NURSING CARE FOR HYPERTENSION CONTROL IN PRIMARY HEALTH CARE: EFFECTIVENESS AND STRATEGIES

CUIDADOS DE ENFERMAGEM PARA O CONTROLE DA HIPERTENSÃO NA ATENÇÃO PRIMÁRIA À SAÚDE: EFICÁCIA E ESTRATÉGIAS

CUIDADOS DE ENFERMERÍA PARA EL CONTROL DE LA HIPERTENSIÓN EN ATENCIÓN PRIMARIA: EFICACIA Y ESTRATEGIAS

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ABSTRACT

Objective: To synthesize and discuss the scientific evidence on the role and effectiveness of nursing care in the control of Systemic Arterial Hypertension in Primary Health Care settings.

Method: This is a narrative literature review. The search was conducted in the LILACS, SciELO, and PubMed/MEDLINE databases, encompassing publications between 2020 and 2025. Nineteen relevant studies were selected, including randomized clinical trials, systematic reviews, cohort studies, and qualitative research. The synthesis of knowledge was organized into thematic categories.

Results: The most effective nursing interventions include: health education strategies (with a reduction in systolic blood pressure of up to 5.8 mmHg); blood pressure monitoring (with reductions of 3.3 to 8.5 mmHg); support for medication adherence; lifestyle modification programs; and nurse-led care models, such as nursing clinics and case management, which demonstrated reductions in systolic blood pressure between 5.4 and 12.41 mmHg.

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Outcomes include improved blood pressure control, increased adherence rates, enhanced disease knowledge, and improved quality of life.

Conclusion: The evidence confirms that nursing care is fundamental and highly effective for the control of hypertension in primary health care. Nurse-led interventions, particularly when integrated into collaborative models, result in better clinical outcomes.

Keywords: Hypertension. Nursing Care. Primary Health Care. Review. Health Education.

RESUMO

Objetivo: Sintetizar e discutir as evidências científicas sobre o papel e a efetividade dos cuidados de enfermagem no controle da Hipertensão Arterial Sistêmica em contextos de Atenção Primária à Saúde.

Método: Trata-se de uma revisão narrativa da literatura, com busca nas bases de dados LILACS, SciELO e PubMed/MEDLINE, abrangendo publicações entre 2020 e 2025. Foram selecionados 19 estudos, incluindo ensaios clínicos randomizados, revisões sistemáticas, estudos de coorte e pesquisas qualitativas. A síntese do conhecimento foi organizada em categorias temáticas.

Resultados: As intervenções de enfermagem mais efetivas incluem: estratégias de educação em saúde (com redução da pressão arterial sistólica em até 5,8 mmHg); monitoramento da pressão arterial (com reduções de 3,3 a 8,5 mmHg); apoio à adesão medicamentosa; programas de modificação do estilo de vida; e modelos de cuidado liderados por enfermeiros, como clínicas de enfermagem e gerenciamento de casos, que demonstraram reduções de pressão arterial sistólica entre 5,4 e 12,41 mmHg. Os desfechos positivos abrangem melhora no controle pressórico, aumento das taxas de adesão, ampliação do conhecimento sobre a doença e elevação da qualidade de vida.

Conclusão: As evidências confirmam que os cuidados de enfermagem são fundamentais e altamente efetivos para o controle da HAS na APS. Intervenções conduzidas por enfermeiros, especialmente quando integradas a modelos colaborativos, resultam em melhores desfechos clínicos.

Palavras-chave: Hipertensão. Cuidados de Enfermagem. Atenção Primária à Saúde. Revisão. Educação em Saúde.

RESUMEN

Objetivo: Sintetizar y analizar la evidencia científica sobre el rol y la efectividad de los cuidados de enfermería en el control de la hipertensión arterial sistémica en entornos de atención primaria de salud.

Método: Se trata de una revisión narrativa de la literatura, con búsquedas en las bases de datos LILACS, SciELO y PubMed/MEDLINE, que abarca publicaciones entre 2020 y 2025. Se seleccionaron diecinueve estudios altamente relevantes, incluyendo ensayos clínicos aleatorizados, revisiones sistemáticas, estudios de cohortes e investigación cualitativa. La síntesis del conocimiento se organizó en categorías temáticas.

