

# Non-pharmacological Treatment of Addiction

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**ABSTRACT:** Drug abuse is a chronic, recurrent disorder which causes both physical and psychological damages to the patients. Due to the direct, complex effect of drugs on the nervous system, the patients experience annoying symptoms after withdrawal. In this regard, using chemical agents has not been highly successful and, consequently, it is necessary to investigate the alternative medicine, particularly herbal remedies, which have a long history in treating the diseases and are accompanied by fewer side effects. The present study is a review of 107 studies on Complementary Alternative Medicine procedures, particularly herbal medicine, in treating addiction. These articles are available in Pub Med and Google Scholar databases. In addition, the articles related to alternative and herbal medicine can be accessed at the following Iranian journals: SID, J Subst Abuse Treat, Drug and Alcohol Review, Springer, Elsevier, and Alternative Therapies in Health and Medicine. There are a limited number of reliable documents in this field. Moreover, their results show that these methods are not highly successful when they are used alone; however, they can be used as an adjuvant therapy in reducing the withdrawal symptoms. Using medicinal plants is a new method in treating addiction and more studies are needed to be conducted on the recommendation for wider utilization of this therapy. Overall, acupuncture has great effects on the physical symptoms of the withdrawal syndrome. Other alternative therapies can also restore the patients' energy and reduce their depression.

**Keywords:** Addiction, Herbal Medicine, Complementary Medicine.

## INTRODUCTION

Drug abuse is considered as a great challenge to social and public health in the world. To date, 185 million addicts are there around the world. According to the statistics, with 1,200,000 permanent drug abusers and 600,000 occasional abusers, Iran is one of the countries which are seriously confronting this annoying phenomenon. In spite of Iran's success in eradication of producing opiates, its wide boundaries with great producers, including Afghanistan and Pakistan, has caused the country to be one of the major consumers of drugs alongside Russia (World health organization 2004, Afkhami 2005). The problems produced by psychoactive drugs are different depending on the type of drugs and the pattern of use (Aqel & Shaheen .1996). Nevertheless, addiction to opiates, such as heroin, is of a greater importance due to being accompanied by special damages, including death and crime. Between 1988 and 1993, 33-39% cases of death resulting from using high doses of drugs were reported among the opiate consumers in British Columbia (Cain 1994). Furthermore, the main factor of new cases of hepatitis C in Canada is related to using heroin and most of the heroin addicts are involved in criminal activities (Remis 2002, Fischer et al .2001). During the recent years, an increasing trend in using heroin has been observed in the world. According to the official statistics presented in 1946, People's Republic of China had more than 20 million opioid users which comprise 5% of the country's population (Cicero et al. 2005, Compton & Volkow.2006, Haydon 2005, Bai 2001). In addition, 75-85% of these individuals were addicted to heroin (Bai 2001, Tang et al. 2005, Dackis & Brien. 2001). Considering the prevalence of addiction to heroin between 1980 and 1990, a large number of researchers aimed at finding an effective, low-risk treatment for this disorder and treatments and facilities were introduced all over the world, particularly in China (Tang et al. 2005). In general, addiction is diagnosed based on the history, psychological evaluation, clinical examination, and laboratory findings. After the diagnosis, selection of the correct treatment method and management of the addicted individuals to return them to normal life are of utmost importance. This management involves psychotherapy, medication therapy, therapeutic

