

ASSOCIATION OF SOCIODEMOGRAPHIC CHARACTERISTICS WITH CARDIOVASCULAR RISK FACTORS IN HYPERTENSIVE MEN

ASSOCIAÇÃO DE CARACTERÍSTICAS SOCIODEMOGRÁFICAS COM FATORES DE RISCO CARDIOVASCULAR EM HOMENS HIPERTENSOS

ASOCIACIÓN DE CARACTERÍSTICAS SOCIODEMOGRÁFICAS CON FACTORES DE RIESGO CARDIOVASCULAR EN HOMBRES HIPERTENSOS

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Objective: to investigate the association of sociodemographic characteristics with cardiovascular risk factors in hypertensive men. **Method:** a cross-sectional study was conducted with 80 men interviewed and clinically evaluated. Data were analyzed descriptively and by Fisher's Exact or Person Chi-Square tests. The level of statistical significance was 5%. **Results:** there was a higher prevalence of smoking in ≤ 60 years ($p=0.002$), insufficient level of physical activity in ≥ 60 years ($p=0.017$), passive smokers in whites ($p=0.026$) and without a partner ($p=0.039$), and excessive consumption of alcohol at the weekend in whites ($p=0.043$) and men with lower schooling ($p=0.041$). **Conclusion:** sociodemographic characteristics were associated with a high prevalence of uncontrolled cardiovascular risk factors in hypertensive men.

Descriptors: Cardiovascular Diseases. Hypertension. Risk Factors. Life Style. Men's Health.

Objetivo: investigar a associação de características sociodemográficas com fatores de risco cardiovascular em homens hipertensos. Método: estudo transversal efetuado com 80 homens entrevistados e avaliados clinicamente. Dados analisados descritivamente e pelos testes Qui-Quadrado de Person ou Exato de Fisher. O nível de significância

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estatística foi de 5%. Resultados: houve maior prevalência de tabagismo em ≤ 60 anos ($p=0,002$), nível insuficiente de atividade física em ≥ 60 anos ($p=0,017$), fumantes passivos em brancos ($p=0,026$) e sem companheira ($p=0,039$) e consumo excessivo de álcool no final de semana em brancos ($p=0,043$) e homens com menor escolaridade ($p=0,041$). Conclusão: foi observada a associação de características sociodemográficas com elevada prevalência de fatores de risco cardiovascular descontrolados em homens hipertensos.

Descritores: Doenças Cardiovasculares. Hipertensão. Fatores de Risco. Estilo de Vida. Saúde do Homem.

Objetivo: investigar la asociación de características sociodemográficas con factores de riesgo cardiovascular en hombres hipertensos. Método: estudio transversal realizado con 80 hombres entrevistados y evaluados clínicamente. Datos analizados descriptivamente y por pruebas de Persona de Fisher o Chi-Cuadrado Exacto. El nivel de significación estadística fue del 5%. Resultados: hubo mayor prevalencia de tabaquismo en ≤ 60 años ($p=0,002$), nivel insuficiente de actividad física en ≥ 60 años ($p=0,017$), fumadores pasivos en blancos ($p=0,026$) y sin pareja ($p=0,039$) y consumo excesivo de alcohol en fin de semana en blancos ($p=0,043$) y hombres con menor escolaridad ($p=0,041$). Conclusión: se observó la asociación de características sociodemográficas con una alta prevalencia de factores de riesgo cardiovascular no controlados en hombres hipertensos.

Descriptores: Enfermedades Cardiovasculares. Hipertensión. Factores de Riesgo. Estilo de Vida. Salud del Hombre.

Introduction

Chronic non-communicable diseases (CNCD), including cardiovascular diseases, are the leading cause of morbidity and mortality worldwide⁽¹⁾. Death rates remain high and may be mainly due to the lack of control of risk factors for this group of diseases.

