

Auriculotherapy and reducing chronic musculoskeletal pain: integrative review

Auriculoterapia e redução da dor musculoesquelética crônica: revisão integrativa
Auriculoterapia y reducción del dolor musculoesquelético crónico: revisión integrativa

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ABSTRACT

Objectives: to describe the scientific evidence on the use of auriculotherapy to reduce chronic musculoskeletal pain in adults and the elderly. **Methods:** integrative literature review conducted in the Latin American and Caribbean Health Sciences, SciVerse Scopus and MEDLINE databases (via National Library of Medicine), in March 2019, with no time frame. **Results:** 14 original scientific articles were analyzed, 64.3% of which were classified with level of evidence 2. All productions show the benefit of auriculotherapy in reducing chronic musculoskeletal pain, especially in the lumbar spine (42.9%). The treatment was developed in one or more sessions, using semi-permanent needles (42.9%) and electroauriculotherapy (21.4%). **Conclusions:** auriculotherapy was effective in reducing chronic musculoskeletal pain, showing itself as an alternative to be used for the promotion and recovery of individuals' health.

Descriptors: Auriculotherapy; Musculoskeletal Pain; Chronic Pain; Nursing; Review.

RESUMO

Objetivos: descrever as evidências científicas sobre o uso da auriculoterapia na redução da dor musculoesquelética crônica em adultos e idosos. **Métodos:** revisão integrativa de literatura realizada nas bases de dados Literatura Latino-Americana e do Caribe em Ciências da Saúde, SciVerse Scopus e MEDLINE (via National Library of Medicine), em março de 2019, sem recorte temporal. **Resultados:** foram analisados 14 artigos científicos originais, sendo 64,3% classificados com nível de evidência 2. Todas as produções mostram o benefício da auriculoterapia na redução da dor musculoesquelética crônica, em especial na região da coluna lombar (42,9%). O tratamento foi desenvolvido em uma ou mais sessões, pelo uso de agulhas semipermanentes (42,9%) e eletroauriculoterapia (21,4%). **Conclusões:** a auriculoterapia foi eficaz na redução da dor musculoesquelética crônica, mostrando-se como uma alternativa a ser utilizada para a promoção e recuperação da saúde dos indivíduos.

Descritores: Auriculoterapia; Dor Musculoesquelética; Dor Crônica; Enfermagem; Revisão.

RESUMEN

Objetivos: describir las evidencias científicas sobre el uso de la auriculoterapia en la reducción del dolor musculoesquelético crónico en adultos y ancianos. **Métodos:** revisión integrativa de literatura realizada en las bases de datos Literatura Latinoamericana y de Caribe en Ciencias de la Salud, SciVerse Scopus y MEDLINE (via National Library of Medicine), en marzo de 2019, sin recorte temporal. **Resultados:** han sido analizados 14 artículos científicos originales, siendo 64,3% clasificados con nivel de evidencia 2. Todas las producciones muestran el beneficio de la auriculoterapia en la reducción del dolor musculoesquelético crónico, en especial en la región de la columna lumbar (42,9%). El tratamiento ha sido desarrollado en una o más sesiones, por el uso de agujas semipermanentes (42,9%) y electroauriculoterapia (21,4%). **Conclusiones:** la auriculoterapia ha sido eficaz en la reducción del dolor musculoesquelético crónico, mostrándose como una alternativa a ser utilizada para la promoción y recuperación de la salud de los individuos.

Descriptorios: Auriculoterapia; Dolor Musculoesquelético; Dolor Crónico; Enfermería; Revisión.

INTRODUCTION

When considering the musculoskeletal system, the scientific literature has shown high rates of painful symptoms in the Brazilian population, especially in adults⁽¹⁻³⁾. The presence of symptoms such as musculoskeletal pain (MSP), tingling and paresthesia is considered as a warning sign to individuals, as it may indicate some biological change⁽⁴⁾.

