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Clinical Review

The benefits of auriculotherapy in the care of psychoactive substances users: a systematic review

Os benefícios da auriculoterapia no cuidado de usuários de substâncias psicoativas: uma revisão sistemática

Los beneficios de la auriculoterapia en el cuidado de los usuarios de sustancias psicoactivas: una revisión sistemática

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Abstract

Introduction: Approximately 36 million people are affected by the consequences of psychoactive substance use. These substances have the ability to cause changes in consciousness when consumed and, depending on the pattern of use, cause dependence and individual and community vulnerabilities. A treatment that has shown promise is auricular acupuncture, due to its low cost, easy applicability and without drug intervention. **Objective:** To evaluate the clinical evidence of auriculotherapy in the care of users of psychoactive substances. **Methods:** Clinical trials that evaluated the effectiveness of auricular acupuncture in the treatment of psychoactive substance users were included. Studies that did not address clinical outcomes, had multiple interventions, or assessed body acupuncture were excluded. The search was performed in the following databases, Cochrane, Pubmed, Embase, Scopus, Web of Science, LILACS, Scielo, ProQuest Dissertations & Theses Global (PQDT Global). **Results:** 24 clinical trials were analyzed, with 8 of these presenting some significant result in the outcome. The extracted data were presented in a table. **Conclusions:** The studies showed several biases in their methodology, both population, eligibility criteria, controls and outcomes. This review did not find robust clinical evidence indicating the use of auricular acupuncture in the care of psychoactive substance users. It is hoped that better studies will be carried out, since auriculotherapy as an adjuvant treatment is seen by many as beneficial and has the potential for harm reduction care.

Keywords: Substance-related disorders; Acupuncture, ear; Craving; Substance withdrawal syndrome; Harm reduction.

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Resumo

Introdução: Aproximadamente 36 milhões de pessoas são afetadas pelas consequências do uso de substâncias psicoativas. Essas substâncias têm a capacidade de causar alterações de consciência quando consumidas e, conforme o padrão de uso, podem causar dependência e vulnerabilidades individuais e comunitárias. Um tratamento que tem se mostrado promissor é a acupuntura auricular, por seu baixo custo, fácil aplicabilidade e sem a intervenção medicamentosa. **Objetivo:** Avaliar as evidências clínicas da auriculoterapia no cuidado dos usuários de substâncias psicoativas. **Métodos:** Foram incluídos ensaios clínicos que avaliaram a eficácia da acupuntura auricular no tratamento de usuários de substâncias psicoativas. Estudos que não abordaram desfechos clínicos, tiveram múltiplas intervenções ou avaliaram acupuntura corporal foram excluídos. A busca foi realizada nas seguintes bases de dados: Cochrane, Biblioteca Nacional de Medicina dos Estados Unidos (PubMed), Embase, Scopus, Web of Science, Literatura Latino-Americana e do Caribe em Ciências da Saúde (LILACS), Scientific Electronic Library Online (SciELO), ProQuest Dissertations & Theses Global (PQDT Global). **Resultados:** Foram analisados 24 ensaios clínicos, oito dos quais apresentavam algum resultado significativo no desfecho. Os dados extraídos foram apresentados em uma tabela. **Conclusões:** Os estudos apresentaram diversos vieses em sua metodologia, tanto populacionais, quanto nos critérios de elegibilidade, controles e desfechos. Esta revisão não encontrou evidências clínicas robustas que indiquem o uso da acupuntura auricular no cuidado de usuários de substâncias psicoativas. Espera-se que melhores estudos sejam realizados, já que a auriculoterapia como tratamento adjuvante é vista por muitos como benéfica e tem a potencialidade de um cuidado pautado na redução de danos.

Palavras-chave: Transtornos relacionados ao uso de substâncias; Acupuntura auricular; Fissura; Síndrome de abstinência a substâncias; Redução do dano.

