and trained interviewers. The interviewer used the lists provided by the FHS as the reference, which contained the name and address of the elderly people, and the instruments used in the elderly person's residence.

The cognitive assessment of the elderly people was performed using the Mini Mental State Examination (MMSE), translated and validated for Brazil.[11] The MMSE score ranges from 0 to 30 points and the cutoff point was considered according to the education of the elderly people: 13 points for illiterate, 18 points for 1 to 11 years of study, and 26 points for more than 11 years.[11]

To collect socioeconomic, demographic and some health behavior data the Older Americans

Resources and Services (OARS) questionnaire was used.[12] The following variables were selected: gender, age group, marital status, education, individual monthly income, and living arrangement.

The variables related to health behaviors considered were: alcohol consumption (consumption of ≥30 g ethanol/day for men and ≥15 g ethanol/day for women);[2] smoking (yes or no); and the practice of physical activity (considered active when performing 150 min/week). The value recommended by the World Health Organization (WHO) was used.

The Food Consumption Frequency Questionnaire (FCFQ), developed by the General Coordination of Food and Nutrition Policy (CGPAN) of the Ministry of Health, was also used.[13] The health behavior variable: habit of putting more salt in food after preparation (yes or no) was included.

Regarding the anthropometric variables, a platform type, portable, digital, Bioland brand (EB9015 model) electronic scale, with a capacity of 150kg and accuracy of 100g, was used to measure the weight, with the subject wearing light clothing and no shoes. To perform the measurement of waist circumference a flexible and inelastic tape measure was used, with a length of 2m divided into centimeters and subdivided into millimeters, measured at the level of the umbilicus with the elderly person standing. Height was measured using the same tape measure used to measure the waist circumference, attached to the wall in a flat and regular place, with the elderly person barefoot, in the standing position with feet together, back to the marker, looking toward the horizon.

The body mass index was calculated using the formula BMI=Weight (kg)/[Height]²(m). For the classification of BMI among the elderly people the classification recommended by the WHO, 27 kg/m² or higher, was considered.[14] The waist circumference was considered inappropriate when it was >80cm for the women and >94cm for the men.[15]

Data were double-entered into two electronic databases created as Excel® spreadsheets. Subsequently, the consistency between the two databases was investigated. When there were inconsistency issues, the original interview was referred to for correction. The consensus database was transported to the Statistical Package for the Social Sciences (SPSS), version 17.0 software, for analysis.

Statistical analysis was performed using simple frequency distribution and Student's t-test for independent samples (p<0.05). The chi-square test was used to determine the prevalence and association between the categorical variables (p<0.05). The prevalence odds ratios (PORs) were presented in raw form for each of the health behaviors, overweight, waist circumference, and indications of depression. Next, they were adjusted for the variables gender, age, health behaviors, overweight, waist circumference and indications of depression, through multiple binary logistic regression, with the main predictor being the groups with and without SAH (p<0.05).

This study was approved by the Human Research Ethics Committee of the *Universidade Federal do Triângulo Mineiro*, Authorization No. 1477 of February 12, 2010. The elderly people were approached in their homes where the aims of the study were presented. The interview was only conducted after the participants signed the Free and Informed Consent Form.

RESULTS

Table 1 - Distribution of the frequencies of the socioeconomic and demographic characteristics of the elderly people with and without arterial hypertension, residents of the rural area of Uberaba-MG, 2010

Variable	Systemic Arterial Hypertension			
	With		Without	
	n	%	n	%
Gender				
Female	250	54.0	151	39.1
Male	213	46.0	235	60.9
Age group (years)				
60 ├ 70	274	59.2	241	62.4
70 ├ 80	137	29.6	123	31.9
80 or more	52	11.2	22	5.7

Variable	Systemic Arterial Hypertension			
	With		Without	
	n	%	n	%
Marital status				
Never married or lived with a partner	31	6.7	30	7.8
Lives with spouse or partner	301	65.0	270	69.9
Widowed	103	22.2	58	15
Separated / legally separated or divorced	28	6.0	28	7.3
Education (years of study)				
Illiterate	110	23.8	99	25.6
1 ├4	149	32.2	106	27.5
4 ├8	167	36.1	145	37.6
8	18	3.9	11	2.8
9 or more	19	4.1	25	6.5
Individual monthly income (in minimum wages)*				
Without income	49	10.6	37	9.6
<1	22	4.8	9	2.3
1	229	49.5	179	46.4
1┤ 3	134	28.9	125	32.4
3┤ 5	20	4.3	26	6.7
>5	9	1.9	9	2.3
Living arrangement				
Lives alone	75	16.2	61	15.8
Lives with carer	-	-	-	-
Lives only with spouse	211	45.6	189	49.0
Lives with others of the same generation	40	8.6	39	10.1
Lives with children	101	21.8	75	19.4
Lives with grandchildren	24	5.2	12	3.1
Other arrangements	12	2.6	10	2.6

* The minimum wage was R$ 540.00 [16]

Females (54%) were predominant among the elderly people with hypertension, while males (60.9%) were predominant among those without the disease. The highest percentages for both groups were for the age group of 60 ├70 years, married/living with a partner, living only with the spouse, with 4 ├8 years of study and an income of one minimum wage. It should be noted that 22.2% of the elderly people with hypertension were widowed (Table 1).