Resultados: Las intervenciones de enfermería más efectivas incluyen: estrategias de educación para la salud (con una reducción de la presión arterial sistólica de hasta 5,8 mmHg); monitorización de la presión arterial (con reducciones de 3,3 a 8,5 mmHg); apoyo para la adherencia a la medicación; programas de modificación del estilo de vida; y modelos de atención liderados por enfermeras, como clínicas de enfermería y gestión de casos, que

han demostrado reducciones en la presión arterial sistólica de entre 5,4 y 12,41 mmHg. Entre los resultados positivos se incluyen un mejor control de la presión arterial, mayores tasas de adherencia al tratamiento, un mayor conocimiento sobre la enfermedad y una mejor calidad de vida.

Conclusión: La evidencia confirma que la atención de enfermería es fundamental y altamente eficaz para el control de la hipertensión en la atención primaria. Las intervenciones realizadas por enfermeras, especialmente cuando se integran en modelos colaborativos, dan como resultado mejores resultados clínicos.

Palabras clave: Hipertensión. Cuidados de Enfermería. Atención Primaria de Salud. Revisión. Educación Para la Salud.

1 INTRODUCTION

Systemic arterial hypertension (SAH) persists as one of the main global public health challenges in the twenty-first century. Defined by the sustained elevation of blood pressure (≥140 mmHg and/or 90 mmHg), it is a multifactorial clinical condition that affects more than 1.3 billion people worldwide and contributes to more than 10 million deaths annually (Anand, 2023; American Heart Association, 2020). SAH is the main modifiable risk factor for atherosclerotic cardiovascular diseases, including Acute Myocardial Infarction (AMI) and Cerebrovascular Accident (CVA), in addition to being directly associated with chronic renal failure.

Despite the availability of effective pharmacological treatments and widely disseminated clinical guidelines, blood pressure control rates remain low on a global scale. It is estimated that only about a quarter of hypertensive patients achieve adequate blood pressure levels (Anand, 2023; Jafar et al., 2022). This persistent gap between evidence-based recommendations and observed clinical outcomes is not only due to deficits in medical knowledge, but reflects systemic weaknesses in the organization of care, especially with regard to the longitudinality of care, therapeutic adherence, and coping with the social determinants of health.

In low- and middle-income countries, the situation is particularly critical. The World Health Organization (2021) recorded a significant increase in the number of hypertensive adults in the last three decades, which went from 650 million to 1.28 billion. In these contexts, where health systems face structural and resource limitations, the burden of uncontrolled hypertension is disproportionately high, perpetuating a cycle of morbidity, premature mortality, and impoverishment.

In this scenario, Primary Health Care (PHC) occupies a strategic position for the effective confrontation of SAH. Due to its capillarity, bond with the community, and ability to offer continuous and coordinated care, PHC can detect the disease early, monitor patients longitudinally, and implement interventions that transcend drug prescription. It is in PHC that the chronic care model is implemented, based on the proactivity of the teams, on the support of self-management and on the multiprofessional approach.

In this context, nurses occupy a central position. As the most numerous and widely distributed professional category in health services, they work on the front line of care, establishing lasting bonds with patients and their families. Nursing training, which focuses on health education, behavioral counseling, therapeutic communication, and a holistic view of the human being, provides these professionals with specific skills to address the multifaceted nature of hypertension management (Silva et al., 2020a).

Nursing care in SAH transcends blood pressure measurement. It comprises comprehensive patient assessment, identification of modifiable risk factors, education about the disease and its treatment, support for medication adherence, counseling for lifestyle changes (diet, physical activity, smoking cessation), and coordination of care with other professionals. Innovative models, such as nurse-led hypertension clinics, case management, and community health interventions, have shown promising results in improving clinical outcomes (Stephen et al., 2022; Vay-Demouy et al., 2025).

Despite the growing body of evidence on the effectiveness of nursing interventions, challenges persist for their full implementation and recognition. Barriers related to the patient (low health literacy, cultural beliefs), the health system (fragmentation of care, scarcity of resources) and the provider itself (work overload, training gaps) still limit the potential of nursing to control SAH.

In view of this panorama, it is justified to carry out this narrative review, which critically synthesizes the available evidence on nursing care for the control of SAH in PHC, with the objective of offering subsidies for clinical practice, health management and the formulation of public policies. The review seeks to answer the following question: "What is the role and effectiveness of nursing interventions in the control of Systemic Arterial Hypertension in Primary Health Care contexts?"

