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## **Alternative medicine - a replacement or an adjunctive for conventional therapy of chronic pain**

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## **ABSTRACT**

### Introduction and purpose:

Many people worldwide suffer from chronic pain. It is a very inconvenient condition on its own, not only an accompanying symptom of other diseases. Conventional drug treatment may be insufficient in some cases or may even cause serious side effects in the long term. In response to this, we aim to demonstrate the diversity of alternative pain management techniques in this review and identify conditions where such techniques may be beneficial to patients.

### State of knowledge:

This paper evaluates some of the most common alternative pain management methods (acupuncture, massage, chiropractic, mind body therapies, herbal medicine, music therapy) and their application in specific cases of chronic pain. We also describe the possible mechanisms of action involved in the effectiveness of these techniques, based on contemporary studies.

### Summary:

In conclusion, there are conditions where alternative medicine may be beneficial for patients suffering from chronic pain. The studies taken into account showed the best effects for chronic musculoskeletal pain treated with methods such as acupuncture and massage. Mind-body therapies may reduce stress levels and symptoms of depression associated with chronic pain, consequently improving the quality of patients' lives. However, alternative methods should not yet be considered as replacements for conventional drug therapy. More studies are needed to evaluate whether alternative therapies will play a significant role in chronic pain management in the future.

**KEYWORDS:** chronic pain, alternative medicine, acupuncture

## **INTRODUCTION AND PURPOSE:**

Chronic pain is a significant problem that affects a large number of people worldwide.

According to the World Health Organization (WHO), chronic pain affects an estimated 20% of adults. It is a condition that causes persistent pain and discomfort that lasts for months or even years. Such pain may be caused by a wide range of conditions, including injuries, diseases, and other health issues. However, it is an independent condition, not merely an accompanying symptom of other diseases. Therefore it has its own medical definition [1].

Chronic pain can have a significant impact on a person's quality of life, causing physical, emotional and social challenges [2]. It can limit a person's ability to perform daily activities, affect their mood, and cause fatigue and other symptoms. Chronic pain can also lead to depression, anxiety, and other mental health conditions, as well as addiction to pain medication [3].

In response to the concerning issue of analgesic addiction, this article explores a variety of alternative pain management methods, some of which have been in use for hundreds of years. We aim to present the latest state of knowledge on these unconventional methods, according to contemporary studies, and to consider the potential for providing alternative medicine alongside drug therapy.

## **DESCRIPTION OF THE STATE OF KNOWLEDGE:**

Studies indicate that alternative pain management methods are most frequently used to treat musculoskeletal pain, with a majority of patients utilizing these therapies reporting them as “helpful” [4]. Therefore, it appears that such methods can serve as valuable adjuncts in the treatment of chronic pain. Here, we present some of these methods:

### **1. ACUPUNCTURE:**

Originating in China more than 3000 years ago, acupuncture remains a useful method for pain management. There are numerous forms of acupuncture, including needling, moxibustion, and cupping [5]. Needling, the most commonly associated acupuncture technique, involves inserting needles into specific acupuncture points on the body. The same points are stimulated in laser acupuncture with non-thermal laser irradiation. Cupping, in contrast, creates a vacuum over the acupuncture points using bamboo, glass, or ceramic cups [6]. The primary aim of these techniques is to promote the flow of Qi through the body [7].

1.1 Osteoarthritis: according to a 2017 meta-analysis acupuncture caused meaningful reduction in chronic knee pain. This method was compared in this study with standard care provided to patients. [8]. Similar studies proved that acupuncture has short-term effectiveness in pain relief for knee osteoarthritis in comparison to sham acupuncture or Western medicine. It is worth noting that in general acupuncture is a reasonable option for patients with such ailments, especially when used in conjunction with nonsteroidal anti-inflammatory drugs or rehabilitation.