Among CNCD, systemic arterial hypertension (SAH) is the most expressive risk factor for cardiovascular diseases. It is estimated that, in 2025, its prevalence will increase from 15% to 20%, reaching 1.5 billion people⁽¹⁻³⁾. This disease is increasing in populations, even in countries with higher income, levels of awareness, treatment, and control⁽³⁻⁵⁾.

From the perspective of social determinants of health, SAH presents a complex multifactorial nature. It is a cardiovascular risk factor influenced by behavioral, economic, social, political, and environmental aspects^(1,4). SAH is associated with age, sex, race/color, genetic inheritance, socioeconomic conditions, sedentary lifestyle, excessive alcohol and salt intake, psychosocial stress, smoking, overweight, and obesity^(3,5). Among the environmental factors contributing to the increase in blood pressure levels, lifestyle changes stand out, including inadequate eating habits associated with physical inactivity, alcohol abuse, and smoking⁽⁶⁾. These habits are stimulated

by the processes of industrialization, urbanization, economic development, and globalization⁽⁷⁾.

Socioeconomic variables, such as race/color, income, education, and housing conditions, have an important influence on the ways of living and, consequently, on the control of SAH. People with less education have less knowledge about the prevention of chronic diseases. The demand for health services for preventive reasons is higher for those with better purchasing power, while for the poorest, it is higher due to disease⁽⁵⁾. Higher income may favor the practice of physical activity, the acquisition of medicines and food, and access to goods and services⁽⁷⁾.

The follow-up and control of SAH and its risk factors can prevent the onset and progression of disease complications and reduce the number of hospitalizations and cardiovascular mortality. To avoid these risk factors and promote the population's health, the Ministry of Health has been developing several articulated initiatives to strengthen therapeutic projects aimed at SAH. In Its Strategic Action Plan for Coping with Chronic Diseases and Noncommunicable Diseases, in Brazil 2021-2030 focuses on the creation and strengthening of intersectoral policies and programs for health promotion and protection with a focus on

the organization of network services and the production of evidence-based information⁽⁸⁾.

Relating to gender, men, despite greater vulnerability and high morbidity and mortality rates, do not seek primary care services, such as women entering the health system through outpatient and hospital care, the consequence of which is the aggravation of morbidity due to attention delay⁽⁹⁾. Thus, linked to the Strategic Action Plan, National Policy for Integral Attention to Men's Health⁽¹⁰⁾ has also been associated with the objective of achieving effective health actions with men and emphasizing the importance of establishing differentiated activities to control SAH in this population group.

Thus, it is crucial to know the exposure of the male population to risk factors for SAH, which is little publicized in the literature. It is known that identifying these factors, such as bad lifestyle habits, high-stress levels, and overweight, can guide interdisciplinary health care practices for the control of SAH, a challenge to be achieved by health professionals and public authorities.

Based on the above, the research question of this study was established: What is the association of sociodemographic characteristics with life habits, stress level, and anthropometric measurements in hypertensive men? Thus, the study aimed to investigate the association of sociodemographic characteristics with cardiovascular risk factors in hypertensive men.

Method

The cross-sectional study was conducted in a reference health center for treating cardiovascular diseases and the Human Health Program (HHP) of the Ministry of Health, located in Salvador, Bahia, Brazil. Data collection occurred over six months in 2015.

The inclusion criteria were men, over 20 years (minimum age to enter the PSH), lucid, followed in the PSH, with medical diagnosis HAS ICD – I10/I15. Exclusion criteria were the lack, for any physical reason, of condition to perform anthropometric measurements.

An instrument was used to collect sociodemographic data with open and closed questions about age, self-declared race/color, marital status, education, current occupation, work situation, and monthly family income. A form was used to know life habits, with closed questions about smoking, alcohol, and salt consumption.

Excessive alcohol consumption was considered to use of five or more doses simultaneously, i.e., more than 15 g/day⁽³⁾. Items formed the instrument on clinical and anthropometric data to record data obtained in the measurement of blood pressure, weight, height, waist circumference (WC), hip circumference (CK), and calculations of body mass index (BMI) and waist/hip ratio (WHR).

