

Use of auriculotherapy to control of low back pain, anxiety and stress of professionals of the correctional system

Uso da auriculoterapia no controle da lombalgia, ansiedade e estresse de profissionais do sistema penitenciário

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ABSTRACT

BACKGROUND AND OBJECTIVES: Auriculotherapy is an integrative practice used to relieve physical and emotional symptoms, especially in relation to pain. It has a low cost and easy applicability, which makes it a viable and eligible therapeutic resource. The present study aimed to identify the contributions of auriculotherapy to improve the quality of life of professionals of the correctional system.

METHODS: Experimental study, with data collection between July and December 2018 in the female public prison of a city of Mato Grosso, Brazil. Low back pain, anxiety, and stress were the symptoms selected for the intervention with auriculotherapy evaluated at each auriculotherapy session by psychometric instruments. Data analysis was performed using STATA software version 12.0.

RESULTS: Women aged between 30 and 44 years old, brown, with complete higher education and living with spouse prevailed. There was a greater reduction in the intensity of symptoms in the intervention group, especially in relation to stress and low back pain, which indicates the effectiveness of auriculotherapy in this group.

CONCLUSION: Auriculotherapy has shown promising in this occupational context and can bring direct benefits to profes-

sionals, both in relation to the willingness to work and to promote the quality of life.

Keywords: Auriculotherapy, Low back pain, Occupation health, Prisons.

RESUMO

JUSTIFICATIVA E OBJETIVOS: A auriculoterapia é uma prática integrativa utilizada para o alívio de sintomas físicos e emocionais, principalmente em relação à dor. Possui baixo custo e fácil aplicabilidade, o que torna um recurso terapêutico viável e elegível. O objetivo deste estudo foi identificar as contribuições da auriculoterapia para a promoção da qualidade de vida de profissionais do sistema penitenciário.

MÉTODOS: Estudo experimental, com coleta de dados entre julho e dezembro de 2018 na cadeia pública feminina de um município mato-grossense, Brasil. Foram elencados os sintomas lombalgia, ansiedade e estresse para a intervenção com auriculoterapia, sendo avaliados a cada sessão por meio de instrumentos psicométricos. A análise dos dados foi realizada através do programa STATA versão 12.0.

RESULTADOS: Houve prevalência de mulheres com idade entre 30 e 44 anos, cor parda, com ensino superior completo e residindo com cônjuge. Verificou-se redução mais acentuada da intensidade dos sintomas no grupo intervenção, especialmente em relação ao estresse e lombalgia, o que aponta a efetividade da auriculoterapia nesse grupo.

CONCLUSÃO: A auriculoterapia mostrou-se promissora neste contexto ocupacional, podendo trazer benefícios diretos aos profissionais, tanto em relação à disposição para o exercício laboral quanto para a promoção da qualidade de vida.

Descritores: Auriculoterapia, Dor lombar, Prisões, Saúde do trabalhador.

INTRODUCTION

In Brazil, within the scope of the Unified Health System, the consolidation of the National Policy of Integrative and Complementary Practices (PNPIC) and corresponding ordinances comprise numerous integrative practices, such as auriculotherapy^{1,2}, a practice used for more than 4,000 years³ to relieve symptoms such as pain. This technique can be used to minimize the damage to workers' health and provider a less harmful work space⁴.

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In prison environments, there are multiple pressures and conflicts generated, either due to the permanent state of watch in the face of any form of risk to institutional, personal, and inmates' integrity, as well as due to the precarious structural conditions that contribute to progressive occupational illness^{5,6}.

The routine of these professionals is reflected in pathological signs and symptoms that are usually silenced by self-medication and/or neglected, circumstances that can intensify the damage to the worker's health and interfere in the good development of work activities⁷. A recent study carried out in a public prison in Mato Grosso (BR) found that most professionals experienced some type of pain, especially after the work shift or extra shifts, but they hardly sought medical assistance⁸.

Professionals consider that the balance between body, mind, and state of mind are relevant to guaranteeing health and that they should be worked on within the institution⁸. Auriculotherapy tends to be a viable therapeutic practice in prisons since it promotes the professionals' well-being and helps to identify situations that cause pain, worries/discomfort, and other sufferings. This study aimed at identifying how auriculotherapy can improve the quality of life of professionals of the correctional system.