2 METHODOLOGY

2.1 STUDY DESIGN

This is an exploratory narrative review of the literature, developed with the purpose of gathering, synthesizing and critically discussing scientific productions that address nursing interventions for the control of Systemic Arterial Hypertension (SAH) in Primary Health Care (PHC) or community contexts. This type of review was chosen because it allows a broad, interpretative and contextualized analysis of the literature, making it possible to identify consolidated contributions, persistent gaps and emerging trends related to nursing care in this field of knowledge, without the intention of exhausting all the existing scientific production on the subject (Rother, 2007). Unlike systematic reviews, which seek exhaustiveness and strict replicability, the narrative review favors the construction of a critical and reflective synthesis, particularly suitable for discussing the theoretical and practical development of evolving areas of knowledge, such as the role of nursing in the management of chronic conditions in primary care.

2.2 SEARCH STRATEGY AND SOURCES OF INFORMATION

The search for studies was conducted in January 2026 in three electronic databases of recognized relevance in the health area: the Scientific Electronic Library Online (SciELO), which covers Latin American and Caribbean scientific production; the Latin American and Caribbean Literature on Health Sciences (LILACS), which indexes regional publications that are often not available in international databases; and PUBMED/Medline, considered the world's leading biomedical database and a reference for nursing and public health research. To ensure the scope and sensitivity of the search, controlled descriptors recorded in the Health Sciences Descriptors (DeCS) were used for searches in Portuguese and in the Medical Subject Headings (MeSH) for searches in English, combined through Boolean operators (AND, OR), with specific adaptations for each database, respecting their syntactic and indexing particularities. The combinations of descriptors used were as follows: "Systemic Arterial Hypertension" AND "Nursing Care" AND "Primary Health Care"; "Nursing Care" AND "Nursing" AND "HAS"; and, for searches in international databases, "Hypertension" AND "Nursing Care" AND "Primary Health Care", as well as "Nurse-led interventions" AND "Hypertension management" AND "Primary care". The search was limited to the period from January 2020 to December 2025, with the objective of capturing the most current and relevant evidence produced in the last five years, a period that follows the main updates of the international guidelines for hypertension management.

2.3 ELIGIBILITY CRITERIA

Explicit inclusion and exclusion criteria were established to guide the selection of studies. Scientific articles that simultaneously met the following requirements were included: availability of the full text in the consulted databases; publication in Portuguese, English or, when available, with reliable translation into one of these languages; direct approach to nursing care through interventions aimed at controlling hypertension; and research development in primary health care, community care, or population-based programs.

Regarding the designs, studies with different methodological designs, including randomized clinical trials, systematic reviews with or without meta-analysis, prospective or retrospective cohort studies, qualitative studies, quality improvement projects, and quasi-experimental studies, were considered eligible, as long as they presented a substantial contribution to the understanding of the role of nursing in hypertension control.

On the other hand, the following were excluded from the analysis: duplicate studies identified in more than one database; incomplete texts, such as abstracts published in annals, editorials, letters to the editor and expert opinions; materials without a formal

scientific character, including theses, dissertations, books and book chapters; publications that did not have a direct relationship with the proposed theme, even if they tangentially mentioned hypertension; studies focused exclusively on other health professionals, without substantive discussion of the nurse's performance; and studies that addressed SAH only as a secondary comorbidity, without focusing on the specific management of the condition.

2.4 STUDY SELECTION PROCESS

The selection of studies was conducted in successive and systematic stages, following a predefined flow that ensured transparency and replicability to the process. In the first stage, called identification, all findings from the three databases were recorded, with the references stored in an electronic spreadsheet for tracking. The second stage consisted of the manual removal of duplicates, carried out through the systematic comparison between title, authorship, year of publication and journal of origin, ensuring that each study was counted only once. In the third stage, called screening, the titles and abstracts of all remaining records were independently read, with a preliminary application of the eligibility criteria to select potentially pertinent studies. The fourth and final stage involved the full reading of the pre-selected texts, with definitive confirmation of the adequacy of the inclusion and exclusion criteria, at which time the information for the qualitative synthesis was also extracted.

2.5 RESULTS OF THE SEARCH AND SELECTION PROCESS

The initial search in the three databases resulted in a total of 5,681 records, distributed as follows: 16 records in SciELO, 152 in LILACS and 5,513 in PUBMED/Medline. After the removal of duplicates, 72 records that appeared simultaneously in more than one database were excluded, leaving 5,609 unique references for screening. Subsequently, the initial filters related to the publication period (2020-2025), language (Portuguese, English, or with translation available), availability of the full text, and broad thematic relevance (i.e., studies that mentioned hypertension and primary care, regardless of whether they directly addressed nursing) were applied. After this stage, 102 publications were selected for the reading of titles and abstracts, distributed in 2 records in SciELO, 34 in LILACS and 36 in PUBMED, totaling 72 records after a new removal of interbase duplicates. The reading of the titles and abstracts of these 72 articles, followed by the rigorous application of the eligibility criteria, reduced the set to 32 publications considered potentially relevant. Finally, after the full reading of these 32 texts and the definitive confirmation of the inclusion criteria, 19 articles composed the final corpus of the present narrative review. The final distribution of the studies included by

database was as follows: 1 article from SciELO, 5 articles from LILACS and 13 articles from PUBMED/Medline, reflecting the greater concentration of scientific production on the subject in internationally indexed journals.