In this scenario, MSP results from repetitive effort, overuse and work-related musculoskeletal disorders⁽⁵⁾. It is classified as acute or chronic. In particular, the latter is defined as persistent or recurrent, that is, it persists beyond the normal time for tissue healing and has a minimum duration of three months⁽⁶⁾. The consequences of chronic MSP represent negative, personal and economic impacts⁽⁷⁾. These include physical disability, reduced functionality and productivity, as well as temporary or permanent leave from work⁽⁸⁾.

The treatment of chronic musculoskeletal symptoms can be through pharmacological resources or not, or with the combination of both. Among the non-pharmacological therapeutic resources, integrative and complementary practices (ICPs) stand out. They involve natural stimuli that promote disease prevention, health promotion and recovery. In Brazil, these practices were incorporated into Health Care in the 1980s, through the creation of the Unified Health System, in order to promote the inclusion of new health strategies and practices⁽⁹⁾.

However, only in 2006, ICPs were made official in Health Care through the National Policy of Integrative and Complementary Practices. At that time, they were constituted by five practices: Traditional Chinese Medicine (acupuncture, homeopathy, medicinal plants, phytotherapy and thermalism), crenotherapy and anthroposophical medicine⁽¹⁰⁾. Subsequently, in 2018, the Unified Health System started to have 29 ICPs available for access by the population, including auriculotherapy.

Auriculotherapy or auricular acupuncture uses reflex points in the outer ear to treat symptoms and diseases. As a mechanism of action, the pinna presents an abundant innervation composed of the auriculotemporal nerves, auricular branch of the vagus nerve, minor occipital and major auricular. They are responsible for electrical stimuli through the Alpha, Beta and Gamma fibers, for the stimulation of certain points, which will transmit information to nervous system structures such as: cranial nerves, limbic system, thalamus, hypothalamus, reticular formation, cerebellum and cerebral cortex⁽¹¹⁾.

This practice is based on the precepts of Traditional Chinese Medicine, is easy to apply, uses non-invasive materials and has minimal side effects⁽¹²⁾. The national and international scientific literature has shown positive results in the treatment of several diseases, both psychic and physical⁽¹²⁻¹⁵⁾, showing itself, in this sense, as a promising practice⁽¹¹⁾.

Given the above, the interface with the field of nursing and its commitment to the health of people in all instances of their lives stands out. In addition, the practice of auriculotherapy can be developed by qualified nurses, according to Resolutions nº 581/2018 and nº 585/2018 of the Federal Nursing Council⁽¹⁶⁻¹⁷⁾, which regulate ICPs and acupuncture, respectively, as one of the nurse's specialties.

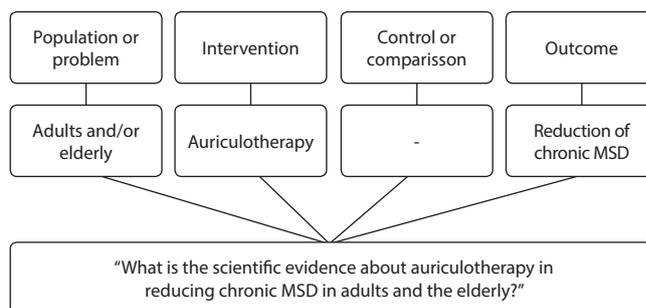
OBJECTIVES

To describe the scientific evidence on the use of auriculotherapy to reduce chronic MSP in adults and the elderly.

METHODS

It is an integrative literature review⁽¹⁸⁾. In carrying out this method, six steps were taken: identification of the theme and formulation of the research question; establishment of inclusion and exclusion criteria for articles; definition of the information to be extracted from the selected articles; evaluation; interpretation of results; and synthesis of evidenced knowledge⁽¹⁸⁾.

To elaborate the research question, the PICO strategy was used, in which adults and / or the elderly were adopted as P (population); I (intervention), auriculotherapy; and O (outcome), the reduction of chronic MSP (Figure 1)⁽¹⁹⁾. In this integrative review, the third element, that is, the comparison (C), was not used. Thus, the review question was formulated: "What is the scientific evidence about auriculotherapy in reducing chronic MSP in adults and the elderly?"



