

# Analysis of care given to patients with hypertension in Belo Horizonte, according to telephone survey

## *Análise do cuidado dispensado a portadores de hipertensão arterial em Belo Horizonte, segundo inquérito telefônico*

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**ABSTRACT:** *Objective:* To examine the care given to patients with hypertension in the Brazilian public and private health services in the population of Belo Horizonte, Minas Gerais. *Methods:* Telephone interviews were conducted in a sample of hypertensive adults in the year 2009, in Belo Horizonte (n = 100). We compared the care provided to hypertensive users of the Unified Health System (SUS) and of the Supplementary Health (SS), using the  $\chi^2$  test or Fisher's exact test. The prevalence ratio was calculated by the Poisson regression model, adjusted for the variables age, education and skin color. *Results:* In the descriptive analysis, hypertensive users of private health plans had a higher frequency of physician referral and greater blood pressure control. Unified Health System users were the ones who participated in health promotion groups the most. The acquisition of antihypertensive medications by beneficiaries of private health insurance was more frequent in private pharmacies, and in Health Centers among users of the Unified Health System. The differences disappeared when adjusting the variables for age, race and education. There was no difference regarding the guidance received for a change of habits, or regarding the incorporation of these healthy practices promotion by hypertensive patients. *Conclusion:* A healthier diet, the practice of physical activity, and the non-use of alcohol and tobacco have been incorporated by hypertensive patients, whether owning private health insurance or not. Promotion practices, proper use of medication a clinical follow-up are important for the control of blood pressure levels. *Keywords:* Hypertension. Unified Health System. Health surveys. Chronic disease. Surveillance system based on telephone interviews.

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**RESUMO:** *Objetivo:* Analisar o cuidado dispensado aos hipertensos na população de Belo Horizonte, segundo posse ou não de plano de saúde privado. *Métodos:* Foram realizadas entrevistas telefônicas em amostra de adultos hipertensos no ano de 2009 em Belo Horizonte (n = 100). O cuidado prestado aos hipertensos usuários do Sistema Único de Saúde (SUS) e Saúde Suplementar (SS) foram comparados usando os testes de  $\chi^2$  de Pearson ou exato de Fisher. Foi calculada a razão de prevalência (RP), estimada pelo modelo de regressão de Poisson, ajustada segundo idade, escolaridade e cor da pele. *Resultados:* Na análise descritiva, os hipertensos usuários de planos de saúde privado tiveram maior frequência de médico de referência e maior controle de pressão arterial. Os usuários do SUS foram os que mais frequentaram grupos operativos de promoção à saúde. A aquisição de medicamentos anti-hipertensivos pelos beneficiários da SS foi mais frequente nas farmácias privadas, e, entre os usuários do SUS, nos Centros de Saúde. As diferenças desapareceram ao se ajustarem as variáveis por idade, cor da pele e escolaridade. Não houve diferença quanto às orientações recebidas de mudanças de hábitos, e nem em relação à incorporação destas práticas saudáveis de promoção pelos hipertensos. *Conclusão:* Práticas de alimentação saudável, atividade física e o não uso de álcool e tabaco têm sido incorporados pelos hipertensos, independentes da posse ou não de planos de saúde. As práticas de promoção, uso correto de medicação e acompanhamento clínico são importantes para o controle dos níveis pressóricos.

**Palavras-chave:** Hipertensão. Sistema Único de Saúde. Inquéritos epidemiológicos. Doença crônica. Sistemas de vigilância por inquérito telefônico.

## INTRODUCTION

The Brazilian population has experienced significant changes in its demographic profile, with declining fecundity and birth rates, increments in life expectancy, and growing elderly population. Scenarios of epidemiological transition have been observed, as well as the proportional reduction of infectious-contagious diseases and increasing chronic non-communicable diseases, besides nutritional transition, with declining malnourishment and increasing excessive weight and obesity<sup>1,2</sup>.

The Chronic Non-Communicable Diseases (CNCD) are the main cause of mortality and premature disability in most countries of the world, including Brazil, corresponding to 63% of the causes of death in the world and about 36 million annual deaths<sup>2,3</sup>.