Resumen

Introducción: Aproximadamente 36 millones de personas se ven afectadas por las consecuencias del consumo de sustancias psicoactivas. Estas sustancias tienen la capacidad de provocar cambios en la conciencia cuando se consumen y, dependiendo del patrón de uso, provocan dependencia y vulnerabilidades individuales y comunitarias. Un tratamiento que se ha mostrado promisorio es la acupuntura auricular, por su bajo costo, fácil aplicabilidad y sin intervención farmacológica. **Objetivo:** Evaluar la evidencia clínica de la auriculoterapia en la atención a usuarios de sustancias psicoactivas. **Métodos:** Se incluyeron ensayos clínicos que evaluaron la efectividad de la acupuntura auricular en el tratamiento de usuarios de sustancias psicoactivas. Se excluyeron los estudios que no abordaron los resultados clínicos, tuvieron múltiples intervenciones o evaluaron la acupuntura corporal. La búsqueda se realizó en las siguientes bases de datos, Cochrane, Pubmed, Embase, Scopus, Web of Science, LILACS, Scielo, ProQuest Dissertations & Tesis Global (PQDT Global). **Resultados:** Se analizaron 24 ensayos clínicos, de los cuales 8 presentaron algunos resultados significativos en el desenlace. Los datos extraídos se presentaron en una tabla. **Conclusiones:** Los estudios mostraron varios sesgos en su metodología, tanto poblacional, criterios de elegibilidad, controles y resultados. Esta revisión no encontró pruebas clínicas sólidas que indiquen el uso de la acupuntura auricular en la atención de los usuarios de sustancias psicoactivas. Se espera que se lleven a cabo mejores estudios, ya que muchos consideran que la auriculoterapia como tratamiento adyuvante es beneficiosa y tiene el potencial para la atención de reducción de daños.

Palabras clave: Trastornos relacionados con sustancias; Acupuntura auricular; Ansia; Síndrome de abstinencia a sustancias; Reducción del daño.

INTRODUÇÃO

Psychoactive substances are compounds that, when consumed, can alter consciousness. Their use may result in substance use disorders, which are associated with increased morbidity and mortality, as well as impaired social functioning. It is estimated that approximately 36 million individuals are affected by drug-related disorders.[1]

The pursuit of substances capable of altering consciousness has been a constant throughout human history, whether for religious purposes or purely recreational use. Patterns of consumption, underlying motivations, and the substances themselves vary according to individual characteristics and the social environment in which one is embedded. Over time, both the types of substances used and patterns of use have shifted. This phenomenon can be understood through a framework that considers the interaction between the individual, the substance, and the broader social, political, and economic context.[2]

Historical, social, and cultural contexts contribute to the varying classifications of substances as licit or illicit. For example, during Prohibition in the United States (1920–1933), alcohol was deemed illegal,

while in countries governed by *sharia*, Islamic law prohibits alcohol consumption.[3] Beginning in the 1960s, a series of United Nations (UN) conferences on the topic led to an approach centered on the criminalization and marginalization of users.[4] The use of psychoactive substances generates distinct vulnerabilities at both individual and community levels, which are further exacerbated by criminalization.

A significant milestone in advancing care for individuals who use drugs was the adoption of the harm reduction (HR) strategy as a guiding principle in the Ministry of Health's Policy for Comprehensive Care for Users of Alcohol and Other Drugs, established in 2003.[4] HR is an ethical-political framework grounded in the defense of users' life and autonomy. Its primary objective is to reduce vulnerabilities associated with drug use without requiring abstinence. As such, it constitutes a political stance that challenges the prevailing logic of criminalization and abstinence.[5]

The role of Primary Care in the provision of care for psychoactive substance users is essential. As part of the Psychosocial Care Network (*Rede de Atenção Psicossocial* – RAPS), Primary Care serves as a key platform for the implementation of preventive measures. Early identification of substance use, classification of consumption patterns, and interventions grounded in the ethics of HR, including brief interventions, are fundamental components of this care. The territorial scope and accessibility of the services promote the development of empathy with users, which is vital to the treatment process. Primary Care must function as a coordinating hub, rather than merely serving as a point of referral to specialized services.[5]

Given this context, treatment must be understood as a complex phenomenon that should be tailored to the specific needs of each individual, with the overarching goal of improving quality of life.[6] The literature offers limited evidence regarding treatment outcomes for cases involving multiple substance use and co-occurring psychiatric disorders.[7] Although some studies have shown promising results with psychological and behavioral interventions for cocaine abuse, there is currently no evidence supporting the effectiveness of any pharmacological therapy.[8]

