

Acupuncture in hypertension and your contributions about nursing diagnoses

Acupuntura na hipertensão arterial sistêmica e suas contribuições sobre diagnósticos de enfermagem

La acupuntura en la hipertensión y sus contribuciones acerca de diagnósticos de enfermería

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ABSTRACT

Objectives: To conduct a reflective analysis of knowledge acquired concerning the use of acupuncture as a complementary treatment to treat individuals with hypertension; and discuss the contributions of acupuncture to nursing diagnoses among hypertensive individuals and those contributions' implications for nursing practice. **Methods:** Integrative literature review presenting a theoretical and philosophical reflection regarding the topic in the last five years. **Results:** The findings were organized into two categories: primary evidence of the practice as complementary treatment to care provided to hypertensive patients; and contributions to care delivery according to nursing-diagnosis based interventions. **Conclusion:** Evidence shows the potential of acupuncture as complementary treatment and the potential for it to be included in the nursing care provided to hypertensive individuals.

Keywords: Hypertension; Acupuncture Therapy; Nursing; Nursing Diagnosis.

RESUMO

Objetivos: Realizar uma análise reflexiva sobre o conhecimento produzido acerca da utilização da acupuntura como tratamento complementar à saúde de pessoas com hipertensão; e discutir as contribuições da acupuntura sobre diagnósticos de enfermagem em pessoas com hipertensão e suas implicações à prática do enfermeiro. **Métodos:** Reflexão teórica a partir de revisão integrativa da literatura sobre a temática nos últimos cinco anos. **Resultados:** Os achados foram organizados e discutidos em duas categorias que apresentam as principais evidências da prática como tratamento complementar à saúde de pessoas hipertensas e suas contribuições para o cuidado a partir da intervenção sobre diagnósticos de enfermagem. **Conclusão:** Existem evidências que apontam o potencial da acupuntura no tratamento complementar de saúde indicando possibilidade de sua inserção no cuidado de enfermagem a pessoas hipertensas.

Palavras-chave: Hipertensão; Terapia por acupuntura; Enfermagem; Diagnóstico de Enfermagem.

RESUMEN

Objetivos: Realizar un análisis reflexivo de los conocimientos producidos por el uso de la acupuntura como tratamiento complementario para la salud de las personas con hipertensión; y discutir las contribuciones de acupuntura en diagnósticos de enfermería en personas con hipertensión y sus implicaciones para la práctica de enfermería. **Métodos:** Reflexión teórica a partir de una revisión integradora de la literatura sobre el tema en los últimos cinco años. **Resultados:** Se organizaron los resultados en dos categorías que analizan las evidencias principales de la práctica como un tratamiento complementario para la salud de las personas hipertensas y sus contribuciones la intervención sobre los diagnósticos de enfermería. **Conclusión:** Hay evidencia el potencial de la acupuntura como un tratamiento complementario de salud que indica la posibilidad de su inclusión en los cuidados de enfermería para las personas hipertensas.

Palabras clave: Hipertensión; Terapia por Acupuntura; Enfermería; Diagnóstico de Enfermería.

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INTRODUCTION

In the past century, infectious diseases were those that most frequently caused premature deaths worldwide. With the current level of technological development and improved socioeconomic and cultural conditions experienced by modern society, noncommunicable chronic diseases (NCDs) are the primary cause of mortality around the world, especially cardiovascular diseases.^{1,2}

Among cardiovascular diseases, systemic arterial hypertension (SAH) is one of the main modifiable risk factors and one of the most important public health problems in Brazil and worldwide.^{3,4} SAH is a multifactor clinical condition, with high prevalence and low management rates, characterized by sustained high blood pressure, i.e., systolic blood pressure (SBP) greater than 140 mmHg and diastolic blood pressure (DBP) greater than 90 mmHg. It is considered a precursor of and potential risk factor for cardiovascular diseases (CVDs) and accounted for 30% (approximately 17 million) of all causes of death and up to 50% of deaths caused by NCDs in the last 10 years.²⁻⁴

Restraining the advancement of NCDs is a considerable challenge for the Brazilian health system, as well as those around the world. International organizations estimate that the global burden of economic losses caused by NCDs between 2011 and 2030 will reach 47 trillion dollars; this is equivalent to 5% of the gross global product in the period.² Given the epidemiological and socioeconomic impact of NCDs, the World Health Organization (WHO) has promoted the development of intervention technologies to prevent, treat and control such diseases.⁵

Various population intervention projects have been developed worldwide since 1970 in order to promote behavioral modifications that will decrease risk factors for NCDs. Currently, however, there is a need for new projects and strategies of great impact and broad population coverage to control and cope with these diseases.⁵

