

Auriculotherapy With Needles to Improve the Quality of Life of Cancer Patients: An Integrative Literature Review

Auriculoterapia com Agulhas para Melhora da Qualidade de Vida em Pacientes com Câncer: Revisão Integrativa

La Acupuntura Auricular y la Calidad de Vida de Pacientes con Cáncer: Revisión Integradora

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ABSTRACT

Objective: The study's goal has been to identify in the literature the use of auriculotherapy with needles as an intervention to improve cancer patients' life quality. **Methods:** It is an Integrative Literature Review of articles published in Portuguese, English, Spanish and/or German, available in full at the databases VHL, CAPES, CINHAI, PubMed, Web of Science and Scopus. The study was carried out in January 2017. The descriptors employed were cancer, neoplasms, auriculotherapy, ear acupuncture, and auricular acupuncture, and six studies were then selected. **Results:** The use of auricular therapy with needles as interventions in the clinical symptoms due to cancer and its treatment, as well as in the improvement of the domains affected in people's life quality have indicated satisfactory evidence. **Conclusion:** The evidences have identified an improvement in the quality of life of oncology patients that underwent auriculotherapy with needles, therefore, this intervention is a safe, effective and economical complementary therapy, which is very well accepted by the patients.

Descriptors: Cancer, Neoplasms, Auriculotherapy, Ear Acupuncture, Auricular Acupuncture.

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RESUMO

Objetivo: Identificar na literatura o uso da auriculoterapia com agulhas como intervenção para melhoria da qualidade de vida de pacientes com câncer. **Método:** Revisão integrativa de artigos publicados em português, inglês, espanhol e/ou alemão, disponíveis na íntegra nas bases de dados BVS, CAPES, CINHAL, PUBMED, WEB of SCIENCE e SCOPUS. A pesquisa ocorreu no período de janeiro de 2017. Foram utilizados os descritores câncer, neoplasia, auriculoterapia, acupuntura orelha e acupuntura auricular, sendo selecionados seis estudos. **Resultados:** O uso da auriculoterapia com agulhas como intervenções nos sintomas clínicos decorrentes do câncer e de seu tratamento bem como na melhoria dos domínios afetados na qualidade de vida apontou evidências satisfatórias. **Conclusão:** As evidências identificaram melhora na qualidade de vida de pacientes oncológicos que foram submetidos a auriculoterapia com agulhas e que esta intervenção é uma terapia complementar segura, eficaz e econômica, muito bem aceita pelos pacientes.

Descritores: Câncer, Neoplasia, Auriculoterapia, Acupuntura orelha, Acupuntura auricular.

RESUMEN

Objetivo: Identificar la producción disponible relacionada al uso de la acupuntura auricular como intervención para la mejora de la calidad de vida de pacientes con cáncer. **Método:** Revisión integrativa de literatura con búsqueda en bases electrónicas y bibliotecas virtuales BVS, CAPES, CINHAL, PUBMED, WEB of SCIENCE y SCOPUS En el período de enero de 2017 con los descriptores cáncer, neoplasia, auriculoterapia, acupuntura o acupuntura auricular y acupuntura auricular, la acupuntura auricular y la acupuntura auricular. La revisión integrativa propuesta tuvo lugar en seis etapas distintas y complementarias. **Resultados:** Se identificaron seis artículos con evidencias satisfactorias de las intervenciones en los síntomas clínicos inherentes al cáncer y su tratamiento que demostraron impactos positivos de la auriculoterapia como intervención. **Conclusión:** Los estudios relacionados con el tema son escasos, apuntan una realidad científica poco explorada. Un número mayor de estudios clínicos debe ocurrir para fortalecer las evidencias de las intervenciones terapéuticas efectivas, subsidiar la práctica y asegurar asistencia cualificada.

Descriptorios: Cáncer, Neoplasia, Auriculoterapia, Acupuntura oreja, Acupuntura auricular.