Auricular acupuncture, based on the National Acupuncture Detoxification Association (NADA) protocol, is a complementary therapy widely used in addiction treatment services. Developed in the United States during the 1970s, NADA was established as a comprehensive care model for individuals who use psychoactive substances. Acupuncture is regarded as a natural therapy that stimulates the flow of energy throughout the body, promoting physical and mental well-being while enhancing individuals' autonomy in managing their condition.[9]

The protocol involves the insertion of needles at five specific points: the auricular, *shen men*, sympathetic, kidney, liver, and lung. The therapy is administered in group settings, typically lasting 30–45 minutes. It is considered safe, low-cost, and does not involve the use of medications, thereby avoiding the risk of dependency.[10]

Pharmacological treatment has been criticized for focusing primarily on suppressing withdrawal symptoms, which may alleviate discomfort while failing to restore optimal energy functioning in the body. This limitation may help explain why patients often continue to experience symptoms such as anxiety or depression following discharge.[9] However, the model acknowledges that no single component is solely responsible for addressing these health conditions, and that combining pharmacological approaches with psychotherapy increases the likelihood of treatment success.

Given the existing evidence supporting the use of auriculotherapy as an adjuvant treatment for individuals who use psychoactive substances,[11] a systematic review was conducted to evaluate the available clinical evidence and its quality as a harm reduction tool.

General Objective: To evaluate the clinical evidence regarding the use of auriculotherapy in the care of individuals who use psychoactive substances.

Specific Objectives:

- To evaluate the efficacy and safety of auriculotherapy in managing symptoms related to substance use.
- To compare the effectiveness of auriculotherapy and pharmacological therapies in controlling substance abuse.
- To evaluate and compare the auricular points used.

METHODS

Type of study

A systematic review was conducted with the objective of evaluating and synthesizing the available evidence, aiming to minimize bias and produce results that are both reliable and clinically applicable.[12]

This study was conducted in accordance with the Cochrane Handbook for Systematic Reviews of Interventions.[12]

Studies evaluating the use of auricular acupuncture in the clinical management of individuals who use psychoactive substances were selected.

Criteria for inclusion and exclusion of studies

The following inclusion criteria were defined:

1. Clinical trials that evaluated the efficacy of auriculotherapy in the treatment of clinical conditions related to substance use.

The following exclusion criteria were defined:

1. Studies not related solely to auriculotherapy, including, for example, body acupuncture;
2. Studies with multiple interventions;
3. Studies that did not evaluate clinical outcomes;
4. Studies addressing smoking alone.

Search strategy

The following databases were used

1. Cochrane
2. United States National Library of Medicine (PubMed)
3. Embase
4. Scopus
5. Web of Science
6. Latin American and Caribbean Health Sciences Literature (*Literatura Latino-Americana e do Caribe em Ciências da Saúde* – LILACS)
7. Scientific Electronic Library Online (SciELO)

8. ProQuest Dissertations & Theses Global (PQDT Global)

The search strategy was developed in collaboration with a university librarian from Universidade Federal de Santa Catarina (UFSC). A meeting was held to discuss the descriptors, search terms, and databases to be used. No restrictions were applied regarding language, publication date, or country of publication. The descriptors are provided in Appendix A. The search strategy was adapted for each database and was last updated on May 19, 2021. Additional searches were conducted by reviewing the bibliographies of the selected articles.

Article selection process

Articles were selected by independent, peer-reviewed researchers without conflicts of interest. In cases of disagreement, a final decision was reached through discussion between the reviewers.

Initially, titles were screened to assess whether the articles corresponded to the proposed topic. Subsequently, abstracts were reviewed to determine if the eligibility criteria were met. Finally, the selected articles were read in full.

Data extraction

Data extraction was performed independently by two researchers without conflicts of interest.

Initially, information was extracted using a data extraction form, which is provided in Appendix B.

Subsequently, the population, intervention, control, and outcomes were assessed, along with the risks of bias. The extracted information was summarized in a table.