In this context, the WHO recommends the use of complementary and alternative medicine (CAM) or complementary and integrative health practices (CIHP) in health systems around the world to implement complementary therapies in addition to conventional treatments.⁶ CAM/CIHP account for 80% of the care interventions implemented in populations in Africa and 40% of care provided in the Chinese health system. From 40% to 70% of the population in Latin American countries, such as Colombia and Chile, demands and uses this type of therapy.⁶

In Brazil, prevention and treatment strategies and lines of care that deal with NCDs, were enlarged in the last decade due to the expansion of the primary health care, especially the family health strategy and family health support centers, with the incorporation of practices aligned with integral care or acknowledging body-mind-spirit.^{1,7}

CAM/CIHP has gained space in the Brazilian Unified System (SUS) in response to the Integrative and Complementary Health Practices National Policy implemented in 2006 to promote the

use of CIHP in the prevention of diseases, health promotion and recovery, with an emphasis on primary health care. These practices have a continued, humanized and integral nature, and are part of the strategy recommended in the main lines of care promoted by the Brazilian Ministry of Health to care for individuals with chronic diseases, children, and support family health.^{1,7,8} Among these practices, traditional Chinese medicine (TCM)/acupuncture, phytotherapy, meditation, yoga and other body practices originating from TCM/CAM, stand out.^{6,7}

Acupuncture (AP) in its diverse modalities has specific competencies that differ from conventional medicine concerning the care provided to individuals with NCDs, both in prevention and treatment. With its comprehensive and multidisciplinary nature, its purpose is to complement existing orthodox treatment systems by including integral therapeutic protocols aimed at individuals' health and wellbeing.^{9,10}

In its traditional form, acupuncture consists of the insertion of metallic needles at certain points of the body, called acupoints or acupuncture points. It can also incorporate modern technologies that are associated with the traditional technique, such as the application of electrical stimuli (electroacupuncture) or low intensity laser (laser acupuncture), both with results proven in studies and research.¹¹

In contrast with health interventions aligned with the biomedical model, which is based on a fragmented and reductionist view of humans and on a technical approach to health and treatment of disease, AP focuses on the individual. That is, the focus is on the individual and human responses that are triggered when facing a disease, a fact that is related to nursing care and its theoretical-philosophical foundations.^{9,10,12}

This is so because nursing is intended to relieve suffering by establishing nursing diagnoses (NDs) and treating real and/or potential human responses of individuals, families, communities and populations.¹³ A human is a unified whole, constantly exchanging matter and energy with the environment; has individual integrity and manifested characteristics that are more than the sum of its parts, expressed in life patterns that result from events of his/her interaction with the environment at the current moment and prior moments.¹⁴

Therefore, looking away from disease and focusing on the person conceived in her/his wholeness instead expands one's perspective on health care and notions regarding co-responsibility regarding actions that involve the health-disease continuum.^{10,15}

Considering that AP is a still a seldom explored technology applied to the treatment of NCDs in the sphere of nursing care, it is opportune to learn about scientific studies addressing its efficacy, especially when applied to the care of people with SAH. The objectives in considering AP include: to perform a reflective analysis of the knowledge produced so far concerning the use of acupuncture as a complementary treatment for people with SAH and to discuss the contribution of acupuncture to NDs among people with SAH and its implications to the practice of nurses.

METHODS

This is a reflection based on an integrative literature review on the use of AP as complementary treatment for people with SAH. The methodology was developed according to the following process: establishment of a guiding question; establishment of inclusion and exclusion criteria; selection of databases; search for scientific papers addressing the theme; analysis of the information contained in the selected studies; presentation of results; and synthesis. The study's guiding question was: What evidence has been produced regarding acupuncture as complementary therapy for people with SAH?

The search was conducted between November and December 2015 in the Virtual Health Library (VHL) using the following databases: Latin American and Caribbean Literature in Health Sciences (LILACS), Brazilian Nursing Database (BDENF) and Medical Literature Analysis, and Retrieval System Online (MEDLINE), using the descriptors: "Acupuncture", "Hypertension". The Boolean operator [AND] was used between the descriptors, resulting in the following strategy: ["Acupuncture AND Hypertension"].

To systematize the investigation process and selection of studies, the following inclusion criteria were established: being the result of a scientific study and published in the form of paper, thesis or dissertation; being written in Portuguese, English or Spanish; having been published between 2010 and 2015; available in electronic form; addressing the use of systemic AP with or without needles (laser acupuncture) as therapy complementary to the conventional treatment of people with SAH.

