



## REVIEW

**Adherence to the treatment of systemic arterial hypertension in a cardiology outpatient clinic: a scope review**

Adesão ao tratamento da hipertensão arterial sistêmica em ambulatório de cardiologia: uma revisão de escopo

Adherencia al tratamiento de la hipertensión arterial sistémica en un ambulatorio de cardiología: una revisión de alcance

Aline Maria Oliveira Loureiro<sup>1</sup> <https://orcid.org/0000-0003-3370-4031>Thereza Maria Magalhães Moreira<sup>1</sup> <https://orcid.org/0000-0003-1424-0649><sup>1</sup>Universidade Estadual do Ceará. Fortaleza, Ceará, Brasil.**ABSTRACT****Objective:** To analyze in the literature the degree of adherence of patients followed in a cardiology outpatient clinic as well as the strategies developed by these centers for the promotion and maintenance of good therapeutic adherence.**Methods:** This is a Scoping Review performed in the SCOPUS, EMBASE and WEB OF SCIENCE databases using the descriptors Hypertension, Blood Pressure, High, Ambulatory, Medication Adherence, Medication Compliance, Patient Compliance, Patient Adherence, Patient Cooperation, Treatment Compliance, Treatment Adherence, Patient Compliance, Adherence, and Compliance. **Results:** 290 articles were found, of which 12 were selected for this study. The studies found covered both population studies and reviews, and two international guidelines and a comparative analysis study of these guidelines were included. **Conclusion:** For the success of antihypertensive therapy, it is necessary to involve a multidisciplinary team that aims beyond drug therapy: to promote a friendly, welcoming environment, with frank therapeutic listening where the patients feel safe to participate in the treatment objective and with the team willing to develop education strategies aimed at changing the lifestyle and helping to monitor the blood pressure levels of these patients.**Descriptors:** Hypertension. Treatment adherence and compliance. Ambulatory care.**RESUMO****Objetivo:** Analisar na literatura o grau de adesão de pacientes acompanhados em ambulatório de cardiologia, bem como as estratégias desenvolvidas por esses centros para promoção e manutenção de uma boa aderência terapêutica. **Métodos:** Trata-se de uma *Scoping Review* realizada nas bases de dados SCOPUS, EMBASE e WEB OF SCIENCE usando os descritores Hipertensão, Pressão Arterial, Alta, Ambulatoria, Adherência a Medicação, Cumprimento de Medicação, Cumprimento do Paciente, aderência do Paciente, Cooperação do Paciente, Cumprimento de Tratamento, Adherência ao tratamento, Cumprimento do paciente, Adherência, Cumprimento. **Resultados:** Encontraram-se 290 artigos, dos quais 12 foram selecionados para este estudo. Os trabalhos encontrados abrangeram estudos tanto populacionais como revisões, sendo que foram incluídos dois guidelines internacionais e um estudo de análise comparativa desses guidelines. **Conclusão:** Para o sucesso da terapia anti-hipertensiva, faz-se necessário o envolvimento de uma equipe multiprofissional que vise, além da terapia medicamentosa, promover um ambiente amigável, acolhedor, com escuta terapêutica franca em que o paciente se sente seguro para participar do objetivo do tratamento e com a equipe disposta a desenvolver estratégias de educação voltadas à mudança de estilo de vida e ao auxílio no monitoramento dos níveis pressóricos desses pacientes.**Descritores:** Hipertensão. Cooperação e adesão ao tratamento. Assistência ambulatorial.**RESUMÉN****Objetivo:** Analizar en la literatura el grado de adherencia de los pacientes atendidos en un ambulatorio de cardiología, así como las estrategias desarrolladas por estos centros para promover y mantener una buena adherencia terapéutica. **Métodos:** Se trata de un Scoping Review realizado en las bases de datos SCOPUS, EMBASE y WEB OF SCIENCE utilizando los descriptores Hipertensión, Presión Arterial, Alta, Ambulatoria, Adherencia a Medicación, Cumplimiento de Medicación, Cumplimiento del Paciente, adherencia del Paciente, Cooperación del Paciente, Cumplimiento de Tratamiento, Adherencia al tratamiento, Cumplimiento del paciente, Adherencia, Cumplimiento. **Resultados:** Se encontraron 290 artículos, de los cuales 12 fueron seleccionados para este estudio. Los estudios encontrados cubrieron tanto estudios de población como revisiones, incluidas dos guías internacionales y un análisis comparativo de estas guías. **Conclusión:** Para el éxito de la terapia antihipertensiva es necesario involucrar un equipo multidisciplinario que apunte más allá de la farmacoterapia: promover un ambiente amable, acogedor, con franca escucha terapéutica donde el paciente se sienta seguro para participar en el objetivo del tratamiento y con el equipo dispuesto a desarrollar estrategias de educación dirigidas a cambiar el estilo de vida y ayudar a monitorear los niveles de presión arterial de estos pacientes.**Descritores:** Hipertensión. Cumplimiento y adherencia al tratamiento. Atención ambulatoria.

