

Factors associated with the prevalence of hypertension and control practices among elderly residents of São Paulo city, Brazil

Fatores associados à prevalência de hipertensão e medidas de controle entre idosos residentes no Município de São Paulo, Brasil

Factores asociados con la prevalencia de hipertensión y medidas de control entre ancianos residentes en el Municipio de São Paulo, Brasil

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Abstract

The aim of this study was to analyze the prevalence of hypertension and control practices among the elderly. The survey analyzed data from 872 elderly people in São Paulo, Brazil, through a cluster sampling, stratified according to education and income. A Poisson multiple regression model checked for the existence of factors associated with hypertension. The prevalence of self-reported hypertension among the elderly was 46.9%. Variables associated with hypertension were self-rated health, alcohol consumption, gender, and hospitalization in the last year, regardless of age. The three most common measures taken to control hypertension, but only rarely, are oral medication, routine salt-free diet and physical activity. Lifestyle and socioeconomic status did not affect the practice of control, but knowledge about the importance of physical activity was higher among those older people with higher education and greater income. The research suggests that health policies that focus on primary care to encourage lifestyle changes among the elderly are necessary.

Hypertension; Health Surveys; Health Services; Aged

Resumo

O objetivo deste estudo foi analisar a prevalência de hipertensão e práticas de controle em idosos. Inquérito transversal analisou dados de 872 idosos de São Paulo, Brasil, por meio de uma amostra por conglomerados, estratificada segundo escolaridade e renda. O modelo de regressão múltiplo de Poisson verificou a existência de fatores associados à hipertensão. A prevalência de hipertensão referida entre os idosos foi de 46,9%. As variáveis associadas à hipertensão foram auto percepção de saúde, consumo de álcool, sexo e hospitalização no último ano, independentemente da idade. As três medidas mais adotadas para o controle da hipertensão, embora pouco praticadas, são tomar medicação oral de rotina, dieta sem sal e atividade física. O estilo de vida e a condição socioeconômica não influenciaram a prática de controle, mas o conhecimento sobre a importância da atividade física foi maior entre os idosos com mais escolaridade e renda. Fazem-se necessárias políticas de saúde com foco na atenção primária que incentivem mudanças no estilo de vida dos idosos.

Hipertensão; Inquéritos Epidemiológicos; Serviços de Saúde; Idoso

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Introduction

Chronic diseases resultant from the ageing process and unhealthy lifestyles are the greatest factors responsible for the high morbidity-mortality rates, particularly among the elderly, and for placing immense pressure on the health system¹. Chronic diseases, especially cardiovascular ones, are the main cause of death among the elderly population throughout the world². Among the main risk factors for cardiovascular disease are diabetes mellitus and hypertension, which are independent factors that together may be even more aggravating³.

In the United States about 77.9 million adults (1 in every 3) have high blood pressure. Men and women are equally likely to develop high blood pressure during their lifetimes. However, after the age of 65, the condition is more likely to affect women than men⁴. The estimated prevalence of hypertension found among the elderly (65 years old and above) in Brazil in the year 2008, was 60.6%, with a significant difference between genders⁵.

Even though the Brazilian Society for Hypertension has well defined criteria for the treatment of hypertension using medicines, and despite the existence of control strategies, in some cases, without pharmacological measures, the control indexes are still low. Such control is complex for several reasons including the cost of medication, the need to combine more than one medicine, collateral effects, low adherence to the treatment, and difficulties related to access and use of health services⁶.

This lack of control of hypertension can also be found in developed countries, where less than 25% of patients with this disease have their blood pressure levels controlled, while in developing countries this number does not reach 10%⁷. For this reason, actions involving dietary and lifestyle changes have been more recommended⁸.

Knowledge about the demographic and socioeconomic profiles of the elderly with hypertension and the information they have about the disease and its control strategies, allows for the development of epidemiological care and a better approach, thereby empowering the elderly. Furthermore, it supports the planning and development of public policies for a better placement of the available resources aiming at obtaining more effective results in the access and use of health services by the elderly.

The aims of this study were to identify related factors to the prevalence of hypertension in the elderly according to demographic and socioeconomic conditions, and to analyze health conditions and the lifestyle of the elderly, in addition

to investigating their knowledge about measures and practices used to control hypertension.