Among the CNCDs, the ones that stand out due to their magnitude are cardiovascular diseases (arterial hypertension, infarction, stroke), chronic respiratory diseases, cancer and diabetes mellitus<sup>4</sup>. Studies point out that arterial hypertension (AH) affects about 22% of the Brazilian population aged more than 20 years old, and it could be responsible for 80% of the stroke cases and 60% of cases of acute myocardial infarction<sup>5</sup>.

Arterial hypertension has generated major impact on morbimortality in Brazil and in the world. Data from the World Health Organization (WHO) indicate the existence of

600 million people affected by systemic arterial hypertension (SAH), and about 7.1 million annual deaths, which correspond to 13% of global mortality<sup>3</sup>.

Studies show that the quality of provided care requires follow-up, full approach, continuous use of medications, adoption of healthy lifestyles, thus articulating actions of health promotion, prevention, diagnosis and care<sup>6,7</sup>. However, this quality can range according to the access and nature of services (public or private), the existence of a protection network, qualification and availability of professionals, waiting time, among others<sup>8-10</sup>. In the country, Supplementary Health covers about 25% of the population, especially in Belo Horizonte, in Minas Gerais, where coverage reaches 51%, with growing tendency in the past years<sup>11-13</sup>.

It is relevant to know how the care provided to hypertensive patients has taken place in the different health system services, be them public or private. The quality of care provided to the user is essential to obtain better results, such as AH control, the reduction of morbidities and more severe outcomes<sup>6,7</sup>.

The objective of this study was to analyze the care provided to hypertensive patients in the population aged 18 years old or more, in the city of Belo Horizonte, according to the financing modality (Supplementary Health and Unified Health System).

## METHODS

This is an epidemiological, descriptive, cross-sectional, population-based study conducted with the use of a subsample from the Telephone-Based Surveillance of Risk and Protective Factors for Chronic Diseases (VIGITEL)<sup>14</sup>.

The system establishes a sample of about two thousand individuals, aged 18 years old or more, in each city, so that it is possible to estimate the frequency of indicators investigated in the adult population with a 95% confidence interval and maximum sampling error of about two percentage points. The sampling procedures used by VIGITEL aim at obtaining, in each of the 26 Brazilian State capitals and the Federal District, probability samples of the population of adults living in households with at least one landline<sup>14</sup>.

For this study, data bases referring to the VIGITEL samples of 2008, in the city of Belo Horizonte, were used. Participants who declared being hypertensive or diabetic composed the eligible population.

The VIGITEL system registered, in Belo Horizonte, in 2008, 2016 interviews distributed in 17 replicas or subsamples, containing about 200 landlines each. Out of these, the last five replicas were selected for re-interviews (replicas 13 to 17). In these five replicas, in 2008, 545 interviews were conducted, because each replica had about 25% of non-eligible lines for the study, such as commercial lines, lines that did not answer after six attempts made in different days and times, including Saturdays, Sundays and night-periods, and that probably correspond to a closed household. A new interview was conducted in 2009, and individuals who had self-reported arterial hypertension in 2008 and confirmed the diagnosis in 2009 were interviewed again with a structured questionnaire about care. It was not

possible to interview 38 individuals, who either refused to participate or confirmed the arterial hypertension diagnosis in the re-interview. Therefore, 100 hypertensive individuals participated in the re-interview.

The hypertensive patients of replicas 1 to 12 from 2008, composing group 1 ( $n = 567$ ), were compared to hypertensive students in the studied sample (replicas 13 to 17), composing group 2 ( $n = 100$ ), with the objective of determining if these groups were similar, or if the population of re-interviewed hypertensive patients in 2009 represents the population of hypertensive patients from Belo Horizonte, in 2008. The Kolmogorov-Smirnov (KS) test was used, which is adequate for discrete and continuous variables. The test verified the maximum absolute difference between two functions of accumulate functions. The following variables were assessed by means of the KS test: age, BMI, sex and schooling years. The  $\chi^2$  test was used to compare the variable sex<sup>15</sup>.

The sample of hypertensive patients studied in 2009 did not undergo the post-stratification procedures used in VIGITEL, because the sample does not aim at representing the general population, but the population of hypertensive people in Belo Horizonte, in which the elderly are prevalent.