Note: MSP (musculoskeletal pain).

Figure 1 – Description of the PICO, Brazil strategy, 2019

The selection of articles was carried out in March 2019, in the Latin American and Caribbean Health Sciences (LILACS), SciVerse Scopus (Scopus) and MEDLINE databases (via National Library of Medicine - PubMed). For the search, the following inclusion criteria were considered: original articles (from primary studies), published in Portuguese, English or Spanish, available in electronic support online and that answered the review question. Exclusion criteria: articles developed with participants who were under 18 years old. There was no time cut. Duplicate articles were considered only once. Chronic MSP was defined as chronic MSP lasting more than three months, according to the classification of the Brazilian Society for the Study of Pain⁽²⁰⁾.

From this, the search strategy was formulated in the LILACS database ("auriculotherapy" OR "auricular acupuncture") AND ("chronic pain" OR "low back pain" OR "cervicalgia" OR "cumulative traumatic disorders"); MEDLINE (via PubMed) (((((((("musculoskeletal pain" [MeSH Terms]) OR "chronic pain" [MeSH Terms]) OR "low back pain" [MeSH Terms]) OR "neck pain" [MeSH Terms]) OR ("musculoskeletal pain" OR "chronic pain" OR "low back pain" OR "neck pain"))) AND (("auriculotherapy" [MeSH Terms]) OR ("auriculotherapy" OR "auricular acupuncture"))); and, in Scopus TITLE-ABS-KEY ("musculoskeletal pain" OR "chronic pain" OR "low back pain" OR "neck pain") AND ("auriculotherapy" OR "auricular acupuncture" OR "auricular therapy").

The productions were exported to the Endnote software, in order to assist in the selection of studies. First, the titles and

abstracts of all items that responded to the primary search were read. Subsequently, the productions were read in full. The study selection process was carried out by two reviewers independently. When in a situation of divergence, a consensus was sought with the support of a third reviewer. This phase is represented in Figure 2.

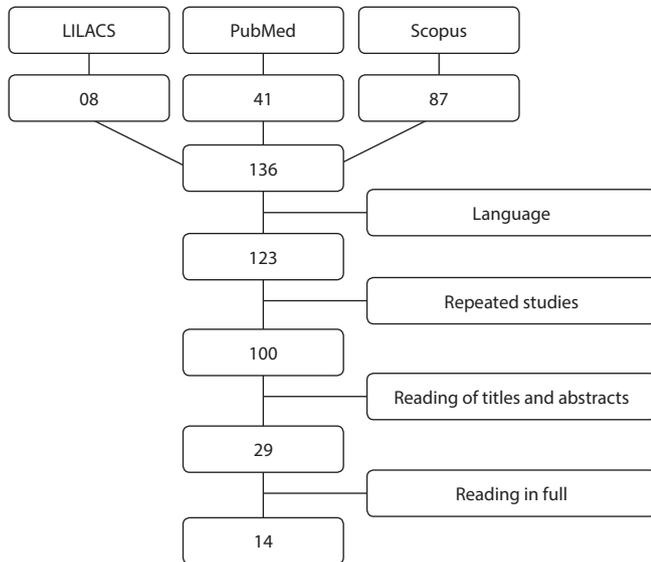


Figure 2 – Flow of the selection of studies included in the corpus of the integrative review, from the databases of Latin American and Caribbean Literature in Health Sciences, SciVerse Scopus and National Library of Medicine, Brazil, 2019

For the categorization phase of the studies, a synoptic table was developed, built in the text editor Microsoft Word 2010, containing variables related to the characterization of the articles (methodological design, level of evidence, type / location of MSP, participants and duration, ear points, material used [intervention and control, number of sessions], evaluation and main results).

The level of evidence of primary studies was also classified according to the type of clinical question in the studies, which may be: of significance; prognosis, prediction or etiology; and intervention, treatment or diagnostic / diagnostic test⁽²¹⁾.

RESULTS

With the studies in full, they were characterized according to methodological design, level of evidence, type / location of MSP, participants and duration, ear points, material used (intervention and control, number of sessions), evaluation and results. It is shown in Chart 1.