engagement, and body reconstruction. In fact, addiction is a psychological disorder which is accompanied by physical dependence. Also, due to the direct effect of the drugs on the brain, addiction is considered as a recurrent disorder (Dackis & Brien. 2001, Di Chiara 1999). Moreover, addiction leads to empowerment of the behavioral patterns which result in involuntary consumption of drugs and, consequently, affect controlling the brain as well as the behavior (Gerdeman et al.2003). Such complex mechanism has caused most of the treatment methods for addiction not to be effective and the possibility of using drugs to be there even years after withdrawal (Zarrindast & Mousa-Ahmadi .1999, Izedi 2004). Furthermore, most of the individuals who plan to quit addiction, suffer from several psychological disorders which increases the complexity of the issue (Volkow & Li .2005, French et al.2000, Mark ea al.2001). In the middle of the 20<sup>th</sup> century, treating addiction was based on the psychological treatment methods; so that the individuals who referred for treatment returned to normal life with more energy (Aqel &Shaheen .1996, Miller 1990).Nowadays, the chemical agents which are available to the addicts have considerable side effects which have caused problems in the addicts' acceptance of these medicines (John 1998). Thus, alternative medicine was introduced as a common treatment method in the recent half century and has been utilized for treating various symptoms and disorders. Although only a limited number of studies have been conducted on alternative medicine, the individuals' belief in its effectiveness has led to its high acceptance. Various studies have reported that 30-50% of the adults in industrial countries use the alternative medicine in order to prevent or treat the diseases (Peniston & Kulkosky.1998). Studies have also shown that at the end of the 1800s, the health specialists made use of the alternative medicine for treating the addicts for the first time. These researchers believed that saline and electric tub were useful for treating the individuals who were addicted to heroin (Morgan 1981). In Iran, most of the studies conducted on addiction have focused on using the chemical agents and cognitive-behavioral interventions. However, herbal remedies have been welcomed by the people through the recent years. Considering the tendency toward the herbal remedies and the wide activities of the herbal shops which mostly do not have license for work, scientific and executive unions have been paying more attention to the alternative medicine recently (Najafi 2005, Lau et al.2001). Alternative medicine includes herbal treatment, as one of its major components, meditation, acupuncture, etc. (Brewington et al.1994). The present study aims to investigate non-chemical methods for treating addiction.

## METHOD

The present study is a review of 107 studies on Complementary Alternative Medicine (CAM) procedures, particularly herbal medicine, in treating addiction. These articles are available in Pub Med and Google Scholar databases. In addition, the articles related to alternative and herbal medicine can be accessed at the following Iranian journals: SID, Elsevier, J Subs Abuse Treat, Drug and Alcohol Review, Springer, and Alternative Therapies in Health and Medicine. These studies mostly involve medicinal plants, acupuncture, electro acupuncture, and other treatments, such as biofeedback, hypnosis, yoga, meditation, relaxation, Restricted Environmental Stimulation (REST), and aromatherapy, which are mostly being investigated. There are a limited number of randomized controlled clinical trials or accurate studies for a systematic investigation. Therefore, the researchers used the classified structure of the National Center for Complementary and Alternative Medicine (NCCAM) in order to report the available findings .NCCAM in the U.S. national institute of health has classified CAM into 5 categories: All medical systems, such as homeopathy, naturopathic medicine, Ayurveda, and traditional Chinese medicine, including acupuncture and acupressure.

Based on the biological methods, such as using vegetables, specific diets, special micronutrients, vitamins, minerals, and other food supplements.

Energy medicine which is of two types: A. treatment based on bioelectromagnetics; i.e., using energy in uncommon electromagnetic fields; for instance Tran cranial Magnetic Stimulation (TSM), and B. Bio field treatment which is affected by the energy field which apparently penetrates into the human body. Magnetic treatments include Qigong, Reiki, and therapeutic touch.

The methods which are based on the body and mind, including meditation, yoga, spiritual therapy, art, music therapy, and biofeedback.

Medical manipulation techniques, such as massage therapy and vertebral column manipulation. To date, a lot of CAM-based treatment interventions are not approved by the physicians because their clinical effects have not been completely confirmed. Therefore, it is quite necessary to investigate the effect of these interventions before recommending them to the patients. The present study also aimed to investigate various CAM treatments in drug abuse disorders and, at the same time, present evidences for their effectiveness.

