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BUREAU OF JUSTICE ASSISTANCE (BJA) DRUG COURT TECHNICAL ASSISTANCE PROJECT

FREQUENTLY ASKED QUESTIONS SERIES

Subject: Effectiveness of Acupuncture as an Adjunct to Substance Abuse Treatment: Summary of Recent Research Findings
From: BJA Drug Court Technical Assistance Project
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QUESTION

A number of the early drug courts used acupuncture as an adjunct to the substance abuse treatment provide to drug court participants. However, over the years, the frequency with which drug court programs have incorporated acupuncture as an adjunct to the treatment services provided appears to be declining for reasons which appear unrelated to the merits of its use. In response to the periodic inquiries the BJA Drug Court Technical Assistance Project receives from the field regarding the effectiveness of acupuncture as an adjunct to drug treatment, we have prepared the following summary of recent research findings for use by programs considering including acupuncture as an available adjunct to the treatment services available to drug court participants. The research findings reported below include citations to the study reports from which they are excerpted as well as any limitations regarding the study methodology that are noted. Further information regarding the use of acupuncture as an adjunct to substance abuse treatment can be obtained from the National Acupuncture Detoxification Association (NADA) <http://www.acudetox.com>.

• **WHAT IS ACUPUNCTURE?**

Acupuncture is a component of Traditional Chinese Medicine (TCM) strategies that has been practiced for thousands of years. It entails the stimulation of specific points on the body by a variety of techniques, including insertion of thin metal needles through the skin to remove blockages in the flow of “qi” and restore health. While acupuncture has been used to address a wide array of ailments over the years – asthma, arthritis, multiple sclerosis for example -- in the early 1970’s a special protocol¹ was developed to use acupuncture as an adjunct to substance abuse treatment. The protocol entails insertion by clinicians trained in the NADA protocol, fine gauge, and sterilized, one-time use stainless steel needles just under the skin at five designated ear points in each auricle (outer ear), where they remain for up to an hour. The procedure is designed to promote reductions in craving and withdrawal symptoms and to function as an adjunct to a comprehensive substance abuse treatment program that provides counselling, and other services essential for addiction recovery.

• **WHAT HAS BEEN THE EFFECTIVENESS OF ACUPUNCTURE SERVICES AS AN ADJUNCT TO SUBSTANCE ABUSE**

¹ Further described in resources available through the National Acupuncture Detoxification Association (NADA) <http://www.acudetox.com/>

➤ **STUDIES DEMONSTRATING THE EFFECTIVENESS OF ACUPUNCTURE**

A number of studies have demonstrated that patients who receive acupuncture services experience reduced cravings and symptoms of withdrawal and are more amenable to treatment services than patients who do not receive acupuncture. Patients who are more open to treatment may then have a greater chance of achieving remission and potentially avoid more frequent relapses. The two leading studies conducted on the subject were conducted by Milton L. Bullock and Michael Shwartz and demonstrate the significant impact acupuncture can have as an adjunct to substance abuse treatment.

Milton L. Bullock. “Controlled Trial of Acupuncture for Severe Recidivist Alcoholism” *The Lancet* 333, no. 8652 (1989)

Dr. Milton Bullock, an assistant professor of Medicine at the University of Minnesota, conducted this study in 1989 at the Mission Lodge detoxification center in Plymouth, Minnesota to assess the effectiveness of acupuncture in alcohol addiction treatment. The study focused on patients who relapsed after treatment for alcoholism. A sample of 80 patients were followed, all of whom experienced severe recidivist alcoholic problems. Patients were assigned to 2 groups: a treatment group for whom acupuncture was applied to specific points and a control group for whom acupuncture was applied to nonspecific points. The findings of this study demonstrated that completion rates were significantly higher for the treatment group who completed the treatment throughout all 3 phases as shown in the following table.

COMPLETION RATES (BULLOCK 1989)

	Treatment Group	Control
Phase I (Daily Acupuncture for 2 weeks)	37 (92%)	21 (52%)
Phase II (3 Times a week for 4 weeks)	26 (65%)	3 (7%)
Phase III (Twice a week for 2 weeks)	21 (52%)	1 (2.1%)

The study also showed that in the months following the treatment, patients who received acupuncture were less likely to experience moderate/strong need to consume alcohol compared to patients in the treatment only group. The following table illustrates the number of drinking episodes versus abstinence as reported by the patients.