Of the 14 studies included in this review, Brazil is highlighted as the country that most published and conducted the most research on the subject in question (N = 5; 35.7%), specifically in the states of Paraná⁽²²⁾, São Paulo^(23,28,30) and Minas Gerais⁽³³⁾. Next, there are China (N = 4; 28.6%), Austria (N = 2; 14.3%), Germany (N = 2; 14.3%) and the United States (N = 1; 7.1%). As for the place of the study, physiotherapy clinics and / or rehabilitation center^(22,24,33), long-term care institution for the elderly⁽³¹⁻³²⁾, university⁽²⁶⁻²⁸⁾ and military region⁽³⁴⁾. The others did not describe the study location^(14,23,25,29-30).

Chart 1 – Characterization of the articles analyzed in the integrative review, Brazil, 2019 (N = 14)

Title	Design, LE and year of publication	Type / location of pain	Participants and duration	Auricular points	Intervention and control	Evaluation and result
Auriculotherapy in the treatment of individuals affected by work-related musculoskeletal disorders (wrmd) / repetitive strain injuries (RSI) ⁽²²⁾	Before and after clinical trial LE = 3 Year: 2006	Work-related diseases (WRD)	Participants: 12 (workers) Duration: Ten sessions (twice a week)	Apex of the ear, <i>shen men</i> , kidney, sympathetic, liver, spleen-pancreas, points related to painful areas	Rapeseed seeds	Evaluation: Visual Analog Scale Result: reduction of pain (p <0.001)
Evaluation of atrial acupressure in painful shoulder syndrome: a case study ⁽²³⁾	Case study LE = 6 Year: 2013	Painful shoulder syndrome	Participants: 1 (military police) Duration: 12 sessions (weekly)	<i>Shen men</i> , kidney, sympathetic, shoulder, shoulder joint and clavicle	Crystal spheres	Evaluation: Penn Shoulder Score Result: pain reduction and sleep improvement
Exercise and Auricular Acupuncture for Chronic Low-back Pain: A Feasibility Randomized-Controlled Trial ⁽²⁴⁾	Randomized clinical trial LE = 2 Year: 2012	Lower back	Participants: 51 (students) Duration: 12 weeks (6 face-to-face and 6 telephone support)	<i>Shen men</i> , lumbar spine and <i>cushion</i>	Intervention: auriculotherapy (semi-permanent needles) and physical exercise Control: physical exercise	Evaluation: <i>Oswestry Disability Questionnaire</i> ; Analogic visual scale Result: reduction of pain; and use of pain relief medication in the intervention group (73.9%) compared to control (41.2%)
Multimodal Care in the Management of a Patient with Chronic Tendinopathy of the Biceps Femoris: a Case Report ⁽²⁵⁾	Case study LE = 6 Year: 2017	Right femoral muscle	Participants: 1 (patient) Duration: Eight sessions (twice a week) and three sessions (weekly)	Apex of the ear, <i>shen men</i> , sympathetic, liver, spleen, kidney, liver yang, hip	Auriculotherapy combined with dry needling	Evaluation: Numerical Pain Scale Result: reduction of pain, fatigue, symptoms of anxiety and tension; and improving sleep quality