Methods

The study involved a population-based cross sectional study that included 872 non-institutionalized elderly people (60 years old and over), residing in São Paulo city in 2003. This research is part of the *Health Survey in São Paulo City* project (ISA-Capital).

In the ISA-Capital survey, a total of 3,357 individuals were randomly selected by two-stage (census-tract and household) cluster sampling. The sample was also stratified according to the education of the head of the family, dividing the percentage of heads with academic degrees into three categories: less than 5%, between 5% and 25%, and more than 25%.

A minimum sample size of 420 people was estimated for each domain of age and gender, taking into account possible losses, and based on a prevalence estimate of 50% ($p = 0.50$), with a confidence level of 95% ($z = 1.96$), sample error of 0.06, and design effect of 1.5.

The information was obtained using questionnaires applied by interviewers and answered by the persons selected. In addition, all interviews were carried out by qualified interviewers with at least complete secondary school.

The questionnaire was organized in blocks and most of the questions were closed, with predetermined alternatives. Not all blocks were applied to all interviewees, since some themes were specific for certain individual conditions.

The variables included in the study were: (a) presence of reported arterial hypertension (having or not having hypertension); (b) demographic – gender, age, ethnic group, religion, marital status, level of education of head of the family, paid work; (c) socioeconomic – education, family income per capita (measured as a multiple of the minimum wage); (d) health conditions – “self-rated health”, reported morbidity 15 days prior to the interview, number of chronic diseases, hospitalization in the 12 months prior to the interview; (e) lifestyle – weekly alcohol consumption, abuse/addiction to alcohol assessed by the CAGE questionnaire⁹, and smoking status (the alcohol use frequency was classified in: never drank/don't drink anymore; up to two times a month; one to three times a week; four to seven times a week).

Only seniors who reported having hypertension answered an extra block of questions. It was asked who had told them that they were hypertensive (doctor or someone else), what did they

do to control the blood pressure, if they usually go to the health center or doctor periodically to control it, the reason for not seeking out a doctor to control pressure, how long has it been since they sought a doctor or a health service, whether they had participated in discussion groups about the disease, which they had knowledge about it, what should be done to control it and what they actually did.

The survey commands of the statistical software Stata 10 (Stata Corp., College Station, USA) were used to analyze the data considering the complex sample design. Thus, the participants' weight (main weight) was incorporated in the analysis based on the sampling fractions and post-stratification adjustment.

Association tests were performed using Pearson's chi-square tests (Rao-Scott) with a significance level of 5% in order to verify the existence of a statistical association between demographic and socioeconomic variables, and lifestyle and health status, according to the reported presence of hypertension ($p < 0.05$). Prevalence estimates were performed and prevalence ratios (PR) were calculated for reported hypertension with confidence intervals of 95% (95%CI).

The Poisson regression model with robust variance was used¹⁰ in order to verify the existence of associated factors to hypertension. The majority of the variables were dichotomized and those which presented $p < 0.20$ in the univariate analysis were considered for the introduction in the model, adjusted by age (stepwise forward procedure).

This research project was approved by the Research Ethics Committee of the Medical School of the University of São Paulo, protocol nº 0217/09.

Results

Of the 3,357 individuals interviewed in the ISA-Capital survey, a total of 872 were elderly people aged 60 or above, of which 451 were female; 60.3% (95%CI: 56.54-63.98) and 421 male; 39.7% (95%CI: 36.02-43.46) and were considered for this study. The mean age of the participants was 70.23 years with no significant difference between men (69.75 years) and women (70.55 years), ($p = 0.094$).

Regarding the 872 subjects interviewed, only 842 completed the questionnaires. This difference can be explained by refusals to participate and other reasons, despite identifying the elderly at home and successive visits. Among the 842 elderly, 395 reported hypertension and in all but one instance [(394 (99.8%) 95%CI (98.25-99.97)], the diagnosis had been made by a doctor, on

average 12 years before the interview [95%CI (10.88-13.27)].

The prevalence of reported arterial hypertension was higher among women, non-white individuals, widows and widowers, those who were not the head of the family, those who did not have any paid activity, those with lower educational levels and those with lower income (Table 1).