Regarding the comorbidities, the mean number for those with SAH was 5.82, with a standard deviation of 3.03, higher than the mean for the elderly people without the disease (3.44, with a standard deviation of 2.42).

Table 2 - Distribution of prevalence odds ratios adjusted for the variables related to health behaviors, overweight, waist circumference and indications of depression in the elderly people with and without hypertension, living in the rural area of Uberaba-MG, 2010

Variable	Systemic arterial hypertension				X²*	Adjusted POR (CI)†	*p*‡
	With		Without				
	n	%	n	%			
Alcohol consumption							
Yes	117	25.3	145	37.6	14.913	0.654 (0.47 – 0.90)	0.011
No	346	74.7	241	62.4			
Smoking							
Yes	57	12.3	101	26.4	27.330	0.546 (0.36 – 0.80)	0.003
No	405	87.7	281	73.6			
Adds more salt							

Variable	Systemic arterial hypertension				X^{2*}	Adjusted POR (CI)†	*p*‡
	With		Without				
	n	%	n	%			
Yes	16	3.5	27	7.0	5.449	0.605 (0.30 – 1.18)	0.144
No	446	96.5	359	93.0			
Practices physical activity							
Yes	110	23.8	84	21.8	0.472	1.090 (0.76 – 1.54)	0.628
No	352	76.2	301	78.2			
Overweight							
Yes	194	42.3	91	23.7	32.212	1.749 (1.23 – 2.47)	0.002
No	265	57.7	293	76.3			
waist circumference							
Appropriate	101	22.2	168	44.2	0.360	0.527 (0.36 – 0.76)	0.001
Inappropriate	354	77.8	212	55.8			
Indications of depression							
Yes	121	26.1	66	17.1	10.006	1.486 (1.01 – 2.16)	0.021
No	342	73.9	320	82.9			

* Pearson's chi-square association coefficient =X^2; †Refers to the value of the adjusted prevalence odds ratio; ‡p value for the chi-square test considering the significance level (alpha)=0.05.

Regarding health behaviors, there was a lower proportion of elderly people with SAH who reported alcohol consumption, smoking and addition of salt to food after its preparation, compared to those without SAH (Table 2).

Among the health behaviors, after adjustment, it was observed that the elderly people with hypertension presented 34.6% lower POR for alcohol consumption and 45.4% lower POR for smoking in relation to the elderly people without hypertension (Table 2).

Considering the anthropometric variables, there was a higher proportion of overweight elderly people, with greater waist circumference than that recommended, and with indications of depression, compared to those without this morbidity (Table 2).

After adjustment, it should be noted that the elderly people with SAH presented 74.9% higher POR for being overweight, 47.3% higher POR for inappropriate waist circumference, and 48% higher POR for indications of depression, when compared to those without SAH (Table 2).

DISCUSSION

Hypertension was also found to be more prevalent among female adults and elderly people from the rural area of Vale do Jequitinhonha-MG, however, with a highest percentage (81.1%).[9] The difference in the prevalence of SAH between the genders has also been observed in international studies. In a study conducted with the rural elderly population of China, males were predominant (45.2%), while in Greece this was the case for females (90.2%).[17] Given the greater female longevity and the occurrence of chronic disease, it is worth focusing on self-care for the maintenance of independence for as long as possible.

The younger age group verified in this study corroborates a study with elderly people in the rural area of Bambuí-MG, in which 59.9% were aged 60 |- 70 years.[18] This finding reinforces what was previously mentioned about the intervention of nurses, in that their practice seeks to prevent other injuries and impact positively on the health and quality of life of the elderly people.

Regarding marital status, one study found that married elderly people presented better control of BP levels, in relation to those unmarried.[18] The support of family members, such as the spouse, can be helpful in the control of BP, preventing complications.[19] This support acts as an incentive for self-care, for adherence to SAH treatment, and especially for changes to positive health behaviors, when necessary. It should be noted that among widowed elderly people specific strategies should be developed, as living alone or being single can increase the possibility of self-care deficit and weight gain, can reduce motivation for performing physical activity and can lead to a greater propensity for depression.[20]

The education level was higher than that found in a study with adults and elderly people of the rural area of Minas Gerais, where the highest percentage (39%) of the population with SAH reported 1-4 years of study.[9] It is known that

education can interfere with the treatment of SAH,[2] especially in understanding the guidance for the disease treatment and preventive actions, as well as in health promotion. The bond with the FHS team may favor the exposure, by the elderly people, of their doubts, anxieties and fears.