SELF-REPORTED DRINKING EPISODES (BULLOCK 1989)

Follow-up interval	Number of drinking episodes
<i>One month</i>	
Treatment group (34)	107
Control group (28)	162
<i>Three months</i>	
Treatment group (32)	101
Control group (25)	301
<i>Six months</i>	
Treatment group (27)	100
Control group (22)	241

Michael Schwartz, PhD “The Value of Acupuncture Detoxification Programs in a Substance Abuse Treatment System” *Journal of Substance Abuse Treatment* 17, no.4 (1999)

Michael Schwartz, professor of Health Care and Operations Management at Boston University, conducted research to assess the benefits of acupuncture in substance abuse treatments and its impact on readmission rates. In his study, Professor Schwartz compared patients who received acupuncture in outpatient treatment programs and patients receiving treatment in residential detoxification facilities. The acupuncture program also included counseling services for patients. The study focused on the first six months following discharge from treatment -- the period when patients were considered more exposed to risks of relapse. Using data from the Boston Office of Treatment Improvement (BOTI) and a sample of 8,011 clients (6,907 following treatment in a residential program and 1,104 in an outpatient acupuncture program), the study found that 18% of acupuncture patients were readmitted compared to 36% of patients readmitted from traditional inpatient detox programs. This study demonstrated that acupuncture as a component of outpatient detoxification programs can be effective and also found that acupuncture treatment appeared to be most effective for clients with two or more admissions in residential detoxification in the year prior to the acupuncture treatment.

The following table from the Schwartz study details the percentage of readmitted patients from residential treatment programs without acupuncture compared with those from outpatient programs with acupuncture and the nature of their substance addiction (alcohol, cocaine, crack or heroin).

		Residential Detox		Acupuncture
Primary Drug	n	% re-admitted	n	% readmitted
Alcohol	2,919	37.3	358	10.9
Cocaine	1,122	31.0	183	19.7
Crack	1,099	28.8	223	21.5
Heroin	1,699	40.6	210	31.4

The following are summaries of other more recent studies demonstrating the effectiveness of acupuncture as an adjunct to substance abuse treatment. Additional studies are reported on the NADA website.

Milton L. Bullock “A large randomized placebo controlled study of auricular acupuncture for alcohol dependence” *Journal of Substance Abuse Treatment* 22, no. 2 (2002)

Having conducted a study in 1989 indicating promising results for acupuncture as an adjunct to conventional substance abuse treatment, Dr. Bullock and his colleagues then attempted to assess the impact of auricular acupuncture on the reduction of alcoholism. In this 2002 study, 503 patients were assigned to different types of treatment modalities with 134 following a conventional treatment, 133 using non-specific acupuncture, 132 using specific acupuncture and 104 using symptom-based acupuncture. The study found that 49% of patients who received acupuncture and conventional treatment at the same time reported that acupuncture contributed to reducing their alcohol dependence, reinforcing Bullock’s previous findings that acupuncture as an adjunct treatment can be effective.

Christine Courbasson. "Acupuncture treatment for women with concurrent substance abuse and anxiety/depression: an effective alternative therapy?" *Family and Community Health* 30, no. 2 (2007)

Dr. Courbasson, an addiction clinic director at the Centre for Addiction and Mental Health (CAMH) in Toronto, Canada, conducted a study on the effects of acupuncture on the treatment of substance abuse and other related symptoms for women diagnosed with both a substance abuse and mental health disorder. A sample of 246 women were divided into two groups to determine how the women who had acupuncture as an adjunct to treatment

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performed in terms of withdrawal and cravings compared with those who received a standard treatment without acupuncture. Seventy-eight percent of the women in the group receiving acupuncture reported that they felt more relaxed and experienced less insomnia and craving for substances. Overall, they also stated that their mental and physical well-being improved.

Patricia Janssen. "Acupuncture for substance abuse treatment in the downtown eastside of Vancouver." *Journal of Urban Health: Bulletin of the New York Academy of Medicine* 82, no. 2 (2005)

Dr. Janssen, a faculty member of the University of British Columbia, attempted to assess the effectiveness of the use of acupuncture as an adjunct to addiction treatment in a drop-in centre and in a residential treatment center in the Downtown Eastside of Vancouver also known as the DES. (The DES reportedly includes the poorest urban population in Canada.) The study found that, in addition to substance addiction (primarily heroin and alcohol), 30% of the population was infected with HIV and 90% with hepatitis C. Participation in the study was voluntary, with acupuncture provided every Friday for one month. Among the 57 participants who came at least for three Fridays, at least 45% reported a significant reduction in withdrawal symptoms such as shaking, nausea, diarrhea, insomnia and anxiety.

Chae Ha Yanh, Bong Hyo Lee, & Sung Hoon Sohn. "A possible mechanism underlying the effectiveness of acupuncture in the treatment of drug addiction." *Evidence-Based Complementary and Alternative Medicine*, 5, no. 3 (2008)

Chae Ha Yang, Bong Lee Hyo and Sung Sohn Hoon, Sung, researchers from the Daegu Haany University in South Korea, conducted a study on rats to establish that acupuncture significantly reduced the dopamine release induced by ethanol consumption. They found that applying pressure on specific acupoints helped stimulate neurotransmitters/nerves that regulate excitability and whose functions are affected by drug intake. The stimulation caused by acupuncture was found to contribute to obliterating the effects of ethanol and easing withdrawal symptoms in cases involving cocaine.