Considering the lifestyle variables, hypertension was associated with consumption of alcohol, ($p < 0.001$), self-rated health ($p < 0.001$) and hospitalization ($p = 0.032$). Although alcohol consumption has a significant influence upon the prevalence of hypertension, its association is inverse. There was no association between hypertension and smoking (Table 2).

Among the elderly with hypertension, the percentage who never drank was higher compared to the non-hypertensive group, 73.7% and 55.9% respectively.

Concerning health status, the prevalence of hypertension was 1.84 times higher among the elderly who self reported as having bad/very bad health when compared to those who self reported having great/excellent health. Accordingly, it was verified that the prevalence of hypertension was 34% higher among the elderly who were hospitalized at least once compared to those who had been hospitalized in the year prior to the interview (Table 2).

Among the individuals with hypertension, the number of hospitalizations in the last year was also higher (17.4%) compared to individuals without hypertension (10.4%) $p < 0.0032$ (data not shown in table). Regarding the number of chronic diseases, it was noticed that the presence of one or more diseases was higher among hypertensive patients (71.7%) compared to non-hypertensive patients (45.5%) This association does not persist for three or more diseases, $p < 0.001$ (data not shown in table).

The variables associated with hypertension and which presented a p -value < 0.20 were introduced in the Poisson regression model in the following sequence: self-rated health perception, frequency of alcohol use, gender, marital status, hospitalization, level of education, income, head of family condition, ethnic group, smoking status, and religion. The Poisson multiple regression model showed a higher prevalence ratio of hypertension among the elderly who presented self perception of health as bad/very bad, among those who never drank or do not drink anymore, among women, and among those who were hospitalized at least once in the previous year. The variable marital status appeared to be inversely associated with hypertension, when comparing single people to those who were married (Table 3).

Table 1

Prevalence of arterial hypertension according to demographic and socioeconomic variables in elderly aged 60 years and over (n = 842). ISA-Capital, São Paulo State, Brazil, 2003.

Variables	n	Prevalence (%) *	PR (95%CI) crude	p-value **
Gender				
Male	405	37.95	1.00	0.0003
Female	437	51.56	1.36 (1.13-1.63)	
Age group (years)				
60-69	458	43.78	1.00	0.4305
70-79	297	48.34	1.10 (0.92-1.32)	
80 and more	87	50.02	1.14 (0.88-1.48)	
Race/Color				
White	585	43.85	1.00	0.0429
No white	256	53.64	1.22 (1.01-1.47)	
Religion				
Catholic	601	46.01	1.00	0.1592
No religion	26	28.87	0.63 (0.26-1.51)	
Evangelical	158	50.66	1.10 (0.86-1.40)	
Spiritualist	16	22.90	0.50 (0.14-1.71)	
Others	41	57.06	1.24 (0.80-1.93)	
Marital status				
Married	481	44.83	1.00	0.0023
Single	32	22.16	0.49 (0.24-1.01)	
Divorced/Separated	65	36.53	0.81 (0.58-1.15)	
Widow(er)	247	53.72	1.20 (1.01-1.43)	
Head of the family				
Yes	575	42.58	1.00	0.0228
No	264	52.22	1.23 (1.02-1.47)	
Education (years)				
0-7	660	49.68	1.31 (1.04-1.66)	0.0124
8 or more	168	37.79	1.00	
Income <i>per capita</i> (multiple of the minimum)				
Up to 2.5	642	48.96	1.00	0.0200
2.5 or more	200	40.32	0.82 (0.69-0.98)	

95%CI: 95% confidence interval; PR: prevalence rate.

* Sample weights were taken into account;

** Values in bold present statistical significance ($p < 0.05$).

Concerning the participation of the elderly in discussion groups about the control of high blood pressure, a total of 392 individuals with hypertension answered this question. Of this total, 88.9% responded that they did not participate and only 11.1% did.

The involvement in discussion groups about the disease only influenced the knowledge about the control practice of a low-salt diet ($p < 0.0001$); there was no significant statistical differences upon the other control measures, such as practicing physical activity or medication (Figure 1).

Concerning knowledge about measures and practices for the control of hypertension, there was no significant difference between genders ($p > 0.005$).

