



Adherence to antihypertensive treatment and occurrence of Metabolic Syndrome

Adesão ao tratamento anti-hipertensivo e ocorrência de Síndrome Metabólica Adherencia al tratamiento antihipertensivo y la ocurrencia del Síndrome Metabólico

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ABSTRACT

Objective: To analyze the association between adherence to antihypertensive treatment and the occurrence of Metabolic Syndrome in hypertensive patients in a primary health care unit. **Method:** Analytical cross-sectional study carried out with 306 hypertensive patients from a Primary Health Care Unit located in the city of Fortaleza-CE. **Results:** Of the study participants, 74.2% were female, mean 61.8 ± 11.9 years old and within the age group of 54 to 69, 77.1% race / brown color, 60.8% with incomplete fundamental level or complete and 70.6% with family income between 1 and 2 minimum wages. Of the evaluated hypertensive patients, 41.5% had Metabolic Syndrome and 76.5% had partial adherence to antihypertensive treatment. In the statistical evaluation of the association between the variables, it was verified that it did not exist ($p = 0,149$ e $p = 0,642$). The values regarding adherence to antihypertensive treatment were the same, both in patients with Metabolic Syndrome and in those who did not have this condition. **Conclusions and implications for practice:** High and partial antihypertensive therapy adherence was prevalent. The frequency of Metabolic Syndrome among hypertensive patients under study was high. Therefore, preventive measures for cardiovascular diseases and achievement of therapeutic goals must be implemented continuously. A challenge to be overcome by health professionals and services.

Keywords: Treatment Adherence and Compliance; Hypertension; Metabolic Syndrome; Measures of Association, Exposure, Risk or Outcome; Primary Health Care.

RESUMO

Objetivo: Analisar a associação entre a adesão ao tratamento anti-hipertensivo e a ocorrência de Síndrome Metabólica em pacientes hipertensos de uma unidade de atenção primária à saúde. **Método:** Estudo analítico com corte transversal realizado com 306 pacientes hipertensos de uma Unidade de Atenção Primária à Saúde localizada na cidade de Fortaleza-CE. **Resultados:** Dos participantes do estudo 74,2% eram do sexo feminino, média $61,8 \pm 11,9$ anos e dentro da faixa etária de 54 a 69, 77,1% raça/cor parda, 60,8% com nível fundamental incompleto ou completo e 70,6% com renda familiar entre 1 e 2 salários mínimos. Dos hipertensos avaliados, 41,5% apresentaram Síndrome Metabólica e 76,5% apresentava aderência parcial ao tratamento anti-hipertensivo. Na avaliação estatística da associação entre as variáveis foi verificado não existir ($p = 0,149$ e $p = 0,642$). Os valores referentes à adesão ao tratamento anti-hipertensivo eram iguais, tanto nos pacientes com Síndrome Metabólica como dos que não apresentavam essa condição. **Conclusão e implicações para a prática:** A adesão terapêutica anti-hipertensiva alta e parcial foi prevalente. A frequência de Síndrome Metabólica entre os hipertensos em estudo foi elevada. Portanto, medidas de prevenção para doenças cardiovasculares e alcance das metas terapêuticas devem ser implementadas continuamente. Um desafio a ser superado pelos profissionais e serviços de saúde.

Palavras-chaves: Cooperação e Adesão ao Tratamento; Hipertensão; Síndrome Metabólica; Medidas de Associação, Exposição, Risco ou Desfecho; Atenção Primária à Saúde.

RESUMEN

Objetivo: Analizar la asociación entre la adherencia al tratamiento antihipertensivo y la aparición del síndrome metabólico en pacientes hipertensos en una unidad de atención primaria de salud. **Método:** Estudio analítico con corte transversal realizado con 306 pacientes hipertensos de una Unidad de Atención Primaria de Salud ubicada en la ciudad de Fortaleza-CE. **Resultados:** De los participantes en el estudio, el 74,2% eran mujeres, con una media de $61,8 \pm 11,9$ años y dentro del grupo de edad de 54 a 69, 77,1% raza / color marrón, 60,8% con nivel fundamental incompleto o completo y 70,6% con ingresos familiares entre 1 y 2 salarios mínimos. De los pacientes hipertensos evaluados, el 41,5% tenía síndrome metabólico y el 76,5% tenía adherencia parcial al tratamiento antihipertensivo. En la evaluación estadística de la asociación entre las variables, se encontró que no existía ($p = 0,149$ e $p = 0,642$). Los valores con respecto a la adherencia al tratamiento antihipertensivo fueron los mismos, tanto en pacientes con síndrome metabólico como en aquellos que no tenían esta condición. **Conclusiones e implicaciones para la práctica:** La adherencia a la terapia antihipertensiva alta y parcial fue prevalente. La frecuencia del síndrome metabólico entre los pacientes hipertensos en estudio fue elevada. Por lo tanto, las medidas preventivas para las enfermedades cardiovasculares y el logro de objetivos terapéuticos deben implementarse continuamente. Un desafío a superar por los profesionales y servicios de salud.