METHODS

An experimental study with two groups: control group (CG - untreated) and intervention group (IG - with the application of auriculotherapy), developed in the female public prison in the mid-north region of Mato Grosso. Eighteen of the 22 professionals who have been working at the institution for more than 12 months were included, except for four who were on vacation or pregnant women were included.

The participants were numbered sequentially, and the portal www.randomizer.org was used to draw lots, constituting the CG and IG with nine participants each. An interview was conducted following a structured script to collect sociodemographic data and symptom history. The professionals reported the most frequent symptoms in the last 30 days. All of them reported low back pain, anxiety, and stress. Thus, these three symptoms were listed for the auriculotherapy intervention. Data collection was carried out from July to December 2018, in an institution's room reserved for this purpose, and a nurse trained in Chinese auriculotherapy did the procedure. The individuals were seen weekly for six weeks. At the end of each session, the IG had auriculotherapy sessions with the assessment of the presence and intensity of symptoms, while only the symptoms were assessed in the CG by individual interviews.

For the analysis of low back pain, the numerical pain scale (zero-100) was used, where zero means no pain and 100 the greatest unimaginable pain⁹. The instrument used to measure the state of stress was the Lipp's Stress Symptoms Inventory for Adults¹⁰. Anxiety was analyzed according to the State-Trait Anxiety Inventory (STAI)^{11,12}.

Then, to assess the evolution, the symptoms were classified from zero to four, where zero corresponds to the absence of the symptom, and four the highest intensity. The intensity of each symptom was measured three times: at the beginning of the sessions (T0), after three (T1) and six (T2) sessions.

The pinna was cleaned with alcohol at 70%, and the participant was instructed about any possible discomfort. Vaccaria seeds were fixed with hypoallergenic microporous tape, and the participants were instructed to stimulate the sites three times a day. The ear points were: *shen men*, kidney, diaphragm, liver, heart, brain stem, and anxiety, according to the Traditional Chinese Medicine mapping (TCM)¹³. During the study, none of the participants took painkillers, anti-inflammatories, or tranquilizers. The Human Research Ethics Committee of the University of the State of Mato Grosso approved this study under CAAE: 50417815.8.0000.5166 and opinion 1.457.621. All ethical aspects of research with human beings were respected, as recommended by the Declaration of Helsinki and Resolution 466/12. All participants signed the Free and Informed Consent Term (FICT).

Statistical analysis

After the data collection, the data was entered twice and compared in Data Compare. Afterward, the database was imported to STATA version 12.0. Pearson's Chi-square test was used to compare the proportions between IG and CG.

RESULTS

Females prevailed (61.1%), aged between 30 and 44 years (100.0%), brown (55.5%), with complete higher education (100.0%), living with a spouse (77.7%) and performing the role of Prison Security Officer (PSO) (83.3%). They consumed alcohol (50.0%), did not perform physical activities (66.7%) and denied the use of antidepressants (94.4%).

The main symptoms/conditions mentioned were headache, neck pain, myalgia, sciatic pain, migraine, low back pain, and pelvic pain. They also mentioned stress, anxiety, insomnia, panic attacks, feelings of anger, and fatigue.

According to the pain scale, the intensity of the low back pain corresponded to "unimaginable pain (4)" (100.0%) at the beginning of the sessions, "unimaginable pain (4)" (100.0%) after three sessions, and "mild pain (1)" (100.0%) after six sessions among the participants of the CG. In the IG, "severe pain (3)" (50.0%), "moderate pain (2)" (25.0%), and "unimaginable pain (4)" (25.0%) were observed at the beginning of the sessions. "Moderate pain (2)" (50.0%), "mild pain (1)" (25.0%) and "absence of pain (0)" (25.0%) after three sessions, and "absence of pain (zero)" (50.0%), "severe pain (3)" (25.0%) and "unimaginable pain (4)" (25.0%) after six sessions (Figure 1).

The intensity of anxiety reported by the CG participants was "almost always (4)" at the beginning of the sessions (75.0%), "almost never (1)" after three sessions (50.0%), and "sometimes (2)" after six sessions (50.0%). In the IG, this symptom was referred to as "almost always (4)" at the beginning of the sessions (100.0%), and "almost never (1)" (25.0%), "sometimes (2)" (25.0%), "frequently (3)" (25.0%), and "almost always (4)" (25.0%) after three and six sessions.