## RESULTS

### **Medicinal plants**

Medicinal plants are considered as one of the first treatment methods in alternative and Chinese medicine. On the contrary to the western medicine which prescribes a particular medication for a specific disease, in the traditional Chinese medicine, disease represents the body's imbalance or disharmony with the environment. The traditional Chinese medicine aims to help the patients as well as the organs which are under pressure. In fact, Chinese researchers have emphasized this treatment approach for a long time. Between 1840 and 1952, a large number of Chinese addicts received the traditional Chinese plants and were detoxified; however, later on it was revealed that many of these drugs included opium (Simpson 1990). Afterwards, some guidelines were approved based on the researches conducted on the issue according to which, Food and Drug Administration of China inhibited using opium containing drugs in addiction treatment centers. Based on the new guidelines, using the following 10 drugs was allowed and considered beneficent in treatment of addiction: Gancao, Poria, Yanhusuo, Danggui, Ren Shen, Huangqi, Baizhu, Suanzaoren, Yuanzhi, and Yangjinhua (Min 2007). Considering the categorization of Chinese medicine which is based on a unique theory, strengthens health through vital energy, and removes the effect of the toxic materials, these plants are effective in treatment of addiction through a wide range of functions. These plants have different mechanisms, including empowerment, improvement of blood circulation, elimination of blood stasis, removal of excess heat from the body, and peace of mind. Such plants are also used in order to remove the acute withdrawal syndrome which is similar to the conditions experienced at the beginning stages of a disease and is accompanied by symptoms, such as feeling cold, fever, headache, runny nose, and cough.

Some studies have shown that treating the addiction to opiates using Chinese herbal medicine has fewer side effects and is comparable with clonidine (Tang ET AL.2007, Xu et al.2002, Xu et al.2000, Wang et al.2004).

Islamic medicine has also introduced medications in this regard. For instance, Nigella Satvia which is from the passion flower family and known all over the world is considered to have various advantages in the Islamic medicine. In a hadith, prophet Mohammad (PBUH) has stated that Nigella Satvia is a cure to every pain except for death (Aqel & Shaheen .1996). Nigella Satvia oil contains carboxyl polymer of thymoquinone (Akhtar & Riffat .1991). Moreover, this plant is able to block the calcium channel and reduce the neuronal activity in the peripheral tissues. In a study which was conducted by Sangi in Karachi between 2003 and 2005, 500 mg Nigella Satvia was orally given to 50 men who were addicted to opioid 3 times a day. These subjects were followed up for 12 days regarding the acute phase of addiction and then for 12 weeks regarding the withdrawal syndrome. The study results showed the effectiveness of this medicine in long-term management of the opioids. The results also showed that not only the plant was effective in treating the addiction, but it also played a major role in treating the infections and weaknesses which are among the main causes of pain after addiction. It should be mentioned that no side effects were detected in these patients. Overall, Nigella Satvia is an anti-allergic, antibacterial, sympatholytic medicine, has nutritional characteristics, is rich in amino acids, and can be an appropriate medicine for treating the symptoms of the withdrawal syndrome (Sangi et al. 2008, Nutt 1996). In the Iranian and Islamic medicine, medicinal plants have a special position in the people's culture and beliefs and treatment of addiction using herbal medicine has been greatly welcomed by the people. The recognized treatments which have symptomatic treatment effects in this regard include Berberine in Berberis which is the inhibitor of the calcium channel and eliminates tachycardia in the withdrawal phase. This plant also reduces diarrhea and nausea by weakening the sympathetic system and decreases the stimulation symptoms because of its anticonvulsant and anti-spasm effects. Another medicine is Valerian which reduces insomnia and agitation and its higher doses are effective in treatment of tension and spasm. Valerian applies its effect through release of Gamma Aminobutyric Acid (GABA) on the brain surfaces (Takese et al.1993, Akhondzadah et al.2001, Gerhard et al.1996, Santos et al.1994, Rahimi - Movaghar et al.2008).