RESULTS

A total of 308 articles were identified. After screening titles and abstracts, 50 articles were selected for full-text review. Ultimately, 24 clinical trials were included in the systematic review.

Of the 24 trials, eight reported significant benefits of acupuncture compared with control groups, as detailed in Table 1.

Uncontrolled and case-control studies were excluded.

Among the studies analyzed, nine used *sham* points as controls, with three (33.3%) demonstrating benefits of acupuncture. Six studies employed control points considered non-specific for chemical dependency, of which two (33.3%) favored the intervention. In addition to auricular acupuncture, four trials included relaxation therapy, while six used the standard treatment provided by addiction services as controls, yielding positive results in one (25%) and three (50%) studies, respectively. Only one study utilized aromatherapy as a control, which showed no statistically significant advantage for acupuncture.

DISCUSSION

Most study populations met the Diagnostic and Statistical Manual of Mental Disorders (DSM) criteria for dependence on the specific substance under investigation. The majority of treatments were conducted in rehabilitation clinics or hospital wards, with only five studies involving outpatient settings.

Table 1. List of selected studies, research design, population, points used in the intervention and control, outcomes, conclusion, and observations

Reference	Research design	Population	Points used	Intervention duration	Control	Outcomes	Conclusion	Observations
Ahlberg et al.[7]	Randomized controlled trial	280 individuals undergoing treatment for substance abuse, both inpatient and outpatient	NADA protocol: sympathetic; *shen men*; liver; lung; kidney	5 weeks; 15 NADA sessions; 10 local protocol sessions	2 groups: local protocol with same points (fewer sessions); relaxation	Anxiety; insomnia; drug use; assessed at 5 weeks and 3 months	Acupuncture was not more effective than relaxation	High dropout rate
Avants et al.[13]	Randomized controlled trial	82 patients dependent on cocaine and opioids undergoing methadone treatment	NADA protocol: sympathetic; *shen men*; liver; lung; kidney	8 weeks, 5 sessions per week	2 groups: non-specific points for dependency; relaxation	Urine toxicology test	Reduction in cocaine use (p=0.1 compared to relaxation; p=0.5 compared to point control)	37% loss of the initial sample
Bearn et al.[14]	Randomized controlled trial	82 opioid-dependent patients in hospital treatment, undergoing methadone therapy	5 unspecified points	2 weeks; 10 sessions	5 unspecified points	Withdrawal symptoms; craving	No effect on the outcomes analyzed	
Berman et al.[15]	Randomized controlled trial	163 prisoners with a history of drug use	NADA Protocol: sympathetic; *shen men*; liver; lung; kidney	4 weeks + 14 sessions	Non-specific points for dependency;	Physical and psychological symptoms	No evidence of benefit	
Black et al.[16]	Randomized controlled trial	101 patients in addiction treatment service	NADA Protocol: sympathetic; *shen men*; liver; lung; kidney	3 sessions within a maximum of 2 weeks	2 groups: non-specific points for dependency; relaxation	Anxiety symptoms assessed immediately after intervention	No evidence of benefit	52 patients dropped out
Bullock et al.[17]	Randomized controlled trial	503 inpatients in a rehabilitation service	*Shen men*, liver, lung, sympathetic	3 weeks, 18 sessions	3 groups: nearby points; symptom-based points; conventional treatment	Alcohol craving and consumption; anxiety; depression; functional status scale	Findings do not support the use of auriculotherapy	Follow-up at 3, 6, and 12 months; 29.2% dropout rate
Bullock et al.[18]	Randomized controlled trial	236 patients in a rehabilitation clinic	Used 3 specific points for addiction (not specified).	8 weeks, 28 sessions	2 groups: conventional treatment; conventional treatment + *sham* points	Urinalysis, craving, scales assessing functional status	No benefit identified from auriculotherapy	2 clinical trials (trial 2 excluded for associating non-auricular points); conventional treatment maintained during intervention

Continue...

Table 1. Continuation.

