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Prevalence and factors associated with hypertension in elderly people at a primary care service

Prevalência e fatores associados à hipertensão em idosos de um serviço de atenção primária

Prevalencia y factores asociados a la hipertensión en ancianos de un servicio de atención primaria

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Arterial hypertension is a systemic disease highly prevalent in elderly individuals and a decisive factor in high morbidity and mortality in this population. The aim of this study is to assess the epidemiological characteristics of hypertension (SAH) and the associated factors in elderly population accompanied at a Basic Health Unit in the southern region of São Paulo city. This is a cross-sectional study carried out through investigation at home with 340 elderlies. The elderly who participated in this study were mostly women (62%) from 60 to 69 years old. The prevalence of hypertension was 74.7%. The factors associated with hypertension were male gender (p-value 0.0133) and black-skinned (p-value 0.0365). HAS presented high prevalence in the elderly investigated, being higher in certain subgroups: men, low education level and black race. The increase of elderly population shows greater number of chronic problems, including high blood pressure.
Descriptors: Hypertension; Elderly; Chronic disease; Epidemiology.

A hipertensão arterial sistêmica é uma doença altamente prevalente em indivíduos idosos, tornando-se um fator determinante na morbidade e mortalidade elevadas dessa população. O objetivo deste estudo é analisar as características epidemiológicas da hipertensão arterial sistêmica (HAS) e os fatores associados na população idosa acompanhada por uma Unidade Básica de Saúde da zona Sul da cidade de São Paulo. Trata-se de um estudo transversal realizado por meio de inquérito domiciliar com 340 idosos. Os idosos que participaram deste estudo eram sua maioria mulheres (62%), na faixa etária de 60 a 69 anos A prevalência da hipertensão foi de 74,7%. Os fatores associados à hipertensão foram: sexo masculino (p-valor 0,0133) e raça negra (p-valor 0,0365). A HAS apresentou alta prevalência nos idosos investigados, sendo maior em determinados subgrupos: homens, baixa escolaridade e raça negra. O aumento da população idosa, evidencia maior número de problemas crônicos, entre elas a hipertensão arterial.
Descritores: Hipertensão; idoso; Doença crônica; Epidemiologia.

La hipertensión arterial sistémica es una enfermedad altamente prevalente en individuos ancianos, volviéndose un factor determinante en la morbilidad y mortalidad elevadas de esa población. El objetivo de este estudio es analizar las características epidemiológicas de la hipertensión arterial sistémica (HAS) y los factores asociados en la población anciana acompañada por una Unidad Básica de Salud de la zona sur de la ciudad de São Paulo. Se trata de un estudio transversal realizado por medio de una encuesta domiciliaria con 340 ancianos. Los participantes eran en su mayoría mujeres (62%), en el grupo de edad de 60 a 69 años. La prevalencia de la hipertensión fue de 74,7%. Los factores asociados a la hipertensión fueron: sexo masculino (p-valor 0,0133) y raza negra (p-valor 0,0365). La HAS presentó alta prevalencia en los ancianos investigados, siendo mayor en determinados subgrupos: hombres, baja escolaridad y raza negra. El aumento de la población anciana, evidencia mayor número de problemas crónicos, entre ellos la hipertensión arterial.
Descriptores: Hipertensión; Anciano; Enfermedad crónica; Epidemiología.

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INTRODUCTION

Population ageing is a worldwide phenomenon that and one of the most significant events of the society, acquiring, over the years, more expressive dimensions, particularly in developing countries[1]. In Brazil, the population segment represented by the elderly is the fastest growing. Projections indicate that in 2025 the country will occupy the sixth place among those with the highest number of elderly people, when approximately 15% of Brazilians will be 60 or more years old, which represents in absolute values, 32 million people[2].

While on the one hand the population ageing has brought the benefits of increased longevity, on the other hand the occurrence of morbidity and mortality profile increased, characterized by a higher number of chronic degenerative diseases[3]. The concern with health conditions of the elderly has motivated the development of several studies on human ageing. These studies are essential to guide public policies that meet the old portion of the population, even as the current Brazilian health system still needs to be adjusted and organized for the different demographic and epidemiological profiles, arising from the increased expectation of survival[3].