One other effective medicine is passion flower which is a woody, hairy, climbing plant and has sedative as well as anti-anxiety effects. This plant is used as tincture and due to its characteristics, can be used as an adjuvant agent to clonidine (Bradley 1995, Bregner 1995, Bruneton 1995, British Herbal Medicine Association 1996). Nikzad et al. conducted a double-blind study on passion flower in Iran and divided 65 individuals who had referred for addiction treatment to clonidine + passion flower and clonidine + placebo groups. These subjects underwent treatment for 14 days and the results showed that although both protocols affected the symptoms of the withdrawal syndrome, the effects on the physical symptoms started quite faster in the first group (Nikzad 2002).

Papaver rhas' L is another medicinal plant whose extract is effective in treatment of morphine-dependence and its prescription has no effects on induction of dependence. Similar to morphine, this plant has anti-pain, hypnotic, and anti-diarrhea features and applies its effect through opioid, dopamine, benzodiazepine, and

cholinergic neurotransmitters (Pourmotabbed et al.2004). Also, Papaver somniferum is sometimes used and its dosage is reduced little by little in order to help the individuals (Razavi 2005). Nonetheless, it should be noted that in spite of the utilization of medicinal plants for a long period of time, using herbal products in treatment of addiction is rather a novel phenomenon and most of the studies on this issue are still being conducted on animal models (Lau et al .2001).

Chamomile includes the active ingredient "bisabolol" and the flavonoid material with similar effects to benzodiazepine. It also has anti-anxiety as well as anti-spasm effects. Esmaeeli conducted a study on the withdrawal symptoms in male rats in Qazvin University of Medical Sciences, Qazvin, Iran and showed that injection of 10, 20, and 30 mg/kg chamomile extract can reduce chronic as well as acute withdrawal symptoms (McKay & Blumberg .2006, Esmaili et al.2008).

Peganum harmala has alkaloids with harmaline being the most important one. This material is the antagonist of serotonin and inhibitor of monoamine oxidase and eliminates some of the withdrawal symptoms. This plant seems to apply its effects through influencing the opioid circuits and receptors as well as the limbic system and autonomic nervous system in the brain stem. Khalili et al. performed a study in order to investigate the effect of this medicine on morphine withdrawal symptoms in male rats and revealed the effectiveness of oral administration of peganum harmala powder in reducing the incidence of the withdrawal symptoms (Mahmodian et al.2002, Khalili et al .2011, Arshad et al.2008, Frenois et al .2005, Chang et al.2009).Carum Copticcum is another medicinal plant which has been investigated in this regard. This plant has the active ingredient "thymol" which has anti-nausea, anti-spasm, diuretic, and antiseptic effects, reduces fever, decreases the blood cholesterol, and sedates spasm. This active ingredient can activate each of the paths involved by narcotics, including the limbic system, spinal paths, intermediate nucleus of the thalamus, gelatinous substance of the spinal cord, and autonomic nervous system. In the study conducted by Jafari on the withdrawal symptoms in male rats in Qazvin, Iran, 10% extract of Carum Copticcum revealed to be as effective as methadone in treatment of the withdrawal symptoms (Jaffari et al.2004, Agrewala 1986, Mukerhas et al .1967, Balba 1973, Zargari 1997, Kenzie &George .1985, Paterson et al.1983, Anthony & Bertram .1996, Jafari et al.2005).Datura also has anti-pain and anti-inflammatory effects because of containing hyoscine and scopolamine. In addition, its anti-cholinergic effects can reduce the incidence of the withdrawal symptoms. These materials apply their effects through the limbic system as well as the neuronal circuits influencing the autonomic system. Khalili et al. used this plant in male rats and demonstrated that it reduced the withdrawal symptoms, particularly diarrhea and bruxism , Schulman & Bolton .1998, Miraldi et al.2001, Smith &Lane .1984, Smith et al.1984).