Reference	Research design	Population	Points used	Intervention duration	Control	Outcomes	Conclusion	Observations
Carter et al.[19]	Randomized controlled trial	100 patients in a substance abuse treatment service	NADA protocol: sympathetic; *shen men*; liver; lung; kidney	Approximately 8 weeks, 2 sessions per week	Conventional treatment	Quality of life, depression, anxiety, substance use; assessed at 3 and 6 months follow-up	Improvement in quality of life questionnaire (p not reported) Reduction in alcohol consumption at 3 and 6 months (p<0.05)	Outpatient treatment 39% dropout rate
Chang e Sommers[20]	Randomized controlled trial	67 homeless war veterans in a rehabilitation program	NADA protocol: sympathetic; *shen men*; liver; lung; kidney	10 weeks, 20 sessions	Relaxation therapy	Craving and anxiety assessed after each intervention	No difference between groups	Usual treatment provided to both groups Prior abstinence required for inclusion
Courbasson et al.[21]	Non-randomized controlled study	305 women undergoing treatment for alcohol/drug use	NADA protocol: sympathetic; *shen men*; liver; lung; kidney	21 days, 3 sessions per week	Conventional treatment	Anxiety, depression, drug use Follow-up at 1 and 3 months	Significant effect on anxiety (p=0.005), depression (p=0.004), and alcohol use sustained at follow-up (p=0.018; p=0.018; p=0.022)	Participants chose which group to join Conventional treatment maintained 20% sample loss
Gurevich et al.[22]	Non-randomized study	77 patients in a psychiatric hospital ward	NADA protocol: sympathetic; *shen men*; liver; lung; kidney	Daily sessions	Conventional treatment	Treatment adherence; Followed up for 4 months	Improved adherence (p<0.001) and outpatient follow-up rate (p<0.02)	Patients chose whether or not to receive acupuncture
Killeen et al.[23]	Randomized controlled study	30 patients dependent on cocaine	NADA protocol: sympathetic; *shen men*; liver; lung; kidney	Not specified	*Sham* points	Craving, assessed after intervention	Questions the use of auriculotherapy	
Kunz et al.[24]	Randomized controlled study	109 inpatients undergoing alcohol detoxification	NADA protocol: sympathetic; *shen men*; liver; lung; kidney	5 daily sessions	Aromatherapy	Duration and severity of alcohol withdrawal symptoms	No evidence of benefit	Loss of 74 participants
Lipton et al.[25]	Randomized controlled trial	150 patients undergoing treatment for crack/cocaine abuse	4 points: *shen men*, liver, lung, sympathetic	4 weeks, offered 6 times per week	*Sham* points	Urine toxicology, craving	Lower cocaine use in 2 analyzed weeks (p<0.05)	Outpatient treatment Psychotherapy was not offered Only 30 completed more than 2 weeks

Continue...

Table 1. Continuation.

Reference	Research design	Population	Points used	Intervention duration	Control	Outcomes	Conclusion	Observations
Lua et al.[26]	Randomized controlled study	69 opioid-dependent patients undergoing methadone treatment	NADA protocol: sympathetic; *shen men*; liver; lung; kidney	8 weeks, 3 sessions per week	Usual treatment	Compare treatment satisfaction and coping mechanisms	Auriculotherapy has no influence on the analyzed outcomes	
Margolin et al.[27]	Randomized controlled study	165 cocaine users undergoing methadone treatment	4 points: *shen* men, liver, lung, sympathetic	8 weeks, 5 sessions per week	2 groups: nonspecific points for addiction; relaxation	Urine sample, acute post-intervention effects, and treatment adherence	Significant effect on cocaine use, favoring the trial that included psychotherapy Acupuncture (p=0.05); Relaxation (p=0.011)	Two clinical trials were conducted In Trial 2, patients received financial support and did not have group counseling
Margolin et al.[8]	Randomized controlled study	620 patients dependent on cocaine/ opioids	4 points: *shen* men, liver, lung, sympathetic	8 weeks, 5 sessions per week	2 groups: nonspecific points for addiction; relaxation	Urine sample, treatment adherence	No benefit from auriculotherapy	208 patients were in methadone treatment (both groups) Dropout rate 55%
Mondoni et al.[28]	Randomized controlled study	61 cocaine-dependent patients	NADA protocol: sympathetic; *shen* men; liver; lung; kidney	12 weeks, weekly sessions	Nonspecific points for addiction	Questionnaire evaluating physical, psychological, and social parameters Evaluated every 4 weeks	Improvement in score at 1 month (p = 0.000)	Associated group psychotherapy Outpatient treatment 65% dropout rate
Otto et al.[29]	Randomized controlled study	36 cocaine-dependent patients treated at a reference unit	NADA protocol: sympathetic; *shen* men; liver; lung; kidney	4 weeks hospitalized; 8 weeks outpatient 24 sessions	Nonspecific points for addiction	Anxiety, depression, craving, treatment adherence	No benefit demonstrated from the intervention	Only 4 completed all 24 sessions
Rampes et al.[30]	Randomized controlled study	59 alcohol-dependent patients	*Shen* men, sympathetic, and lung	6 weeks, weekly sessions	2 groups: nonspecific points for addiction; usual treatment	Craving, anxiety, and alcohol consumption	No benefit demonstrated from the intervention	Electrostimulation of points was applied during acupuncture treatment Conventional treatment continued during the intervention 33 patients dropped out