To assess the level of physical activity and sedentary behavior, we used the International Physical Activity Questionnaire (IPAQ), a reduced version, validated for the Portuguese, and recommended for evaluation of physical activity in adults aged 15 to 69 years⁽⁸⁾. This instrument provides information about the frequency and duration of walks and physical activities that require moderate, vigorous, and walking physical efforts. In addition to the time spent in activities in a sitting or reclining position, on weekdays (between Monday and Friday) and the weekend (Saturday and Sunday), having as reference period a usual week. Men with a low level of physical activity were considered insufficiently active/sedentary; those with a good level of physical activity were classified as active/very active⁽⁹⁾. Sedentary behavior was considered the man who sat ≥ 240 minutes/day⁽⁹⁾.

Another instrument applied was the Perceived Stress Scale (PSS)⁽¹¹⁾, which assesses the degree individuals perceive the situations experienced as stressful. It contains 14 items (PSS 14), and the sum of the scores of the 14 questions ranges from zero to 56. The higher the score, the higher the stress level⁽¹¹⁾. PSS can be used in several age groups since it has no context-specific issues. Considering that clinical decisions are dichotomous and taking into account

the objective of this study to obtain only a momentary classification of the stress situation, in this study, for analysis of responses, a cutoff point was created according to the mean of the scores obtained (20.5 ± 8.48). Then the classification of the stress level was considered below (0 to 20 points) and high (21 to 40 points).

The data collection instruments were tested with men assisted at the study site who were not included in the sample. After the pre-test, the need for language adequacy was found in some questions. In addition, changes in the questions presented were made to avoid the dispersion and tiredness of men during the interview. The researcher, a nurse, an MSc student trained to work in data collection, applied this pre-test.

Men were approached in the study locus waiting room, before or after the medical consultation and after confirmation of the inclusion and exclusion criteria. They were received in a private room, where the study objectives and the Informed Consent Form were displayed. After acquiescence to participate in the research and signing of the form, blood pressure and anthropometric measurements were subsequently measured.

For blood pressure measurement and interpretation, the recommendations of the Brazilian Guidelines on Arterial Hypertension⁽³⁾ were adopted, and the Omron HEM 705 CP digital device was used. For the verification of anthropometric measurements, the criteria proposed by Heyward and Stolarczyk were adopted⁽¹¹⁾. BMI was calculated by the formula $BMI = \text{weight in kg} / \text{height}^2$, height in cm, being considered low weight $< 18.4 \text{ kg/m}^2$, eutrophic ≥ 18.5 and $< 25.0 \text{ kg/m}^2$, overweight ≥ 25.0 and $< 30.0 \text{ kg/m}^2$, obesity grade I > 30.0 and $< 34.9 \text{ kg/m}^2$, obesity grade II kg/m^2 and obesity grade III $\geq 35.0 \text{ kg/m}^2$. The high waist circumference for men was $\geq 90 \text{ cm}$ ⁽¹²⁾.

The data formed a database in the Statistical Package of Social Science (SPSS) 18.0 for Windows. The sociodemographic variables were analyzed in percentage and absolute frequencies, means, and standard deviation. The Fisher's

Exact Test or Person's Chi-Square was used to analyze the interest associations. The statistical significance adopted was 5%.

The research project was approved by Opinion n. 268,722/2013, issued by the Ethics Committee of the Nursing School of the *Universidade Federal da Bahia* (Certificate of Presentation of Ethical Appreciation n. 09870313.4.0000.5531). The research respected ethical principles according to Resolution n. 466 of December 12, 2012, of the National Health Council, regulates research involving human beings⁽¹³⁾.

Results

The sample of 80 men was obtained in six months of data collection. The mean age of men was 58.46 years ($SD=8.64$), with a minimum age of 36 years and a maximum of 80 years. There was a higher proportion between 30 and 59 years (56.2%), self-declared black race/color (91.2%), married/in stable union (70.0%), with incomplete/complete elementary education (47.5%), in an active working situation (63.7%), with a monthly family income of up to two minimum wages (57.5%), responsible for family support (95.0%) and coming from Salvador and the Metropolitan Region (98.8%).