Palabras clave: Cumplimiento y Adherencia al Tratamiento; Hipertensión; Síndrome Metabólico; Medidas de Asociación, Exposición, Riesgo o Desenlace; Atención Primaria de Salud.

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INTRODUCTION

Chronic diseases are considered an important public health problem in the world panorama, according to the World Health Organization (WHO)¹ it is estimated that 13 million people die before the age of 70 every year, having as one of the main causes the cardiovascular diseases, followed by chronic respiratory disease, cancer and diabetes, being more prevalent in low and low - medium income countries.

Data from the Health Surveillance Secretariat² show that until September 2018 there were 178,362 cases of premature death, which corresponds to the 30 to 69 years old age group, due to Chronic Non-Communicable Diseases (NCDs). In the year 2017, this number was higher, totaling 225,431 until the month of September of the above-mentioned year. In the Northeast region these data presented several 42,635 deaths and in Ceará there were 6,664, and in the period between the previous year and the month of September, the number of deaths was 8,233

In this context, Systemic Arterial Hypertension (SAH) presents itself as one of the main NCDs. According to the Brazilian Society of Cardiology, SAH is a multifactorial clinical condition characterized when values systematically greater than or equal to 140/90 mmHg are recorded in the office. This condition can also be verified in relation to equally abnormal means ($\geq 130/80$ mmHg) of 24 hours by Ambulatory Blood Pressure Monitoring (MAPA) or Home Blood Pressure Monitoring (MRPA) ($\geq 135/85$ mmHg).³

Currently, this physiological change in blood pressure levels generates one of the most important risk factors for the advancement of systemic diseases in the human body, being responsible for at least 40% of deaths from stroke, 25% of deaths from coronary artery disease and, in combination with diabetes, for 50% of cases of end-stage renal failure.⁴

Therefore, SAH significantly and continuously affects the patient's life. After diagnosis, changes in lifestyle and inclusion of drug treatment are necessary to bring blood pressure values to their normal levels and thus decrease cardiovascular risk.⁵

It is extremely important that the health professional recognizes the patient's level of therapeutic adherence so that he/she can intervene according to the demand presented and can reverse the cases of non-adherence. In this process of patient awareness, it is essential that the professional emphasizes the importance of pressure control to avoid the occurrence of cardiovascular complications and improve the patient's quality of life.

Non-cooperation and adherence to antihypertensive treatment has been considered an obstacle to pressure control. This lack of pressure control is directly related to non-adherence to antihypertensive treatment. Therefore, therapeutic adherence becomes an essential component in the SAH treatment and has been conceptualized as the behavioral convergence between the health professional's prescription and the patient's behavioral habits.^{6,7}

In this scenario, the Metabolic Syndrome (MS) presents from a set of risk factors and has as one of the unfavorable outcomes the development of cardiovascular disease. High abdominal circumference (AC), *high density lipoprotein* (HDL-c)

cholesterol, low blood pressure, high triglycerides and glycemia are associated with MS.⁸

It should be noted that this coexistence may change according to the organization that characterizes it. Different international organizations have proposed definitions of MS for adults, sometimes using the same components, but with different cut-off points in the distribution of the components used to define it.