Continue...

Table 1. Continuation.

Reference	Research design	Population	Points used	Intervention duration	Control	Outcomes	Conclusion	Observations
Sapir-weise et al.[31]	Randomized controlled study	72 alcohol-dependent patients (51 men; 21 women)	*Shen* men, sympathetic, and lung	10 weeks, 30 sessions	*Sham* points	Alcohol consumption, craving, mood disorders	Women showed reduced anxiety at 1 month ($p<0.05$)	Outpatient treatment Follow-up at 1, 3, and 6 months; 29% dropout rate at 6 months
Trumpler[32]	Randomized controlled study	48 patients hospitalized for alcohol detoxification	Points not specified Based on daily evaluation by acupuncturists	Daily sessions until the end of detoxification	*Sham* points Laser	Withdrawal symptoms and sedative use	No benefit demonstrated from auriculotherapy	Residential treatment (voluntary hospitalization; patients may choose to attend consultations and psychotherapy without mandatory inpatient stay) Acupuncture with needles and laser were used in the intervention Conclusion focuses only on the laser intervention
Washburn et al.[33]	Randomized controlled study	100 heroin-dependent patients	Sympathetic, *shen* men, lung, kidney	21 days	*Sham* points	Treatment retention and heroin use	Greater treatment adherence ($p<0.05$) Authors conclude it to be a plausible therapy	Outpatient treatment
Wells et al.[34]	Randomized controlled study	60 patients undergoing methadone treatment for opioid dependence	NADA protocol: sympathetic; *shen* men; liver; lung; kidney	Up to 6 months, weekly sessions	*Sham* points	Treatment adherence, withdrawal symptoms and craving, substance use	Statistically lower cocaine use in the acupuncture groups compared to historical (non-acupuncture) medical records ($p=0.05–0.004$)	Study compares results with historical service data (non-acupuncture) Authors conclude that these findings should not be used to infer definitive results

In contrast to the situation in Brazil, the US is experiencing what has been termed an opioid epidemic, which the US Department of Health and Human Services declared a public health emergency in 2017.[3] Consequently, several studies have focused exclusively on opioid dependence, all of which included methadone treatment. According to 2015 data, the prevalence of non-prescription opioid use in Brazil over the previous 12 months was 1.4%, exceeding the prevalence of cocaine use at 0.9%.[3] This figure reflects only non-prescription use and does not account for total opioid consumption, which is likely higher, nor does it specify the number of individuals with opioid use disorders.

It is important to recognize that patterns of substance use vary, and not all use meets the criteria for dependence. One indicator of dependence is when an individual's drug use becomes so frequent that their life centers around the substance,[5] resulting in functional impairment and increased vulnerabilities. Standardized screening instruments are employed to assess use patterns, including the CAGE questionnaire, AUDIT for alcohol, and ASSIST, which covers alcohol and other substances.[35] Intervening only after dependence develops is a misconception. Since most studies focus on dependent populations, this introduces potential bias in clinical trials. Another identified limitation is that some studies require abstinence as a condition for continued treatment, which conflicts with the principles of harm reduction.

