Acupuncture for Psychiatric Illness: A Literature Review

Article in Behavioral Medicine · February 2008
Impact Factor: 1 · DOI: 10.3200/BMED.34.2.55-64 · Source: PubMed

CITATIONS 33
READS 341

4 authors, including:

Cornelius Gropp
Shaare Zedek Medical Center
17 PUBLICATIONS 141 CITATIONS

Menachem Oberbaum
Shaare Zedek Medical Center
85 PUBLICATIONS 1,167 CITATIONS

All in-text references underlined in blue are linked to publications on ResearchGate, letting you access and read them immediately.

Available from: Menachem Oberbaum
Retrieved on: 12 May 2016
Acupuncture for Psychiatric Illness: A Literature Review

Noah Samuels, MD; Cornelius Gropp, MD; Shepherd Roee Singer, MD; Menachem Oberbaum, MD

The use of complementary and alternative medicine (CAM) is on the rise, especially among psychiatric patients. Acupuncture is considered a safe and effective treatment modality, and traditional Chinese medicine teaches that acupuncture harmonizes the body’s energies. Scientific research has found that acupuncture increases a number of central nervous system hormones (ACTH, beta-endorphins, serotonin, and noradrenaline) and urinary levels of MHPG-sulfate, an adrenergic metabolite inversely related to the severity of illness in schizophrenics. Acupuncture can have positive effects on depression and anxiety, although evidence is still lacking as to its true efficacy for these conditions. To the authors’ knowledge, no trials have been conducted for schizophrenia, and researchers evaluating acupuncture in cases of substance abuse have found conflicting results. Further research is warranted.

Index Terms: acupuncture, anxiety, depression, schizophrenia, substance abuse

The use of complementary and alternative medicine (CAM) is on the rise, with psychiatric patients, especially those diagnosed with disorders such as anxiety or depression, more likely to use CAM than are patients with nonpsychiatric illness. The ancient Chinese treatment of acupuncture incorporates the use of ultra-fine needles (diameter 0.15–0.30 mm), which are inserted into specific points on the skin (acupoints). Acupuncture is central to the treatment regimen of traditional Chinese medicine (TCM), along with other manual therapies (eg, Tui Na, Chi Gong), herbal remedies, and nutritional and lifestyle changes. TCM promotes a holistic, energy-based approach to well-being, as opposed to the disease-oriented approach of Western (scientific) medicine. Both the US National Institutes of Health and British Medical Association recognize acupuncture as an effective treatment for many medical conditions, although for many in the medical profession, acupuncture and other CAM treatments remain enigmatic.

According to TCM, the body’s energy, or Qi (pronounced chee), flows along series of points called meridians. Each of the internal organs has a corresponding meridian, and applying pressure (acupressure, Shiatsu), heat (Moxibustion), or needles (acupuncture) to relevant acupoints is believed to influence each of the internal organs and harmonize the body’s Qi. There are many schools of acupuncture (eg, Chinese, Japanese, Korean, Indian), each with its own approach to diagnosis and allocation of acupoints. Modern acupuncture has branched out into related fields, such as electroacupuncture (low-voltage stimulation of needles) and laser acupuncture. Auricular acupuncture is a related field in which needles are inserted into points located on and around the earlobe that correspond to internal organs.

TCM teaches that Qi exists in many forms in the human body. For example, Jing—considered the most concrete form of Qi—is housed in the kidneys. Levels of Jing increase and decrease in 7-year cycles in women in a

Drs Samuels, Singer, and Oberbaum are with the The Center for Integrative Complementary Medicine in Jerusalem, Israel. Dr Gropp is with Psychiatric Consultation and Liaison Service at Shaare Zedek Medical Center in Jerusalem.