It was verified that the great majority of the elderly (98.4%) reported practicing some kind of control measure; however, when these practices were analyzed individually, it was demonstrated that the control practice is still precarious (data not shown in table).

The three most commonly cited control measures for high blood pressure, although still little

Table 2

Prevalence of arterial hypertension according to lifestyle and health status of elderly aged 60 years and over. ISA-Capital, São Paulo State, Brazil, 2003.

Variables	n	Prevalence (%) *	PR (95%CI) crude	p-value **
Smoking habit (n = 836)				
Non-smoker/Ex-smoker	708	47.13	1.00	0.1542
Smoker	128	39.58	0.84 (0.65-1.09)	
Alcohol use (n = 832)				
Never/Do not drink	546	52.75	1.78 (1.31-2.42)	< 0.0001
Up to 2 times per month	117	38.27	1.29 (0.95-1.74)	
1-7 times per week	169	29.63	1.00	
Alcoholism/CAGE (n = 293)				
Negative (< 2)	251	33.59	1.00	0.8013
Positive (≥ 2)	42	35.72	1.06 (0.65-1.75)	
Self assessment of health (n = 840)				
Great/Excellent	162	23.72	1.00	< 0.0001
Good	543	49.56	2.09 (1.65-2.65)	
Bad/Very bad	135	67.37	2.84 (2.17-3.72)	
Morbidity 15 days (n = 842)				
No	616	47.12	1.00	0.3608
Yes	226	43.55	0.92 (0.77-1.10)	
Hospitalization (n = 839)				
None	735	44.05	1.00	0.0032
One or more	104	59.01	1.34 (1.14-1.58)	

95%CI: 95% confidence interval; PR: prevalence rate.

* The sample weights were taken into account;

** Values in bold present statistical significance ($p < 0.05$).

practiced among the elderly with hypertension, were: taking routine oral medication (87.2%, 95%CI: 81.7; 91.1), a low-salt diet (33.4%, 95%CI: 27.6; 39.8), and practicing physical activity (5.4%, 95%CI: 3.1; 9.3). In particular, taking routine oral medication was the most commonly known and practiced among the three measures mentioned by the elderly, and physical activity the least.

Of a total of 395 individuals with hypertension, 59.8% (95%CI: 51.7; 67.3) of the elderly knew of the importance of taking routine oral medicine and, as previously mentioned, 87.2% practiced this measure. Among men, 62.7% (95%CI: 51.6; 72.6) knew that taking routine medication was important for the control and 85.5% (95%CI: 76.5; 91.5) of them reported taking it; among women, the percentages were 58.4% (95%CI: 49.5; 66.7) and 88% (95%CI: 82.1; 92.1) respectively. Concerning lifestyle, smoking status, the frequency of alcohol use and its abusive as measured by CAGE did not influence the knowledge about what is important to be done in order to control hypertension (data not shown). Those elderly who smoked were the ones who least likely to

practice a low-salt diet (11.2%, 95%CI: 5.2; 22.3) compared to ex-smokers, (42.2%, 95%CI: 32.6; 52.6) and non-smokers, (34%, 95%CI: 26.0; 43.0) ($p = 0.022$). In addition, smokers are the ones who take less routine oral medication (76.9%, 95%CI: 60.6; 87.8) ($p = 0.0356$). The elderly who presented abusive levels of alcohol consumption practiced less low-salt diets (4.3%) and less control (29%) of hypertension compared to those with negative CAGE ($p = 0.0131$).

As regards to the socioeconomic conditions, knowledge of the importance of physical activity as a control measure of hypertension was found to be higher among those with better education levels (37.4%) compared to those with low levels (3.67%). ($p = 0.0033$) and greater income (19.3% vs. 4.7%) ($p = 0.0025$) respectively. When investigating the influence of education on the knowledge that the elderly had on measures to control blood pressure, there was no statistical significance for infirm measures, although there was a tendency for some measures like dieting without salt ($p = 0.0058$), and physical activity ($p = 0.0052$). The highest income significantly

Table 3

Poisson multiple regression model. Variables associated to arterial hypertension in elderly aged 60 and over (n = 842). ISA-Capital, São Paulo, Brazil, 2003.