The following distributions were obtained for the studied sample:

- Sociodemographic characteristics: sex, age, schooling, ethnicity/color;
- Body mass index (BMI);
- Characteristics of the provided care: time of diagnosis, existence of a medical caretaker, visit to health services;
- Recommendations received from health professionals during appointments: use of anti-hypertensive medications, last blood pressure measurement;
- Health promotion actions indicated by professionals: participation in groups of health promotion and arterial hypertension control, orientations received from health professional about: changing dietary habits, reducing salt consumption, restriction to alcohol and tobacco;
- Actions of health promotion adopted by hypertensive patients: diet, salt reduction, physical activity, restriction to alcohol and smoking, use of medications.

In order to test the differences in the case of categorical variables between groups, the  $\chi^2$  test or the Fisher exact test with a 5% significance level were used. Statistical processing was conducted with the Statistical Software for Professionals (STATA), version 9.0, and the Statistical Package for the Social Sciences (SPSS), version 17.0.

In order to analyze the independently significant differences in the care provided to hypertensive patients according to the financing modality (Supplementary Health and Unified Health System), a multivariate adjustment of the results was made with the calculation of the Prevalence Ratio (PR), as well as its respective confidence intervals (95% CI), estimated by the Poisson regression and adjusted by age, schooling, sex and skin color.

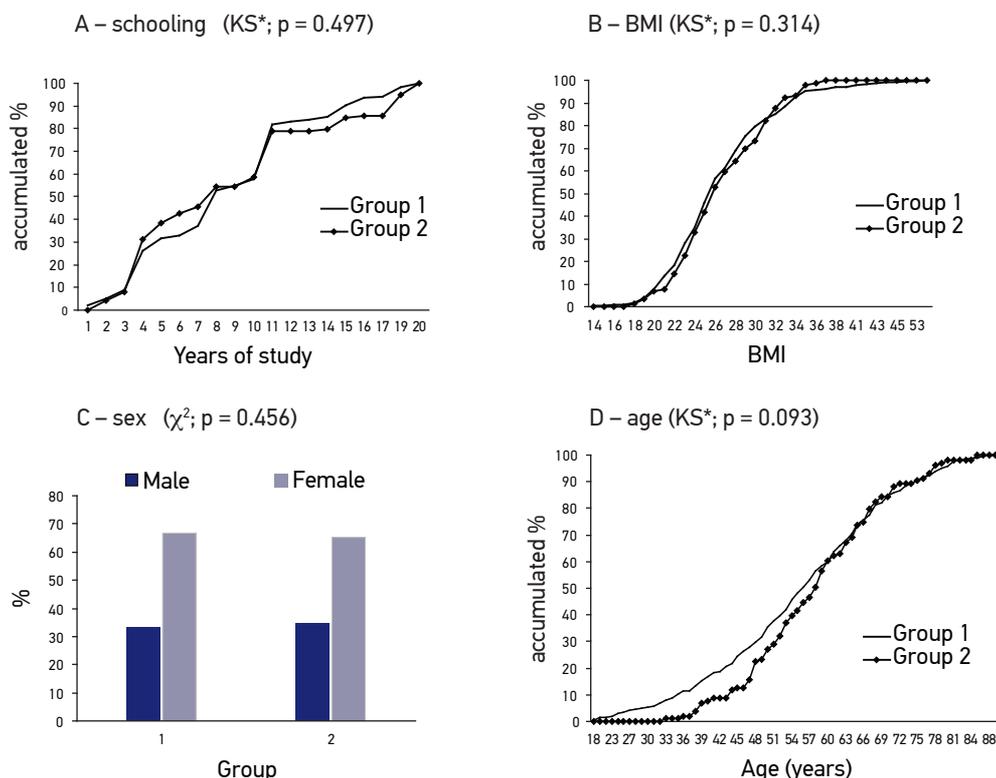
Since the interviews were conducted by telephone, the informed consent form was replaced by the verbal consent, obtained at the time interviewees were contacted by telephone.

The project to implement VIGITEL was approved by the Human Research Ethics Committee of the Ministry of Health and in the Research Ethics Committee of *Universidade Federal de Minas Gerais*, report n. 552/08.

## RESULTS

The subsample was composed of 114 participants and 17 (15%) reported being diabetic and hypertensive, 14 (12%) declared being diabetic, and 84 (73%) declared being hypertensive. Diabetic people were excluded from the analysis ( $n = 14$ ), resulting in a final sample of 100 hypertensive patients.