Copyright © 2008 Heldref Publications
circadian fashion that is similar to levels of estradiol in the fertility cycle. Shen (meaning “of the mind”) is the most spiritual form of energy and is housed in the heart. Shen is responsible for the various mental activities required for day-to-day functioning. Mental illness can result when there is disharmony or imbalance in the body’s energy system, especially when the Shen is affected. A number of etiological factors—such as constitutional makeup, fetal trauma, improper diet, overwork, excessive sexual activity, and narcotic drugs—can create such an imbalance.

The exact mechanism by which acupuncture induces physiological changes, relieves pain, and alleviates illness is still unclear. Research has shown that treatment with acupuncture results in local and systemic effects, such as an increased release of pituitary beta-endorphins and ACTH.7 The release of endorphins may partly explain the analgesic effects of this treatment, whereas increased ACTH secretion—which leads to elevated serum cortisol levels—may account for its anti-inflammatory effects. Acupuncture can also lead to accelerated synthesis and release of serotonin and noradrenaline in the central nervous system,8 with activation of descending antinociceptive pathways and deactivation of multiple limbic areas subserving pain association.9 Clinical studies of the efficacy of acupuncture for psychiatric illness are often convincing but still inconclusive in many areas. Thus, we present a literature review (using Medline, 1966–2007) on the effectiveness of acupuncture for 4 Axis I disorders: depression, anxiety disorders, schizophrenia, and substance abuse.

**Depression**

Depression is the most common psychiatric illness in the United States, with a prevalence as high as 18.9% in the primary care setting.10 Many who suffer from depression may remain undiagnosed or inadequately treated because of a failure to recognize symptoms, underestimation of severity, limited access to health care, reluctance to see a mental healthcare specialist, noncompliance with treatment, or lack of health insurance.11 Conventional medical treatment is problematic for several reasons. First, as many as 35% of patients do not respond to conventional treatment, perhaps more so among those with chronic illness.12 Second, although compliance with next-generation selective serotonin reuptake inhibitor medications has improved, the dropout rate is as high as 15%.13 Last, a number of clinical trials have failed to demonstrate a significant difference between active treatment and placebo groups,14 undermining the public’s confidence in these drugs. Women may be hesitant to initiate treatment during childbearing years, and elderly patients may have comorbid medical conditions that warrant specialist expertise or contraindicate the use of these drugs.

TCM teaches that depressive symptoms result from disharmony between the physical Qi and the spiritual Shen energies of the body. According to the Five-Element school of TCM, 3 distinct forms of depression exist, each with its own predominant emotional imbalance: Earth type (worry), Water type (fear), and Wood type (anger). Each of these forms of depression correspond to an imbalance in one of 3 internal organ systems: the spleen/stomach (Earth), the kidneys (Water), and the liver (Wood). In most instances, the depressed patient may suffer from more than 1. The imbalance can be caused by internal organ deficiencies (eg, innate deficiency of kidney Qi), excesses (eg, stagnation of liver Qi caused by repressed anger), or both. As with many other ailments, TCM recommends an integrated approach to treatment, using herbal remedies and acupuncture in addition to nutrition and other lifestyle changes.

Depression is among the top 10 diagnoses for which patients turn to CAM treatment, often as a result of dissatisfaction with conventional treatments, the feeling of personal autonomy and empowerment offered by CAM therapies, and compatibility with personal values and beliefs.15 Acupuncture may alleviate symptoms of depression through central effects, such as the release of noradrenaline and serotonin,9 or as a result of patient expectations. Although many researchers who have examined the efficacy of acupuncture treatment for depression were limited by study size and methodology, enough evidence exists to support a role for this treatment modality. In their double-blind, placebo-controlled, multicenter study of first 29 and then 241 depressed inpatients, Luo et al16 found electroacupuncture to be as effective as amitriptyline for depressive symptoms. Patients in this study who were treated with acupuncture had better outcomes with respect to somatization and cognitive process disturbances than did those treated with medication, an effect that Yang et al17 also observed. Acupuncture is also a promising treatment for depression during pregnancy.18 Table 1 summarizes clinical study findings regarding the efficacy of acupuncture for depression.