## INTRODUCTION

Systemic Arterial Hypertension (SAH) is defined as a chronic non-communicable disease characterized by a persistent increase in blood pressure, with genetic, environmental and social factors. It is worth noting here that the benefits of treatment (drug or non-drug) must be greater than the risks. It is characterized, according to the Brazilian Hypertension Guideline, by the persistent increase in blood pressure (systolic BP greater than or equal to 140 mmHg and/or diastolic BP greater than or equal to 90 mmHg) measured with the correct technique without the use of antihypertensives.<sup>(1)</sup>

A study related to population analysis indicates that 31.1% of the adult population is hypertensive, and blood pressure control is related to socioeconomic conditions. In higher-developed countries, blood pressure control rates are higher (28.4%) than those in lower-developed countries (7.7%).<sup>(2)</sup> In the Brazilian reality, a study carried out in 2015 revealed that the control rate varies from 10.4% to 35.2% depending on the region of the country.<sup>(3)</sup>

Marques, et al, in their systematic review carried out in 2018<sup>(4)</sup> highlighted the factors associated with systemic arterial hypertension: Age and high BMI are the most prevalent variables. Also noteworthy are the variables male gender, low education, lower income, high waist circumference, non-white color, lack of physical activity, smoking, and alcohol consumption. The factors related to SAH are multidimensional, that is, in addition to involving not only a defining characteristic, the examiner needs attention and care when assessing the patient's life context.<sup>(4)</sup>

Adherence to SAH treatment continues to be challenging for health services due to its complexity involving the following participants: the patients, their caregivers and health professionals. Therapeutic adherence in which a collaborative relationship is established between the parties involved depends on the patient's medical prescription and behavior.

These are some factors that make it difficult to adhere to treatment: effects and costs of antihypertensive medication, factors intrinsic to the patient (gender, age, ethnicity, education, income), factors related to the pathology (chronicity and its complications) and cultural aspects (belief, religion). It is worth highlighting here the family involvement as a support in the control of the disease and performance of the multidisciplinary team in the effectiveness of pharmacological and non-pharmacological therapies. It is also noteworthy the importance of public policies aimed at the social assistance of the population since socioeconomic factors will also be directly involved in the continuity of treatment.<sup>(5)</sup>

In outpatient care where the monitoring/follow-up of hypertensive patients is carried out, it is not difficult to identify adherent and non-adherent patients to treatment - despite the various strategies used to estimate treatment adherence, it is also possible to perceive the difficulty for behavior change, especially regarding non-pharmacological

treatment and its understanding for the reduction of morbidity and mortality and cardiovascular complications.<sup>(6)</sup>

It is known that factors related to therapeutic non-adherence are present worldwide - despite the strategies developed for the control of systemic arterial hypertension, the numbers referring to complications resulting from poor management of the condition continue to be a cause of concern due to its global impact. Based on the picture presented, the following question arises: "What are the strategies used in Brazil and in the International Centers to improve adherence to therapy aimed at hypertensive patients followed in cardiology outpatient clinics?" This study is relevant since it aims to highlight the adherence of hypertensive patients in the secondary segment of care, the strategies for their good maintenance as well as the orientations aimed at this public, aiming at guiding health professionals in which it is possible to contextualize this care respecting the plurality of factors involved in the diagnosis, understanding that treatment transcends medicines, but rather a whole life situation.

This study aims to identify the measurement of adherence of patients followed in a cardiology outpatient clinic as well as the strategies developed by these centers for the promotion and maintenance of good adherence to therapy.

## METHODS

This study is a scope review (OSF.IO/B54YN) in which the proposed revision of the Joana Briggs Institute (JBI) is followed. The scope review is conducted in order to examine and clarify key concepts and report on the types of evidence that address and inform practice in a topic area. They can also be used to map evidence in relation to time, place, source, approach, or origin.<sup>(7)</sup>

The scoping review methodology, used for this protocol, will be from the Joanna Briggs Institute (JBI), Reviewers Manual 2020<sup>(8)</sup>, which establishes five stages: 1) identification of the research question; 2) identification of relevant studies; 3) selection of studies; 4) analysis of data; and, 5) grouping, synthesis and presentation of data. Joanna Briggs Institute (JBI) is an international organization, headquartered in the College of Health and Medical Sciences at the University of Adelaide, Australia. The purpose of JBI is to develop and provide information, software, education and training on Evidence-Based Health. To this end, it has developed methodologies for conducting systematic reviews and various other types of reviews.<sup>(9)</sup>

For the first stage, the problem question was constructed in which the *PCC strategy was used: Population, Concept and Context* for a scope review where P - hypertensive patients, C - Adherence to Treatment and C - Cardiology Outpatient Clinic were defined. According to the strategy, the following problem question was formulated: "What are the prevalences evidenced in scientific publications that favor the adherence of patients affected by Systemic Arterial Hypertension in a cardiology outpatient clinic?".

For the second stage, databases were chosen, search strategies were developed with Boolean descriptors and operators, and inclusion and exclusion criteria were defined. Studies that addressed patients outside the outpatient setting, those under 18 years of age or even those with hypertension associated with other comorbidity were excluded from the review.