To be continued

Chart 1

Title	Design, LE and year of publication	Type / location of pain	Participants and duration	Auricular points	Intervention and control	Evaluation and result
Electrical Stimulation of Auricular Acupuncture Points Is More Effective Than Conventional Manual Auricular Acupuncture in Chronic Cervical Pain: A Pilot Study ⁽²⁶⁾	Randomized clinical trial LE = 2 Year: 2003	Cervical	Participants: 21 (patients) Duration: Six sessions (weekly)	<i>Shen men</i> , cervical spine and <i>cushion</i>	Intervention: electroacupuncture Control: auriculotherapy (semi-permanent needles)	Evaluation: Visual Analog Scale Result: greater reduction in chronic cervical pain and medication use; improvement in sleep quality and psychological well-being in the intervention group, when compared to control (p <0.05)
The Short- and Long-Term Benefit in Chronic Low Back Pain Through Adjuvant Electrical Versus Manual Auricular Acupuncture ⁽²⁷⁾	Randomized clinical trial LE = 2 Year: 2004	Lower back	Participants: 61 (patients) Duration: Six sessions (weekly)	<i>Shen men</i> , lumbar spine and <i>cushion</i>	Intervention: electroacupuncture Control: auriculotherapy (semi-permanent needles)	Evaluation: Visual Analog Scale Result: greater pain reduction in the intervention group, when compared to control (p < 0.001) and medication use (p < 0.001); improvement in psychological well-being and sleep
Effect of a single session of ear acupuncture on pain intensity and postural control in individuals with chronic low back pain: a randomized controlled trial ⁽²⁸⁾	Randomized clinical trial LE = 2 Year: 2016	Lower back	Participants: 80 (patients) Duration: One session	<i>Shen men</i> , lumbar spine and <i>cushion</i>	Intervention: auriculotherapy (semipermaning needles) Control: ultrasound on but not activated	Evaluation: Numerical Pain Scale Result: greater pain reduction in the intervention group when compared to the control group (p = 0.032)
Auricular therapy for chronic pain management in adults: A synthesis of evidence ⁽²⁹⁾	Systematic review and meta-analysis LE = 1 Year: 2015	Chronic pains	Participants: 12 to 265 (patients) Duration: One to 12 weeks	Most used: <i>shen men</i>	Vaccaria seeds and semi-permanent needles (electrostimulation)	Evaluation: Visual Analogue Scale; Numerical Pain Scale Result: reduced intensity of chronic low back pain and tension headaches
Efficacy of Auricular Acupressure for Chronic Low Back Pain: A Systematic Review and Meta-Analysis of Randomized Controlled Trials ⁽¹⁴⁾	Systematic review and meta-analysis LE = 1 Year: 2017	Lower back	Participants: 19 to 74 (adult patients) Duration: Two to 12 weeks	Most used: <i>shen men</i> , subcortex, lumbosacral region, liver, kidney and sympathetic	Vaccaria seeds and metal spheres	Evaluation: Visual Analog Scale, Verbal Rating Scale, Brief Pain Inventory Short Form Result: pain reduction (p < 0.001)
Evaluation of the immediate effect of auricular acupuncture on pain and electromyographic activity of the upper trapezius muscle in patients with nonspecific neck pain: A randomized, single-blinded, sham-controlled, crossover study ⁽³⁰⁾	Randomized clinical trial LE = 2 Year: 2015	Músculo trapézio e cervicalgia unspecific	Participantes: 24 (pacientes) Duration: One session	Grupo-intervenção: Cintura escapular e ombro Placebo: regions that were unrelated to the outcome	Intervenção: agulhas semipermanentes Placebo: semi-permanent needles	Avaliação: Escala Numérica da Dor Result: pain reduction (p <0.001) in both groups
Longitudinal changes in the disability level of the elders with low back pain after auriculotherapy ⁽³¹⁾	Randomized controlled clinical trial LE = 2 Year: 2008	Backache	Participants: 60 (elderly patients) Duration: Three sessions (weekly)	<i>Shen men</i> , kidney, bladder, region, lumbosacral region, liver, spleen and coccyx	Intervention: magnetic spheres Control: vaccaria seed	Evaluation: Aberdeen low back pain disability scale Result: the intervention group showed greater pain reduction, improved physical and functional capacity and abilities (p <0.001) when compared to the control group

To be continued

Chart 1 (concluded)