INTRODUCTION

In Brazil, cancer is a public health problem whose control and prevention must be prioritized in every country. Diagnoses are predominantly performed at advanced stages of the disease and have consequences in the Quality of Life (QOL) of the patients. Nevertheless, when identification occurs in the early stages of the disease, there is a decrease in morbidity and symptomatology related to the treatment.¹

The widely used cancer treatment for patients is the antineoplastic chemotherapy; varied chemical agents, act for the purpose of curative, or palliative. Because it is a systemic treatment, it ends up affecting healthy cells of the body which causes side effects.² The appearance of these depends on the chemotherapeutic agent, the quantification of the dosage, duration of the treatment, drugs used, as well as the patient's condition.³ Side effects have varying duration and intensities, may be transient or permanent,

cease together with chemotherapeutic cycle or accompany the patients for several months and years.⁴

The rehabilitation of the cancer patient is considered one of the areas of greatest relevance to health sciences. The use of complementary therapies has been increasing with the search for better adaptations in the prevention and control of side effects for cancer patients, aiding in the disappearance and/or reduction of complications due to the disease, in order to improve QOL.⁵⁻⁷

The understanding of QOL is based on the subjective assessment of disease processes and recovery. It is defined by the World Health Organization (WHO) as "the individual's perception of their position in life in the context of the culture and value system in which they live and in relation to their goals, expectations, standards and concerns."⁸ It is a difficult term to define, includes a variety of conditions that impact on the individual's perception of their emotions and behaviors related to daily functioning, interfering with the health condition.

It is hoped that quantitative measures can help in the definition of actions that prioritize QOL and can guide strategies for therapeutic interventions.⁹ Bearing this in mind, complementary therapies have received attention when acting in parallel to conventional treatment, with significant results in the reduction of symptoms treatment and disease in cancer patients.¹⁰

Particularly among Alternative and Complementary Therapies (ACTs), acupuncture is a form of ancient therapy within Traditional Chinese Medicine that uses needles to stimulate certain points, called acupoints for prevention, maintenance or restoration of health. The stimulation in the sensory fibers of the Peripheral Nervous System (PNS) caused by acupuncture triggers an electrical transmission in the neurons that, upon reaching the Central Nervous System (CNS) causes the release of substances such as: endorphin, cortisol, dopamine, serotonin and noradrenaline, which are likely to cause well-being.¹¹

Auriculotherapy with needles has been indicated in clinical practice as an effective method for the control of adverse effects, controlling the common signs and symptoms of cancer patients who have received cancer treatment.^{12,13}

Hence, the study's objective was to identify in the literature the use of auriculotherapy with needles as an intervention to improve the QOL of cancer patients.

METHODS

This is an Integrative Literature Review. The Integrative Literature Review develops with significant systematization and analysis of scientific research, offering an overview of the production of scientific findings to know the evolution of a specific clinical theme over a certain period of time.¹⁴

The proposed integrative review took place in the following stages¹⁵: identification of the theme and

definition of a guiding question; sample selection of studies; categorization of studies; analysis of the studies included in the research; interpretation of results and presentation of data in the review or synthesis of knowledge.

For the study's design, the question was formulated: "Do the studies that point out the use of auriculotherapy with needles to cancer patients in treatment present results to improve life quality?" The bibliographic search occurred during the month of January, 2017, in the electronic databases: CAPES Database Portal, Cumulative Index to Nursing and Allied Health Literature (CINAHL), Scopus, Web of Science, National Library of Medicine (PubMed), Virtual Health Library (VHL), Medical Literature Analysis and Retrieval System Online (MEDLINE), *Literatura Latino-Americana e do Caribe em Ciências da Saúde (LILACS)* [Latin-American and Caribbean Literature in Health Sciences] and *Base de Dados de Enfermagem (BDENF)* [Nursing Database].

The operationalization of this research began with a consultation to the *Descritores em Ciências da Saúde (DeCS)* [Health Sciences Descriptors], through the Virtual Health Library (VHL); and the National Library's Medical Subject Headings (MeSH) Terms with the Boolean operators AND and OR, by configuring the search in a controlled manner by the following combination: (cancer OR neoplasms) AND (auriculotherapy OR "acupuncture ear" OR "auricular acupuncture"). The descriptor "quality of life" was not used because it restricts the findings in the search and it is understood that quality of life would be implicit in the articles found.

The inclusion criteria were defined as follows: articles published in full, electronically available in Portuguese, English, Spanish and/or German, whose results favored the theme of needle-based auriculotherapy related to the quality of life in cancer patients older than or equal to 18 years old, without distinction of evidence level. Duplicate publications and articles without abstract were excluded.

For the development of the summarization stage and consequent organizational arrangement, the adapted instrument¹⁰ was used, which identifies publication by study title, journal name, year of publication, objective, method, results, and implications, along with study evaluation criteria of QOL and its methodological characteristics.