With the increase of the elderly population, the prevalence of chronic diseases is significant, the major causes of morbidity and mortality in the world. Among these illnesses, we include hypertension (SAH) Diabetes Mellitus (DM) and cerebrovascular accident (CVA). In Brazil, cardiovascular diseases are the leading cause of mortality, revealing problems in their control, especially when they are asymptomatic, as is the case of SAH[4].

SAH is considered a disease and a risk factor, directly related to coronary artery disease and cerebrovascular accident, representing a major challenge to public health, because cardiovascular disease is the leading cause of death in the Brazil. Detection, treatment and control of HAS are essential to reduce cardiovascular events[5].

The fast growth of the elderly population and its inherent aspects and the phenomenon of ageing is a current issue, so it is necessary to know the epidemiological profile, the characteristics and the factors associated with the SAH in this population. It is believed to be possible the prevention of chronic diseases and their sequelae, their causes and risk factors, with the development of actions and programs of prevention[6,7].

The aim of this study was to analyze the epidemiological characteristics of hypertension (SAH) and the associated factors in elderly population at a Basic Health Unit.

METHOD

This is a study of a population-based cross-sectional delineation, accomplished through domiciliary inquiry. With 340 elderlies of 60 or more years old, of both sexes, living in an area covered by the Basic Health Unit (BHU) Vila Santa Catarina, located in the southern region of São Paulo-SP.

The city of São Paulo has a rapid process of population ageing in full demographic transition. At the same time, they are experiencing the process of epidemiological transition, with increased prevalence of chronic conditions and changes in the morbidity and mortality profile of its population. Currently, São Paulo has 11,638,802 inhabitants, being 1,619,760 of people with 60 years old or more[8]. For this study, we adopted the technique of simple random sampling without replacement.

Data were collected by researchers through forms previously tested, in the period from January to March 2013. We obtained information about individual identification, and demographic, socioeconomic, lifestyle, morbidity, polypharmacy, inability for Basic Activities of Daily Life (BADL), inability to Instrumental Activities of Daily Life (IADL) and hospitalization variables. Demographic and socioeconomic variables studied were: sex, age, skin color, marital status, education and family income.

The categories for smoking were: smokers, nonsmokers and former smokers. The consumption of alcoholic beverages was categorized in “yes” and “no”, questioned in

relation to the 30 days before the interview. Physical activity in leisure was categorized into "yes" and "no". The variable polypharmacy was considered when the elderly used 5 or more drugs from different pharmacologic classes[9].

For this study we established the following inclusion criteria: being 60 years old or more; be registered in the Basic Health Unit and agree to participate in the study by signing an informed consent (TFCC).

About the knowledge of the condition of hypertension, we considered individuals who self-reported knowing this condition. As for treatment, we considered the elderly reporting the use of antihypertensive drugs.

For statistical analysis we used the software Statistical Analysis System 9.9(SAS), which enables the analysis of data consistency. To verify the existence between the dependent variable SAH and other independent variables of the study, we used the technique of logistic regression, Chi-square test and *Odds Ratio* (OR).

The research project was evaluated by the Research Ethics Committee of the Federal University of São Paulo, paragraph 1012/11 and the Research Ethics Committee of the Municipal Health Secretariat of Sao Paulo CAAE: 0813.0.174.162.11.

RESULTS

The average age of the participants was 68.9 years old with a standard deviation of 7.3 years. Minimum age 60 years old and maximum of 85 years old, 62.1% were women from of 60 to 69 years old, 58% of mix-raced and black, low schooling people with 1 to 4 years of study, with household income of 1 to 3 minimum salaries, 86% percent were sedentary, 86% with inability to perform instrumental activities of daily life, as in Table 1.

The prevalence of SAH in the elderly was 74.7%, sex and race variables showed statistical significance, indicating that elderly male presented two times more chances of hypertension than the female, as well as elderly black presented two times more chances of hypertension than those of mixed races (Table 2).

Table 1. Prevalence of arterial hypertension, according to demographic, socioeconomic, lifestyle and functional capacity variables of the elderly users of BHU Vila Santa Catarina, municipality of São Paulo-SP, 2013.