The auricular points utilized in the studies were based on the NADA protocol, which is considered specific for chemical dependency. These points include *shen men*, sympathetic, kidney, liver, and lung. The literature has raised concerns regarding the selection of appropriate control points — specifically, those presumed to be inactive and devoid of therapeutic effect. Points located on the helix have been suggested as more suitable for use as controls.[36] Another approach employed in some studies involves using fewer points to minimize overall stimulation of the pinna, based on the hypothesis that any auricular stimulation may elicit a biological response.[27] Additionally, the use of a fixed-point protocol has been criticized for limiting the ability to tailor treatment to individual needs,[17] which contradicts the principle that treatment should be complex and personalized.

The number of sessions offered to study participants varied, ranging from weekly or daily treatments to three to five sessions per week, with the latter being more common among the trials analyzed. Although the NADA protocol is generally described as consisting of 12 sessions,[10] there is no consensus in the literature regarding the optimal number. Clinical impressions indicate that the effects of acupuncture on withdrawal symptoms may be short-lived,[11] supporting the hypothesis that daily sessions may be necessary.

With regard to the outcomes analyzed, auriculotherapy has been recognized for its ability to promote calmness and provide mental benefits that support the development of coping strategies, thereby enhancing individuals' engagement with treatment. Acupuncture appears to be most effective when outcomes such as craving and withdrawal symptoms are evaluated. Although substance use is a critical factor in treatment and is directly related to the progression toward chemical dependence, abstinence may not be an appropriate outcome measure.[11]

Some benefit was observed in at least eight clinical trials, two of which were non-randomized. In a study by Courbasson et al.,[21] participants were allowed to choose between the acupuncture intervention or conventional treatment, in a sample of 305 women. Significant reductions in anxiety, depression, and alcohol consumption were reported. Positive outcomes among women had been previously noted.[31] In contrast, Gurevich et al.[22] designated individuals who either declined auriculotherapy or attended few sessions as the control group, and greater adherence was observed among those who received acupuncture. The absence of randomization represents a source of bias in these trials. In both studies, participants used multiple substances. A previous randomized outpatient study[33] involving a heroin-dependent population also reported benefits in treatment adherence.

Outpatient treatment was utilized in five studies, among which the trial by Carter et al.[19] presented the least risk of bias. This randomized controlled trial, conducted with a sample of 100 participants undergoing conventional psychotherapy-based treatment, demonstrated improvements in both a quality of life questionnaire and alcohol consumption. However, a notable limitation in the reporting of results is the absence of information regarding the level of statistical significance.

A Brazilian randomized study[28] evaluated 61 cocaine-dependent patients undergoing outpatient treatment using a questionnaire that assessed physical, psychological, and social parameters. Results favored acupuncture during the first month; however, this difference was not sustained in the second and third months. The study reported a high dropout rate of 65%. Similarly, a trial by Lipton et al.[25] also experienced a high dropout rate but showed favorable outcomes for acupuncture. This randomized study included 150 crack/cocaine users, though only 30 participants completed more than two weeks of treatment. Based on the available data, a significant reduction in cocaine use was observed.

The only positive study[13] that analyzed results using an intention-to-treat approach reported a significant reduction in cocaine use. This randomized trial included 82 patients dependent on both cocaine and opioids who were undergoing methadone treatment. The study employed ideal control points located on the helix.

It is important to note that high dropout rates are common in studies involving individuals who use psychoactive substances.[7] In the studies included in this review, attrition rates ranged from 30 to 65%, representing a source of bias that should be taken into account in future research.

The two largest studies in terms of sample size reported no benefit from auriculotherapy.[8,17] Both were randomized clinical trials that employed various control conditions, including *sham* points, non-specific points, relaxation therapy, or continuation of the conventional treatment provided by the service. One of these studies uniquely individualized auricular points based on symptoms reported by patients during the session, making it the only trial in this review to do so. Following the publication of these studies, a decline was observed in the number of rehabilitation clinics offering this complementary therapy.

Comparisons involving auricular points used in the intervention were not possible, as the studies reviewed were based primarily on the NADA protocol points. Minimal side effects were reported in some studies. No studies included pharmacological therapy as a control.