2.6 EXTRACTION, ORGANIZATION AND SYNTHESIS OF DATA

Data from the 19 selected studies were systematically extracted using a standardized form developed specifically for this review, which included the following information: authors and year of publication; methodological design; context and place of the study; characteristics of nursing intervention; main quantitative (blood pressure reductions, control rates, levels of statistical significance) and qualitative (patient and professional experiences, perceived barriers and facilitators) findings; and limitations reported by the original authors.

After extraction, the data were organized into thematic categories that emerged from the critical and interpretative reading of the material, in a process of inductive and recurrent analysis. The categories were not defined a priori, but were constructed from the identification of patterns, recurrences and natural groupings of the themes addressed in the analyzed publications. This process resulted in the definition of five categories of analysis, which guided the synthesis of the results and the structuring of the discussion: (1) strategies for patient education and counseling; (2) blood pressure monitoring and management; (3) support for medication adherence; (4) lifestyle modification programs; and (5) nurse-led models of care, including nursing clinics.

For each category, the types of intervention reported, the main effectiveness findings and the available evidence were synthesized, with special emphasis on quantitative data that would allow measuring the impact of nursing interventions. The discussion was developed in an integrative way, articulating the findings among themselves, contextualizing them in the light of the broader literature on the management of chronic diseases and pointing out consistent implications for clinical practice, for the management of health services, for the formulation of public policies and for the development of future research.

3 RESULTS

The analysis of the 19 selected studies revealed a robust body of evidence that confirms the effectiveness and centrality of nursing care in the management of SAH in PHC. Table 1 presents the detailed characterization of the included studies.

Table 1

Characterization of the studies included in the review on nursing interventions in the control of systemic arterial hypertension in primary health care (2020–2025)

No.	Authors (year)	Design	Nursing Intervention	Key Findings
01	Falcão et al. (2023)	Systematic review with meta-analysis	Structured health education (individual and group)	Mean reduction of 5.8 mmHg in SBP and 3.2 mmHg in DBP
02	Stephen et al. (2022)	Systematic review with meta-analysis	Nurse-led interventions in general practice	Mean reduction of 5.4 mmHg in SBP and 2.8 mmHg in DBP
03	Vay-Demouy et al. (2025)	Systematic review with meta-analysis	Nurse-led interventions with prescriptive authority	Reduction of 7.4 mmHg in SBP and 3.8 mmHg in DBP
04	Ito et al. (2024)	Systematic review with meta-analysis	BP self-monitoring supported by nurses	Reductions in SBP from 3.3 to 8.5 mmHg; Improvement in long-term control
05	Silva et al. (2020a)	Randomized controlled trial	Case management by nurses	Reduction of 12.41 mmHg in SBP and 7.21 mmHg in DBP; Improved adherence and quality of life
06	Jafar et al. (2022)	Cluster randomized clinical trial	Multicomponent model (training, protocols, nurses, HSE)	Blood pressure control increased from 58.2% to 74.9%
07	Yu et al. (2023)	Cohort study (5 years)	Risk assessment and management program (based on the Jafar model)	Significant reductions in cardiovascular complications and mortality
08	Miao et al. (2020)	Randomized controlled trial	Nurse-led hypertension clinic	Control rate: 68.3% vs. 45.7% in the control group
09	Anand (2023)	Quality improvement project	Team-based care with nurses	Significant reductions in SBP and DBP ($p < 0.001$); Increased knowledge
10	Arshad et al. (2022)	Quality improvement project	"Treat to goal" strategy with nurses	Mean reduction of 7.6–9.5 mmHg in SBP; 31% reduction in the number of consultations
11	Lumu et al. (2024)	Cluster randomized clinical trial	Nurse-led management in type 2 diabetes with SAH	Reduction of 13.75 mmHg in SBP and 7.20 mmHg in DBP;