Variables		Yes		No		Total	p-value
		N	%	N	%		
Age	60 to 64 years	86	77.5	25	22.5	111	0.6657
	65 to 69 years	71	71.7	28	28.3	99	
	70 to 74 years	30	68.2	14	31.8	44	
	75 to 79 years	36	78.3	10	21.7	46	
	80 to 85 years	31	77.5	9	22.5	40	
	Total	254		86		340	
Sex	Male	106	82.2	23	17.8	129	**0,0133**
	Female	148	70.1	63	29.9	211	
	Total	254		86		340	
Race/Color	White	74	68.5	34	31.5	108	**0,0365**
	Black	75	84.3	14	15.7	89	
	Mixed	105	73.4	38	26.6	143	
	Total	254		86		340	
Marital status	Single	66	79.5	17	20.5	83	0.5445
	Married	74	71.8	29	28.2	103	
	Divorced	27	69.2	12	30.8	39	
	Widow	87	75.7	28	24.4	115	
	Total	254		86		340	
Schooling	Iliterate	126	77.3	37	22.7	163	0.2909
	Incomplete Elementary School	128	72.3	49	27.7	177	
	Total	254		86		340	
Family income	1 to 3 minimum wages	197	74.6	67	25.4	264	0.9466
	4 to 5 minimum wages	57	75.0	19	25.0	76	
	Total	254		86		340	
Hospitalization	Yes	88	73.3	32	26.7	120	0.6672
	No	166	75.5	54	24.6	220	
	Total	254		86		340	
Physical activity	No	205	75.1	68	24.9	273	0.7412
	Yes	49	73.1	18	26.9	67	
	Total	254		86		340	
Smoking	Smoker	48	73.9	17	26.2	65	0.9360
	Former smoker	115	75.7	37	24.3	152	
	Never smoked	91	74.0	32	26.0	123	
	Total	254		86		340	
Alcohol consumption	Yes	71	79.8	18	20.2	89	0.2004
	No	183	72.9	68	27.1	251	
	Total	254		86		340	
Inability BADL	No	188	75.2	62	24.8	250	0.7268
	Yes	66	73.3	24	26.7	90	
	Total	254		86		340	
Inability IADL	Yes	224	75.9	71	24.1	295	0.1829
	No	30	66.7	15	33.3	45	
	Total	254		86		340	
Polipharmacy	Yes	90	75.0	30	25.0	120	0.9266
	No	164	74.6	56	25.5	220	
	Total	254		86		340	

Table 2 –Prevalence of arterial hypertension, according to the logistic model to hypertension probability of elderly users of HBU Vila Santa Catarina, municipality of São Paulo-SP, 2013.

Parameter		GL	Estimate	Wald statistic	p-value
Intercept		1	0.9967	12.1415	**0,0005**
Age range	1	1	0.3359	1.4648	0.2262
	2	1	-0.015	0.0037	0.9516
	3	1	-0.3202	1.1345	0.2868
	4	1	0.0936	0.0796	0.7778
Sex	1	1	0.376	4.6408	**0,0312**
Race/color	1	1	-0.3329	2.8636	0.0906
	2	1	0.5714	5.8427	**0,0156**
Marital status	1	1	0.3137	1.5424	0.2143
	2	1	-0.2998	1.7104	0.1909
	3	1	-0.176	0.3326	0.5641
Schooling	1	1	0.1291	0.7108	0.3992
Family income	2	1	-0.0947	0.3263	0.5678
Hospitalization	1	1	-0.2016	1.6796	0.1950
Physical activity	1	1	-0.0084	0.0025	0.9600
Smoking	1	1	-0.4832	2.8875	0.0893
	2	1	0.1423	0.5338	0.4650
Alcohol consumption	1	1	0.1299	0.3711	0.5424
Inabilty BADL	1	1	0.0448	0.0816	0.7751
Inabilty IADL	1	1	0.2451	1.6586	0.1978
Polipharmacy	1	1	-0.0552	0.1556	0.6933

DISCUSSION

In this study, we observed a high prevalence of SAH (74.7%) among elderlies surveyed. Other studies that investigated the prevalence of SAH in elderly people, pointed inferior results [10,11]. International studies conducted in Europe and Canada, showed prevalence of 30% and 35%respectively[12,13]. Although we cannot consider that self-referred chronic diseases correspond, in fact, to their prevalence, they have been used in epidemiological studies as an indicator of health status, especially in elderly people[13].

A study conducted with elderly residents in the community, in a residential area of São Paulo city, and another in the city of Tubarão (SC) identified higher prevalence of SAH in elderly women[14,15]. In this study, the higher prevalence of hypertension occurred among elderly men.

As for schooling, there was a higher prevalence of SAH in older people with less schooling. This data is compatible with the national prevalence and research that has detected a low educational profile in Brazilian elderlies[15-17].