**Anxiety Disorders**

Anxiety disorders are the second most prevalent psychiatric condition in the United States, with a lifetime prevalence of 5%.24 Anxiety is also a common complaint in any medical environment, especially in prehospital and inpatient settings. Because preoperative anxiety has a negative effect on postoperative outcomes,25 physicians use sedative medications and preparation programs to treat preoperative anxiety, which is a practice that incurs increased operational costs for the healthcare system. According to TCM, anxiety results from an innate deficiency of the heart and kidney energies,
excess of liver Qi, and a lack of communication between the heart and the kidneys, among other imbalances.

Acupuncture may alleviate anxiety through a number of mechanisms. Acupuncture results in a “stillness,” with prominent alpha rhythm in electroencephalography readings, deep general relaxation, and a high degree of unre sponsiveness to ordinarily painful stimuli. Acupuncture also can modulate the neuropeptide Y system in the basolateral amygdale of rats, increase nocturnal endogenic melatonin secretion in humans, and increase the release of previously mentioned endogenous endorphins. Investigators studying acupuncture as a treatment for anxiety have observed beneficial responses. In a prospective, randomized, placebo-controlled trial of 30 patients scheduled to undergo colonoscopy, Fanti et al found that treatment with acupuncture decreased patients’ demand for sedative drugs, reducing both discomfort and anxiety during the procedure. In another randomized, blinded, controlled trial of 91 ambulatory surgery patients, Wang et al found that patients treated with auricular acupuncture at relaxation points reported significantly lower levels of anxiety than did controls. Table 2 summarizes results from clinical studies of the efficacy of acupuncture on anxiety-related conditions.

**Schizophrenia**

Schizophrenia is a psychiatric illness characterized by thought disturbances, bizarre behavior, and cognitive impairment that may diminish a person’s social relations, school, work, and self-care. Because of the distorted thought process, treatment is difficult and conventional treatments are of limited benefit. Antipsychotic medication has limited efficacy and many potential side effects, with second-generation agents such as Clozapine more effective but requiring frequent monitoring of the leukocyte count. Newer agents such as Risperidone have a relatively safer profile and result in lower recurrence rates.

TCM categorizes schizophrenia as 2 types: depressive psychosis and manic psychosis. The onset of the depressive form is gradual and accompanied by reduced mental clarity, followed by incoherent speech, mood swings,

<table>
<thead>
<tr>
<th>Source</th>
<th>Year conducted</th>
<th>n</th>
<th>Study format and conclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Luo et al</td>
<td>1998</td>
<td>270</td>
<td>RCT, double-blinded; acupuncture as effective as amitryptiline, more effective for anxiety somatization and cognitive process disturbance and with less side effects.</td>
</tr>
<tr>
<td>Yang et al</td>
<td>1994</td>
<td>41</td>
<td>Acupuncture as effective as amitryptiline, more effective in reducing anxiety somatization.</td>
</tr>
<tr>
<td>Manber et al</td>
<td>2004</td>
<td>61</td>
<td>Acupuncture significantly more effective than massage therapy for pregnant women with depression, more so when depression-specific points used.</td>
</tr>
<tr>
<td>Allen et al</td>
<td>1998</td>
<td>38</td>
<td>RCT; acupuncture significantly more effective than waiting list, more so when depression-specific points used.</td>
</tr>
<tr>
<td>Gallagher et al</td>
<td>2001</td>
<td>33</td>
<td>RCT; double-blind; relapse rates comparable to medical treatments.</td>
</tr>
<tr>
<td>Han et al</td>
<td>2004</td>
<td>61</td>
<td>RCT; equivocal symptom reduction with less side effects than maprotiline.</td>
</tr>
<tr>
<td>Macpherson et al</td>
<td>2004</td>
<td>16</td>
<td>RCT; acupuncture showed significant improvement vs no treatment.</td>
</tr>
<tr>
<td>Roschke et al</td>
<td>2000</td>
<td>71</td>
<td>Addition of acupuncture (either true or sham) to mianserin treatment was significantly more effective than mianserin treatment alone.</td>
</tr>
</tbody>
</table>