Subsequently, the articles for sample composition were screened. The identification, selection and eligibility steps of the study sample are described in Figure 1 (based on the criteria of the Preferred Reporting Items for Systematic Reviews and Meta-Analysis - PRISMA statement).¹⁶

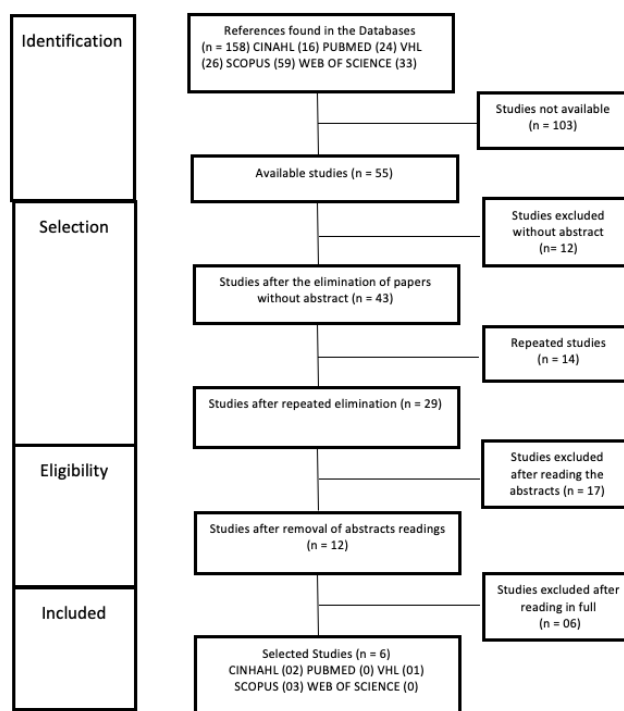


Figure 1 - Flowchart of the scientific articles selection process.

All the studies selection stages were peer-reviewed, and the final sample consisted of six articles. Then, a matrix was created to group the following components: study title, journal name, year of publication, objective, method, results, and implications.

Data were systematized and grouped into the following categories: auriculotherapy with needles as complementary therapy in the aid of cancer side effects and treatment and the implication of auriculotherapy with needles in people's life quality. This categorization aims at the synthesis, so that the researchers obtain a new understanding of the phenomenon of scientific search and subsequent applicability.¹⁷ In relation to the ethical aspects of the study, the authorship of all articles studied was respected.

RESULTS AND DISCUSSION

With analysis of the articles, we observed results of significant improvement of the symptoms after auriculotherapy with needles, among them decrease of pain, warmth, night sweats, anxiety/fear, depressed mood, memory/concentration, sleep problems, somatic and vasomotor symptoms and xerostomia; consequently providing a reduction in the interference of symptoms in daily, social and work life, improving the QOL.

Associated with the improvement in QOL, it was concluded that this intervention is a safe, effective and economical complementary therapy, very well accepted by the patients. These studies presented significant evidences, emphasizing the continuity of the use in patients submitted to oncological treatments.

The instruments used showed different methods of measuring the patients' life quality; with this the importance of the correct choice of these instruments is highlighted, as this may compromise comparative data of the evidences. More clinical studies should be undertaken to strengthen evidence of effective therapeutic interventions, subsidize practice, and ensure qualified care.

Table 1 - Distribution of articles analyzed in the review according to year, country, objective, methodological characteristics and results/outcomes. Curitiba city, Paraná State, Brazil, 2017.