Variables	PR (95%CI) * crude	PR (95% CI) * adjusted **
Self assessment of health		
Great/Excellent	1.00	1.00
Good	2.09 (1.65-2.65)	1.91 (1.50-2.44)
Bad/Very bad	2.84 (2.17-3.72)	2.35 (1.79-3.08)
Alcohol use (n = 832)		
Never/Do not drink	1.78 (1.31-2.42)	1.40 (1.05-1.86)
Up to 2 times per month	1.29 (0.95-1.74)	1.14 (0.83-1.57)
1-7 times a week	1.00	1.00
Gender		
Male	1.00	1.00
Female	1.36 (1.13-1.63)	1.33 (1.06-1.65)
Marital status		
Married	1.00	1.00
Single	0.49 (0.24-1.01)	0.46 (0.23-0.96)
Divorced/Separated	0.81 (0.58-1.15)	0.66 (0.43-1.00)
Widow(er)	1.20 (1.01-1.43)	0.96 (0.78-1.18)
Hospitalization (n = 839)		
None	1.00	1.00
One or more	1.34 (1.14-1.58)	1.20 (1.01-1.43)
Age group (years)		
60-69	1.00	1.00
70-79	1.10 (0.92-1.32)	1.02 (0.86-1.22)
80 and more	1.14 (0.88-1.48)	1.02 (0.80-1.30)

95%CI: 95% confidence interval; PR: prevalence rate.

* Sample weights were taken into account;

** Poisson regression model adjusted by the variables presented in table.

influenced knowledge about only two of these measures ($p = 0.0242$ and 0.0192 , respectively).

By analyzing the socioeconomic influence on the adoption of control measures, neither income nor education had a significant influence ($p > 0.05$) (data not shown in table).

Regarding the periodicity in demand for health services or doctor because of high blood pressure, a total of 395 elderly hypertensive patients, 70.1% (273) said yes, routinely sought out a doctor, 18.7% (77) did not and 11.2% (45) of older adults said they only sought health services when they had problem as can be seen in Figure 2.

Discussion

The prevalence of reported hypertension (46.9%) in the elderly residing in São Paulo city was found to be similar in São Paulo State – 43.9%¹¹ and 46.8%¹² – and similar to the one found in

Canada in 2005 (45%)¹³ and lower than the one found in cities such as Bambuí, Minas Gerais State (61.5%)¹⁴ and Campinas, São Paulo State (51.8%) for the same age group¹⁵.

Concerning the higher prevalence among non-white individuals, a similar result was found in Campinas¹⁵ and in the United States¹⁶. Economic conditions, lifestyle¹, educational levels¹⁷, income opportunities that are dependent on these factors, racism¹⁸ and access to health services¹⁹ are all variables that should be considered in order to explain unequal opportunities between white and non-white subjects. Hypertension among black individuals was 41.4% compared to 28.1% among white individuals²⁰. According to Cacciamali & Hirata²¹, one of the factors that may explain such racial inequality is the heritage of African slavery in Brazil, as well as the patterns of a patriarchal society. Such conditions led to a social and working discrimination that perpetuated those

Figure 1

Knowledge of hypertension control practices by the elderly according to participation (n = 336) and non-participation in discussion groups about the disease. ISA-Capital, São Paulo State, Brazil, 2003.