Title	Design, LE and year of publication	Type / location of pain	Participants and duration	Auricular points	Intervention and control	Evaluation and result
Auriculotherapy on low back pain in the elderly ⁽³²⁾	Randomized controlled clinical trial LE = 2 Year: 2007	Backache	Participants: 60 (elderly patients) Duration: Three sessions (weekly)	<i>Shen men</i> , kidney, bladder, lumbosacral region, liver, spleen and coccyx	Intervention: magnetic spheres Control: vaccaria seed	Rating: Chinese Pain Intensity Verbal Rating Scale Result: the intervention group showed greater pain reduction when compared to the control group (p <0.001)
Effects of auricular acupuncture on chronic pain in people with back musculoskeletal disorders: a randomized clinical trial ⁽³³⁾	Randomized clinical trial LE = 2 Year: 2019	Pain in the spine	Participants: 110 (adults and the elderly) Duration: Five sessions (weekly)	Intervention group: <i>Shen men</i> , kidney, sympathetic nerve, points of restoring energy balance, cervical, thoracic and / or lumbar vertebrae Placebo group: Eye point	Intervention and placebo: semi-permanent needles Control: received no intervention	Evaluation: Brief Inventory of Pain; digital algometry Result: there was a reduction in pain intensity in the intervention and placebo group between the initial and final evaluation (p < 0.05), and in the intervention group between the initial and follow-up evaluation (p < 0.05)
Auricular Acupuncture for Chronic Pain and Insomnia: A Randomized Clinical Trial ⁽³⁴⁾	Randomized clinical trial LE = 2 Year: 2018	Chronic pains *	Participants: 45 active and / or retired military personnel Duration: 1 session	Cingulate Gyrus, Thalamus point, Omega 2, Point Zero and <i>Shenmen</i>	Intervention: semi-permanent needle Control: actigraph device (non-invasive method to monitor human rest / activity cycles)	Assessment: Brief Inventory of Pain Result: the intervention group showed greater reduction in pain (p = 0.001), insomnia (p = 0.018) and better satisfaction with life (p = 0.007) when compared to the control group

Note: LE (Level of evidence); * Study contemplates the treatment of chronic pain and insomnia.

In relation to the academic background of the authors, Physiotherapy stands out^(22,28,30), Nursing^(14,23,29,31-33), Medicine^(14,26-27,34), Health Sciences and Rehabilitation⁽²⁴⁾, Basic and Clinical Sciences⁽²⁵⁾ and Epidemiology⁽¹⁴⁾. With regard to the year of publication of the studies, there has been an increase in scientific production in the last five years (2015 to 2019), which points to a relatively current production.

With regard to methodological designs, clinical trials stood out: randomized (N = 7; 50%) and randomized controlled trials (N = 2; 14.3%). In addition, there was a case study (N = 2; 14.3%), systematic review and meta-analysis (N = 2; 14.3%) and of the type before and after (N = 1; 7.1%).

As for the levels of evidence (Figure 3), all studies presented the type of clinical question aimed at intervention or treatment, being classified as level 2 (N = 9; 64.3%).

There was a predominance of productions that researched auriculotherapy with patients (N = 9; 64.2%) who reported chronic MSP^(14,25-30,32-33). Auriculotherapy treatment was applied to adults and / or the elderly, especially in the lumbar spine (N = 6; 42.9%)^(14,24,27-28,31,32). For treatment, the most used ear points were those related to the region of pain and the *Shen men* (N = 13; 92.9%).

It was observed that there was a reduction in chronic MSP between the first and the last application of auriculotherapy (Chart 2). Different methods and materials were used for application. With regard to the electroacupuncture technique (N = 3; 21.4%), it was evidenced that this presented significant results (p

<0.05) in terms of the reduction of chronic pain in the cervical and lumbar region, in comparison with the use of semi-permanent needles for 48 hours⁽²⁶⁻²⁷⁾.