It was possible to verify that stress was reported as "exhaustion (4)" (75.0%), and "almost exhaustion (3)" (25.0%) at the beginning of the sessions, "almost exhaustion (3)" (50.0%), "exhaus-

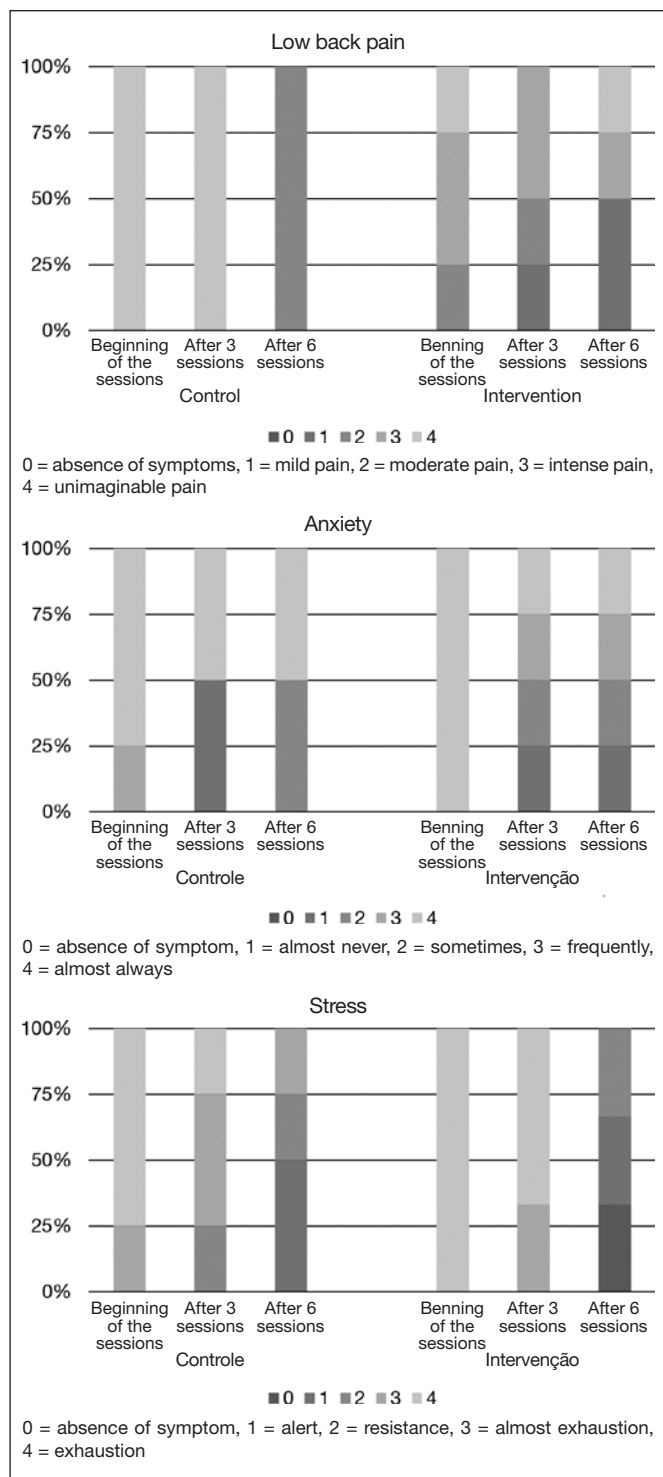


Figure 1. Intensity of low back pain, anxiety, and stress in the control and intervention groups of professionals in the correctional system. Tangará da Serra, MT, 2019

tion (4)” (25.0%), and “resistance (2)” (25.0%) after three sessions and “alert (1)” (50.0%), “resistance (2)” (25.0%), and “almost exhaustion (3)” (25.0%) after six sessions, in the CG. Among the participants of the IG, this intensity varied between “exhaustion (4)” (100.0%) at the beginning of the sessions, “exhaustion (4)” (66.6%), and “almost exhaustion (3)” (33.3%)

after three sessions, and “alert (1)” (33.3%), “almost exhaustion (3)” (33.3%), and “no stress (zero)” (33.3%) after six sessions. The intensity of low back pain, anxiety and stress showed a more significant reduction in the IG, with emphasis on the absence of low back pain (50.0%), and stress (33.3%), after six sessions of auriculotherapy.