Reviewing the studies shows that using medicinal plants has been highly effective in controlling the withdrawal symptoms; however, their optimum effect is revealed in case they are accompanied by psycho-social interventions (Rahimi et al.2008). As the studies showed, the main challenge in using medicinal plants as an important component of the alternative medicine is the lack of sufficient information. Moreover, their potential harmfulness and lack of access to appropriate medical centers are other concerning issues of using this treatment approach all around the world (Pourmotabbed et al .2004, Razavi 2005, Tang & Hao .2007).

Furthermore, it should be mentioned that some herbal medicines contain opium which can lead to drug abuse. In a study which was conducted on 29 addicted men referring to the treatment centers in India between 2003 and 2009 and aimed to determine the opium or opium-like features of the medicinal plants, the subjects had averagely started the treatment after 3.3 years and used two opium containing medicines named Kamini and Barshasha. The findings of that study showed that Kamini included 23 mg opium in each 100 mg and each 160 g of Barshasha included 694 mg opium. Among the study participants, 8.82% had experienced side effects, 5 had become dependent on the plants, and most of them had experienced the withdrawal symptoms after disruption of the medicine; of course, these complications were quite less than those of the medical agents. Overall, further studies are needed to be conducted in order to make sure of the effectiveness of the medicinal plants (Debasish et al.2010).

### ***Acupuncture and Electro acupuncture***

Acupuncture is one of the major components of the traditional Chinese medicine as well as alternative medicine. This method which is performed using thin, silver needles can be done either in the form of manual acupuncture or electro acupuncture. Acupuncture was utilized as an analgesic and is being used in order to reduce the withdrawal symptoms in the recent 3 decades (Kong et al.2005, Shi et al.2006). Treatment by acupuncture is based on the stimulation of the peripheral nerves for sending messages to the brain to increase the secretion and release of endorphins and change the regulation of other hormones, such as prolactin, oxytocin, thyroid hormones, corticosteroid, and insulin (Steiner et al .1982).In 1972, Wen, a neurosurgeon in Hong Kong, for the first time

utilized acupuncture for treatment of addiction in a patient who had referred for neurosurgery and had been abusing drugs for 5 years. In doing so, he placed the needles in the right hand (SI3, IL4) and arm (TB9, EH4) and two needles in the right ear (brain stem) and used electrical stimulation (Steiner et al .1982, Cui et al .2008, Wen 1977, Wen 1979). Nevertheless, according to the studies carried out by Smith, the head of U.S. international acupuncture organization, in New York, two modifications were applied to this method. First, acupuncture was performed only on 5 bilateral points on the ear. Besides, electrical stimulation did not seem to increase the effectiveness of the treatment and both manual and electro acupuncture were believed to enhance the production and release of endogenous opioids in the central nervous system. This new method was used as the standard acupuncture therapy for years and had appealing results (Smith & Khan .1988, Culliton & Kiresuk .1996, Rockville 2003, Han 2003, Han 2004). However, the technical problems occurring while working with the addicts, such as breaking of the needles, would result in stress and caused the researchers to make use of metal needles containing adhesive electrodes on the acupuncture points. This method which was invented by Han was not less effective than electro acupuncture. In this method, a pair of stimulants is placed on IL4 (at the back of the right hand) and another on the opposite point; i.e., on the palm of the right or the left hand (IL4, P-8). Then, one other pair of electrodes is located on and at the back of the forearm and a flow of 2 Hz is conducted for 3 seconds. This stimulation has been shown to produce the 4 opioids in the central nervous system and be effective in reducing the withdrawal symptoms (Wang et al .1992, Han & Wang .1992, Zhong et al .2006). Overall, similar to the herbal medicines, acupuncture is mostly utilized for the symptoms of the withdrawal syndrome. Some treatment centers believe that acupuncture is only effective in treatment of mild to average addiction and several studies have reported the effectiveness of acupuncture alone in the withdrawal syndrome (Tang et al .2007). Montazeri et al. conducted a study on 40 adult males who were addicted to opioids in 2002 and showed that this method could reduce the intensity of the withdrawal symptoms (Jordan 2006, Montazeri et al . 2002). Yet, Wen et al used standard acupuncture for 220 addicts to heroin who were dealing with the withdrawal syndrome. They divided the patients into two groups receiving either standard acupuncture or lofexidine hydrochloride and the treatment outcome was investigated by monitoring the withdrawal symptoms. The study results showed acupuncture as a desirable, quick treatment method for the withdrawal symptoms (Wen et al .2005). According to the studies and documents, although most of the physicians are against acupuncture due to the lack of sufficient evidence for its effectiveness, they prefer this treatment approach more than the other methods of alternative medicine (Astin et al .1998).