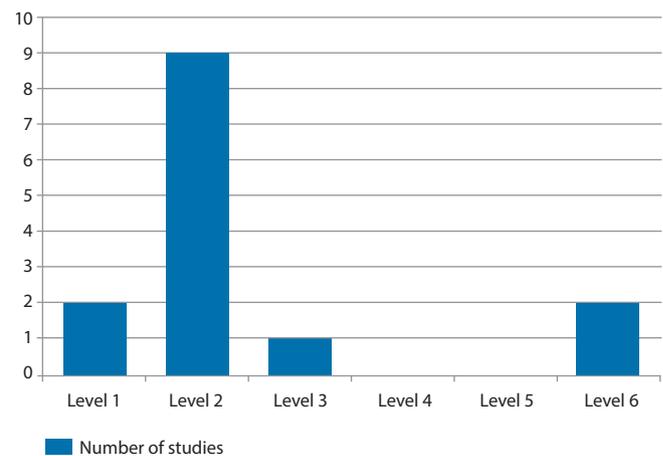


Figure 3 – Distribution of articles regarding the level of evidence⁽²¹⁾, Brazil, 2019 (N = 14)

However, studies have found that auricular therapy performed using semi-permanent needles (N = 6; 42.9%), metallic spheres (N = 2; 14.3%) and seeds (N = 1; 7.1%) also obtained positive results in the reduction of chronic MSP^(22-24,26,30-31,33-34). In addition, it has been shown that auriculotherapy can have a lasting effect on the relief of chronic MSP within one month after the end of treatment⁽²⁹⁾.

As for the reduction of the intensity of chronic MSP, the use of auriculotherapy as a therapy was favorable in the studies, as shown in Chart 2. A drop in pain intensity scores stands out, especially in those who used the Visual Analogue Scale, with a maximum reduction of 5 points^(22,25). Reductions were also observed with percentages of 10.6% and 46.7% on the intensity of this chronic symptomatology^(14,23-24,28-29). However, there are studies that did not provide quantitative data on the reduction of pain intensity, which made it impossible to include them in Chart 2.

Chart 2 – Pain intensity before and after the intervention, according to the instruments used, Brazil, 2019

Evaluation tool	Groups	Pain intensity*		Number of sessions
		Before	After	
Analogic visual scale ⁽²²⁾	-	5.86 (±2.23)	1.19 (±1.18)	10
PSS-Brazil ⁽²³⁾	-	0.0% [†]	46.7% [†]	12
Analogic visual scale ⁽²⁵⁾	-	6	1	19
Numerical Pain Scale ⁽³⁰⁾	Intervention	4,25 (±1,13)	2,25 (± 0,97)	4
	Placebo	4,00 (±0,73)	2,33 (±1,07)	
Chinese Pain Intensity Verbal Rating Scale ⁽³²⁾	Intervention	2.73 (±0.74)	1.87 (±0.68)	3
	Control	2.47 (±0.78)	2.27 (±0.58)	
Brief Inventory of Pain ⁽³³⁾	Intervention	4.86 (±2.79)	2.46 (±3.03)	5
	Placebo	4.89 (±2.74)	2.89 (±2.98)	
	Control	3.68 (±3.11)	3.65 (±3.35)	
Brief Inventory of Pain ⁽³⁴⁾	Intervention	4.7 (±2.0)	3,1 (±1.8)	1
	Control	3.6 (±1.7)	3.6 (±2.3)	

Note: *Pain intensity patterns vary according to the instruments used. † Percentage of improvement.

Furthermore, in addition to the intensity of the pain, the evidence indicates that auriculotherapy proved to be favorable in helping to reduce pain, by relieving symptoms^(14,24,26,27,29,31), physical disability^(24,31), aid in physical and functional skills⁽³¹⁾. There was also an improvement in the quality of sleep and aspects of well-being of individuals^(23,26-27,31-32), who, similarly, showed a reduction in the consumption of medications during the treatment period with auriculotherapy^(24,26,34).

DISCUSSION

The analyzed articles demonstrate that auriculotherapy is an effective technique to reduce chronic MSP and is well accepted by individuals. This evidence is of great relevance for assistance, considering that auriculotherapy is configured as a therapeutic resource of easy application and with a relative absence of side effects, providing assistance in health promotion and recovery⁽¹⁵⁾.