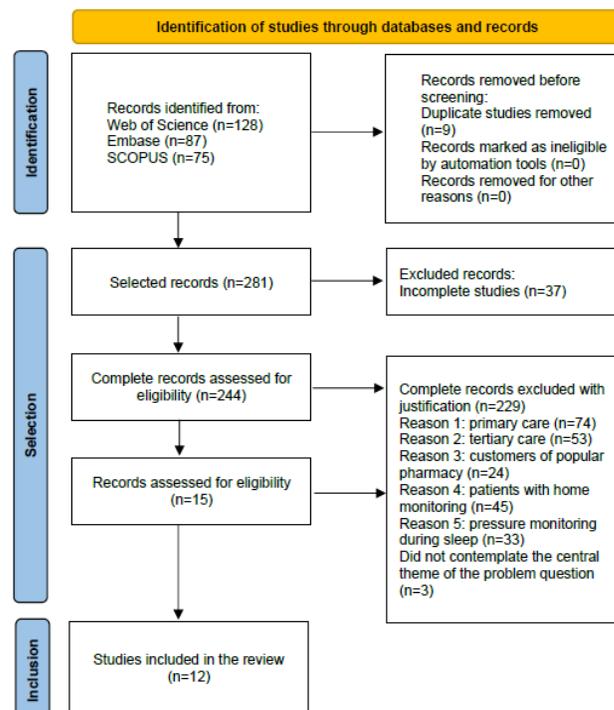
The bibliographic survey was carried out in April and May 2021 using the search key with the descriptors used in the Medical Subject Headings (MeSH) platform together with the Boolean operators AND and OR: (Hypertension OR Blood Pressure, High) AND (Ambulatory) AND (Medication Adherence OR Medication Compliance OR Patient Compliance OR Patient Adherence OR Patient Cooperation OR Treatment Compliance OR Treatment Adherence OR Patient Compliance OR Adherence OR Compliance).

The databases used for the review were *Scopus* (through the CAPES/CAFE platform), *Web of Science* (through the CAPES/CAFE platform) and *Embase* (through the CAPES/CAFE platform). The inclusion of the Pubmed/Medline platform was not carried out due to the free text search using variants of the term, combining synonyms, plurals and spelling variants (UK versus US) with the OR operator, Some medical terms are written differently in British and American English (examples: tumour OR tumor; ageing OR aging; labour OR labor; coeliac OR celiac), so the inclusion of a word for the different spelling should be considered in the research strategy. Some databases search for term variants automatically, which is called lemmatization. The Web of Science database automatically does lemmatization, however PubMed does not. <sup>(10)</sup> In addition to searching in the Catalogue of Theses and Dissertations of CAPES. The search in the gray literature of non-indexed materials will be conducted through Google Scholar.

In order to carry out a mapping, studies carried out in Brazil, Canada and Europe were included. The languages of the studies found were Portuguese (3), English (6) and French (3) because it is the language of fluency of the countries listed in the mapping and because they are a global reference in the treatment and monitoring of hypertensive patients. Complete studies were used, available on the web, prospective, case-control, cross-sectional, longitudinal, analytical, cohort, observational, multicenter, unicentric, bibliographic reviews, in addition to two guidelines, published or made available until May 2021.

The process of searching and selecting the studies of this review is presented in the flowchart according to the recommendations of the Joana Brigs Institute, according to the checklist adapted from the Preferred Reporting Items for Systematic Reviews and Meta-Analyses - PRISMA.

Figure 1. Flowchart of the study selection process adapted from PRISMA. Fortaleza, Ceará, Brazil, 2021.



Source: authors (2022).

For the fulfillment of stage 4 and 5, the studies included in this review were published/made available between 2014 and 2020, published in the following countries: Brazil, United States, Canada, Belgium, Spain and France (Box 1). The studies found covered both population studies and reviews, and two international guidelines and a comparative analysis study of these guidelines were included. In Box 2 we present the levels of adherence identified in these studies and in Box 3 the strategies identified to improve adherence to antihypertensive treatment. It is noteworthy that certain authors focused on strategies for measuring adherence, while the others addressed measurement and strategies for adherence to the therapy.

## RESULTS

To comply with stage 3 of the *Scoping Review*, of the 290 studies found, after exhaustive reading of the titles and abstracts of the articles, 14 were selected because they met the inclusion criteria established. Among those selected, two were excluded for not fully contemplating the theme, referring to the therapeutic conduct not only of hypertensive patients and for addressing only the screening of hypertension at the outpatient level - not relating to adherence. The final sample totaled 12 selected studies.