Title Journal name Year	Main author Country Language	Objective	Methodological characteristics	Results Implications
A1 - Analgesic Effect of Auricular Acupuncture for Cancer Pain: A Randomized, Blinded, Controlled Trial. Journal of Oncology 2003	David Alimi France English	To examine the efficacy of auricular acupuncture in reducing the pain intensity in cancer patients.	Randomized Clinical Study with one group (ear points with electrodermal response detection) and two groups with placebo points, one with needle and the other with seed fixation.	The decrease in pain intensity measured by the Visual Analog Scale was observed, representing the clear benefit of Auriculotherapy with needle for these cancer patients who are in pain.
A2 - Auricular acupuntura: a novel treatment for vasomotor symptoms associated with luteinizing hormone releasing hormone agonist treatment for prostate cancer. BJU International 2008	Christopher Harding England English	To assess the role of auricular acupuntura in men who received luteinizing hormone-releasing hormone for prostate carcinoma.	Prospective cohort study, 60 patients with prostate cancer were selected, mean age of 74 years old and receiving treatment with hormones. They consented to 10-week needle-assisted auriculotherapy to evaluate the severity of symptoms before and after treatment.	All men completed treatment without adverse events, 95% of the patients reported a decrease in severity of symptoms.
A3 - NADA Acupuntura for Breast Cancer Treatment-Related Hot Flashes and Sweats: An Observation Study. Medical Acupuncture 2012	Beverley de Valois England English	To evaluate the feasibility of the Programa Nacional de Acupuntura para Desintoxicação (NADA) [National Acupuncture Program for Detoxification], a five-point ear acupuncture protocol, to reduce and improve the physical and emotional well-being of women with adjuvant breast cancer treatment.	Observational study. It included women with breast cancer, approximately 35 years old, undergoing treatment with tamoxylene. Fifty participants underwent auriculotherapy with needles for eight weeks using the NADA protocol.	The protocol proved effective. There was clinical improvement in the clinical status of anxiety, fear, mood, concentration, sleep problems, somatic and vasomotor symptoms.
A4 - Improving Well-Being of Prostate Cancer Survivors Using the NADA Acupuncture Protocol: A Clinical Outcome Study. Medical Acupuncture 2015.	Beverley de Valois England English	To evaluate the feasibility of the Programa Nacional de Acupuntura para Desintoxicação (NADA) [National Acupuncture Program for Detoxification], ear acupuncture protocol in five points, to improve well-being in men with prostate cancer.	Observational study. It included men diagnosed with prostate cancer at approximately 35 years old, with no relapse or metastases, at the stage of cancer treatment experienced symptoms or side effects. Twenty patients completed eight weeks treatment of auriculotherapy with needles using the NADA protocol.	There were improvements in patients' quality of life, at work, sleep, mood, concentration. No adverse effects were reported.
A5 - Auricular Acupuncture in the Treatment of Xerostomia. Journal of Chinese Medicine 2005	Warren M. Morganstein U.S.A English	To lead the understanding of a new proposal of acupuncture treatment for xerostomia.	Observational study. Seven patients with xerostomia after neck radiotherapy were referred to the author for acupuncture. Six of the patients underwent surgery before receiving radiotherapy, five for tongue squamous cell carcinoma and one for ear squamous cell carcinoma. The seventh patient received radiotherapy without surgery for nasopharyngeal cancer.	Results exceeded the author's expectations with all patients. There has been an increase in salivary flow, of the ability to feed on a wider variety of foods. The author concluded that acupuncture presented improvement in the quality of life.
A6 - Pilot study of acupuncture for the treatment of joint symptoms related to adjuvant aromatase inhibitor therapy in postmenopausal breast cancer patients. J Cancer Surviv 2007	Katherine D. Crew U.S.A English	To analyze the highest degree of pain before and after acupuncture and whether this is a safe and effective procedure to treat arthralgias arising from the treatment with aromatase inhibitors used in postmenopausal women with breast cancer.	Randomized Clinical Study in postmenopausal women with early-stage breast cancer with self-reported musculoskeletal pain were randomized in a cross-over study to receive acupuncture twice weekly for 6 weeks followed by observation or vice versa.	Patients reported that acupuncture brought relief and reduced symptoms related to aromatase inhibitors and improved functional capacity. The study suggests that acupuncture is a favorable non-pharmacological method in relieving pain and joint stiffness caused by aromatase inhibitors.

All the articles of the research pointed out good results in the use of auriculotherapy with needles, promoting improvement of the symptoms and the side effects related to the treatment for cancer and in the QOL, these were divided into two categories for a better understanding: a) Auriculotherapy with needles as therapy complementary in the aid of cancer side effects and treatment, such as: reduction of pain in patients, improvement of xerostomia after radiotherapy in patients with neck cancer and improvement of arthralgia caused by aromatase inhibitors in women with breast cancer; b) Implication of auriculotherapy with needles in people's life quality, with the following themes: evaluation of general well-being in the physical and psychological domains of men with prostate cancer, evaluation of physical and emotional well-being in women with breast cancer in adjuvant treatment with heat and night sweats.