Chronic pain, according to the principles of Traditional Chinese Medicine, may result from blood stagnation, which will block the channels, that is, the meridians, causing a painful process and inefficiency in the activity of the organs^(29,35). From this perspective,

it is believed that the auricular points and the meridians are associated with Zang Fu, that is, with the organs and viscera that correspond to the organism's functions⁽²⁹⁾. It is noteworthy, therefore, that the therapeutic principle of Traditional Chinese Medicine is to relax the muscles and promote blood circulation, which, therefore, will activate the meridians and regulate the functions of the Zang Fu, providing pain control and relief^(29,35).

The most researched anatomical region for pain reduction, among the studies, was the lumbar spine. Pain in this region affects around 60% to 80% of the world population, and 20% of individuals progress to the development of chronic pain⁽²⁹⁾. This is considered a complex and heterogeneous medical condition, as it presents a variety of symptoms and impacts on people's daily lives⁽³⁶⁾. It can favor physical and functional incapacity, which are responsible for causing a compromise in the development of daily activities, as well as impairing the quality of sleep⁽³⁷⁾.

The level of physical disability may vary according to the intensity and threshold of pain⁽¹⁵⁾. Therefore, by reducing the intensity of chronic pain through auriculotherapy, health and improved quality of life can be promoted. That is, there is rehabilitation for the development of daily activities, as well as improvement in sleep quality⁽¹⁵⁾.

Among the most used points for atrial stimulation, the *shen men* stand out, whose main purposes are to predispose the regions of the trunk and cerebral cortex to receive and decode the reflexes of the other regions to be stimulated later. This point is also related to the production of loads of natural hormones, such as endorphins, which will provide an aid in the relief of pain, as well as malaise⁽²³⁾.

It was evidenced that the use of different materials to stimulate the auricular points was valid and presented positive results in the reduction of chronic MSP. In particular, electrical stimulation stands out, which showed a significant reduction in chronic MSP when compared to the use of semi-permanent needles. This may occur due to the use of electrical current at the ear points, which increases the effectiveness of analgesia at the site⁽²⁶⁾, since, according to the intensity of the electrical stimulation, different types of endorphins are released⁽²⁷⁾.

In addition, the use of semi-permanent needles, seeds and spheres also provided relief in the intensity of chronic MSP. This corroborates studies developed in Minas Gerais, which observed that the use of auriculotherapy by means of semi-permanent needles was effective in reducing chronic MSP in the spine region. It also helped in the clinical improvement of physical disability and in the development of daily activities^(15,33). Still, a meta-analysis found that the use of seeds and metallic spheres for the stimulation of reflex auricular points presented significant results in relation to the reduction of chronic pain in the low back⁽¹⁴⁾.

Semi-permanent needles, unlike seeds, do not need to be stimulated manually, which produces continuous stimulation through innervations in the auricular region until they are removed⁽³⁸⁾. However, the needles present greater discomfort during application and stay in the auricular points. In contrast, the use of seeds and metallic spheres is better accepted, as discomfort is minimal. However, these options require the participation of patients in the stimulation of points, which can be a limiting factor to scientific research⁽³⁹⁾.

As for the number of sessions offered, there was no pattern during treatment. This may occur due to the precepts of Traditional Chinese Medicine, in which individual treatments are designed according to the energy imbalance of each individual and their needs⁽³⁹⁾.

Study limitations

As a limitation of the study, the difficulty in comparing the results related to the reduction of pain intensity, before and after intervention, is pointed out, since the studies do not present a standard in the presentation of results, nor of parameters or scales.

Contributions to the field of Nursing

This study brings contributions to the health field, nursing area and, above all, to the ICPs, so that services and professionals qualified to practice auriculotherapy can formulate intervention programs, for health problems, based on the demands pointed out by the scientific evidence. Therefore, the importance and

effectiveness of this practice in health promotion and recovery is emphasized, especially in the treatment of chronic musculoskeletal symptoms.

CONCLUSIONS

The evidence from this study makes it possible to conclude that auriculotherapy contributed to the reduction of chronic MSP, especially in the lumbar spine region, developed in one or more sessions, by the use of electro-auriculotherapy. In practice, it has proven to be a safe technique, which provides both the relief of musculoskeletal symptoms and has beneficial effects on health and well-being.

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