Blood pressure values were uncontrolled ($BP \geq 140 \times 90 \text{ mmHg}$) in 70% of men. Of these, 30.0% were classified as stage I hypertension, 27.5% as stage II hypertension, and 12.5% as stage III hypertension. Alcohol consumption was excessive at 8.7% during the week and 38.7% at the weekend. Regarding the level of physical activity, 35.0% were insufficiently active, 12.5% sedentary, and 95.0% had a high time in sedentary behavior. The stress level was high at 50.0%. Overweight predominated (82.5%), being 55.0% overweight and 27.5% obese. $WC > 90 \text{ cm}$ was found in 82.5% and high/very high risk for cardiovascular disease due to WHR at 60.0%.

The average of aggregated uncontrolled risk factors was 3.59 ($SD=1.2$). They included current or passive smoking, excessive alcohol

consumption, low level of physical activity, high-stress level, overweight ($BMI \geq 25 \text{ kg/m}^2$), WC not recommended, and additional salt intake in ready-made food. More than one-third (32.5%) had four uncontrolled factors, and more than half (57.5%) added four to six factors.

Regarding age, a higher proportion of smokers under 60 years of age ($p=0.002$) and men with an insufficient level of physical activity with 60 years or older ($p=0.017$) were observed. There was no statistically significant difference between age and other risk factors studied. However, there was a higher prevalence of these in men under 60, except for excessive time spent sitting.

Regarding self-reported race/color, the prevalence of passive smokers ($p=0.026$) and excessive alcohol consumption at the weekend ($p=0.043$) was higher in whites than blacks. No white men smoked or consumed excessive alcoholic beverages during the study in the week.

There was no statistically significant difference between race/color and other risk factors, but black men were more irregularly active/sedentary and had a higher stress level than whites. All white men presented sedentary behavior.

Related to marital status, the prevalence of passive smokers was higher in men without a partner ($p=0.039$). There was no statistically significant difference between marital status and the other factors studied. However, we found a higher prevalence of men with a partner who consumed excess alcohol during and at the weekend, was irregularly active/sedentary, and had high-stress levels. Current smoking and sedentary behavior were prevalent in men without a partner.

Table 1 shows the association of sociodemographic characteristics with smoking and excessive alcohol consumption.

Table 1 – Association of sociodemographic characteristics with smoking and excessive alcohol consumption. Salvador, Bahia, Brazil – 2015. (N=80) (continued)

| Sociodemographic characteristics | Current smoking | | Passive smoker | | Excessive alcohol consumption during the week | | Excessive alcohol consumption on weekends | |
|----------------------------------|-----------------|----------|----------------|----------|---|----------|---|----------|
| | n(%) | p value | n(%) | p value | n(%) | p value | n(%) | p value |
| Age | | | | | | | | |
| 30-60 years (n=45) | 4(8.9) | 0.002(1) | 22(48.9) | 0.066(2) | 5(11.1) | 0.39(1) | 21(46.7) | 0.099(2) |
| ≥60 years (n=35) | 3(8.6) | | 10(28.6) | | 2(5.7) | | 10(28.6) | |
| Race/Color | | | | | | | | |
| White (n=7) | - | 0.735(2) | 3(42.8) | 0.026(1) | - | 0.615(2) | 7(100.0) | 0.043(2) |
| Black (n=73) | 7(9.6) | | 29(39.7) | | 7(9.3) | | 24(32.9) | |
| Marital Status | | | | | | | | |
| With partner (n=56) | 3(5.35) | 0.101(1) | 22(39.3) | 0.039(2) | 5(8.9) | 0.218(1) | 23(41.1) | 0.702(2) |
| Without partner (n=24) | 4(16.7) | | 10(41.7) | | 2(8.33) | | 8(33.3) | |
| Education | | | | | | | | |
| Primary education (n=38) | 3(7.9) | 0.066(1) | 13(34.2) | 0.315(2) | 3(7.9) | 0.163(1) | 15(39.5) | 0.041(2) |
| High school/ College (n=42) | 4(9.5) | | 19(45.2) | | 4(9.5) | | 16(38.1) | |
| Work Situation | | | | | | | | |
| With occupation (n=51) | 3(5.9) | 0.229(1) | 24(47.0) | 0.087(2) | 5(9.8) | 0.784(1) | 23(45.1) | 0.068(2) |
| Without occupation (n=29) | 4(13.8) | | 8(27.6) | | 2(6.9) | | 8(27.6) | |