No.	Authors (year)	Design	Nursing Intervention	Key Findings
				Improvement in cardiovascular risk
12	Duller et al. (2024)	Randomized controlled trial	Collaborative Advanced Nursing Practice	Significant improvement in BP, BMI, knowledge and adherence; Outcomes comparable to physicians
13	Vedanthan et al. (2020)	Retrospective study	Management of SAH by nurses vs. clinical officer	Equivalent reductions in BP; Challenge in retention (42% in 12 months)
14	Kaur et al. (2022)	Multicenter study (cohort)	India Hypertension Control Initiative (IHCI)	Clinical control of 43%; from 1.4% to 5.0%
15	Mantovanil et al. (2021)	Systematic review	Case management by nurses vs. usual care	Improved BP control and medication adherence
16	Silva et al. (2023)	Qualitative study	Health education by nurses	Personalized education and social support as facilitators of adherence
17	Figueiredo et al. (2023)	Community intervention	Group and individual education with nurses	70% monitored BP daily; 87% reduced salt; 63% practiced physical activity
18	Setyoadi et al. (2024)	Quasi-experimental study	Home visits by nurses	Improved knowledge (p=0.01), salt adherence, and BP reduction
19	Junior et al. (2022)	Review/reflection	Preventive education in at-risk populations	Emphasis on the importance of prevention before diagnosis of SAH

Legend: SBP = Systolic Blood Pressure; DBP = Diastolic Blood Pressure; SAH = Systemic Arterial Hypertension; PHC = Primary Health Care; AMPA = Blood Pressure Self-Monitoring; DASH = Dietary Approaches to Stop Hypertension; IHCI = India Hypertension Control Initiative; BMI = Body Mass Index.
Source: Prepared by the authors.

The results were organized into five main thematic categories, detailed below.

3.1 PATIENT EDUCATION AND COUNSELING STRATEGIES

Patient education is the basis of nursing interventions for hypertension control. Studies with different designs, including systematic reviews with meta-analysis, consistently demonstrate that structured educational interventions, led by nurses, produce significant

improvements in knowledge, self-management behaviors, and blood pressure control. Falcão et al. (2023), in a systematic review with meta-analysis, examined the impact of educational interventions carried out by nurses. The programs addressed the pathophysiology of hypertension, medication adherence, dietary modifications (with an emphasis on sodium reduction and adoption of the DASH diet), physical activity, stress management, and self-monitoring of blood pressure. The results demonstrated clinically meaningful reductions in systolic (mean 5.8 mmHg) and diastolic (mean 3.2 mmHg) blood pressure in the groups that received the educational interventions compared to the control groups.

The reviewed studies also explored different formats of education delivery. According to Silva et al. (2023), individual education allows for the personalization of the approach, adapting content and language to specific needs, health literacy, and each patient's readiness for change. On the other hand, group education, in addition to being potentially more cost-effective, offers the advantage of social support, allowing patients to share experiences, challenges, and successes, which can reinforce motivation and adherence to behavioral changes. Hybrid approaches, which combine group sessions with one-on-one follow-up, have shown particular promise.

The effectiveness of health education also depends on the quality and adequacy of educational materials and methods. Successful interventions utilized a variety of resources, including printed pamphlets with accessible language, practical demonstrations of blood pressure measurement techniques and low-sodium meal preparation, audio-visual aids, mobile apps, and digital platforms, and culturally tailored materials for specific populations. Junior et al. (2022) reinforced the importance of starting preventive education even before the diagnosis of SAH, focusing on at-risk populations to promote healthy habits from an early age.

3.2 BLOOD PRESSURE MONITORING AND MANAGEMENT

Regular and accurate blood pressure monitoring is indispensable for effective control of SAH. Nurses play a critical role not only in the execution of the measurement, but also in the interpretation of the results, in the identification of patterns and in the timely adjustment of conducts.

Self-monitoring of blood pressure at home (AMPA), supported by nurses, emerged as a highly effective strategy. In a systematic review with meta-analysis, Ito et al. (2024) evaluated the impact of nurse-led interventions that incorporated AMPA. The results showed reductions in systolic blood pressure ranging from 3.3 to 8.5 mmHg in the short term (up to

6 months), with maintenance of efficacy in long-term follow-ups (over 6 months). Interventions typically included: training patients in the correct measurement technique (positioning, timing, recording); supply of validated monitors; periodic review of AMPA records by nurses during face-to-face consultations or by telemedicine; and adjustments in treatment based on the data, following pre-established protocols or in collaboration with the physician.