Exclusion criteria were: reviews, reports, letters to the editor, or final papers; referring to AP modalities other than the systemic modality, such as auricular acupuncture or cranial acupuncture; not focusing on care provided to individuals with SAH.

After papers were selected, a pair of nurse researchers, experts in AP, read the full texts and applied the inclusion and exclusion criteria and results were then compared. All the studies selected were kept in the review. A critical and detailed analysis was performed in order to answer the guiding question and establish relationships with nursing care. This analysis generated the thematic categorization of data, with organization and summarization of key information concerning the theme proposed.

RESULTS

A total of 228 studies were identified. Sixteen of these met some of the criteria, such as language and year of publication. After reading and applying the remaining inclusion and exclusion criteria, six papers were selected. The review studies were organized in a single table (Table 1), which presents the title, author(s), type of publication, language, identifier, place and year of publication, brief description, results, and level of evidence according to the Oxford Centre for Evidence-Based Medicine.¹⁶

DISCUSSION

In light of the analyzed studies, we verified that AP developed in its diverse modalities and protocols does not constitute an isolated therapy to replace any given therapy, due to its efficacy potential. The result of this analysis confirms the objective of AP focused on reestablishing the harmony of bodily functions, through which appropriate response will be elicited in order to recover and/or maintain an individual's health, therefore, not focusing on the cure of disease.

The analysis of the papers included in this review enable identifying the AP's therapeutic potential as complementary therapy to treat people with SAH, as well as its potential contribution to nursing care based on ND interventions.

Hence, the theoretical reflection proposed here was divided into two thematic categories discussed as follows:

Acupuncture in individuals with hypertension: primary evidence

Decreased blood pressure was observed in all the studies analyzed.¹⁷⁻²³ The experimental or quasi-experimental methods using metallic needles were the most frequently employed, presenting good internal validity and control of variables, in accordance with standards universally recommended for clinical trials, which enable us to infer that AP is an efficacious technology to be implemented in the care provided to people with SAH.¹⁷⁻²⁴

According to the theoretical-philosophical conceptions of TCM/AP, the body is a field that is constantly exchanging energy, called *Qi*, which circulates among tissue, muscles, organs, and viscera through energetic channels called meridians, where acupuncture points are located. When metallic needles penetrate the skin through these points, they mobilize the *Qi* and regulate its flow through the body, balancing it so that manifestations of imbalance, expressed by signs and symptoms present in a pattern of disharmony, are regulated or remedied.^{11,12}

From the biomedical point of view, the insertion of metallic needles in acupuncture points apparently promote the release of endogenous or neurochemical substances, activating immunological and inflammatory responses that result in improved signs and symptoms.²⁵ Regardless of the different conceptions inherent to the models that construct them, there is a point of agreement: by stimulating the body through acupuncture points, AP promotes improved health through self-healing, which in the case of SAH is expressed by decreased SBP and DBP.^{11,12,25}

Therefore, it is possible that improved BP levels are attained through the regulation of *Qi* flow in the meridians, helping to balance *yin* and *yang* in one's body (TCM/AP paradigm), which possibly corresponds to the release of endogenous or neurochemical substances (biomedical paradigm). Nonetheless, there are no clinical studies addressing these substances in isolation to specify what they are, how they act, or how long their effect endures.