As verified in the present study, the literature shows a higher prevalence of SAH among the lower income population.[2] The specifics of the rural area, in relation to access to goods and services, can further compromise the treatment of SAH among elderly people with low incomes.

It should be noted that the Ministry of Health, through the System of Registration and Monitoring of Hypertensive and Diabetic Patients (HIPERDIA), performs the distribution of diuretics and angiotensin-converting enzyme (ACE) inhibitors, facilitates the monitoring, guarantees receipt of the prescribed medications, and supports strategies to improve the health of this population.[3] The role of the nurse is reinforced in this context, establishing the bond between the population and the FHS,[19] in order to guide and facilitate access to the medication.

Among the health behavior variables, the percentage of abusive alcohol consumption was higher in this study than that found among elderly Brazilians (4.5%), according to data from the Surveillance of Risk and Protective Factors for Chronic Diseases by Telephone Survey (VIGITEL).[3] This highlights the greatest concern with the rural elderly population, as well as the need to investigate the causes involved in this health behavior and alert them to the risks and consequences of long term abusive alcohol consumption.

For smoking, a similar percentage was obtained in a study among older adults with SAH in rural Greece (11.7%).[17] Chronic illness can be a stimulus to stop the habit or may be a factor that predisposes the person to start and/or maintain the addiction, due to the stress caused by the news and the possible consequences.[21]

Health professionals involved in the care of these elderly people should take into account strategies for smoking cessation and alcohol consumption reduction and long-term monitoring, regardless of the age group. In this context, the nursing consultation is valorized, which provides monitoring of changes in health behaviors, as well as their impact on health and the complications of diseases.[22]

Regarding the anthropometric variables, data from VIGITEL showed that 58.4% of the elderly people aged over 65 years and living in urban areas were overweight.[3] A greater concentration of abdominal fat interferes with the function of other organs, as well as increases insulin resistance and possibly results in metabolic syndrome.[23]

The population living in rural areas is also going through what is known as nutrition transition, as in urban areas, with an increase in waist circumference and being overweight, mostly affecting women.[23] Hypertension is one of the major risk factors for cardiovascular disease. Associated with being overweight/obese and inappropriate waist circumference, SAH becomes a predictor for increased prevalence of other chronic morbidities.[7] Actions aimed at reducing the weight and consequently the waist circumference of elderly people are necessary, as this contributes to the control of BP, lowering the impact on health, thereby reducing the risk of fatal and non-fatal cardiovascular events and compromise of the target organs.

The use of the rural area to practice activities, such as making home gardens, in addition to improving the quality of food, stimulates calorie loss through activity and can be promoted as an individual or collective action.

A study with elderly people of a health group in Sarandi-PR recorded an incidence of 30% for depressive symptoms among those with SAH.[20] This may be associated with less motivation for health care among elderly people with indications of depression, which can cause or increase unhealthy behavior, such as physical inactivity, smoking and alcohol consumption. Considering that SAH is mostly asymptomatic, the chance of early diagnosis among elderly people with indications of depression can decrease.[22] Specific care should be directed toward elderly people with an indication of depression, aiming to investigate these symptoms, establish monitoring actions and, where necessary, provide a referral for a medical diagnosis.

It should be noted that the nursing consultation is an essential tool in primary healthcare and provides greater involvement of the elderly patients in their own care and a greater bond with the health professional. The nursing consultation provides monitoring of changes in health behaviors and their impact on health and the complications of diseases.[22]

Given the above, the need was verified for the implementation of health actions targeting elderly people with and without SAH who live in rural areas, valorizing the location for the practice of physical activity, the cultivation of home gardens,

the cessation of alcohol consumption and smoking, and individual and collective monitoring.

CONCLUSION

Greater monitoring of these elderly people is necessary, giving particular attention to those who are female, younger, with lower incomes, more associated morbidities, are overweight, with inappropriate waist circumference, and indications of depression, in order to delay complications arising from SAH and other comorbidities.

Accordingly, it should be a priority to encourage physical activity through groups for the elderly people, such as outdoor fitness projects and group walks, which can benefit these elderly people physically, socially and mentally. An individualized nutritional monitoring program for weight loss, smoking and alcohol consumption cessation, and awareness of self-care and the SAH treatment is also important.

The health behaviors being self-reported constituted a limitation of this study.

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