In this study, we observed socio-economic disadvantages of elderly people with family income of 1 to 3 minimum wages, 264 (77.6%) were observed. Family income represents a determining factor in the elderly health situation, possibly at this stage of life there is a greater need for medicines due to the presence of chronic diseases, differentiated food and other costs that the process of physical limitation implies. In addition, due to the various changes in family arrangements in recent times, elderly people may come across a reality in which they are obliged to hold out unemployed or sick relatives. In this context, the number of studies showing the relevance of the retired elderly figure as a family provider is growing[18,19].

As for hospitalization, this variable showed no statistical significance, however, chance reason calculating shown that the elderly hypertensive patients of this study present 2 to 3 times higher odds of hospitalization. Although in certain circumstances hospitalization is the only possibility for the elderly's treatment, its repercussions are a reduced functional

capacity, slow and protracted recovery, demand for high-cost technologies increasing spending on health care and the need for qualified human resources[20].

Physical inactivity is probably associated with morphological and functional changes inherent to the human ageing process. When associated with chronic diseases, they can lead to decreased physical independence of the elderly[21]. Study conducted in the city of Ribeirão Preto/SP that assessed the usual level of the elderly physical activity, obtained positive association as the cardiovascular health of hypertensive elderly[22].

In the world there are approximately 22% of men with 60 years or older who are smokers and 8% of women with this habit[23]. In Brazil, a health survey conducted in the State of São Paulo, in a sample of 1,954 elderlies, demonstrated a high prevalence of smoking in elderly men with low income, less years of study, low body weight and physical inactivity[23]. In the present study, elderly smokers showed two to three times more probabilities to develop hypertension because of this habit.

The loss of functional capacity is associated with the prediction of fragility, dependence, institutionalization, increased risk of falls and death. Otherwise, mobility problems bring complications over time, generating long-stay and high-cost care due to the need for medical care and risk of hospitalization, which contributes significantly to the current crisis in the health system[24]. A study which surveyed 999 people with an average age of 68.5 years old demonstrated that patients with hypertension had an increased risk of developing functional incapacity in the functions assessed, compared with normotensive[25].

Another study carried out in the municipality of Sao Paulo, with 1,769 elderly people, classified the research participants as independent or dependent for basic activities of daily life and instrumental activities of daily life. Arterial hypertension was the most frequent chronic condition (53.4% of the sample)[26]. In the study presented here, the prevalence of inability for IAVDLs was greater than for the BADLs. Although there was no statistical significance for these variables, the reason for chance was from one to two times, indicating that hypertensive elderly people have low probability of functional inability.

The use of 5 or more medications was reported by 35.2% of the elderlies. This result may have several explanations. To some extent it is a consequence of the greater prevalence of NCCD in this age group. The inconsistent way in which the elderly's health care is carried out, by different specialists, without being questioned about the medications they are using, also contributes to the use of multiple medications. In addition, prescriptions are often repeated indefinitely because patients are not oriented about the duration of the treatment[27].

The prevalence of polypharmacy was greater than that verified in other Brazilian population-based studies with older people, who also considered the use of 5 or more medicines as polypharmacy. In these study, the prevalence ranged from 11.3% in the metropolitan region of Belém-PA[28] to 29.0% in Bahia[29] and 32.7% between retired people of Rio de Janeiro[30]. The differences may be related to the characteristics of the populations researched and the methodology used in the different surveys.

This study has some limitations that should be considered in the results interpretation. Firstly, it is a transversal study, that, despite finding factors related to high blood pressure in the elderly, does not demonstrate a cause-effect relationship. On the other hand, although the study was carried out with elderlies living in a community, such results may not reflect the reality in some regions of the municipality of São Paulo, and there may be differences.

CONCLUSION

This study represents a contribution to the knowledge of the factors associated with hypertension in elderly people in a primary care service. The prevalence of arterial hypertension in the elderlies was high when compared to other studies carried out in Brazil.

The factors associated with hypertension were: the male gender and the black race. The elderly were mostly women of 60 to 69 years old, low schooling, insufficient family income, dependent on the Unified Health System and with a high degree of inability for instrumental activities of daily life.

The increase of elderly population shows a greater number of chronic problems, among them high blood pressure, the highest prevalence in this range of the population. Studies in this area of knowledge are important for planning and establishing public policies for the benefit of the elderly population.

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