CONCLUSION

Current evidence does not support a benefit of auricular acupuncture in the care of individuals who use psychoactive substances. None of the studies reporting positive effects evaluated significant improvements in craving or withdrawal symptoms. Anxiety and depression are not considered specific withdrawal symptoms.[11]

Regarding study quality, it is important to highlight the challenges associated with conducting double-blind clinical trials in this context. *Sham* points should not be used as controls, as points located in other areas of the auricle are easily perceived by participants, rendering it impossible to maintain the double-blind design.

Many studies are conducted in rehabilitation clinics where dependence and abstinence are minimum requirements for treatment inclusion. As previously noted, care for substance users should address their individual complexities in accordance with HR ethics. The focus on dependent and abstinent populations introduces bias in the studies analyzed.

In a study,[27] participants who did not receive group counseling therapy showed a significant difference in cocaine use outcomes, reinforcing evidence that supports the effectiveness of psychotherapy in treating cocaine users.[8]

Despite the lack of robust evidence, multiple variables influence study outcomes. Based on reports from acupuncturists and patients describing benefits of acupuncture, further research is warranted to more precisely determine the role of auriculotherapy in the care of individuals using psychoactive substances. The author and advisor declare no conflicts of interest.

CONFLICT OF INTERESTS

Nothing to declare.

AUTHORS' CONTRIBUTIONS

GP: Conceptualization, Methodology, Data Curation, Formal Analysis, Writing – Original Draft, Writing – Review & Editing.

MKE: Writing – Review & Editing, Supervision, Project Administration.

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Appendix A. Example of the strategy used in the United States National Library of Medicine (PubMed).

Auriculoterapia;"Acupuntura Auricular";"Acupuntura na Orelha";"acupressão auricular";"Acupuntura en la Oreja";"Auriculotherapy"[Mesh];Auriculotherapy;*Auriculotherapie;"Auriculo therapies";"Acupuncture, Ear"[Mesh];"Ear acupuncture";"Ear Acupunctures";"Ear Acupressure";"Auricular Acupuncture";"Auricular Acupunctures";"auricular acupressure"

AND

"Psicotrópicos";"Psicotrópico";Psicoativ*;"Psicofarmaco";"Psicofarmacos";"Transtornos Relacionados ao Uso de Substâncias";"Abuso de Drogas";"Abuso de Substâncias";"Adição a Drogas";"Dependência de Drogas";"Dependência de Substâncias";"Uso de Substância";"Usuários de Drogas";"Dependentes Químicos";"Drogaditos";"Usuário de Droga";"Viciados em Drogas";"Viciado em Droga";"Alcoólicos";Alcoolist*;Alcoólatra*;"Alcoolismo";"Abuso de Álcool";"Psicoactivo";"Psicoactivos";"Psicodroga";"Psicodrogas";"Trastornos Relacionados con Sustancias";"Abuso de Sustancias";"Adicción a Drogas";"Dependencia a Drogas";"Dependencia a Sustancias";"Uso de Sustancia";"Consumidores de Drogas";"Adictos a las Drogas";"Adictos a las Sustancias";"Dependientes de Sustancias";"Dependientes de las Drogas";"Dependientes de las Sustancias";"Drogadictos";"Alcohólicos";"Alcoholismo";"Abuso de Alcohol";"Psychotropic Drugs"[Mesh];"Psychotropic Drugs";Psychotropic*;"Psychoactive";"Psychopharmaceutical";"Substance-Related Disorders"[Mesh];"Substance-Related Disorders";"Drug Abuse";"Substance Abuse";"Drug Addiction";"Drug Dependence";"Substance Dependence";"Substance Use";"Drug Users"[Mesh];"Drug Users";"Drug Abuser";"Drug Abusers";"Drug Addicts";"Drug Addict";"Drug User";"Alcoholics"[Mesh];"Alcoholics";"Alcoholic";"Alcoholism"[Mesh];"Alcoholism";"Alcohol Abuse"

Appendix B. Data extraction form.

1. Title
2. Researcher
3. Year
4. Eligibility for the study
5. Design (PICO - Population, Intervention, Control, Outcomes)
6. Objectives
7. Results
8. Authors' conclusion
9. Quality (risk of bias)
10. Points used
11. Additional data