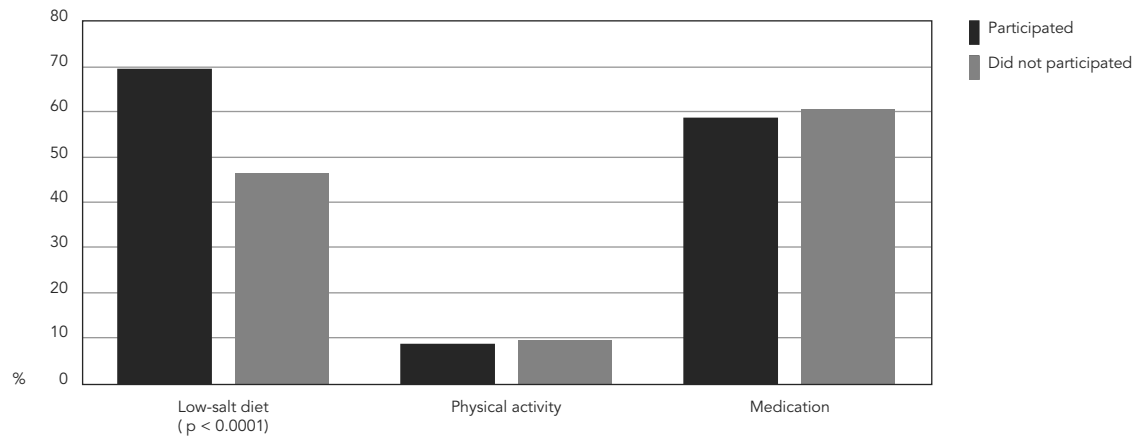
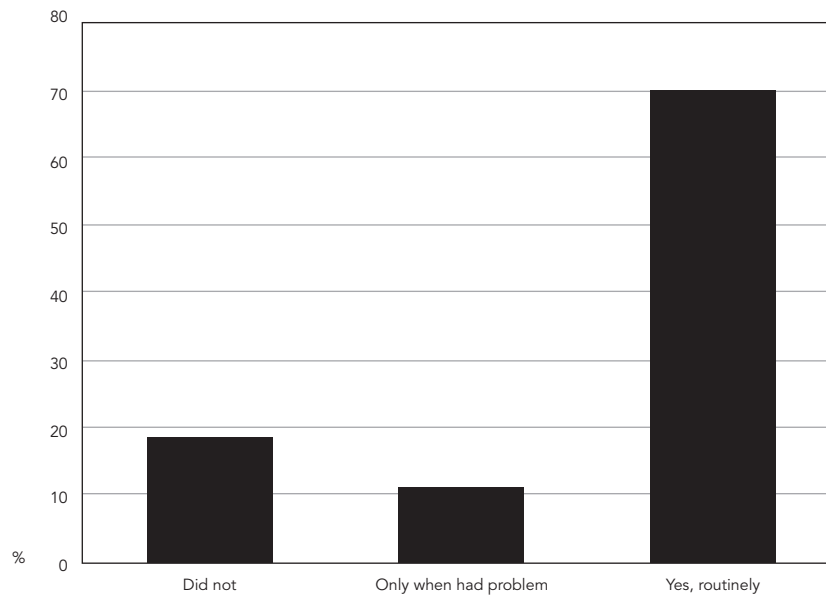


Figure 2

Attendance at health services by the elderly due to hypertension. ISA-Capital, São Paulo State, Brazil, 2003.



differences, which may justify the worse educational and health conditions.

Taking gender into account, a prevalence of hypertension was found to be 33% higher in women; with the same finding made in the cities

of Campinas¹⁵, Santos²², São Paulo State, and also in the international literature²³.

The fact is that disease prevalence may also be influenced by the individual's access to health services, by socioeconomic disadvantages, and

by the self-perception of health status. Women have better self-perception of health, take more care of themselves, seek out health services with greater frequency, and therefore can better identify diseases^{11,24,25}. This may be a reflex of a society where men are considered the stronger gender, which reinforces this behavior among men, and calls for a reassessment of the types of assistance made available for the elderly.

Being a widow(er), not being the head of the family, and not practicing any kind of working activity were considered by the univariate analysis as factors associated to a greater prevalence of hypertension. These factors may be related to the higher percentage of widows who were not the head of the family and were not actively working.

We observed an inverse association between the elderly who were single in relation to the prevalence of hypertension that may be related to a lower demand for health care among singles, who therefore have less of a chance of being diagnosed with hypertension, and thereby reported less hypertension.

The socioeconomic conditions analyzed by educational levels and income per capita revealed a greater prevalence of hypertension among the elderly with lower educational levels and lower income and this association was also found in other studies^{15,26}. The educational levels may facilitate not only the acquisition of knowledge of better control practices, but also better working opportunities and income²⁷ which facilitates the access to health services, medical appointments, acquisition of medication, and ongoing treatment^{13,26}. The racial and gender discrimination, and the heritage of slavery may explain the elevated degree of inequity in the working market and opportunities, especially in terms of access to education.