MS is the most common metabolic change and has a growing prevalence worldwide.⁹⁻¹¹ In Brazil, this condition, evaluated from the harmonization of international consensus and secondary analysis of the 2013 National Health Survey, showed that 8.9% (IC99% 8.4-9.5) of the Brazilian population has MS.¹² Recent data from an epidemiological analysis show that in a specific Brazilian population the prevalence of MS found was 12.21%.¹³

The Brazilian Society of Cardiology infers that MS is this association of several cardiovascular risk factors that associated, in turn, to SAH, under the epidemiological view, is responsible for an increase of up to 2.5 times in mortality from cardiovascular events. It is important to emphasize that, in case of this association, the treatment consists of a change in lifestyle and the use or not of drugs. At this point, the use of medication will be determined if the blood pressure level of the individual is equal to or above 140/90 mmHg.⁵

Since MS is associated with SAH, conditions that, when associated, increase the global risk for cardiovascular diseases, it becomes necessary to identify if there are measures of association, exposure, risk or outcome between adherence to antihypertensive treatment and the occurrence of metabolic syndrome and thus positively influence the health of the general population.

This study aimed to analyze the association between adherence to antihypertensive treatment and the occurrence of metabolic syndrome in hypertensive patients in a primary health care unit.

METHOD

The present study was of the analytical type with transversal cut and the survey of data through the application of questionnaire. The data were collected in an institution that integrates the network of Unidades de Atenção Primária à Saúde (UAPS) of the city of Fortaleza, whose coverage involves four neighborhoods, being responsible for a population estimated at about 28,000 people.

The population was composed of adults (≥ 18 years old), of both sexes, belonging to the UAPS area of coverage and registered in this health unit as hypertensive. The calculation was made for infinite populations.¹⁴ Based on the calculation result, a sample of 282 participants was reached. Patients who were scheduled and did not attend the consultation were excluded from the sample. A safety margin of 8.5% was added to the sample, totaling 306 patients. Patients were invited to participate in the research on the day of their care at random.

The level of adherence to the antihypertensive treatment was analyzed by applying the Martin-Bayarre-Grau (MBG) questionnaire developed in Cuba,¹⁵ which was applied individually at the UAPS and respecting the participant's privacy through its application in a reserved place. This questionnaire is based on the definition of

therapeutic adherence, which is the active and voluntary action of the user to adopt a behavior related to the fulfillment of the agreed treatment in agreement with his doctor. This instrument is self-applicable, short, easy to apply and convincing possibilities of response by the user. It has 12 items in the form of statements, with *likert* type response, with five response possibilities that go from always to never. To calculate the score obtained by each user, it is considered that the answer never has a value of zero, almost never has a value of one, sometimes corresponds to two, almost always refers to three and for the answer is always assigned a value of four, being 48 the total of possible points to reach. The authors classified the values, considering the scores obtained and consider as total adherents those who obtain 38 to 48 points; partial adherents, from 18 to 37 points, and non-adherent, from 0 to 17 points, so that one can quickly quantify and determine three types of levels of adherence: total, partial and non-adherent. The questionnaire presented an internal consistency of *Cronbach* alpha of 0.889 and the validation of content was performed by expert.¹⁶

The prevalence of Metabolic Syndrome (MS) in these patients with hypertension was also analyzed, thus the definition of NCEP-ATP III¹⁷ was used, and the following parameters of the patients had to be checked: Abdominal circumference that was measured with inelastic tape measure (Sanny® sn-4010, two meters long, 0.5 cm wide and 0.1 mm resolution) at the midpoint located between the anterior iliac crest and the costal edge; measurement of blood pressure that was performed with Beurer® model BM35 digital apparatus in order to minimize the interference of the examiner in the right upper limb, following the protocol proposed by the 7th Brazilian Guideline of Arterial Hypertension;⁵ triglyceride values, the cholesterol linked to high density lipoprotein (HDL-c) and fasting glycemia were obtained through the consultation in the patient's electronic record of the last laboratory tests performed within a period of up to 1 year.

According to the NCEP-ATP III definition, it is necessary that the patient presents at least three of the following criteria to characterize him/her with MS: abdominal obesity by measuring the abdominal circumference > 102 cm in men and > 88 cm in women, triglycerides ≥ 150 mg/dL, HDL-c < 40 mg/dL in men and < 50 mg/dL in women, blood pressure ≥ 130 mmHg or ≥ 85 mmHg and fasting glycemia ≥ 110 mg/dL. In case of evaluation of the components glycemia, blood pressure and triglycerides, the previous diagnosis of type 2 diabetes, systemic arterial hypertension and the use of lipid-lowering, respectively, fulfill the diagnostic criterion¹⁷

After the data collection, a sample loss was evidenced in three of the criteria for the characterization of the MS prevalence. This information deficit occurred in the factors Triglycerides (40.8%), HDL-c (40.5%) and fasting glycemia (30.7%) of the surveyed patients. Such parameters did not make the study and its analysis impossible, but the lack of such information may cause an underestimation of MS cases among hypertensive patients. The lack of this information is highlighted in the patient's

electronic chart, even though the exam was performed some months before the collection period.