Figure 1 shows the results of the adhesion test comparing both groups of hypertensive patients: group 1 (replicas 1 to 12) and group 2 (replicas 13 to 17), as to sociodemographic characteristics (age, schooling, sex) and BMI. The analysis shows that hypertensive adults of both samples are similar, so there is no difference between the proportions of the compared variables ( $p > 0.05$ ).



\*KS: Kolmogorov-Smirnov; BMI: body mass index.

Figure 1. Comparison of the cumulative distribution of sociodemographic variables and body mass index in hypertensive people in samples A and B, Belo Horizonte, 2008, 2009.

Table 1 presents the sociodemographic characteristics and the BMI of the studied population according to the public or private financing modality of the health plan. It is possible to observe that female participants were prevalent (65%), aged more than 55 years old (60%), with zero to eight schooling years (54.2%), with non-white skin color (60%) and BMI  $\geq 25$  kg/m<sup>2</sup> (69.8%). By comparing the hypertensive patients according to the fact of owning a health insurance plan or not, 58% were users of the Supplementary Health (SH), and 42% were users of SUS. It was possible to observe significant differences between these two groups (users of SUS and beneficiaries of SH) as to schooling ( $p < 0.001$ ), ethnicity/skin color ( $p = 0.005$ ) and age group ( $p = 0.024$ ). Among users who use SUS exclusively, individuals with lower schooling, from zero to eight schooling years (82.2%); non-white (76.2%) and people aged between 35 to 54 years old (73.8%) were prevalent.

Table 1. Comparison of sociodemographic characteristics and BMI in the study population, according to financing modality (Supplementary Health and Unified Health System). Belo Horizonte, 2009.

Variables	Total n (%)	Supplementary Health n (%)	Unified Health System n (%)	p-value*
<b>Sex</b>				
Male	35 (35.0)	23 (39.7)	12 (28.6)	0.251
Female	65 (65.0)	35 (60.3)	30 (71.4)	
<b>Color</b>				
White	40 (40.0)	30 (51.7)	10 (23.8)	0.005
Non-White	60 (60.0)	28 (48.3)	32 (76.2)	
<b>Schooling</b>				
0 to 8 years old	52 (54.2)	20 (35.1)	32 (82.2)	< 0.001
9 to 11 years old	24 (25)	19 (33.3)	5 (12.8)	
Older than 11 years old	20 (20.8)	18 (31.6)	2 (5.1)	
<b>Age</b>				
18 to 34 years old	1 (1.0)	-	1 (2.4)	0.024
35 to 44 years old	10 (10.0)	6 (10.3)	4 (9.5)	
45 to 54 years old	29 (29.0)	14 (24.1)	15 (35.7)	
55 to 64 years old	30 (30.0)	14 (24.1)	16 (38.1)	
> 64 years old	30 (30.0)	24 (41.4)	6 (14.3)	
<b>BMI</b>				
Malnourished or eutrophic	26 (30.2)	18 (34.0)	8 (24.2)	0.340
Excessive weight	60 (69.8)	35 (66.6)	25 (75.8)	

BMI: Body mass index.

\*  $\chi^2$  test or Fisher's exact.

Among beneficiaries of Supplementary Health, it was possible to observe higher schooling (31.6%), more white people (51.7%) and people aged more than 64 years old (41.4%).

Table 2 compares the care provided to the hypertensive population (SH versus SUS). It was observed that hypertensive beneficiaries of SH reported having a reference doctor more often (84.5%) when compared to users of SUS (61.9%), more success in the control of systolic arterial hypertension (76.6% versus 50%) and also in the control of diastolic arterial pressure (70.2% versus 45.2%). However, the prevalence ratios

Table 2. Comparison of the care provided to hypertensive population according to financing modality (Supplementary Health and Unified Health System). Belo Horizonte-2009.