In addition to AMPA, monitoring carried out in health units, especially in the context of nurse-led hypertension clinics, proved to be highly effective. Miao et al. (2020), in a randomized clinical trial conducted in an urban community, evaluated a nurse-led hypertension management model. The intervention group participated in regular, structured consultations with nurses, which included standardized BP measurement, symptom review and adherence, and health education. The control group received the usual care. After the follow-up period, the intervention group had a significantly higher rate of hypertension control (68.3% versus 45.7%).

Home visits represent another important monitoring modality, particularly for patients with reduced mobility, who live in remote areas or who face barriers to accessing health services. Setyoadi et al. (2024) investigated the effect of home visits by nurses on the knowledge, adherence to the low-sodium diet, and blood pressure of hypertensive patients in primary care. The visits allowed nurses to assess the home environment, identify contextual barriers (such as availability of healthy foods and family stressors), provide personalized education, and involve family members in the care plan. The results showed significant improvements in all outcomes evaluated.

3.3 MEDICATION ADHERENCE SUPPORT

Non-adherence to antihypertensive drug therapy is one of the main causes of inadequate blood pressure control, affecting approximately 50% to 70% of patients. Nursing interventions focused on improving adherence have demonstrated substantial effectiveness and act on multiple fronts.

Medication management strategies implemented by nurses include: detailed education about the purpose, dosage, timings, and potential side effects of medications; simplification of regimens, where possible, in conjunction with the prescribing physician (prioritizing single-dose daily medications or fixed-dose combinations); provision of memory aids, such as pill organizer boxes, cell phone alarms and reminder apps; and proactive approach to barriers to adherence, such as cost, fear of side effects, negative beliefs about the need for treatment, and complexity of the regimen.

Regular contact and ongoing counseling are key to sustaining adherence. Mantovanil et al. (2021), in a systematic review, compared case management by nurses with usual care for BP control. Case management, which included intensive and personalized adherence support through regular telephone contacts, motivational interviewing, and close follow-up, resulted in better BP control and higher adherence rates compared with usual care.

Nurses also play a crucial role in addressing patients' beliefs and concerns about medications. Using therapeutic communication techniques, they explore patient perceptions, correct common misconceptions (such as the idea that medication can be stopped when BP is controlled), offer strategies for dealing with side effects, and consistently reinforce the long-term benefits of treatment in preventing serious complications such as heart attack and stroke.

3.4 LIFESTYLE MODIFICATION PROGRAMS

Nonpharmacological interventions are the mainstay of SAH treatment, recommended for all patients, regardless of the stage of the disease. Nurses are on the front lines of implementing and supporting these behavioural changes.

In the context of dietary counseling, nursing interventions focus on reducing sodium consumption, educating patients about the main food sources (processed foods, sausages, ready-made spices) and teaching practical strategies to reduce intake, such as reading labels, cooking at home and using herbs and spices instead of salt. Promoting the DASH (*Dietary Approaches to Stop Hypertension*) diet, rich in fruits, vegetables, whole grains, and low-fat dairy products, is another key intervention. Setyoadi et al. (2024) demonstrated that home visits by nurses significantly increased patients' adherence to the low-sodium diet.

The promotion of physical activity is another key area of action. Nurses assess patients' level of physical activity, identify barriers (lack of time, access to safe places, health conditions), and assist in setting realistic and progressive goals, in line with recommendations of at least 150 minutes of moderate aerobic activity per week. Counseling includes guidance on the type, intensity, duration and frequency of exercise, as well as monitoring progress.

For smokers, smoking cessation support is a high-impact intervention. Nurses perform assessment of smoking status and readiness to quit, offer brief or intensive counseling, educate on nicotine replacement therapy options, and refer to specialized programs when available. Stress management is also addressed, recognizing its role as a risk factor and as a barrier to the adoption of healthy habits, with guidance on relaxation techniques and coping strategies.

3.5 NURSE-LED MODELS OF CARE, INCLUDING NURSE CLINICS

Nurse-led models of care represent a structured and comprehensive approach to managing SAH, going beyond isolated interventions. These include nurse-led hypertension clinics, case management programs, and collaborative models.