The data were tabulated in Microsoft Office Excel® software version 2013 and later by IBM® (International Business Machines) SPSS® (Statistical Package for the Social Sciences) software version 23, when the data was then processed. The mean descriptive statistical measures and standard deviation of continuous variables were calculated, as well as their absolute frequencies and percentages in categorical variables. The variables age and family income were collected in a continuous way and passed through categorization, adopting the criteria for class construction (Total Amplitude, Class Intervals by the Sturges formula and size of each interval obtained by dividing the value of the difference between the highest and lowest value by the number of class intervals).¹⁴

Afterwards, the normality of the variables was verified through the Shapiro-Wilk Test and dispersion graphs, and finally, the Mann-Whitney and Chi-square of Independence Test was applied to analyze the adherence to the antihypertensive treatment with the diagnosis of MS. The statistical significance level of 5% was considered in all tests.

The study respected the formal requirements contained in the norms involving human beings through resolution 466/12 and was approved by the Research Ethics Committee of the Universidade Estadual do Ceará with opinion number 2,561,473 in March 2018.

RESULTS

The data in Table 1 show that there was a predominance of women (74.2%). The mean age among those surveyed was 61.8 ± 11.9 years. When categorizing the continuous data in class intervals to observe the distribution of the analyzed variable, the age groups from 62 to 69 years (27.5%) and from 54 to 61 years (23.6%) were highlighted, corresponding to more than half of those surveyed.

In relation to the schooling degree and familiar income, 60,8% of the researched presented incomplete or complete fundamental level and 70,6% with familiar income between 1 and 2 minimum wages.

Regarding the number of people at home and the self-reported race/color, 3.3 ± 1.6 people were obtained and 77.1% declared themselves brown. In the variable persons at home, it was found that almost half of the families had 2 to 3 persons at home (47.0%).

Regarding the occupation of those surveyed, it should be noted that more than half (52.9%) had the following occupations: retired (30.7%), household (19.6%) or pensioners (2.6%). In addition, we can see that 92.8% declared they did not smoke and 92.5% did not abuse alcohol. However, more than half (53.6%) were sedentary and had a history of systemic arterial hypertension in the family (85.9%).

In Table 2, you can see the clinical characteristics evaluated. Attention is drawn to the fact that the values of Triglycerides, Cholesterol linked to high density lipoprotein (HDL-c) and fasting glycemia do not make up the total of the initial sample of the study,

Table 1. Sociodemographic characteristics of the researched hypertensive individuals. Fortaleza, CE, Brazil. 2019. N=306.

Sociodemographic Features	N ^a	% ^b	Mean	Standard Deviation
Sex				
Female	227	74.2		
Male	79	25.8		
Age^c				
			61.8	11.9
22 — 29	1	0.3		
30 — 37	10	3.3		
38 — 45	15	4.9		
46 — 53	44	14.4		
54 — 61	72	23.6		
62 — 69	84	27.5		
70 — 77	55	18.1		
78 — 85	19	6.3		
86 — 95	5	1.6		
Schooling				
Illiterate	29	9.5		
Basic level incomplete/complete	186	60.8		
Average level incomplete/complete	78	25.5		
Upper level incomplete/complete	13	4.2		
Family income				
< 1 minimum wage	47	15.4		
1 — 2 minimum wages	216	70.6		
3 — 4 minimum wages	35	11.4		
5 — 6 minimum wages	6	2.0		
≥ 7 minimum wages	2	0.6		
People at home				
			3.3	1.6
1	32	10.5		
2	72	23.5		
3	72	23.5		
4	70	22.9		
5	39	12.7		
≥ 6	20	6.5		
Breed/Color				
Yellow	2	0.7		
White	59	19.3		
Brown	236	77.1		
Black	9	2.9		

^aNumber; ^bPercentage; ^cIn the variable age had the loss of registration of one of the researched.

because the results were not available in the patient's electronic record, as previously described.