Table 1. Synthesis of studies selected for the review

Title	Author	Type of publication/ language/Identifier	Place/year of publication	Description/Results	Level of evidence
Acupuncture for Essential Hypertension: A Meta-Analysis of Randomized Sham-Controlled Clinical Trials	Li DZ, Zhou Y, Yang YN, Ma YT, Li XM, Yu J, Zhao Y, Zhai H, Lao L.	Article/English/DOI: 10.1155/2014/279478	Evidence Based Complementary and Alternative Medicine/2014	Systematic review with meta-analysis of 4 randomized clinical trials (RCT) involving 386 hypertensive individuals. The conclusion was that AP significantly reduced BP when associated with anti-hypertensive medication.	1A
Acupuncture for essential hypertension	Wang J, Xion X, Liu, W.	Article/English/ISSN: 0167-5273	International Journal of Cardiology/2013	Systematic review with meta-analysis including 35 RCTs addressing 2,539 patients. It reports that AP can decrease the systolic and diastolic BP of hypertensive patients.	1A
The Effect of Acupuncture on High Blood Pressure of Patients Using Antihypertensive Drugs	Cevik C, Iseri SO.	Article/English/ISSN: 0360-1293	Acupuncture Electro-therapeutics Research/2013	RCTs addressing 34 patients with hypertension undergoing pharmacological therapy, from 1 to 3 anti-hypertensive drugs from heterogeneous pharmacological groups, varying ACE inhibitors, diuretics, and beta blockers, for more than 24 months. The analyzed group presented positive results in the face of an AP intervention, with significant decrease in both systolic and diastolic BP.	1B
The effects of acupuncture on the levels of blood pressure and nitric oxide in hypertensive patients	Severcan C, Cevik C, Acar HV, Sivri AB, Mit SS, Geçioğlu E, Pasaoglu OT, Gündüztepe Y.	Article/English/ISSN 03601293	Acupuncture Electro-therapeutics Research/2012	Quasi-experimental study developed by the Medical School of Gazi University, in Ankara/Turkey, with 32 hypertensive individuals aged between 32 and 65 years old, associating AP and conventional treatment during ten weeks. The analyzed group presented decreased systolic and diastolic blood pressure.	2B
Can acupuncture affect the circadian rhythm of blood pressure? A randomized, double-blind, controlled trial	Kim HM, Cho SY, Park SU, Sohn IS, Jung WS, Moon SK, Park JM, Ko CN, Cho KH.	Article/English/ ISSN:1075-5535	Journal of Alternative and Complementary Medicine/2012	RCT developed in Korea with 32 hypertensive people aged from 18 to 70 years old. The best response from the application of AP was decreased diastolic BP, especially at night. The systolic BP decreased, as well, however, with less significance.	1B
Acupuncture for essential hypertension.	Kim LW, Zhu J.	Article/English/ISSN: 1075-5535	Journal of Alternative and Complementary Medicine/2010	RCT with 15 hypertensive individuals who received AP. The results revealed that AP improved the endothelial dysfunction of hypertensive patients, decreasing systolic and diastolic BP levels.	1B

Decreased BP and its effective control minimizes the risk of CVDs and associated comorbidities, especially among non-diabetic hypertensive individuals who have no active kidney disease.^{3,4,26} It is worth noting that simulation and/or placebo techniques investigated in the analyzed studies were not linked to decreased blood pressure. The most significant decrease was observed among those exposed to AP associated with pharmacological treatment when compared to those who received either medication only or AP.^{17-19,22,23} This shows that AP employed as a complement to conventional treatment can produce more satisfactory results.

The same is observed in randomized clinical trials (RCT) using AP in its laser acupuncture modality.²³ We highlight one study that was conducted by nurses who verified significant results for the BP levels and NDs of hypertensive individuals.²⁴

The potential action of the laser acupuncture technique was not compromised or harmed when compared to the effectiveness response reported by studies using metallic needles or needles associated with electrotherapy,^{23,24} though there are no studies employing the three modalities and thus allowing comparisons to be performed among the techniques in regard to effectiveness.

The systematic reviews with meta-analysis included in this paper also presented statistically significant confidence intervals, though the studies' methodological and clinical heterogeneity resulted in varying inconsistent measures, from very low to high percentiles, aspects which must be considered to be limitations.^{17,23}

Such variation may have been influenced by sample losses reported by the RCTs. In some studies such loss was more prevalent in the placebo group and we infer that as the participants in this group did not perceive any improvement in their health condition (e.g., decreased blood pressure), they withdrew from the study and no longer attended the experimental sessions. Other relevant limitations include the use of placebos and the adoption of standard protocols, necessary for conducting an RCT.

The release of *Qi* can be perceived by patients during the treatment as needle sensations, classified by the TCM/AP as *Hebiqi* or *De Qi*, which manifests as a feeling of heaviness or shock (electrical), lightness, tingling, hot or cold. This sensation usually occurs near the puncture site and may spread along the meridian and adjacent regions.^{12,27} *Hebiqi* can also be perceived by the acupuncturist as a tightening sensation, as if the needle is being pulled in or pushed out; by observing small muscle spasms around the acupuncture points; or when the needle is held in place and it is necessary to maneuver it to release it.¹²

These aspects hinder the use of metallic needles in clinical studies (or effectiveness trials), especially in high-level evidentiary studies such as RCTs, which are required to be blind and to contain sham procedures (simulation) and/or the use of a placebo. The reason is that both the participant and acupuncturist may be able to recognize whether *Hebiqi* took place or not and, in this case, verify whether the puncture area is or not an acupuncture point, compromising the study's reliability.