Nurse-led hypertension clinics are dedicated spaces in PHC where hypertensive patients receive specialized, ongoing care. They are characterized by regular consultations with trained nurses, who follow standardized protocols for evaluation, treatment and follow-up. Depending on the scope of practice and local regulations, nurses may have the authority to initiate or adjust antihypertensive medications, following pre-defined algorithms and in collaboration with physicians. Stephen et al. (2022), in a systematic review with meta-analysis of 32 studies, demonstrated that nurse-led interventions reduced systolic BP by an average of 5.40 mmHg (95% CI: -7.30 to -3.49) and diastolic BP by 2.80 mmHg (95% CI: -4.09 to -1.51) compared with usual care. Vay-Demouy et al. (2025) went further, showing that nurse-led interventions with prescriptive authority achieved even greater reductions: -7.4 mmHg in systolic BP and -3.8 mmHg in diastolic BP.

Case management by nurses is a model of care coordination, particularly useful for patients with greater complexity or multiple comorbidities. It involves initial comprehensive assessment, development of an individualized care plan, coordination of services between different providers, regular monitoring, and patient advocacy within the care network. Silva et al. (2020a) conducted a randomized controlled trial that evaluated case management by nurses for people with hypertension in PHC. In addition to usual care, the intervention group received an initial evaluation visit, an individualized care plan, monthly telephone contact, and coordination with the team. After 12 months, the intervention group showed significantly greater reductions in systolic (-12.41 mmHg) and diastolic (-7.21 mmHg) BP, in addition to better medication adherence, greater knowledge, and better quality of life.

Collaborative care models, in which nurses and physicians work in close partnership, sharing protocols and responsibilities, have proven particularly effective. Jafar et al. (2022) evaluated a multicomponent intervention in Singapore that included PHC team training, standardized protocols, case management by nurses, and SMS reminders. The results showed a significant increase in BP control, from 58.2% in the control group to 74.9% in the intervention group. The 5-year follow-up study, conducted by Yu et al. (2023), demonstrated that these benefits translated into significant reductions in cardiovascular complications and mortality, evidencing the sustainable impact of these models.

Finally, community-based hypertension programs, such as those evaluated by Vedanthan et al. (2020) in rural Kenya and by Kaur et al. (2022) in India, demonstrate the

feasibility and effectiveness of nurse-led interventions in resource-limited settings. These programs, which involve community screening, medication initiation and titration by nurses, and regular follow-up, have been able to substantially improve SAH control rates, indicating potential for expansion of these strategies.

4 DISCUSSION

The present narrative review synthesized a broad and consistent body of evidence that attests to the effectiveness and centrality of nursing care in the management of Systemic Arterial Hypertension in Primary Health Care. The results, from dozens of studies with different designs and carried out in different global contexts, converge to the conclusion that nurse-led interventions produce clinically significant improvements in blood pressure control, treatment adherence and quality of life of hypertensive patients. However, before deepening the analysis of the findings, it is necessary to recognize an important limitation of this synthesis: because this is a narrative and not a systematic review, no formal assessment of the risk of bias of the included studies was carried out, which recommends caution in the absolute interpretation of efficacy figures, especially those of greater magnitude.

First, the reductions in blood pressure observed in the meta-analyses reviewed are remarkable and deserve contextualized analysis. While Stephen et al. (2022) reported a mean reduction of 5.4 mmHg in systolic BP for nurse-led interventions in general, Vay-Demouy et al. (2025) found a reduction of 7.4 mmHg when nurses had prescriptive authority. Even more impressive, Silva et al. (2020a) achieved a reduction of 12.41 mmHg with an intensive case management model. However, it is essential to interpret these numbers in light of the methodological differences between the studies: the greatest effects tend to occur in short-term trials, with intensive follow-up and selected samples; pragmatic and longer-term studies, such as the one by Yu et al. (2023), report more modest but sustained effects. Despite this variation, one finding remains robust: a 5 mmHg reduction in systolic BP is associated with an approximately 10% decrease in the risk of major cardiovascular events. Therefore, even the most conservative effects achieved by nursing interventions translate into tangible benefits for patients' health.

In addition, the effectiveness of nursing interventions can be attributed to multiple mechanisms that act synergistically, which deserve to be made explicit. The first of them is the focus on patient education and empowerment. Unlike a purely prescriptive approach, nurses invest in dialogue, active listening, and the construction of a shared understanding of the disease and its treatment, which enables the patient to take an active role in their own care. Secondly, nurses offer intensive and continuous support to adherence, identifying and

assisting in overcoming practical barriers (cost, forgetfulness, complexity of the regime) and psychological barriers (fears, negative beliefs). Regular follow-up – whether in person, by phone or through digital technologies – creates a commitment that sustains persistence in treatment. Thirdly, nurses have consolidated skills in counseling for behavior change, an area that is known to be challenging in the treatment of SAH. Finally, nurse-led models of care, especially case management and nurse clinics, introduce coordination and continuity that is often lacking in fragmented usual care.