The elderly who drank less presented a higher prevalence of hypertension. This same inverse effect may be found by another study¹⁵.

This result may have been influenced by the confounding variable gender, since most women in this age group have hypertension. Furthermore, despite the advantages of speed and lower costs of the cross-sectional study, it has its limitations since it does not identify causality, whether the factors associated with hypertension came before or after it, since expositions and outcomes are collected at the same moment. Another factor to be considered is the average age (70) of the elderly who may justify the survival bias. This may also explain the lack of significance between smoking status and hypertension and the inverse relation with the frequency of alcohol use found in the study. The higher prevalence among in-

dividuals who consume more alcohol may be related to the fact that when someone becomes aware of the diagnosis, they may be more ready to change their lifestyle. But when analyzing the prevalence of hypertension among the elderly who had quit smoking (n = 116, 24.6%) and non-hypertensive patients (n = 114, 25.1%) there was found to be no statistically significant difference and we might infer that seniors have quit smoking when hypertension was discovered.

Smoking is associated with an increased cardiac rate and (minimum) diastolic blood pressure, and the study showed that smokers have a six times reduced elastic capacity in their arterial system when compared to non-smokers, although this fact was not found to be statistically significant in the current study²⁸.

The prevalence of hypertension among the elderly who self reported their health as bad/very bad was 2.84 (95%CI: 2.17; 3.72) times the prevalence who had a self-perception of excellent/great and the prevalence of hypertension among those who were hospitalized at least once in the past 12 months was 1.34 times (95%CI: 1.14; 1.58) the prevalence compared with those who had never been hospitalized. These results reinforce the relationship between self-perceived health and morbidity found in other studies^{29,30,31}. These findings were different from another study, where the prevalence of hypertension among the elderly who self assessed their health as bad/very bad was 93% higher³² although in this last study, the odds ratio (OR) had been used to interpret the results.

The morbidity reported 15 days prior to the interview was not statistically significant in the univariate analysis. This data is compatible with a study that revealed that hypertension influences quality of life and health less than other chronic diseases¹¹. This fact was explained by the existence of more structured programs that facilitate the early diagnosis and prevent greater consequences, as well as by the fact that some studies showed higher use of medication by those patients indicating greater access to services in comparison to other patients³³. However, the findings of this study indicate the need for certain urgent changes. Nevertheless, an important parcel of the adult population with hypertension does not know they have it; and many of those who do know are not being treated adequately.

In the present study, the prevalence of chronic diseases drew attention since, although statistically significant, the number of chronic diseases reported was only higher among patients with hypertension when compared to those without hypertension who reported one or two diseases.

Analyzing the final Poisson regression model (adjusted PR), a higher prevalence of hypertension was found among the elderly who self-assessed their health as bad/very bad and good, the elderly who never drank or do not drink anymore (inverse relation), among women, and among those who had been hospitalized in the past 12 months, independently of age. We observed an inverse association between the single elderly in relation to the prevalence of hypertension which may be related to the fact that these seniors are less likely to seek out a doctor or health service and therefore reported less hypertension. Being married can be a protective factor in this case.

The inverse relationship found between alcohol intake and hypertension does not agree with the data found in the literature that consumption of alcohol should be limited to two drinks per day for men and no more than one drink per day for women³¹. In fact, the results of the present study can be justified because it is a cross-sectional study that cannot make inferences about the time that these factors have emerged and therefore does not indicate causality.

Data from the present research revealed that only 11.1% of a total of 392 patients with hypertension participated in discussion groups for control measures of high blood pressure. The only control measure that was influenced by the elderly participation in those groups was the alimentary diet. This may explain the lack of information about the necessity of high blood pressure control and the little search for service for the same reason. When questioned about the search for control, 18.7% answered that they did not search and 11.2% only searched when they had problems.

Furthermore, to justify such behavior, 48.2% answered they did not think it was necessary. It should be highlighted that on average, those elderly with hypertension took almost 12 months to return to the doctor. This data also clarifies the absence of a difference in the use of health services between those elderly with and those without hypertension, in the search for services or some health professional between the elderly with hypertension by reported morbidity, and between elderly with and without hypertension regarding morbidity 15 days prior to the interview.