**Box 1.** Studies found according to year of publication, authorship, country and type of publication. Fortaleza, Ceará, Brazil, 2021.

| No. | Grade | Title   | Author   | Country | Post Type |
|-----|-------|---|--|---------|-----------|
| 1   | 2020  | Antihypertensive Medication Adherence and Confirmation of True Refractory Hypertension  | Siddiqui M, Judd EK, Dudenbostel T, Gupta P, Tomaszewski M, Patel P, et al           | USA     | Article   |
| 2   | 2019  | Masked uncontrolled hypertension is not attributable to medication non-adherence  | Siddiqui M, Judd EK, Dudenbostel T, Zhang B, Gupta P, Tomaszewski M, et al           | USA     | Article   |
| 3   | 2016  | Adherence to treatment and control of Arterial Hypertension after participation in ReHOT  | Jesus NS, Nogueira AR, Pachu CO, Luiz RR, Moraes de Oliveira GM                      | Brazil  | Article   |
| 4   | 2014  | Multiprofessional approach in the health care of patients of the HIPERDIA program   | Ferreira NS, Barbosa de Lira CA, Ferri LP, Cintra CE, Morais LC, Gonçalves VO, et al | Brazil  | Article   |
| 5   | 2018  | Use of strategies to improve antihypertensive medication adherence within United States outpatient health care practices, DocStyles 2015-2016   | Chang TE, Ritchey MD, Ayala C, Durthaler JM, Loustalot F                             | USA     | Article   |
| 6   | 2015  | Adherence to treatment of patients with cardiovascular risk factors in an outpatient clinic in the South Zone of São Paulo  | Pesinato RM, Richards GL, Cintra FF, Tamassia Roncoletta AF                          | Brazil  | Article   |
| 7   | 2020  | Bedtime hypertension treatment improves cardiovascular risk reduction: The Hygia Chronotherapy Trial  | Hermida RC, Crespo JJ, Dominguez-Sardinia M, Otero A, Moyá A, Ríos MT, et al         | Spain   | Article   |
| 8   | 2018  | Prevention and Control of Hypertension: JACC Health Promotion Series  | Carey RM, Muntner P, Bosworth HB, Whelton PK   | USA     | Article   |
| 9   | 2019  | Évaluation de l'adhérence aux médicaments antihypertenseurs chez des patients avec hypertension artérielle résistante recevant un traitement optimum Assessment of adherence to antihypertensive drugs in patients with resistant hypertension receiving optimal treatment      | Kichou B, Henine N, Himeur Y, Kichou L, Ait Said M, Mazeghrane A, et al              | France  | Article   |
| 10  | 2018  | New take Hypertension in 2018 proposed by the European Cardiology Societies and hypertension What's new and what are the differences with the new American guidelines presented in 2017?  | Xhignesse P, Krzesinski JM   | Belgium | Article   |
| 11  | 2018  | 2017 ACC/Aha/AAPA/ABC/ACPM/AGS/APhA/ASH/ASPC/NMA/PCNA Guideline for the Prevention, Detection, Evaluation, and Management of High Blood Pressure in Adults A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines | Whelton PK, Carey RM, Aronow WS, Casey DE, Collins KJ, Himmelfarb CD, et al          | USA     | Guideline |
| 12  | 2018  | Hypertension Canada's 2018 Guidelines for Diagnosis, Risk Assessment, Prevention, and Treatment of Hypertension in Adults and Children  | Nerenberg KA, Zarnke KB, Leung AA, Dasgupta K, Butalia S, McBrien K, et al           | Canada  | Guideline |

Source: authors (2022).

**Box 2.** Description of the studied population with evaluation method and adherence to the therapy. Fortaleza, Ceará, Brazil, 2021.

| No. | Title  | Country | Population   | Evaluation Method  | Adherence  |
|-----|--|---------|--|--|--|
| 1   | Antihypertensive medication Adherence and Confirmation of true refractory hypertension | USA     | 40 patients seen in the hypertension clinic for uncontrolled treatment of SAH, Ccm at least 3 follow-up visits and with prescription of at least 5 antihypertensive drugs of different classes | Stage 1: Measurement of pressure in the clinic. Stage 2: 24h monitoring outside the clinic; Stage 3: Biochemical Analysis; Stage 4: 24h urine drug screening | Of the 40 patients evaluated, 16 (40%) were completely adherent to drug therapy; 18 (45%) partially adherent and 6 (15%) non-adherent to drug therapy. |