Table 1 – Association of sociodemographic characteristics with smoking and excessive alcohol consumption. Salvador, Bahia, Brazil – 2015. (N=80)

(conclusion)

| Sociodemographic characteristics | Current smoking | | Passive smoker | | Excessive alcohol consumption during the week | | Excessive alcohol consumption on weekends | |
|----------------------------------|-----------------|----------|----------------|----------|---|----------|---|----------|
| | n(%) | p value | n(%) | p value | n(%) | p value | n(%) | p value |
| Monthly Family Income | | | | | | | | |
| Up to 2 Minimum Wages (n=46) | 2(4.3) | 0.105(1) | 20(43.8) | 0.460(2) | 5(10.9) | 0.167(1) | 18(39.1) | 0.242(2) |
| ≥3 Minimum Wages (n=34) | 5(14.7) | | 12(35.3) | | 2(5.9) | | 13(38.2) | |

Source: Created by the authors.

Note: Conventional signal used:

- Numerical data equal to zero, not resulting from rounding.

(1) Fisher's exact test.

(2) Pearson's chi-square test.

Regarding education, there was a higher prevalence of excessive alcohol consumption at the weekend for men with fewer years of schooling ($p=0.041$). The other risk factors predominated in men with higher education, except for the increased time in sedentary behavior, but without statistically significant difference.

There was no statistically significant difference in the association between work situation and variables of interest. Current smoking, high time in sedentary behavior, and high level of stress predominated in men without occupation. In

contrast, passive smoker, excessive alcohol consumption during and at the weekend, and insufficient levels of physical activity were prevalent in men with occupational.

Regarding monthly family income, there was no statistically significant difference in associations of interest, but the low income was prevalent in passive smokers who consumed excessive alcohol during and over the weekend. In men with better socioeconomic status, current smoking, insufficient level of physical activity, and high level of stress predominated (Table 2).

Table 2 – Association of sociodemographic characteristics with the level of physical activity, sedentary behavior, and stress level. Salvador, Bahia, Brazil – 2015. (N=80)

(continued)

| Sociodemographic characteristics | Irregularly active/sedentary physical activity level | | Time ≥ 240 min/day in sedentary behavior | | High level of stress | |
|----------------------------------|--|----------|--|----------|----------------------|----------|
| | n(%) | p value | n(%) | p value | n(%) | p value |
| Age | | | | | | |
| 30-60 years (n=45) | 18(40.0) | 0.017(2) | 44(97.8) | 0.375(2) | 25(55.6) | 0.260(2) |
| ≥60 years (n=35) | 20(57.1) | | 35(100.0) | | 15(42.8) | |
| Race/Color | | | | | | |
| White (n=7) | 3(42.8) | 0.570(1) | 7(100.0) | 0.097(2) | 3(42.8) | 0.692(1) |
| Black (n=73) | 35(47.9) | | 72(98.6) | | 37(50.7) | |
| Marital Status | | | | | | |
| With partner (n=56) | 30(53.5) | 0.251(2) | 55(98.2) | 0.510(2) | 30(53.5) | 0.329(2) |
| Without partner (n=24) | 8(33.3) | | 24(100.0) | | 10(41.7) | |
| Education | | | | | | |
| Primary education (n=38) | 14(36.8) | 0.187(2) | 38(100.0) | 0.338(2) | 18(47.4) | 0.654(2) |