The fact that almost 50% did not seek out a health service because they considered it was not necessary reflects the absence of information about hypertension itself. The search for health services is important not only for identifying the disease, but also for the education and knowledge about how to control and avoid its evolution, thereby minimizing complications. The reported morbidity may be biased since those who

seek out a doctor have a greater chance of being diagnosed.

Concerning the knowledge about measures and practices for the control of hypertension, there was no significant difference between genders. Lifestyle did not influence the knowledge about control measures of hypertension, but influenced its practice. It should be noted that smokers practice significantly less a low-salt diet and take less routine medication when compared to ex-smokers and non-smokers. Although alcohol use measured by the frequency did not show any difference when it came to controlling the disease, the CAGE test revealed that among chronic alcoholics the practice of control was lower. As regards to the influence of socioeconomic conditions on the knowledge about hypertension control, education and income were significant only for physical activity.

This result was consistent with the literature which reports that individuals with less education are more sedentary in relation to leisure activities³², are more likely to adopt unhealthy habits, present worse health indicators, and have less access to information and to health services³³. Another study observed that the elderly with higher education levels recognized the importance and incorporated these hypertension control practices¹⁵. The same effect of income and education upon hypertension control practices may no longer be observed in the present study.

In general, it can be concluded that the adoption of control measures for high blood pressure among the elderly is far from the ideal, which may in part be attributed to the fact that hypertension is a silent disease, and that it often does not present symptoms, if controlled with medication³⁴. Thus, many individuals only treat the symptoms whenever they appear, showing the lack of understanding about the need for treatment. Another factor that should be taken into account is that because of the greater occurrence of comorbidities among the elderly, the chances of medication interaction and side effects are higher, which may lead the elderly to abandon the treatment, let alone financial issues.

A factor that influences control practice for these diseases is the bond between the patient and the health unit for follow up. Actions involving the training of health professional multipliers, screening campaigns, promoting healthy lifestyles, enrolling and follow up of people with hypertension in primary healthcare is really necessary, as are carrying out hypertension screening before the optimization of a clinical management of the disease, and the preparation of the health system to handle the demands. Screening strategies should be systematically kept by the

government, with a guarantee of continuity and before considering an attempt of broader screening, the health system should be prepared to offer adequate treatment for new cases, and that preventive interventions are directed to individuals in greater risk³⁵.

Actions to encourage practices that promote healthy habits are necessary, as are investments

in adequate human resources committed to the profession and art of education; guiding and monitoring health conditions. Learning is only possible when it becomes significant and when the individual is willing to learn. Finally, it is only through knowledge that actions can be planned and social inequality barriers can be lowered.

Resumen

El objetivo de este estudio fue analizar la prevalencia de hipertensión y prácticas de control en ancianos. Un estudio transversal analizó los datos de 872 ancianos de São Paulo, Brasil, mediante una muestra por conglomerados, estratificada según la escolaridad y renta. El modelo de regresión múltiple de Poisson verificó la existencia de factores asociados a la hipertensión. La prevalencia de hipertensión referida a los ancianos fue de un 46,9%. Las variables asociadas a la hipertensión fueron: autopercepción de salud, consumo de alcohol, sexo y hospitalización durante el último año, independientemente de la edad. Las tres medidas más adoptadas para el control de la hipertensión, aunque poco practicadas, son: tomar medicación oral de rutina, dieta sin sal, y actividad física. El estilo de vida y la condición socioeconómica no influenciaron la práctica de control, sin embargo, el conocimiento sobre la importancia de la actividad física fue mayor entre los ancianos con mayor escolaridad y renta. Se necesitan políticas de salud enfocadas a la atención primaria que incentiven cambios en el estilo de vida de los ancianos.

Hipertensión; Encuestas Epidemiológicas; Servicios de Salud; Anciano

Contributors

T. A. B. Mendes proposed the article and was responsible for the literature review, data analysis and writing up the article. M. Goldbaum provided orientation on the article proposal, data analysis and write-up. N. J. Segri assisted with the article revision, write-up and data analysis. M. B. A. Barros, C. L. G. César and L. Carandina designed the research tools, coordinated the fieldwork and contributed to the revision of the article.

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