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| 2 | Masked uncontrolled hypertension is not attributable to medication non-adherence   | USA    | 158 hypertensive patients undergoing drug treatment, who had at least 3 follow-ups between April 2014 and March 2019. The groups were 77 patients with truly controlled pressure and 81 patients with uncontrolled masked hypertension (MUCH) | Stage 1: Measurement of pressure in the clinic. Stage 2: 24h monitoring outside the clinic; Stage 3: Biochemical Analysis; Stage 4: High-performance 24h urine to identify drug adherence  | Of the group of patients with true pressure control, 69 (89.6%) were completely adherent to therapy while 8 were partially adherent (10.4%). Of the patients with masked hypertension, of the 81 patients, 69 (85.2%) were completely adherent and while 12 (14.6%) were partially adherent |
| 3 | Treatment adherence and blood pressure control after participation in ReHOT  | Brazil | 96 patients attended University Hospital with resistant hypertension and standardization of the therapeutic regimen. Patients aged 18 to 75 years and regular enrollment at the participating center.   | Patients treated with recommended drug therapy for 12 weeks with sodium reduction guidelines and physical exercise. BP measurements were performed together with ABPM and ECG. Phase 1: phenotypic characterization to identify increased activity of the renin-angiotensin-sympathetic system with blood and urine analysis. Phase 2: evaluate the fourth drug to be introduced in the regimen for control of SAH with repetition of laboratory tests, ABPM and ECG for further evaluation. Morisky scale applied to assess adherence to drug therapy | Of the 96 patients 31.3% presented adherence to drug therapy according to the Morisky scale. 16.7% had adherence to treatment with BP control while 16.7% had adherence to treatment, but without BP control. 35.4% did not achieve BP control and 33% did not adhere to treatment.         |
| 4 | Multiprofessional approach in patient health care of the HIPERDIA program  | Brazil | 119 patients - both genders over the age of 30 years with a diagnosis of SAH, attend at least 2 appointments per year   | A medical record analysis was carried out between 1998 and 2010. Adherence was evaluated based on the nursing prescription conditions for two consultations per year. Anthropometric data, BP measurement, BMI calculation, physical activity classification, diet assessment, evolution of the clinical condition according to the record of consultations 1, 5, 10, 15 and 20 were requested.  | Low frequency of patients to consultations and adherence to treatment. Regarding adherence, 37 to 39% had between 3 and 4 unhealthy lifestyle habits. 85% of patients regularly used antihypertensive drugs. 74% had non-regular BP.  |
| 5 | Adherence to treatment of patients with cardiovascular risk factors in an outpatient clinic in the South Zone of São Paulo | Brazil | Applied 100 questionnaires in a population where 44% of respondents were male, 56% female, aged 18 to 85 years, 76% white, 12% black, 10% brown and 2% yellow   | A questionnaire was applied on cardiovascular risk factors and triggering reasons for a difficulty in adhering to treatment, BP was verified according to Guideline VI   | 73% of the patients had medical follow-up with 4.04 consultations/year, 24% had nutritional follow-up, 9% were smokers, 82% were sedentary. Only 15% adhered to treatment   |
| 6 | Bedtime hypertension treatment improves cardiovascular risk reduction: The Hygia Chronotherapy Trial                       | Spain  | 19084 hypertensive patients (10614 men and 8470 women) with ABPM corroborating the diagnosis with at least 1 year of follow-up. Ambulatory Blood Pressure Monitoring (ABPM)   | Patients divided in 1:1 ratio according to the circadian cycle with dose of antihypertensive prescribed at bedtime without any portion in the morning. Patients instructed to leave medication on the bedside table for use after nighttime sleep or before turning off the lights. A Morisky-Green scale was performed to assess adherence along with the ABPM. Also performed biochemistry with urine test.  | Poor adherence was reported at any visit during follow-up by 2.8% and 2.9% of patients in the wake-up and bedtime treatment groups.   |

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| 7 | Evaluation of adherence to antihypertensive drugs in patients with resistant arterial hypertension receiving optimal treatment | France | 386 patients with a mean age of 64.6 years, 48.2% men - 68% of these were married, 30% had low education. 57.8% of patients had SAH for more than 10 years. Number of daily medications: 6.8. 74.6% had health insurance. | Patients had BP measured by means of a ABPM with exhaustive etymological performance during the last 2 years. SAH was considered if ABPM in wakefulness was >135/85 or at 24h reading >130/80 with the use of 4 antihypertensive drugs. Adherence was measured indirectly (Morisky Scale adapted in French) | 72.1% of the population were totally or partially non-adherent to treatment. Associated factors: female gender, low level of education, celibacy, polypharmacy with more than 5 medications and absence of self-medication at home. |
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Source: authors (2022).