Table 2 – Association of sociodemographic characteristics with the level of physical activity, sedentary behavior, and stress level. Salvador, Bahia, Brazil – 2015. (N=80) (conclusion)

| Sociodemographic characteristics | Irregularly active/ sedentary physical activity level | | Time ≥ 240 min/day in sedentary behavior | | High level of stress | |
|----------------------------------|---|----------|---|----------|----------------------|----------|
| | n(%) | p value | n(%) | p value | n(%) | p value |
| Education | | | | | | |
| High school/ College (n=42) | 24(57.1) | | 41(97.6) | | 22(52.4) | |
| Work Situation | | | | | | |
| With occupation (n=51) | 26(51.0) | 0.479(2) | 50(98.0) | 0.448(2) | 22(43.1) | 0.104(2) |
| Without occupation (n=29) | 12(41.4) | | 29(100.0) | | 18(62.0) | |
| Monthly Family income | | | | | | |
| Up to 2 Minimum Wages (n=46) | 20(43.5) | 0.69(2) | 45(97.8) | 0.387(2) | 21(45.6) | 0.366(2) |
| ≥3 Minimum Wages (n=34) | 18(52.9) | | 34(100.0) | | 19(55.9) | |

Source: Created by the authors.

(1) Fisher's exact test.

(2) Pearson's chi-square test.

Table 3 shows the association between sociodemographic characteristics and non-recommended anthropometric measurements. Overweight, high WC and WHR values compatible with increased risk for cardiovascular disease were prevalent in men under 60 years of age and higher schooling, with a statistically significant difference for WHR.

Regarding self-reported race/color, all anthropometric measurements not recommended in white men prevailed, with a statistically

significant difference for overweight and increased WC.

There was no association between marital status and variables of interest. Regarding the work situation, men without occupation had a higher prevalence of non-recommended WC, with a statistically significant difference. Regarding family income, there was a higher prevalence of overweight, and WC not recommended for those with low income (Table 3).

Table 3 – Association of sociodemographic characteristics with anthropometric measurements not recommended in hypertensive men. Salvador, Bahia, Brazil – 2015. (N=80) (continued)

| Sociodemographic characteristics | Overweight | | Non- recommended waist circumference | | High cardiovascular risk for waist-to-hip ratio | |
|----------------------------------|------------|----------|---|----------|---|----------|
| | n(%) | p value | n(%) | p value | n(%) | p value |
| Age | | | | | | |
| 30-60 years (n=45) | 39(86.7) | 0.266(2) | 38(84.4) | 0.604(2) | 27(77.1) | 0.000(2) |
| ≥60 years (n=35) | 27(77.1) | | 28(80.0) | | 21(60.0) | |
| Race/Color | | | | | | |
| White (n=7) | 6(85.7) | 0.054(2) | 6(85.7) | 0.054(2) | 5(71.4) | 0.417(1) |
| Black (n=73) | 60(82.2) | | 60(82.2) | | 43(58.9) | |
| Marital Status | | | | | | |
| With partner (n=56) | 47(83.9) | 0.607(2) | 45(80.3) | 0.44(1) | 37(66.1) | 0.090(2) |
| Without partner (n=24) | 19(79.2) | | 21(87.5) | | 11(45.8) | |

Table 3 – Association of sociodemographic characteristics with anthropometric measurements not recommended in hypertensive men. Salvador, Bahia, Brazil – 2015. (N=80) (conclusion)