Variables	Total	Supplementary Health	Unified Health System	p-value*	PR
	n (%)	n (%)	n (%)		
Time of diagnosis of AH					
1 to 3 years	15 (15.8)	7 (12.5)	8 (20.5)	0.146	
> 3 years	80 (84.2)	49 (87.5)	31 (79.5)		
Medical reference					
Yes	75 (75)	49 (84.5)	26 (61.9)	0.010	1.20
No	25 (25)	9 (15.5)	16 (38.1)		(0.69 – 2.08)
Visit to health care					
Yes	74 (74.7)	45 (77.6)	29 (70.7)	0.439	-
No	25 (25.3)	13 (22.4)	12 (29.3)		
Time of last medical appointment					
Less than 6 months	69 (94.5)	41 (93.2)	28 (96.6)	0.477	-
7 months or more	4 (5.5)	3 (6.8)	1 (3.4)		
Recommendation for anti-hypertensive					
Yes	99 (99.0)	58 (100.0)	41 (97.6)	-	-
No	1 (1.0)	-	1 (2.4)		
Last BP measurement in the past month					
Yes	70 (70.7)	38 (65.5)	32 (78.0)	0.088	
No	29 (29.3)	20 (34.5)	9 (22.0)		
Normal/controlled SBP					
Yes	52 (65.82)	36 (76.6)	16 (50.0)	0.014	1.49
No	27 (34.18)	11 (23.4)	16 (50.0)		(0.77 – 2.87)
Normal/controlled DBP					
Yes	47 (60.25)	33 (70.2)	14 (45.2)	0.027	1.61
No	31 (39.74)	14 (29.8)	17 (54.8)		(0.82 – 3.15)

AH: arterial hypertension; BP: Blood pressure; SBP: Systolic blood pressure; DBP: Diastolic pressure; \* $\chi^2$  or Fisher's exact test of Fisher Pearson; PR: prevalence ratio adjusted for age, education, sex and skin color; - statistical test not performed.

adjusted by age, sex and schooling show that prevalence rates were similar. Besides, there were no differences as to the time of diagnosis, attendance at health services, duration of last doctor's appointment, orientation to use anti-hypertensive medications, time of the last BP measurement, according to SUS or SH.

Table 3 shows the comparison of health promotion actions provided to participants, according to financing modality (SH versus SUS). The participation in an operative group for AH control, orientation to reduce salt and the consumption of alcohol, as well as the practice of physical activity and orientation about dietary habits, except for advisement about smoking, was always more prevalent in the SH group. However, the prevalence ratio adjusted by age, sex and schooling shows similar prevalence for all of the orientations.

Table 3. Comparison of health promotion strategies offered to hypertensive patients, according to financing modality (Supplementary Health and Unified Health System). Belo Horizonte, 2009.

Variables	Total	Supplementary Health	Unified Health System	p-value*	PR
	n (%)	n (%)	n (%)		
Educational group/activity					
Yes	25 (25.0)	10 (17.2)	15 (35.7)	0.035	1.01 (0.40 – 2.56)
No	75 (75.0)	48 (82.8)	27 (64.3)		
Orientation as to salt consumption					
Yes	93 (93.0)	55 (94.8)	38 (90.5)	0.324	–
No	7 (7.0)	3 (5.2)	4 (9.5)		
Orientation as to alcohol consumption					
Yes	58 (89.3)	33 (94.3)	25 (83.3)	0.154	–
No	7 (10.7)	2 (5.7)	5 (16.7)		
Orientation as to smoking					
Yes	7 (8.0)	4 (7.4)	3 (8.8)	0.463	–
No	81 (92.0)	50 (92.6)	31 (91.2)		
Orientation as to physical activity					
Yes	94 (94.0)	55 (94.8)	39 (92.9)	0.694	–
No	6 (6.0)	3 (5.2)	3 (7.1)		
Orientation as to dietary habits					
Yes	81 (83.5)	45 (81.9)	36 (85.7)	0.784	–
No	16 (16.5)	10 (18.2)	6 (14.3)		

\*Pearson's  $\chi^2$  or Fisher's exact test; PR: prevalence ratio adjusted for age, sex, education and skin color.

Table 4 shows that habits/orientations incorporated by hypertensive patients were: report of having reduced salt in 92%, the adoption of a diet in 36%, the incorporation of regular physical activity in 51%, the regular use of anti-hypertensive medication in 95%, and the use of anti-hypertensive medication only when BP was high in 6%. In the comparison between changes of practices according to financing modality (SH versus SUS), the prevalence ratio adjusted by age and schooling shows similar prevalence rates between these groups.