The first component described was the abdominal circumference (WC). Hypertensive patients had a general mean of 101.2 ± 12.3 cm and a maximum value of 139 cm. For females, the mean was 100.5 ± 12.9 cm and for males, the mean was 103.0 ± 10.1 cm.

Regarding triglycerides, the average of this item in hypertensive patients was 172.6 ± 100.0 mg/dL, and a maximum value of 761 mg/dL. The HDL-c component presented a general average for hypertensive patients of 47.5 ± 11.5 mg/dL. This component, in reference to the female gender, the mean was 48.2 ± 11.0 mg/dL and to the male gender, the mean was 45.6 ± 12.64 mg/dL.

Table 2. Clinical characteristics of the hypertensive patients surveyed. Fortaleza, CE, Brazil. 2019. N=306

Clinical Characteristics	N ^a	Lowest	Highest	Medium	Standard Deviation
WC ^b (cm)- general	306	34.0	139.0	101.2	12.3
WC ^b (cm)- female	227	34.0	139.0	100.5	12.9
WC ^b (cm)- male	79	77.0	126.0	103.0	10.1
Triglycerides (mg/dL)	181	45.0	761.0	172.6	100.0
HDL-c ^c (mg/dL) - general	182	22.0	94.0	47.5	11.5
HDL-c ^c (mg/dL) - female	135	28.0	84.0	48.2	11.0
HDL-c ^c (mg/dL) - male	47	22.0	94.0	45.6	12.6
Fasting Blood Glucose (mg/dL)	216	69.0	477.0	127.3	64.7
Systemic blood pressure (mmHg)	306	99	210	139.6	18.2
Diastolic blood pressure (mmHg)	306	47	111	77.4	11.4

^aNumber; ^bAbdominal Circumference; ^cHigh lipoprotein cholesterol density – *high density lipoprotein*.

The fasting glycemia presented an average of 127.3 ± 64.7 mg/dL and maximum value of 477 mg/dL. The variations in BP were: an average of 139.6 ± 18.2 mmHg in systolic blood pressure (SBP) and a maximum value of 210 mmHg; diastolic blood pressure (DBP) presented an average of 77.4 ± 11.4 mmHg and a maximum value of 111 mmHg.

After the mentioned description of the criteria for the characterization of Metabolic Syndrome (MS), the hypertensive individuals evaluated had a prevalence of 41.5% of MS according to NCEP-ATP III. Among hypertensive individuals, 35.3% did not have some of the laboratory tests that could complement the evaluation to verify the occurrence of MS, as shown in Table 2, and were thus classified as “inconclusive”.

The answers to the 12 questions that make up the Martin-Bayarre-Grau Questionnaire (MBG) that evaluates adherence to antihypertensive treatment are described below.

When observing the data presented in Table,³ it can be verified that the questioning about taking medication at the established time and, according to the indicated dose, was 41.5% and 70.9% of hypertensive people always take respectively; 31.4% stated that they sometimes follow the rules of the prescribed diet, close to the 35.6% that almost always followed and more than half (54.9%) never perform the indicated physical exercises. The last two items described reveal a certain resistance of the hypertensive patients in the study in the performance of the non-drug treatment.

Regarding the attendance to the scheduled appointments, 83.3% stated that they always attended, but only 35.0% answered that they always decided with the doctor the treatment to be followed. This condition was corroborated by only 39.2% who answered that they always had the possibility to give their opinion on the treatment prescribed by the doctor and by 34.3% who answered that they always discussed how to fulfill the treatment. Facts that call attention.

When exposing about accommodating medicine schedules in daily activities, 59.8% always did so and 71.2% never made use of reminders to perform the treatment. In addition, 57.5% of them have ceaselessly continued the treatment without much effort and 64.1% have always completed the treatment without the supervision of their family or friends.

In the quantification and subsequent classification of adherence to antihypertensive treatment by the data obtained from Table 3, an average of 31 ± 7 points was obtained in the questionnaires, drawing attention, since the lowest score was 5. This data shows that the classification of hypertensive patients, in general, is of partial adherence, as recommended by the authors. Thus, it can be verified that most patients (76.5%) had partial adherence, 19.9% had total adherence to therapy and only 3.6% of the 306 hypertensive patients were considered non-adherent.

By means of the Mann-Whitney U test it has been demonstrated that adherence to antihypertensive treatment had no effect on having or not having Metabolic Syndrome ($U = 3950,500$, $p = 0.149$) when analyzed by the gross scores of the questionnaire. Because, according to the hypotheses tested, the two groups have the same distribution (h_0) or the two groups do not have the same distribution (h_1). The null hypothesis prevails.