**Box 3. Strategies to improve adherence to antihypertensive therapy. Fortaleza, Ceará, Brasil, 2021.**

| No. | Title   | Country | Adherence Strategy  |
|-----|---|---------|---|
| 1   | Antihypertensive medication Adherence and Confirmation of true refractory hypertension  | USA     | Clinical management and therapeutic decisions in these patients should be focused on improving drug adherence by simplifying the antihypertensive drug regimen, in part using fixed dose combinations and intradermal patch administration.   |
| 2   | Treatment adherence and blood pressure control after participation in ReHOT   | Brazil  | The study suggests that the association of an out-of-office BP measurement method to assess BP control increases the health system's ability to discriminate who would need more attention to achieve blood pressure control goals.   |
| 3   | Multiprofessional approach in patient health care of the HIPERDIA program   | Brazil  | After follow-up by the health team, the patients still had the same risk factors, which showed low adherence to non-pharmacological treatment. Nevertheless, follow-up was of great importance for the control of patients' blood pressure and must have prevented a series of comorbidities, evidencing the importance of institutionalized care provided by multiprofessional health groups.  |
| 4   | Use of strategies to improve antihypertensive medication adherence within United States outpatient health care practices, DocStyles 2015-2016   | USA     | On individual strategies: out of 10 strategies, professionals used an average of 5.2 strategies to improve adherence. Prevalence: 17.2% to provide rewards related to adherence, 69.4% prescribing a 1x/day regimen - this being more used than education and incentive strategies. Strategies of wide range and intensity: 58.2% used a wide variety of strategies, 37.6% used high intensity strategies. Regarding adherence assessment methods: 40.9% of professionals indicate regularly practicing the assessment of adherence to antihypertensive drugs through self-reported (90.7%) and structured (10.4%) adherence. |
| 5   | Adherence to treatment of patients with cardiovascular risk factors in an outpatient clinic in the South Zone of São Paulo  | Brazil  | Adhering to treatment is entering the patients' world, seeking to understand their difficulties and concrete solutions for the better management of chronic diseases, keeping in mind their epidemiological importance.   |
| 6   | Bedtime hypertension treatment improves cardiovascular risk reduction: The Hygia Chronotherapy Trial  | Spain   | Intake of the entire daily dose of 1 or more prescription blood pressure lowering drugs at bedtime compared to waking up resulted in control of BP during sleep and decreased the ratio of mortality and morbidity from cardiovascular disease  |
| 7   | Prevention and Control of Hypertension: JACC Health Promotion Series  | USA     | Increased adherence is multifactorial and includes complex drug regimens, convenience factors, behavioral factors, and problems with treatment and asymptomatic diseases.   |
| 8   | Évaluation de l'adhérence aux médicaments antihypertenseurs chez des patients avec hypertension artérielle résistante recevant un traitement optimum<br>Assessment of adherence to antihypertensive drugs in patients with resistant hypertension receiving optimal treatment | France  | The use of validated adherence questionnaires should be generalized to all hypertensive patients. Finding drugs in urine or plasma should be reserved for patients not controlled with 4 drugs, before embarking on complex explorations and expensive or non-invasive pharmacological therapies  |
| 9   | New 2018 European guidelines for the management of hypertension and comparison with the 2017 American guidelines  | Belgium | In 2013, Europeans considered that the treatment of hypertension should begin with monotherapy, except in patients with high BP (>160mmHg) or in the presence of significant cardiovascular risk. In these two conditions, dual therapy was recommended. For the 2017 North American guideline, a dual therapy is recommended from the outset in patients with grade 2 hypertension. Europeans have distinguished that in the 2018 proposal start with a combined treatment in one tablet to quickly improve efficiency and adherence to treatment.   |

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| 10 | 2017<br>ACC/Aha/AAPA/ABC/ACPM/AGS/APhA/ASH/ASPC/NMA/PCNA guideline for the prevention, detection, evaluation, and management of high blood pressure in adults a report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines | USA    | Interventions for adherence to drug treatment: modification in antihypertensive therapy. No single intervention is uniquely effective - a coordinated effort approach that aims to counteract all barriers to an individual's adherence is the most effective approach. Creating an encouraging and guilt-free environment in which patients are recognized for achieving the treatment goal and given permission to answer questions related to honest treatment is essential to identifying and treating adherence.   |
| 11 | Hypertension Canada's 2018 Guidelines for Diagnosis, Risk Assessment, Prevention, and Treatment of Hypertension in Adults and Children   | Canada | Strategies for promoting adherence to treatment: Adapting tablet intake to suit the patient's daily habits; Simplifying medication regimens for once-daily dosing; Replacing multiple combinations of antihypertensive pills with single pill combinations; Using unit-of-use packaging (from multiple drugs to be taken together; Using a multidisciplinary team approach to improve adherence to an antihypertensive prescription. Help your patients become more involved in their treatment: Encourage greater patients responsibility / autonomy in monitoring their blood pressure and adjusting their prescriptions; educate patients and their families about their illnesses and treatment regimens. Improve your in-office and out-of-office management: Evaluation of adherence to pharmacological and non-pharmacological therapy at each visit; Encourage adherence to therapy by out-of-office contact (by phone or mail), particularly during the first three months of therapy; Coordination with pharmacists and health care professionals in the workplace to improve monitoring of adherence to pharmacological prescriptions and lifestyle modification; Use electronic medication compliance aids. |

Source: authors (2022).

## DISCUSSION

Adherence to treatment is a fundamental factor in the conduct of hypertension therapy. The levels of non-adherence identified by the studies reached rates of 15% to 72.1%. This factor is worrying since the risk of compromise for cardiovascular diseases is increased in this group of patients and can lead to complications such as acute myocardial infarction, stroke, among others.<sup>(8)</sup>

It is worth noting here that for the beginning of hypertension treatment it is necessary to properly investigate with laboratory tests, checking the pressure in the physician's office, 24-HOUR MAP, identification of risk factors for cardiovascular diseases with screening of organ lesions. After the investigation, drug treatment is listed. It is at this stage that the construction of some barriers to adherence to therapy can begin.<sup>(9)</sup>

It was evidenced that depending on the geographical location of the patient, his drug regimen will be differentiated depending on the standardized guidelines: there are differences in North American and European recommendations regarding parameters, classification in hypertension levels and therapeutic conduction. While for the US guidelines it is important to start treatment with two drug classes soon for the brevity of the control of blood pressure levels, the European guidelines argue that monotherapy should be the first chosen in order to facilitate the beginning of a new routine of the patient.<sup>(10-11)</sup> A French study identified that polypharmacy becomes a factor listed for the partial or total absence of adherence.<sup>(12)</sup>