Table 4. Changes in practices (salt, diet, physical activity, medications) and medicine acquisition, among hypertensive patients, according with the financing modality (Supplementary Health and Unified Health System). Belo Horizonte, 2009.

Variables	Total	Supplementary Health	Unified Health System	p-value*	PR
	n (%)	n (%)	n (%)		
Reduction in salt intake					
Yes	92 (92.0)	54 (93.1)	38 (90.5)	0.633	
No	8 (8.0)	4 (6.9)	4 (9.5)		
Diet to lose/maintain weight					
Yes	36 (36.0)	19 (32.8)	17 (40.5)	0.427	
No	64 (64.0)	39 (67.2)	25 (59.5)		
Regular practice of physical activity					
Yes	51 (51.0)	31 (53.4)	20 (47.6)	0.565	
No	49 (49.0)	27 (46.6)	22 (52.4)		
Regular use of medication					
Yes	95 (95.0)	56 (96.6)	39 (92.9)	0.647	
No	5 (5.0)	2 (3.4)	3 (7.1)		
Use of medication with high BP					
Yes	6 (6.0)	2 (3.4)	4 (9.5)	0.235	
No	94 (94.0)	56 (96.6)	38 (90.5)		
Acquisition of medications					
Health Center	38 (38.0)	10 (17.2)	28 (66.7)		0.59 (0.22 – 1.11)
Popular drugstore	13 (13.0)	9 (15.5)	4 (9.5)	< 0.001	1.24 (0.36 – 4.30)
Private drugstore	49 (49.0)	39 (67.2)	10 (23.8)		1.98 (0.95 – 4.13)

\* Pearson's  $\chi^2$  or Fisher's exact test; PR: prevalence ratio adjusted for age, education, sex and skin color; BP: blood pressure.

## DISCUSSION

Some sociodemographic differences were found in this study between beneficiaries of SH versus SUS, and beneficiaries of SH presented higher schooling, were older and white. In the analyses adjusted by age, skin color, sex and schooling, no differences were observed regarding systolic (SBP) and diastolic blood pressure (DBP) control, reference doctor (caretaker), orientations about changing habits, incorporation of healthy health promotion actions and prevention of hypertension and acquisition of anti-hypertensive medications. However, it is worth to mention that, despite the significant differences shown between groups (SH versus SUS) by means of significant bivariate associations, they were not maintained in the multivariate models. Since the objective was not the one of establishing causality relations, the significant variables in bivariate models could potentially be faced as group markers. For example, a higher percentage of medical reference, blood pressure control and acquisition of medications from the private network was observed in the SH group, and more participation and acquisition of medications in the health center, in the SUS group.

Another result pointed out by this study was that owning a health insurance plan in Belo Horizonte corresponded to almost double the national average (25%). Similar data were registered by the Record of the National Agency of Supplementary Health<sup>13</sup> and by the Brazilian National Household Survey<sup>11</sup>. On the other hand, beneficiaries of SH presented higher schooling.

The fact of owning health plans in Brazil reveals social inequalities concerning the access and the use of health services. Owners of health plans in general are individuals with high family income, formal jobs, high schooling, differences of skin color and who assess their own health status as very good and good, besides having more access to health services<sup>11,12,16-18</sup>.

From the total number of people with hypertension who were re-interviewed, 65% were female, which can be attributed to the fact that it was a self-reported declaration, and this is compatible with the fact that women look for health services more often and, consequently, there are more chances of making a medical diagnosis in this group<sup>19,20</sup>.

Arterial hypertension tends to be more common among the elderly, and the study corroborates data from literature, thus ensuring the increasing frequency of SAH related to age. Individuals aged more than 55 years old accumulated 60% of the SAH frequency<sup>21</sup>.

Elderly hypertensive patients are prevalent, when stratified by owning a health insurance plan, hypertensive people aged more than 64 years old were three times more frequent than users of SUS. This characteristic is different from national data, which point out that beneficiaries of SH are mostly at productive age, especially between 30 and 59 years old<sup>11,13</sup>, which is justified by the prevalence of collective plans (80%), paid by the employers<sup>11</sup>. The prevalence of elderly people in health plan operators in Belo

Horizonte, in relation to the country, had already been identified in a comparative study between seven health insurance operators (self-management, insurance companies, collective medicine and cooperatives)<sup>22</sup>. The authors attributed the finding to the fact that the local operator that is prevalent in the market of Belo Horizonte commercializes individual plans, which have been financed by the families, due to the higher risk of using the plan at this age group or to the more frequent search for health insurance plans by elderly people<sup>22</sup>.