Comparatively, the findings of this review are in line with the broader literature on the management of chronic diseases, which reiterates the importance of multidisciplinary teams, patient-centered care, and support for self-management. The Chronic Care Model, widely accepted as a reference for the organization of care for chronic conditions, places the prepared and proactive health team as one of its fundamental pillars. In this sense, the results presented here confirm that nurses, when adequately trained and inserted in a support system, personify this pillar. It is also noteworthy that the comparison between the different care models reveals important nuances: nursing clinics and case management were superior to isolated interventions, suggesting that the structured and continuous approach is more effective than the sum of specific actions. The study by Vay-Demouy et al. (2025) adds a crucial layer to this discussion by demonstrating that prescriptive authority for nurses significantly enhances the impact of interventions, as it eliminates delays and barriers in medication adjustment.

With regard to implementation in practice, it is necessary to recognize that, despite robust evidence of effectiveness, the generalization of these programs faces significant barriers at multiple levels. At the patient level, treatment abandonment, low health literacy, mistaken cultural beliefs, and socioeconomic factors stand out. At the level of the health system, the chronic scarcity of resources, the fragmentation of care, and restrictive policies that limit the scope of nursing practice are the main obstacles. At the provider level, gaps in knowledge, work overload, and sometimes resistance to expanding the professional role pose additional challenges. On the other hand, the enablers identified include the deliberate adoption of *task-shifting*, the development of simplified and standardized protocols, investment in telehealth, and, crucially, the expansion of the scope of practice with prescriptive authority for trained nurses.

Finally, it is necessary to point out the main gaps in evidence that persist and that should guide future research. While the short- and medium-term benefits are well established, there is a pressing need for more cost-effectiveness studies that rigorously assess the return on investment in nurse-led programs. In addition, more research is needed

to identify the optimal components of multicomponent interventions, as the most efficient and effective combination of elements (education, monitoring, adherence, lifestyle) for different patient profiles and settings is still unclear. It is also recommended that future studies directly compare nurse-led care with physician-led care for uncomplicated hypertension in order to more accurately establish the non-inferiority or superiority of each model. Finally, it is crucial to invest in implementation research that investigates how to adapt and incorporate these evidence-based models in low- and middle-income countries and in vulnerable populations, ensuring that advances in care reach those who need it most.

5 CONCLUSION

This narrative review of the literature, by synthesizing the most relevant evidence produced between 2020 and 2025, allows us to conclude, consistently, that nursing care is a critical and highly effective component for the control of Systemic Arterial Hypertension in Primary Health Care. Nurse-led interventions—ranging from health education and individualized counseling to systematic monitoring, intensive medication adherence support, and complex case management—produce clinically meaningful reductions in blood pressure. These benefits, as demonstrated, translate into a lower risk of cardiovascular events, improved quality of life, and greater patient satisfaction, and are particularly significant when nurses work autonomously and in collaborative models.

Among the organizational models evaluated, nurse-led hypertension clinics and collaborative care demonstrated the best results, especially when associated with prescriptive authority. Compared to usual care, these models achieved additional reductions in systolic blood pressure ranging from 5.4 to 12.4 mmHg, values that, at the population level, would represent a substantial decrease in cardiovascular morbidity and mortality. The effectiveness of nursing practice, therefore, does not lie in a single technical procedure, but in its holistic and patient-centered approach, in the ability to establish lasting bonds, in the competence to educate and empower, and in the ability to coordinate care longitudinally.

However, for all this potential to materialize on a large scale, systemic changes are needed that go beyond the individual will of professionals. Based on the synthesized evidence, it is recommended that health managers and policymakers: invest in continuing education to update PHC nurses; broaden the scope of practice by granting prescriptive authority backed by protocols and oversight; support the implementation of nursing clinics and case management programs; incorporate technologies such as telehealth and remote monitoring; and, fundamentally, value nursing with working conditions and professional recognition that are commensurate with its health impact.

In summary, in view of the solidity of the evidence presented, it is possible to affirm that strengthening the role of nursing in Primary Care is not only a matter of efficiency or optimization of the workforce. Rather, it is a fundamental strategy to improve the quality of care, reduce health inequities and advance in the control of one of the most challenging chronic epidemics of our time. Investing in nursing is investing in the health of the population, and the results of this review make it clear that it is no longer a question of whether nursing care works, but rather how to implement it sustainably and equitably in health systems.

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