Table 4 shows that 76.4% had Metabolic Syndrome and partial adherence to antihypertensive treatment. In those surveyed who did not have Metabolic Syndrome partial adherence also prevailed with 70.4%.

The Independence Chi-square test suggested no association between adherence to antihypertensive treatment and a diagnosis of Metabolic Syndrome [$X^2 (2) = 0.888$; $p = 0.642$]. Corroborated by the analysis of the degree of association of category variables with Cramer's V test which indicates only a ratio of 0.067 or 6.7%.

Table 3. Responses of hypertensive respondents to the Martín-Bayarre-Grau (MBG) questionnaire. Fortaleza, CE, Brazil. 2019. N=306.

MBG Question	Always		Almost always		Sometimes		Almost never		Never	
	N ^a	% ^b								
Do you take the medicine at the established times?	127	41.5%	101	33.0%	56	18.3%	18	5.9%	4	1.3%
Do you take all the indicated doses?	217	70.9%	47	15.4%	24	7.8%	13	4.2%	5	1.6%
Do you follow the diet rules?	66	21.6%	109	35.6%	96	31.4%	17	5.6%	18	5.8%
Do you attend scheduled appointments?	255	83.3%	31	10.1%	12	3.9%	4	1.3%	4	1.3%
Do you perform the indicated physical exercises?	58	19.0%	25	8.2%	33	10.8%	22	7.2%	168	54.9%
Do you accommodate the medicine schedules in your daily activities?	183	59.8%	57	18.6%	36	11.8%	16	5.2%	14	5.6%
Do you and your doctor decide together what treatment to follow?	107	35.0%	43	14.1%	26	8.5%	39	12.7%	91	29.7%
Do you perform the treatment without the supervision of your family or friends?	196	64.1%	17	5.6%	25	8.2%	19	6.2%	49	16.0%
Do you continue the treatment without much effort?	176	57.5%	45	14.7%	35	11.4%	17	5.6%	33	10.8%
Do you use reminders to carry out the treatment?	43	14.1%	7	2.3%	17	5.6%	21	6.9%	218	71.2%
Do you and your doctor discuss how to carry out the treatment?	105	34.3%	40	13.1%	33	10.8%	41	13.4%	87	28.4%
Do you have the possibility to give your opinion on the treatment your doctor prescribes?	120	39.2%	50	16.3%	42	13.7%	24	7.8%	70	22.9%

^aNumber; ^bPercentage.

Table 4. Association between adherence to antihypertensive treatment and the occurrence of metabolic syndrome in the hypertensive patients surveyed. Fortaleza, CE, Brazil. 2019. N= 198.

MGB Questionnaire Classification	Metabolic Syndrome				p-value
	Yes		No		
	N ^a	% ^b	N ^a	% ^b	
Total adherence	25	19.7%	18	25.4%	p = 0.642 ^c
Partial adherence	97	76.4%	50	70.4%	
Not adhered	5	3.9%	3	4.2%	
Total	127	100.0%	71	100.0%	

^aNumber; ^bPercentage; ^cp-value for Pearson's chi-square test.

DISCUSSION

According to the Ministério da Saúde¹⁸ the social determinants of health are living conditions inherent to the environment, to the intrinsic characteristics of each individual and to their social relations that influence health. Therefore, the evaluation of socio-demographic data on hypertensive individuals shown in Table 1 was of extreme importance.

From their professional experience in the Unidade de Atenção Primária à Saúde (UAPS), it can be detected that there are some influencing factors in the high prevalence of women among participants, such as: the increased demand of women for health services. Raymundo and Pierin⁶ emphasize that women seem to have a more accurate perception of their health condition, and have thus developed a closer relationship with health services, i.e., also due to their reproductive attributes and functions.

In a study conducted in the city of Fortaleza-CE, with 182 hypertensive patients enrolled in the Sistema de Gestão Clínica de Hipertensão Arterial e Diabetes Mellitus of basic care, a prevalence of 62.0% of the total hypertensive women, 66.9% elderly with a mean age of 64.5 years¹⁹ was obtained. Data that meet the findings of this research and corroborate the hypothesis of the lack of demand for health care by the male population, even with the implementation of health policies aimed at this population.