More than two thirds of hypertensive people presented with excessive weight, body mass index  $\geq 25$ , which is compatible with national literature<sup>20</sup>. It is estimated that 20 to 30% of the prevalence of hypertension can be explained by excessive weight<sup>23</sup>.

Time of hypertension diagnosis was superior to three years. According to Passos et al<sup>24</sup>, examinations to detect high levels of blood pressure are more accessible to the population by SUS, which can explain the fact that the diagnosis was made for before.

Health promotion activities, such as participation in groups, were reported by only one quarter of hypertensive participants, which may reflect the little priority given to this practice both for users of insurance plans and users of SUS. The little participation of hypertensive patients in operative groups is a matter of concern, since such an activity is important to control SAH and the consequent prevention of problems related to it. The groups may enable individuals to coproduce the educational process, where they will be both object of the work of educational agents and subjects of their own education, which allows the construction of care focused on the needs of social groups, with an emancipatory educational dimension<sup>25,26</sup>.

For Alves<sup>27</sup>, the integrality of care can be expressed in educational activities for health during ambulatory care, and the meeting of the hypertensive group contributes in this process. Studies show important reduction in blood pressure with the implement of physical activities, reduced salt consumption and a healthy diet<sup>28,29</sup>.

Ribeiro et al.<sup>18</sup> observed that the regular attendance of hypertensive patients to doctors' appointments presented a positive correlation with adherence to treatment. In this study, about two thirds attended appointments regularly, which may justify good results, including the adherence to health promotion practices. The recommendation of not smoking and not drinking were not properly informed to patients by their doctors. The use of medications was also recommended by professional, and tobacco was an important factor associated with AH<sup>23</sup>.

There was a difference as to the place of acquiring the medications with relation to owning a health insurance plan or not. Most users of SUS looks for care more often in Health Centers, while the ones with insurance plans usually go to private drugstores. A study points out that more than half of the participants had no difficulties to obtain medications to control BP, and that the free supply of medications for anti-hypertensive therapy, in the health network, was been relevant for treatment follow-up<sup>18</sup>. In a study about treatment adherence, it was observed that most individuals (91.1%) reported

that the cost of medication was not a reason to abandon the treatment, and, out of there, 82.2% acquire these medicines in the drugstore of the basic health unit<sup>30</sup>. The availability of free medicines for hypertension and diabetes in the program “*Aqui tem Farmácia Popular*” (in English, “the Popular Drugstore Is Here”), from the Ministry of Health, tends to amplify the access to medications<sup>2</sup>.

Most hypertensive patients had normal pressure values below 140/90 mmHg. It is important to control it, aiming at preventing ischemic heart diseases and cerebrovascular diseases<sup>31</sup>. Small reductions, both in SBP and DBP, have a major impact on the reduction of cardiovascular mortality<sup>21</sup>.

Among the limitations of the study, the fact that the sample was restricted to those with a landline stands out. However, the coverage of landlines in Belo Horizonte is higher than the average of the country, which allows the reduction of a possible selection bias<sup>32</sup>. Besides, studies comparing the results of VIGITEL with household surveys showed similar results, indicating the adequate external validity of the system<sup>33</sup>. Therefore, characteristics such as sex, age, schooling and age group of hypertensive patients may present differences with relation to the general population. Another limitation refers to the use of the variable self-reported hypertension, depending on the access to medical diagnosis. Studies that have assessed these data, however, indicate advantages in its use because it is easy and low-cost<sup>34</sup>. Besides, the small sample makes analysis more difficult, especially to identify specific associations. Most variables presented differences in descriptive analyses, but disappeared after the adjustment, partly due to the small sample size.

We conclude that it is important to incorporate practices of health promotion in the care provided to the hypertensive patient, which has been observed in the practices of users of SUS and Health Plans. Health professionals have been recommending practices of healthy diet, physical activity, non-use of alcohol and tobacco, and this has been incorporated by users. Practices of promotion, proper use of medication and clinical follow-up are important to control pressure levels. We recommend that this study be replied with a larger sample, aiming at confirming the results.

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