Among the selected, summarized and analyzed in the present study, none were produced nationally or produced by Nurses, even if they already have this practice regulated by the Ministry of Health, through Ordinance No. 971/200. The *Conselho Federal de Enfermagem (COFEN)* [Brazilian Federal Council of Nursing] was one of the first councils to recognize the complementary practices and considers it as a specialization of the area. The Resolution No. 283/2003 from the *COFEN*: "It establishes rules on the practice of Acupuncture by the nurse and gives other measures".¹⁸

The rehabilitation of the cancer patient is considered an area of relevance for health sciences, among them nursing. The management of symptoms resulting from the disease and the treatment proposed by the use of auriculotherapy may be performed by the health professionals who assist them.¹⁸

Needle auriculotherapy is a complementary therapy that helps both the changes related to the physical domains, diseases that require pain control, endocrine-metabolic or inflammatory, as well as in the emotional domains, such as anxiety, depression, and distress.^{10,12,19,20}

Recent investigations^{21,22} have evaluated the psychosocial damage in cancer patients on chemotherapy treatment and the impacts caused by the diagnosis, correlated to depressive-anxiety symptoms and QOL. This reinforces that the rehabilitation of the cancer patient is a continuous and integral process, in order to maximize the capacities of individuals within the limitations imposed by the disease and by the treatment.⁷ The professionals must assist and know them to offer the various therapies and to assist them in this process. Evaluating the articles of the present sample we chose to characterize them in two categories: auriculotherapy with needles as a complementary therapy in the aid of cancer side effects and treatment; and the implication of auriculotherapy with needles in people's life quality.

Auriculotherapy with needles as a complementary therapy in the aid of cancer side effects and treatment

Pain is among the side effects present in both contexts, disease, and treatment. According to the International Association for the Study of Pain (IASP), this is defined as an unpleasant sensory and emotional experience that may be associated with actual or potential injury.²³ Oncology patients undergoing treatment exhibit a prevalence of chronic pain at 30% to 50% of cases and can increase to 70% to 90% in patients with advanced cancer.²³

Inadequate management of pain favors other symptoms such as depressive effects, anxiety, in addition to impairing cognitive functions, affect daily and social activities, promote sleep disturbances, and thereby decrease QOL.²³ Drugs and non-pharmacological interventions such as surgeries, radiotherapies, and physiotherapy are used to treat cancer pain; as well as psychological techniques and acupuncture, the latter two are little used interventions due to the lack of indication and availability of specialized treatment centers.^{3, 7, 23}

Article A1 performed a study comparing the group of auriculotherapy with needles applied at points with electrodermal signal, (which is a skin conductivity response, also called galvanic skin response)²⁴ with two groups, one that used needles and other seeds of mustard, in placebo points, for the reduction of pain in cancer patients. It was concluded that there was a 36% decrease in pain in the group that received ear acupuncture at electrodermal signal points after two months of treatment.²⁴

Article A6 performed a study that verified the efficacy and safety of auriculotherapy with needles in reducing the symptoms of joint pain caused by aromatase inhibitors applied in two groups. One group received the intervention for six weeks followed by observation, in the other, the observation was made for later application of the intervention. Moderate pain relief was reported in 64% of patients and 71% reported moderate stress relief.²⁵

Another effect found was xerostomia in article A5, which is defined as the individual and personal sensation of dry mouth, may or may not be related to the production of quantity and quality of saliva. In addition to the discomfort caused by the dry mouth sensation, it can also cause difficulty in swallowing and articulating words, as well as favoring oral and dental infections, lesions in the oral cavity and pain resulting from mucosal dryness.²⁶

Xerostomia can cause physical discomfort and can generate social impacts. The symptoms listed in the previous paragraph may favor social isolation and influence the comfort and well-being of the patient and consequently worsen QOL. In cancer patients, it may be caused by chemotherapy, radiotherapy, or the use of combination therapies such as chemotherapy along with radiation therapy. Several treatments are used for the management of xerostomia; among them, topical treatment such as the

use of salivary substitutes, chewing gums, lubricating gel, stimulant pads, and others.²⁶

Article A5 brings auriculotherapy with needles as a treatment in patients with xerostomia caused by irradiation to increase salivary flow. The authors propose the application of needles in three auricular, bilateral points and a bilateral extra point in the index finger; mint was also used to help stimulate the salivary flow. As a result, there was an improvement: in the reduction of symptoms, in swallowing, to speak for longer periods and the decrease in the need to drink water at night. The study showed that auriculotherapy improved salivary production, with its increase, even though it did not reach a baseline before irradiation, patients also showed improvement in physical, emotional and cognitive well-being, increasing their QOL.²⁷

Articles A2, A3, and A4 used auriculotherapy with needles to examine the improvement of heat waves and night sweats. Such symptoms are often found as a consequence of the hormonal treatment used and standardized in cases of prostate, breast and endometrial cancer. Hormone therapy is a treatment that acts on hormone production or on the way the hormone acts on tumor cells; however, this treatment causes side effects such as erectile dysfunction, decreased libido, heat and night sweats, among others, thereby reducing patients' quality of life.⁶