### **Other treatments**

Biofeedback was used by Peniston for treating addiction disorders and became known with his own name. This method of alternative medicine assumes that acute or chronic drug abuse leads to a considerable change in the brainwaves which can be identified through qualitative electroencephalography (Peniston & Kulkosky .1998). In this approach, independent feedback from hearing is employed by closed eyes and using two low-frequency waves of alpha and theta and a condition similar to hypnosis is created (Sokhadze et al .2008, Scott et al .2005). Alpha-wave biofeedback was used by Kamiya in treating the addiction to opiates (Nowlis & Kamiya .1970). Moreover, Saxby conducted an experimental study on 14 patients and showed that alpha-theta biofeedback could reduce the tendency for drug abuse as well as the depression and stress mean scores (Saxby & Peniston .1995). The combination of biofeedback and relaxation was also revealed to increase the brain control in adults (Sharp et al .1997). Nevertheless, various results have been obtained regarding the treatment effects of biofeedback on addiction and, consequently, the effectiveness of this treatment approach is questionable (Behere et al .2009).

Hypnosis or magnetic treatment has been used for treatment of psychological as well as psychophysiological disorders since past. This method is performed through relaxation and mental exercise and although the patient is conscious in this method, s/he can respond to the stimulation. Hypnosis decreases the sympathetic activity, leads to consumption of oxygen and removal of Co<sub>2</sub>, reduces the blood pressure and heartbeat, and increases some types of brainwaves. In spite of the limited number of reports on the effectiveness of hypnosis in addiction treatment, no controlled study was found in this field and it seems that this method alone is not effective in treating addiction and may strengthen the effect of other treatments (96, Spiegel et al .1998, Haxby 1995).

Another component of the alternative medicine is yoga which involves both physical and mental exercise and has been used for supplying the patients' energy for thousand years. The 70-year studies have shown that yoga can change the cardio-pulmonary function, blood pressure, and brainwaves and, as a result, might be effective in treatment of addiction (96). In a quasi-experimental study which was conducted on two 12-patient groups, the subjects were divided into a control and a yoga intervention group. The participants of the intervention group took part in three 60-minute yoga sessions for 5 weeks and the results showed that the intervention

significantly reduced the stress and depression after the withdrawal (Mina Marefat et al .2011). Logically speaking, yoga is similar to biofeedback and has no identified effects on quitting the opiates; however, it can be used as an adjuvant therapy for decreasing the symptoms of the withdrawal syndrome, particularly the psychological ones such as depression (Shaffer & LaSalvia .1997).

Meditation is the simplified form of yoga and was established in the U.S. in 1960 (96). Meditation is based on the philosophy that chronic stresses occur due to insufficient and ineffective responses to stress and, eventually, lead to Lack of homeostasis and incidence of diseases. Drug abuse also aims at reaching homeostasis. Yet, meditation is considered as another way for establishing homeostasis by reducing agitation, increasing serotonin, and decreasing cortisol. Moreover, it is believed to reduce stress and anxiety after withdrawal alongside the other treatment methods (Walton & Levitsky. 1995). Chen conducted a study by using Qigong relaxation technique, which is a combination of relaxation, breathing, and imagination, in 2010. The findings of the study showed that this technique could reduce the stress, desire for drugs, and withdrawal symptoms and, as a result, improve the treatment outcomes by managing the patients' stress (Chen et al .2010).