| Sociodemographic characteristics | Overweight | | Non- recommended waist circumference | | High cardiovascular risk for waist-to-hip ratio | |
|----------------------------------|------------|----------|--------------------------------------|----------|---|----------|
| | n(%) | p value | n(%) | p value | n(%) | p value |
| Education | | | | | | |
| Primary education (n=38) | 30(78.9) | 0.426(2) | 29(76.3) | 0.166(2) | 18(47.4) | 0.028(2) |
| High school/ College (n=42) | 36(85.7) | | 37(88.1) | | 30(71.4) | |
| Work Situation | | | | | | |
| With occupation (n=51) | 44(86.3) | 0.239(2) | 42(82.3) | 0.002(2) | 29(56.9) | 0.448(2) |
| Without occupation (n=29) | 22(75.9) | | 24(82.7) | | 19(65.5) | |
| Monthly Family income | | | | | | |
| Up to 2 Minimum Wages (n=46) | 38(82.6) | 0.000(2) | 38(82.6) | 0.000(2) | 26(56.5) | 0.460(2) |
| ≥3 Minimum Wages (n=34) | 28(82.3) | | 28(82.3) | | 22(64.7) | |

Source: Created by the authors.

(1) Fisher's exact test.

(2) Pearson's chi-square test.

Discussion

In this study, most hypertensive men were between 30 and 60 years old, according to another investigation, which showed the appearance of hypertensive symptoms in men in the age group between 40 and 60 years^(3,14). The socioeconomic characteristics predominant in the study, such as dependence on care from the *Sistema Único de Saúde*, black race/color, low education, and family income, confirm them as potentiating the risk for cardiovascular diseases⁽²⁾. The higher prevalence of SAH in hypertensive blacks reinforces the findings of other studies, showing that the relationship between disease and race/color can be justified by genetic variations since blacks have higher levels of plasma vasopressin and a more significant decline in renal response linked to the presence of genes for salt retention, as well as exposed to adverse socioeconomic conditions^(1-2,15).

Although SAH is controlled by drug treatment and lifestyle changes, disease control rates are still low. In this study, most men had uncontrolled blood pressure, even followed by a multidisciplinary team in a reference center. A study shows that only about one-third of hypertensive people have controlled blood

pressure⁽¹⁶⁾. Low control rates were observed in other investigations. They were associated with difficulty in adherence to drug therapy or not^(2-4,17), including restrictive diet, the need for the incorporation of physical activity and other healthy habits, and antihypertensive drug therapy in the routine of life. In this sense, changes in the ways of being and living cannot be conveyed as normative measures but need to consider the perspective and conditions of the individual for self-care. Clinical sharing can optimize the results in the treatment of the disease⁽¹⁻³⁾.

Another aspect to be considered in the care of hypertensive men is the simultaneous occurrence of risk factors. In this study, the average of aggregated and uncontrolled risk factors was high, which enhances the risk for cardiovascular events. Current smoking was reported less frequently, but a significant percentage was passive smokers, contributing to the uncontrollable SAH in people with and without cardiovascular disease. The prevalence of 41.3% of smoking, found in one study, was higher in men. This factor added to the greater male predisposition to develop hypertension increases the chances of smoking men being hypertensive⁽¹⁸⁾.

Although excessive alcohol consumption is linearly associated with increased blood pressure^(2,4,15), because for every 30 ml of ethyl alcohol ingested, blood pressure may increase by 2 mmHg⁽¹⁶⁻¹⁷⁾, excessive consumption was found in the sample, especially on weekends.

In this study, there was also a high prevalence of low level of physical activity and increased time in sedentary behavior. Physical activity reduces the incidence of SAH, even in pre-hypertensive patients, as well as mortality and the risk of cardiovascular disease⁽³⁾. The lack of knowledge about its importance and the low levels of physical activity were positively related to the lack of control of blood pressure levels⁽¹⁸⁾.

In this study, half of the men presented a high-stress level, and exposure to this factor is associated with increased blood pressure⁽¹¹⁾. The emotional aspects represented by depression, anxiety disorders, hostility, anger, chronic stress caused by low socioeconomic patterns, and financial problems at work and in the family⁽²⁻⁴⁾ also generate a progressive increase in atherosclerosis and the onset of coronary heart disease⁽¹⁹⁾.

In this study, a high proportion of men also presented overweight and had high WC, corroborating a study that found a positive association between SAH and overweight⁽¹⁹⁾. Some studies indicate that high WC is more associated with the disease than with obesity itself⁽¹⁸⁾. The relationship between weight gain and blood pressure is almost proportional and observed in adults and adolescents⁽¹⁹⁾.