1.2 Low Back Pain: In a randomized controlled trial (RCT), 130 adults with low back

pain were assigned to groups receiving either needle acupuncture or sham acupuncture, which involves using blunt needles without penetrating acupuncture points. Patients treated with needle acupuncture reported lower scores for pain [9], indicating that acupuncture has physiological effects beyond mere placebo. However, despite its relevance to analgesia, acupuncture remains controversial due to a lack of biological plausibility and its origins in theories outside of biomedicine [10]. It's also worth noting that pregnancy-related low back pain may be relieved with acupuncture [11].

1.3 Rheumatoid Arthritis: Due to discrepancies among studies and a lack of treatment protocols, further well-designed research is needed on acupuncture's role in treating RA pain.

1.4 Fibromyalgia: A 2019 meta-analysis of 12 RCTs indicated that acupuncture was more effective in both short and long term pain relief compared to conventional medication [12]. However, due to the small number of studies, it is not adequate to confirm the efficacy of acupuncture therapy for this condition.

1.5 Migraines: A 2016 review of 22 RCTs showed that acupuncture could reduce migraines by 50% in 41% of patients, and it was superior to sham acupuncture [13]. Another study indicated that combining acupuncture with tuina therapy, a form of massage, resulted in less analgesic usage in treatment [14].

## **2. MASSAGE:**

Massage therapy involves a therapist manipulating the skin, tendons, muscles, and ligaments using hands, fingers, elbows, or even feet. Its possible mechanism of action is blocking pain signals from reaching the central nervous system by stimulating larger nerve fibers [15].

It has been evaluated that massage has a positive effect on cancer-related pain [16]. Moreover a review showed that this therapy has beneficial effects on fibromyalgia [17]. Overall, massage may be a helpful adjunct to the treatment strategy for patients with chronic pain. However, it is crucial that massage therapy be provided by experienced therapists to ensure its safety.

## **3. CHIROPRACTIC**

The primary goal of chiropractic manipulation is to improve joint mobility, alleviate pain, and enhance overall physical function.

During a chiropractic manipulation, a chiropractor applies controlled, manual force to specific joints or areas of the body, typically the spine. This force is intended to restore proper alignment, mobility, and balance to the affected joint or joints. There is little research on the efficiency of chiropractic in pain management. Some of them

evaluated if this practice is beneficial for patients with low back pain, migraine and neck pain. [18, 19, 20]. In summary, while there is a low level of evidence to support its efficacy in these conditions, chiropractic remains a widely used method.

#### **4. MIND BODY THERAPIES:**

Mind body therapies refer to a broad range of approaches that recognize the interconnectedness between the mind, emotions, and physical health. These therapies aim to promote well-being and healing by addressing the relationship between thoughts, feelings, beliefs, and physical symptoms. Possible mechanism of action in such techniques refers to reducing stress level and its negative effect on pain perception.

4.1 Yoga is a holistic practice that originated in ancient India and has evolved over thousands of years. It encompasses physical, mental, and spiritual elements, aiming to promote overall well-being and unity between the body, mind, and spirit. The most crucial elements of this practice are physical postures and breathing exercises. According to two meta-analyses yoga is effective in back pain management [21, 22].

4.2 Tai Chi is a Chinese martial art form that involves slow, deliberate movements and deep breathing, promoting relaxation, balance, and harmony between mind and body. In a randomized controlled trial of 160 people this method was proved efficient in back pain reduction. Moreover, patients reported improvements in disability based on the Roland-Morris Disability [23]. Another study suggested Tai Chi may benefit patients with post-traumatic stress disorder and chronic pain [24].

4.3 Mindfulness is a practice that involves focusing one's attention on the present moment, without judgment or attachment. It is derived from Buddhist traditions but has gained popularity as a secular practice in recent years. With regular practice, mindfulness meditation can help reduce stress, improve focus and concentration, enhance emotional well-being, and promote a greater sense of overall calm and balance in life. According to systematic review and meta analysis this method improves pain, depression symptoms and quality of life but large-scale RTCs are needed to prove its efficiency in chronic pain management [25].