There is less demand from men for health services. This fact is corroborated in the strategic actions of basic care in the Single Health System. The panorama is focused on women's health care throughout its life cycle, making it difficult to monitor and detect several diseases early. This shows the focus on SAH and its complications.²⁰

The "retired" occupation is a factor that can influence adherence to antihypertensive treatment, increasing the dedication to treatment by availability, since appointments usually take place in the morning and may coincide with the patient's working hours, so retirees tend to have a higher adherence. This is in line with the study by Lima et al.¹⁹ which presents 30.7% of retirees, 19.6% of Home and 2.6% of pensioners, totaling 50.2% of those surveyed.

In a study conducted with hypertensive patients in the city of São Paulo, 46.3% did not have complete elementary education,²⁰ corroborating the predominance of low schooling among the survey patients. This reality may make it difficult to adhere to antihypertensive treatment due to their low level of health literacy.

The income is a factor that can influence the adhesion to the treatment, once most of the hypertensive of the study (70,6%) presents familiar income between 1 and 2 minimum wages. In spite of being considered a "good" income, data from the Continuous National Household Sample Survey (PnadC) which deals with all the income sources, divulged by the Instituto Brasileiro de Geografia e Estatística (IBGE) showed that, in 2018, the average monthly income of 60% of the Brazilian workers was R\$ 928, a value inferior to the minimum wage in 2018 (R\$ 954). This situation contrasts with the data presented, which can make it difficult, many times, to obtain medicines that are not available in the public network or to acquire a healthier diet.^{21,22}

The greater predominance of not smoking and not abusing alcohol among hypertensive people was corroborated by the study by de Silva et al.²³ but, although there is an orientation to reduce alcohol and tobacco consumption in older populations, specific interventions in these factors, by health professionals, must be continuous in order to detect possible deleterious effects resulting from this practice.

The sedentary lifestyle in more than half of those surveyed calls attention, since the relationship between sedentary lifestyle and the Metabolic Syndrome (MS), according to the First Brazilian Guidelines on Diagnosis and Treatment of Metabolic Syndrome,²⁴ increases three to four times the prevalence of MS with this condition.

The mean blood pressure (BP) values tend to be high in case of non-adherence to antihypertensive treatment, because the recommended target for BP values of hypertensive patients with the therapy implemented is: BP < 130/80 mmHg and < 140/90 mmHg, according to the stage of hypertension the patient presents, as well as the cardiovascular risk,⁵ which was verified, as shown in Table 2.

Nonadherence to antihypertensive treatment has been considered an obstacle to pressure control. This lack of pressure control is directly related to non-adherence to antihypertensive treatment⁶. In the study, it could be verified that 76.5% of the patients had partial adherence, according to the Martín-Bayarre-Grau (MBG) questionnaire classification. This fact shows the importance of therapeutic adherence in hypertensive patients. This finding, added to the literature data, shows how the evaluation of therapeutic adherence becomes an essential component in the treatment of Systemic Arterial Hypertension and has been conceptualized as the behavioral convergence between the health professional's prescription and the patient's behavioral habits,⁷ as can be observed by the data in Table 3.

Table 4 shows the crossing of the data between the adherence to antihypertensive treatment and MS, in which it was not possible to show, through statistical analysis, an association relationship. It should be noted that the statistical non-association between these variables can possibly be attributed to the high MBG questionnaire score and its equitable distribution among those who had or not the diagnosis of MS.

CONCLUSION AND IMPLICATIONS FOR PRACTICE

When analyzing the study data of patients with hypertension, it was possible to conclude that there was the presence of high and partial adherence to the prevailing antihypertensive therapy, corroborating the data in the world literature, and this fact is still a challenge for health services.

Metabolic Syndrome was also prevalent in the study, even though it is the most common condition that composes it, although no association was found between its presence and more or less therapeutic adherence, although clinical data have

collaborated for potential unfavorable outcomes associated with these clinical conditions.

However, it is important to emphasize that it is necessary to develop more studies involving this theme, with the use of different methods to increase the amount of content in order to help improve the health of the population and dissolve remaining doubts. In addition, more and more prevention measures for cardiovascular diseases and attainment of therapeutic goals are being implemented.

AUTHOR'S CONTRIBUTIONS

Conception and design of the research: Geiciane Fonteles da Silva. Thereza Maria Magalhães Moreira.

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