As for the strategies used to optimize adherence to treatment, there was an agreement on the part of the authors that follow-up needs to be

multiprofessional where a space free of judgments must be increasingly stimulated, where patient autonomy needs to be stimulated and that monitoring adherence must be part of the consultations subsequent to the care of hypertensive patients.<sup>(13-15)</sup> A North American study classified the strategies developed by professionals into categories: individual strategies and strategies of wide range and intensity. The monotherapy strategy was also listed in this study as an alternative to encourage adherence to drug therapy.<sup>(16)</sup>

As a way to identify the level of adherence, the studies recorded different ways of investigation: self-reported, structured adherence and direct investigation (through identification of the drug in urine or plasma). It should be noted here that most of the selected studies were able to measure drug adherence in a structured manner using the Morisky Green validity scale, however, non-pharmacological therapy (diet therapy and physical activity practices) was self-reported.<sup>(17-19)</sup> Only the Canadian guidelines emphasized the importance of monitoring non-pharmacological therapies to increase adherence to antihypertensive treatment. If there is no incentive to non-pharmacological practices, the result may be a worsening of the hypertensive condition.<sup>(11)</sup>

Still regarding non-adherence, it is a fact that there are factors that go beyond the reach of the professional and intrinsic to the patient such as sociodemographic factors: education, income, work, housing and the like, will also have a direct impact on the continuity of treatment. It is important to emphasize the importance of public policies that meet these population needs since, when it comes to health, care is multifactorial.<sup>(14)</sup>

The study aims to contribute so that health professionals who deal with hypertensive patients

can evaluate not only the biological context but also the sociodemographic context so that, together with the multidisciplinary team, they can define the best strategy for promoting a quality of life of patients living with this chronic condition. The limitations of this study are the scarcity of studies that address the factors related to patient adherence to therapy at the secondary level of health care.

## CONCLUSION

Adherence to the treatment of hypertension still constitutes a challenge for health services not only in the Brazilian reality, but in the global context. The strategies adopted by the assisting professionals range from the prescription of monotherapy to family involvement and health education strategies aimed at preventing cardiovascular complications, which can generate great damage not only to the patients, but to the entire structure of the health sector since one third of the world population is affected by the disease.

The understanding was that for the success of antihypertensive therapy it is necessary to involve a multidisciplinary team that aims beyond drug therapy: to promote a friendly, welcoming environment, with frank therapeutic listening where the patient feels safe to participate in the goal of treatment and with the team willing to develop education strategies aimed at changing lifestyle and helping in home monitoring of blood pressure levels, forms the ideal scenario for the correct conduction of hypertension.

Therefore, in addition to the efforts of the teams of professionals to optimize adherence to antihypertensive therapy, we need to analyze the social context of patients so that, making a situational analysis of my patient, the assistant team in possession of this knowledge, develops a more assertive strategy that brings good results in the treatment of systemic arterial hypertension.