Christina S. Meade. "A randomized trial of transcutaneous electric acupoint stimulation as adjunctive treatment for opioid detoxification." *Journal of Substance Abuse Treatment* 38, no. 1 (2010)

Using a sample of 48 patients randomly assigned to TEAS (a form of acupuncture) and non-TEAS acupuncture teams, the researchers administered three 30-minute daily TEAS treatments for a period of three to four days to 24 patients while the 24 others received conventional substance abuse treatment without acupuncture. Study data showed that 35% of TEAS patients used drugs in the days following the treatment compared to 77% in the conventional treatment group without acupuncture. Meade, an assistant professor of Psychiatry at Duke University Medical School, found, as a result of the study, that patients who received transcutaneous electric acupoint stimulation (TEAS) were less likely to use drugs and experience greater physical health.

Kenneth O. Carter. "NADA Acupuncture Prospective Trial in Patients with Substance Use Disorders and Seven Common Health Symptoms." *Medical Acupuncture* 23, no. 3 (2011)

National Acupuncture Detoxification Association (NADA) acupuncture is a simple standardized Five-Point auricular needling protocol that originated as a grassroots response to opiate addiction in the 1970s. It is increasingly recognized as a nonspecific behavioral health intervention of notable utility in a wide variety of other psychiatric settings and conditions. Dr. Carter's aim in this study was to evaluate the effectiveness of NADA acupuncture in reducing the severity of seven common behavioral health symptoms associated with addictive substance abuse. The trial was conducted at the Mecklenburg County Substance Abuse Services Center (SASC) in Charlotte, NC, consisting of 167 patients who met *Diagnostic and Statistical Manual for Mental Disorders- IV Edition, American Psychiatric Association* criteria for a current diagnosis of Substance Abuse Disorder. NADA acupuncture plus conventional treatment associated with statistically significant improvement ($p=0.0001$) across all symptom measures. Carter concluded that NADA acupuncture may help facilitate significant reduction in cravings, depression, anxiety, anger, body aches/headaches, concentration, and decreased energy.

➤ **STUDIES QUESTIONING THE EFFECTIVENESS OF ACUPUNCTURE**

A few articles have questioned the effectiveness of acupuncture, either finding no significant impact or taking issue primarily with the methodology of the studies that showed the effectiveness of acupuncture.

Jennifer Bearn. "Auricular acupuncture as an adjunct to opiate detoxification treatment: effects on withdrawal symptoms." *Journal of Substance Abuse Treatment* 36, no. 3 (2009)

Dr. Bearn, a British expert on opiate-related research, along with colleagues Anshul Swami and Duncan Stewart, conducted a study comparing the effectiveness of auricular acupuncture vs. methadone as an adjunct to traditional substance abuse treatments. Using a sample of 83 drug users, she compared two groups of opiate users: one using acupuncture as an adjunct to treatment and the other serving as a control group using methadone for "medical detoxification". The study found no statistically significant differences between the both groups. All participants reportedly seemed to experience similar levels of craving and withdrawal symptoms after the first 14 days of detoxification.

Note This study did not appear to include patients provided counseling and other psycho-social services associated with substance abuse treatment.

John Norcross. "What Does Not Work? Expert Consensus on Discredited Treatments in the Addictions." *Journal of Addiction Medicine* 4, No. 3 (2010)

The American Society for Addiction Medicine has discounted the use of acupuncture in addiction treatment purportedly based on a review of the methodology of studies reviewing the effectiveness of acupuncture. In an article published in the *Journal of Addiction Medicine*, John C. Norcross, PhD, professor of Psychology and distinguished University Fellow at the University of Scranton examined potential treatments in order to establish a consensus with other medical professionals on what is to be regarded as a "discredited treatment for addiction." To do so, a panel composed of 75 experts from the American Society for Addiction Medicine, the American Psychologic Association's Division of Addictions, editorial members of the boards of the *Journal of Substance Abuse Treatment* and the *Journal of Studies on Alcohol*, reviewed the literature on substance abuse treatment, including studies regarding those treatments that are considered ineffective, flawed or "quack", which may have used trials not subject to controlled research, had flawed hypotheses, and/or lacked "meaningful scientific criteria." Among the "treatments" included in the review were general and auricular acupuncture for alcohol and cocaine.

Note: Since acupuncture is an *adjunct* to treatment, and not a *treatment* per se, there does not appear to be direct relevance of these findings to the issues of the effectiveness of acupuncture as an *adjunct* to treatment.

• **ISSUES STILL TO BE ADDRESSED:**

The most immediate issue that appeared to surface in the research reports reviewed related to "dosage": several of the articles reviewed suggested that the issue of "dosage" -- what is the appropriate/optimum frequency and duration of acupuncture services -- is an issue that still needs to be addressed.

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We welcome any additional comments or perspective on this issue.

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