Regarding heat waves and night sweats, article A2 indicates that 95% of patients reported a significant decrease in symptoms; in article A3, the patients highlighted the improvement of symptoms and their frequency; and in article A4 the results were shown to be clinically and statistically significant.^{19, 28, 29}

Articles A2 and A3 also brought the symptom of sleep disorders. Cancer patients often present this manifestation that can present in all phases of the disease, presenting an incidence of approximately 30% to 50%, considering that in the general population it is present in 15%.³⁰ Poor sleep can cause physical and cognitive symptoms such as decreased concentration, fatigue, anxiety, irritation, nervousness, among others, negatively impact the QOL.⁴ Articles A2 and A3 indicated a significant improvement of sleep disorders with the use of auriculotherapy.^{28, 29}

Implication of auriculotherapy with needles in people's life quality

Patients' QOL is impacted daily by the symptoms of cancer and chemotherapy. The exclusion of work activities or family environment for treatment associated with the emotional trauma that the disease diagnosis brings, added to the fear of the treatment, and can have a negative effect on the patients' life.⁵

Chemotherapy changes the physical, emotional, and social functions of patients. Nonetheless, the usual interventions used by the professionals that assist them, to minimize these effects are related to the physical aspects.

Auriculotherapy with needles can intervene positively in changes related to physical, emotional, personal performance and overall QOL. In regard to the emotional domain, depression and anxiety are frequent in cancer patients and have a significant impact on their QOL.²¹

Article A2 used the Measure Yourself Concerns and Well-Being (MYCAW) questionnaire to verify and evaluate symptoms of complaints of general health and well-being, 95% of patients emphasized reduction of physical symptoms and improvement in the affected psychological domains such as depression, anxiety and panic attack, all results were statistically significant.²⁸

Depression has as its main characteristics feelings of emptiness and sadness, loss of pleasure and interest in activities and environments, fatigue, excessive fatigue, and psychomotor changes. Anxiety is characterized by difficulty concentrating, distraction, fear of losing control and facing situations, escape behaviors, irritability among others.³¹

Article A3 used auriculotherapy with needles with 50 patients and found that six domains of the nine evaluated in the Women's Health Questionnaire (WHQ) highlighted significant changes in anxiety/fears; concentration/memory and depressive mood, demonstrating an improvement in the physical and mental health of these patients.²⁹ Article A4 used the 36-Item Short Form Health Survey (SF-36) instrument which evaluates eight domains being physical and psychological and has achieved significant results in reducing symptoms which affect daily life, work, social life, sleep, mood, concentration resulting in an improvement in QOL.¹⁹

The interventions with emotional effects verified in the studies analyzed in this integrative review involved communication strategies with the patient to evaluate the use of auriculotherapy as a complementary therapy. Two articles, A3 and A4, presented the opportunity for patients to discuss concerns and auricular experiences with needles, previously relevant to them, with the professionals who used auriculotherapy with needles aiming to reduce the patients' concerns.^{19, 29}

Concerning the use of auriculotherapy technique using needles, all articles reported being well tolerated. Article A3 reported that some patients referred to the needle treatment as uncomfortable or painful, and one participant reported an extremely painful point reflecting the consequence of not allowing the needle to be pinched. Occasionally, small bleeding occurred at some needle sites.²⁹ In article A6, 73% of patients reported recommending auriculotherapy with needles to a friend.²⁵

CONCLUSIONS

With analysis of the articles, we observed results of significant improvement of the symptoms after auriculotherapy with needles, among them decrease of pain, warmth, night sweats, anxiety/fear, depressed mood, memory/

concentration, sleep problems, somatic and vasomotor symptoms and xerostomia; consequently providing a reduction in the interference of symptoms in daily, social and work life, improving the QOL.

Associated with the improvement in QOL, it was concluded that this intervention is a safe, effective and economical complementary therapy, very well accepted by the patients. These studies presented significant evidences, emphasizing the continuity of the use in patients submitted to oncological treatments.

The instruments used showed different methods of measuring the patients' life quality; with this the importance of the correct choice of these instruments is highlighted, as this may compromise comparative data of the evidences. More clinical studies should be undertaken to strengthen evidence of effective therapeutic interventions, subsidize practice, and ensure qualified care.

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