Smoking was prevalent in men between 30 and 59 years of age, corroborating other studies⁽¹⁷⁻¹⁸⁾. In addition, passive smoking prevailed in unmarried and white men. Data on these associations were not found in the literature, but passive smoking has already been related to young, economically active adults with vulnerability to secondhand smoke in work activities⁽⁴⁾.

Excessive alcohol consumption is a risk factor for premature deaths and disabilities⁽²⁾. In this study, weekend abuse was higher in white men with lower schooling. There are divergences

in the literature on the relationship between education, socioeconomic level, and alcohol use. Evidence shows that people with lower socioeconomic status are more likely to suffer the consequences of drinking use⁽²⁰⁾. White skin color among men has been associated with alcohol use. However, people of this color are less likely to have an episode of excessive use, which coincides with lower mortality due to alcohol-related disorders⁽²⁰⁾.

The modifiable risk factors for SAH are influenced by living conditions. They are expressed in ways of life and relationships that people establish in their socioeconomic and cultural context. For an appropriate approach to hypertensive people, it is necessary to consider, in addition to traditional risk factors, socioeconomic conditions, knowledge, experiences, and the perception of the seriousness of the disease, the complexity of treatment, and the individual project of care for one's health. The lack of control of risk factors in the men studied challenges health professionals and public authorities in developing strategies and effective application of public policies that help them find new ways of being and living within the scope of their possibilities.

It is not easy to change behavior. Then, health education, applied in a dialogical relationship between professional-client, presupposes that professionals know the population under their care, understand their customs and advance in the promotion of care practices that minimize risk behaviors and favor the preservation of their own lives.

The limitation of the study is related to the sample size, resulting from the difficulty of recruiting men, due to the reform of the study locus and the disarticulation of the reference nucleus for the *Programa de Saúde do Homem* (Men's Health Program), in Salvador (BA). Besides was performed in a single (unicentric) center. The steps of the project should be reapplied in other health services, with an expansion of the sample, to provide additional power to the study.

The investigation contributes to a reflection of the health team on the possibility of incorporating

innovative and interdisciplinary interventions in the care process. The interventions have to aim to change life habits, better control hypertensive men's clinical and anthropometric parameters, and consider cultural perspectives, socioeconomic conditions, preferences, concerns, doubts, projects, and self-care conditions.

Conclusion

The sample presented uncontrolled anthropometric parameters, inadequate life habits, and high blood pressure levels, which impose a health risk. A sedentary lifestyle was associated with the elderly, excessive consumption of alcohol at the weekend among white men with low schooling, current smoking in the age group of 30 to 59 years, and passive smoking for white men and without a partner. Some overweight indicators were identified in men with higher schooling, age below 60 years, white race/color, inactive work situation, and low income. Such indicators cannot be minimized exclusively by the application of high-complexity technologies. Above all, by the change in lifestyle and improvement in living conditions, which implies better access to goods and services, and the modification of current care models, which do not achieve satisfactory results for disease control. The high prevalence of uncontrolled risk factors for hypertension associated with sociodemographic variables imposes a risk to health and points to the need for public policies and actions to promote men's health.

Collaborations:

1 – conception and planning of the project: Glicia Gleide Gonçalves Gama, Pollyana Pereira Portela and Fernanda Carneiro Mussi;

2 – analysis and interpretation of data: Glicia Gleide Gonçalves Gama, Pollyana Pereira Portela, Claudia Geovana da Silva Pires, Andreia Santos Mendes, Mariana de Almeida Moraes and Fernanda Carneiro Mussi;

3 – writing and/or critical review: Glicia Gleide Gonçalves Gama, Pollyana Pereira

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4 – approval of the final version: Glicia Gleide Gonçalves Gama, Claudia Geovana da Silva Pires, Andreia Santos Mendes and Fernanda Carneiro Mussi.

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