4.4 In biofeedback sessions, various sensors are attached to the body to monitor specific physiological functions such as heart rate, skin temperature, muscle tension, breathing patterns, or brainwave activity. The sensors detect changes in these functions, and the information is then displayed to the individual in the form of visual, auditory, or tactile feedback.

By observing this feedback, individuals can learn to recognize and understand their body's responses and make conscious changes to improve their health and well-being. In three RCTs this method was found to be beneficial in reducing muscular tension

and therefore helpful for neck/shoulder pain [26, 27, 28].

4.5 Hypnosis is a therapeutic technique that involves inducing a trance-like state of heightened suggestibility and relaxation in an individual. In this state, a person is more open to suggestions and is able to focus their attention intensely on a specific idea or experience.

In a review of 12 RCTs hypnosis was found to be equal or even better than standard care treatments (biofeedback, CBT, medication). The comparison was for back pain, cancer-related pain, fibromyalgia, headaches [29]. Another study showed that the real advantage of hypnosis is to enhance the effects of existing pain treatment offered by anesthesiologists [30].

## 5. HERBS:

Herbal medicine utilizes the therapeutic properties of different parts of plants, including leaves, flowers, stems, roots, and seeds, to promote healing and maintain health. These plant materials contain various active compounds, such as alkaloids, flavonoids, terpenes, and essential oils, which are believed to have medicinal properties.

Possible mechanisms of action in this practice may be via antiinflammatory effect (e.g. curcumin, Devil's claw) or via desensitization (e.g. capsaicin). A systematic review and meta-analysis of 24 RCT's showed that combining traditional herbal medicine with conventional therapy results in lower cancer-related pain [31]. Compound kushen injection (a form of traditional Chinese medicine) contains aqueous extracts from the roots of Kushen (*Radix Sophorae Flavescens*) and Baituling (*Rhizoma Smilacis Glabrae*). A review of 7 RCT's evaluated that this method has significant effect in bone cancer pain reduction [32]. While providing herbal medicine it is crucial to avoid drug-herb interactions. Despite a significant hype in the media this method may be a useful adjunct to a comprehensive treatment program rather than an exclusive treatment.

## 6. MUSIC THERAPY:

Music can play a significant role in chronic pain therapy as a complementary approach to conventional treatments. Such a therapy can divert attention away from pain and reduce anxiety, emotional distress. A systematic review and meta-analysis of 14 RCT's showed that music therapy has a beneficial effect on self-reported pain and depression symptoms. Moreover it was evaluated that self-chosen music has a higher analgesic effect than researcher-chosen music [33]. More studies are necessary to answer questions about the mechanisms underlying the effect of music. It's important to note that it must not be a standalone treatment and has the most effect combined with conventional therapy.

## **SUMMARY:**

As it was mentioned in this paper, chronic pain affects millions of patients. The most frequent therapies in this condition are based on pharmacologic treatment. Some medications such as opioids lead to addiction especially when used long-term. Alternatives for opioid-based therapy are either not as effective for pain management or carry their own side consequences. According to current medical knowledge it would be impossible to resign from pharmacologic treatment entirely. Therefore all we can do is to minimize side effects of conventional drug therapy. It is possible by reducing doses needed to adequate pain alleviation. We can approach patients holistically and provide other modalities for treating chronic pain. Some of them were evaluated in this review to be effective. Acupuncture was shown to be beneficial in reducing low back pain and pregnancy-related pain. Combination with tuina therapy resulted in less usage of analgesic in migraines. Efficiency of acupuncture was not this clear in the case of other conditions like rheumatoid arthritis and fibromyalgia. Massage and chiropractic were shown to be rather an adjunct to conventional treatment of musculoskeletal pain. Mind body therapies, herbs and music therapy should not be considered as a standalone treatment to chronic pain.

In summary, while alternative therapies should not be considered as replacements for pharmaceutical management, they can be vital in specific cases to reduce a patient's overall need for medication. Further studies are needed to evaluate whether alternative therapies will play a more significant role in future chronic pain management strategies.

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