## REFERENCES

- Barroso WK, Rodrigues CI, Bortolotto LA, Mota-Gomes MA, Brandão AA, Feitosa AD, et al. Diretrizes Brasileiras de Hipertensão Arterial - 2020. 2021 Arq. Bras. Cardiol. 2020; 116 (3): 516-658. doi: <https://doi.org/10.36660/abc.20201238>.
- Vilela-Martin JF, Yugar-Toledo JC, Rodrigues MC, Barroso WK, Carvalho LC, González FJ, et al. Posicionamento Luso-Brasileiro de Emergências Hipertensivas-2020. Arq. Bras. Cardiol. 2020; 114 (4): 736-51. doi: <https://doi.org/10.36660/abc.20190731>.
- Scala LC, Magalhães LB, Machado A. Epidemiologia da hipertensão arterial sistêmica. Arq. Bras. Cardiol. Livro texto da Sociedade Brasileira de Cardiologia. 2 ed. São Paulo: Manole; 2015. p. 780-85.
- Marques AP, Szwarcwald CL, Pires DC, Rodrigues JM, Almeida WS, Romero D. Fatores associados à hipertensão arterial: uma revisão sistemática. Ciên. Saúde Colet. 2020; 25 (6): 2271-82. doi: <https://doi.org/10.1590/1413-81232020256.26972018>.
- Carvalho SS, Oliveira BR. A difícil adesão dos pacientes hipertensos ao tratamento: revisão de literatura. Saúde Rev. 2018; 18 (50): 53-64. doi: <https://doi.org/10.15600/2238-1244/sr.v18n50p53-64>.
- Oliveira TL, Miranda LP, Fernandes PS, Caldeira AP. Eficácia da educação em saúde no tratamento não medicamentoso da hipertensão arterial. Acta Paul. Enferm. 2013; 26 (2): 179-84. doi: <https://doi.org/10.1590/S0103-21002013000200012>.
- Peters MD, Godfrey C, McInerney P, Soares CB, Khalil H, Parker D. Scoping Reviews. Joanna Briggs Institute Reviewer's Manual. 2015: 1-24. Available from: <https://reviewersmanual.joannabriggs.org/>.
- Aromataris E, Munn Z, editors. JBI manual for evidence synthesis. Adelaide: The Joanna Briggs Institute; 2020. Available from: <http://dx.doi.org/10.46658/JBIMES-20-01>.
- Joanna Briggs Institute (JBI). About JBI: Who Are We?2021. Adelaide: The University of Adelaide, 2021. Available from: <https://jbi.global/about-jbi>. Acesso em 07 dez 2021.
- Donato, H. & Donato, M. (2019). Etapas na condução de uma revisão sistemática. Acta Médica Portuguesa, 32(3), 227-235
- Siddiqui M, Judd EK, Dudenbostel T, Gupta P, Tomaszewski M, Patel P, et al. Antihypertensive medication adherence and confirmation of true refractory hypertension. Hypertension. 2020; 75 (2): 510-15. doi: <https://doi.org/10.1161/HYPERTENSIONAHA.119.14137>.
- Siddiqui M, Judd EK, Dudenbostel T, Zhang B, Gupta P, Tomaszewski M, et al. Masked uncontrolled hypertension is not attributable to medication nonadherence. Hypertension. 2019; 74 (3): 652-59. doi: <https://doi.org/10.1161/HYPERTENSIONAHA.119.13258>.
- Whelton PK, Carey RM, Aronow WS, Casey DE, Collins KJ, Himmelfarb CD, et al. 2017 ACC/AHA/AAPA/ABC/ACPM/AGS/APhA/ASH/ASPC/NM A/PCNA guideline for the prevention, detection, evaluation, and management of high blood pressure in adults: a report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. J. Am. Coll. Cardiol. 2018; 71 (19): e127-e248. doi: <https://doi.org/10.1016/j.jacc.2017.11.006>.
- Nerenberg KA, Zarnke KB, Leung AA, Dasgupta K, Butalia S, McBrien K, et al. Hypertension Canada's 2018 guidelines for diagnosis, risk assessment, prevention, and treatment of hypertension in adults and children. Can. J. Cardiol. 2018; 34 (5): 506-25. doi: <https://doi.org/10.1016/j.cjca.2018.02.022>.
- Kichou B, Henine N, Himeur Y, Kichou L, Ait Said M, Mazeghrane A, et al. Assessment of adherence to antihypertensive drugs in patients with resistant hypertension receiving optimal treatment. Ann Cardiol Angeiol (Paris). 2019; 68 (4): 264-68. doi: <https://doi.org/10.1016/j.ancard.2019.07.002>.
- Jesus NS, Nogueira AR, Pachu CO, Luiz RR, Moraes de Oliveira GM. Adesão ao tratamento e Controle da Pressão Arterial após participação no

17. Ferreira NS, Barbosa de Lira CA, Ferri LP, Cintra CE, Morais LC, Gonçalves VO, et al. Abordagem multiprofissional no cuidado à saúde de pacientes do programa HIPERDIA. *Rev. Bras. Hipertens.* 2014; 21 (1): 31-7. Available from: <http://repositorio.bc.ufg.br/handle/ri/16684>.

18. Pesinato RM, Richards GL, Cintra FF, Tamassia Roncoletta AF. Adesão ao tratamento de pacientes com fatores de risco cardiovascular em ambulatório da Zona Sul de São Paulo. *Rev. Soc. Bras. Clín. Méd.* 2015; 13 (3): 185-89. Available from: <http://www.sbcm.org.br/ojs3/index.php/rsbcm/article/view/154/150>.

19. Chang TE, Ritchey MD, Ayala C, Durthaler JM, Loustalot F. Use of strategies to improve antihypertensive medication adherence within United States outpatient health care practices, DocStyles 2015-2016. *J. Clin. Hypertens.* 2018; 20 (2): 225-32. doi: <https://doi.org/10.1111/jch.13188>.

20. Xhignesse P, Krzesinski JM. Nouvelle stratégie de prise en charge de l'hypertension en 2018 proposée par les sociétés européennes de cardiologie et d'hypertension Quoi de neuf et quelles différences avec les nouvelles directives américaines présentées en 2017? *Rev Med Liege.* 2018; 73 (11): 583-91. Available from: <https://orbi.uliege.be/handle/2268/245103>.

21. Hermida RC, Crespo JJ, Domínguez-Sardenha M, Otero A, Moyá A, Ríos MT, et al. Bedtime hypertension treatment improves cardiovascular risk reduction: the Hygia Chronotherapy Trial. *Eur Heart J Open.* 2020; 41 (48): 4565-576. doi: [10.1093/eurheartj/ehz754](https://doi.org/10.1093/eurheartj/ehz754).

22. Carey RM, Muntner P, Bosworth HB, Whelton PK. Prevention and control of hypertension: JACC health promotion series. *J. Am. Coll. Cardiol.* 2018; 72 (11): 1278-293. doi: <https://doi.org/10.1016/j.jacc.2018.07.008>.

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