DISCUSSION

The sociodemographic characteristics of the correctional system professionals at the national level correspond to male¹⁴, age group between 28 and 50 years¹⁵, black¹⁶, individuals with a partner, complete higher education¹⁷, and most of them as PSO¹⁸. These data coincide with the findings of this study, except for gender and color. These may be related to the peculiarities of the female prison staff, with the preference for being of the same gender as the inmates¹⁹, in addition to the characteristics of the region, since most public servants are female²⁰ and self-declared browns²¹. Similar findings were found in national and international surveys, with reports of insomnia, physical inactivity, and consumption of psychoactive substances, mainly alcohol²²⁻²⁷. This unhealthy lifestyle can trigger anxiety and stress. Researchers point out that the combination of these symptoms is also the result of interpersonal conflicts, inadequate working conditions, and bullying by managers/superiors²⁸. Another intensifying factor is the limited knowledge about actions/behaviors to face the sources that generate suffering and pain, which requires social skills and interventions by the player directly and/or indirectly involved in the prison environment, specifically in terms of *in loco* health care compliance²⁹.

The absence of low back pain was reported by 50% of the IG participants at the end of the treatment, whereas in the CG, 100% of the professionals had low back pain during data collection (T0, T1, and T2). A study on occupational risks conducted in the state of Maranhão showed that low back pain is an important ergonomic risk³⁰. Specifically, among professionals of a prison in Florianópolis (SC), low back pain was mentioned as a pathological condition associated with the occupational activity³¹.

The proper treatment for low back pain must consider the diversity of populations, access to care technologies, and clinical response to the therapeutic strategy³². When using auriculotherapy, the user becomes the key player of his own care, with the autonomy to intervene in the therapeutic process. This perspective of care stimulated the creation and dissemination of training in auriculotherapy throughout the country and is currently the most widely offered integrative practice in the services that make up the Primary Health Care (PHC), quite suitable for low back pain^{33,34}.

Besides, the comparison of this integrative therapy with the pharmacological treatment, according to an Argentine study, also proved to be effective³⁵. Other studies have indicated the benefits of auriculotherapy in controlling pain in musculoskeletal disorders³⁶, neck pain³⁷, fibromyalgia³⁸, pain in the shoulder³⁹, and lumbar-sciatic pain⁴⁰.

Regarding anxiety, the intensity of this symptom decreased after three (T2) and six sessions (T3), being more significant in the

IG, which coincides with the results of a survey in São Paulo⁴¹ and Chile⁴². The reduction in the anxiety levels was proven by the statistical analysis of a prospective clinical trial conducted in Germany, showing that this practice also had positive effects on anger, tension, aggression⁴³, and depression⁴⁴.

Regarding stress, everyone reported exhaustion at the beginning of treatment. Over the weeks, these levels were reduced, even with reports of absence of the symptom. National studies have also evidenced this benefit with students in the health area⁴⁵, in nursing teams⁴⁶, professionals working in the Pediatric Intensive Care Unit⁴⁷, hospital receptionists⁴⁸, low-risk pregnant women⁴⁹, and university professors⁵⁰.

The positive physical and psycho-emotional results were observed in the very first auriculotherapy sessions (T2) for the low back pain, anxiety, and stress symptoms, indicating the effectiveness of the practice in a short period. Researches that applied auriculotherapy to patients with these symptoms used an average of 10 to 12 sessions to obtain the results^{46,51,52}. However, other national and international researches found positive scientific evidence after the first auriculotherapy session for pain relief in women in labor⁴¹ and the reduction of anxiety in university students⁵³, after four sessions in patients with fibromyalgia³⁸ and after seven sessions to reduce anxiety in malnourished⁴². For professionals who work in the correctional system, three sessions were sufficient to reduce the symptoms of extreme stress by 33.3%.

Such results signal the improvement and recovery of the prison officer's health. However, it is important to emphasize that auriculotherapy can be extended to the entire prison population to reduce symptoms such as acute pain of different etiologies and other pathological conditions. Adherence to auriculotherapy can contribute to assessing the need to use drugs, as shown in a study that obtained a reduction in blood pressure after one session⁵⁴.

Among the limitations of the study, the low number of participants stood out, not allowing the verification of symptoms reduction regarding gender. However, the study sample was universal. This is a pioneer study in the Midwest, and that meets a demand that is not always acknowledged in health services.

CONCLUSION

Auriculotherapy had positive effects on the intensity of low back pain, anxiety, and stress. The inclusion of this integrative practice in the worker's health program was promising since the reduction of pain improved the professional's quality of life, work performance, and the consequent increase in the standard of living.

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