A similar situation occurs in the use of standard protocols in research because TCM/AP is based on integrality and holism, taking into consideration that people may present different needs, even if the base manifestation is common to all. Hence, the adoption of these protocols that depend on theoretical conceptions adopted for their construction may meet the guidelines of a biomedical paradigm but diverge from the philosophical foundations that are at the foundations of TCM/AP. Some of the studies reveal a concern with these aspects, as the authors made an effort to describe manifestation of SAH in light of TCM/AP to justify the choice and construction of protocols.^{18,20,24}

AP, as is the case with other CIHP that address the care perspective recommended by the SUS, is not intended to replace other therapeutic modalities but complement medication technology in health care.^{7,11} Therefore, AP is indicated as complementary treatment in SAH, though other studies addressing its clinical effectiveness when applied to human health are necessary, especially studies focusing NCDs.

Acupuncture in NDs of individuals with SAH and its contributions to care delivery

Evidence of studies, the object of this analysis, reveals that the benefits of AP on SAH are not limited to BP levels. In addition to decreasing SBP and DBP, AP improves events related to the disease's clinical progression, such as insomnia, stress, and anxiety. When these events are investigated and identified by nurses within the nursing process, they are seen as affected human responses, in which nurses are supposed to intervene.¹³

Even though the use of AP as an intervention technology within ND is indicated in some studies to be a therapeutic possibility, research addressing its effectiveness and in terms of evidence-based practice is still incipient.^{9,11,28,29}

One RCT conducted by Brazilian nurses investigating AP in the laser acupuncture modality in the care provided to individuals with SAH reports significant effects on the following NDs: anxiety, energy field disturbance, activity intolerance, fatigue, insomnia, chronic and acute pain, imbalanced nutrition, and ineffective health maintenance.²⁴

These types of studies, when providing clinical evidence regarding the influence of AP on NDs, can promote AP practiced by acupuncturist nurses and support referrals from generalist nurses or nurses from other specialties in their care plan, specifically, considering the focus of this study, care plans for those with SAH.

Nonetheless, even though AP is a therapeutic alternative legally supported by the regulatory devices of the nursing profession, its use as technology applied to care is directly related to a paradigmatic view constituted around the practice of nurses and theoretical and philosophical concepts that support it.^{28,29}

The same occurs for the various types of CIHP. The growing search for CIHP on the part of the population and healthcare professionals is evident; however, the delivery of complementary care by nurses is still infrequent, considering the factors that influence its advancement in the health field. With the exception

of AP, which is regulated by Resolution COFEN 326/2008, the remaining CIHP lack specific regulation, considering that Resolution COFEN 0500/2015 disallowed CIHP, which previously were established by COFEN 197/97 as a specialty and/or qualification of nursing professionals.³⁰

The remaining factors that favor this situation include the fact that CIHP are seldom addressed in undergraduate nursing programs, with few theoretical and practical discussions concerning the limitations and possibilities they represent for care delivery. Additionally, resistance on the part of health systems and health institutions - given a philosophical, political and social view strongly rooted in the biomedical model that prevails in the health field - results in very limited flexibility and use of CIHP.^{28,29}

Such aspects corroborate a lack of knowledge and lack of interest on the part of some professionals regarding CIHP and support the defense of class interests in medicalization. It is timely to consider the inclusive nature of CIHP, highlighted by Decree 971, Ministry of Health. In spite of this, medical professionals dispute, with other healthcare workers and their representative councils, the right to establish, especially AP, as a practice exclusive to medical professionals.

FINAL CONSIDERATIONS

Decreased BP was reported by all the studies investigating individuals with SAH who received AP as a therapy complementary to a pharmacological regimen, which indicates there is evidence of AP's effective potential. Regardless of the results presented here, one has to take into account that the development of quasi-experimental and experimental studies employing AP is methodologically complex.

The adoption of blind methods, as well as placebo, hinders the process, and often, generates important biases. If we analyze the methodological designs and the way control is employed, we see that the analyst may not take into account the theoretical and philosophical characteristics upon which AP is supported and in which it is employed as a therapeutic intervention. Perhaps, this fact led to some methodological limitations and inconsistencies in the studies analyzed, including the meta-analyses. In this sense, dialogue with experts in the AP field is needed for them to contribute to a better understanding of the practice as a whole, indicating peculiar aspects of it and, thereby, enabling a deeper analysis.

In regard to AP as a nursing therapeutic intervention, we verify its effectiveness in NDs. This therapy can contribute, among other things, to adherence to pharmacological treatments and lifestyle modifications for people with SAH, so that nurses can indicate AP in their care plans during nursing consultations.

The reflection proposed here is expected to promote a more attentive view of the relationship between nursing care and AP, specifically, to encourage studies addressing the effective contribution of AP to the science and practice of nursing within the scope of NDs. For that, the use of sophisticated methodologies is essential to permit the safe and effective use of AP when delivering care, including to individuals with SAH.

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