Relaxation which is among the meditation techniques has a lot of problems for investigation and has not been well evaluated in the studies conducted on the issue. Although this method seems to reduce stress, it cannot treat addiction and reduce drug abuse by itself (Holder et al .2007).

Restricted Environmental Stimulation (REST) is another method which has been studied since 1970. In this method, the patient is located in a bed placed in a room with adjusted light and temperature for 12-24 hours and has access to food and restroom. Studies have shown that this method leads to biochemical changes, such as reduction of plasma and urinary cortisol, rennin, aldosterone, and blood pressure, and increases the alpha waves as well as the secretion of beta-endorphins. Overall, REST seems to be effective when accompanied by other treatments (Borrie 2003, Barabasz et al .1986).

Homeopathy is based on the stimulation of the patients' immune system. This method believes that in case an agent which causes the incidence of disease symptoms in a healthy individual's body is prescribed for a patient with similar symptoms, it will cure his/her disease. There are evidences that homeopathy was used in the U.S. and Europe for treating drug abuse; however, no controlled studies on the effect of homeopathy on treating opiate abuse have been published in medical journals. Of course, in the study which was conducted using opium on 14 alcoholic patients with average dependence duration of 15 years, this method was revealed to be effective in disruption and reduction of alcohol dependence (Adler et al .2012).

Suggestions have also been made regarding aromatherapy, or using aromatic plant oils, in addiction treatment; however, no information is available on the effectiveness of this treatment approach (96).

In 1990, U.S. Food and Drug Administration announced that addiction treatment would be more effective by improving the quality of nutrition through consumption of supplements and nutrition education. Moreover, great nutritional deficiencies have been reported in the addicts, which should be eliminated through appropriate nutrition (Behere et al .2009). Nonetheless, neither the relationship between nutritional disorders and addiction has been completely accepted, nor a special food supplement has been considered effective in treatment of addiction (Biery et al .2001).

## CONCLUSION

Addiction is a disease which has multifaceted impacts on the patients' body, mind, and nervous system and this has resulted in failure of most of the treatment methods for addiction.

Herbal medicine, as one of the main components of alternative medicine, has a long history in treatment of diseases and the majority of people have tendency to use such medications. However, due to the lack of information, there are a lot of questions which have not been answered by the physicians yet and because of the novelty of this treatment method in treating addiction, this lack of information is more evident. On the contrary to the chemical drugs whose dosage, consumption instruction, and side effects are identified through animal studies, no reliable controlled experiments have been conducted on herbal medicine. In addition, although the majority of people think that herbal medications are quite harmless, it seems logical that at least taking impermissible dosages of these medications will cause problems for the patients. Of course, wider researches are required in order to determine the side effects of herbal medicines. Furthermore, lack of reliable service providing centers and selling mixtures of unknown compounds as herbal medicine by uninformed sellers and profiteers have caused a great challenge in this regard. The study conducted by Rahimi Movaghar in Iran showed that 85% of the herbal shops made attempts to treat addiction, 91% of their compounds included diphenoxylate, and 58% of the medications they prescribed contained at least one opioid compound (Rahimi et al .2008). This confirms the necessity to

conduct more studies on the effectiveness and safety of herbal medicines, as the main component of alternative medicine.

Acupuncture, as the recognized, widely used method of alternative medicine, has had the highest acceptance among the physicians (Astin et al .1998). On the contrary to interference of uninformed individuals in herbal medication, since acupuncture is performed by trained specialists, there is little possibility of interference of non-specialists and profiteers. Moreover, as shown by the review studies, acupuncture involves a more scientific and logical process which can justify the preference of this method by the physicians.

Other treatment methods of alternative medicine are also relatively safe from non-specialists and profiteers. However, their usage in treatment of addiction is being investigated and they, alone, do not seem to be effective in addiction treatment. Of course, further studies are needed to be conducted on the issue. After all, alongside other treatments, alternative medicine can decrease the patients' stress and increase their energy and, consequently, reduce the withdrawal symptoms.

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