*Note. RCT = randomized controlled trial.*
ACUPUNCTURE FOR PSYCHIATRIC ILLNESS

Table 2. Clinical Trials of Acupuncture Treatment for Anxiety

<table>
<thead>
<tr>
<th>Source</th>
<th>Year conducted</th>
<th>n</th>
<th>Study format and conclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spence et al(^{28})</td>
<td>2004</td>
<td>18</td>
<td>Uncontrolled; significant improvement in polysomnographic measurements, as well as reduced state and trait anxiety scores.</td>
</tr>
<tr>
<td>Fanti et al(^{29})</td>
<td>2003</td>
<td>30</td>
<td>RCT; true acupuncture significantly more effective than sham or no-acupuncture treatment of precolonoscopy anxiety.</td>
</tr>
<tr>
<td>Wang et al(^{30})</td>
<td>2001</td>
<td>91</td>
<td>RCT; true AA treatment significantly reduced anxiety vs sham treatment, but not more than relaxation.</td>
</tr>
<tr>
<td>Kober et al(^{31})</td>
<td>2003</td>
<td>36</td>
<td>RCT; true AA significantly more effective than sham for prehospitalization anxiety.</td>
</tr>
<tr>
<td>Liu et al(^{32})</td>
<td>1998</td>
<td>240</td>
<td>RCT; acupuncture as effective as behavioral desensitization for anxiety neurosis; combined treatment has higher cure rates.</td>
</tr>
<tr>
<td>Lo et al(^{33})</td>
<td>1979</td>
<td>8</td>
<td>Uncontrolled; 6 patients with anxiety neurosis had good to moderate responses, 2 had no response.</td>
</tr>
<tr>
<td>Paraskeva et al(^{34})</td>
<td>2004</td>
<td>50</td>
<td>RCT; true acupuncture reduced Bispectral Index and Verbal Score Scale (VSS) in patients with pre-operative anxiety; sham treatment reduced only VSS.</td>
</tr>
<tr>
<td>Shuaib et al(^{35})</td>
<td>1977</td>
<td>40</td>
<td>Uncontrolled; acupuncture reduced symptoms of restlessness, tension, mental or physical fatigue, anorexia, and irritability, with poor response for obsessional symptoms.</td>
</tr>
<tr>
<td>Wang et al(^{36})</td>
<td>2001</td>
<td>55</td>
<td>Uncontrolled; true treatment significantly reduced anxiety when compared to sham treatment.</td>
</tr>
</tbody>
</table>

Note. RCT = randomized controlled trial; AA = auricular acupuncture.

anorexia, and insomnia. Depressive psychosis requires regulating Qi, alleviating mental depression, and calming Shen. The onset of manic psychosis is sudden and accompanied by irritability, excessive motor activity, and abusive and violent behavior. This form of schizophrenia must be treated by cooling and calming methods that tranquilize the mind and calm the Shen. Few clinical studies in the field of acupuncture treatment address schizophrenia, with only 1 comparative study\(^{38}\) and a few case reports\(^{39–41}\) published. However, electroacupuncture may increase the urinary secretion of 3-methoxy-4-hydroxyphenylglycol sulphate,\(^{42}\) a metabolite of noradrenaline that is inversely related to the severity of illness in schizophrenics.\(^{43}\) The clinical significance of this finding has yet to be correlated with clinically significant findings.

Substance Abuse

Substance abuse is prevalent in Western society, with as many as 15% of patients who present to a primary care practice exhibiting an at-risk pattern of alcohol use or an alcohol-related health problem, and 5% a history of illicit drug use.\(^{44}\) Treatment of addiction is limited by poor compliance and toxic effects of long-acting agents that are substituted for the abused drug and then tapered gradually. In TCM, drugs such as cannabis, cocaine, heroine, and LSD deeply affect Shen, with prolonged use leading to confusion, memory loss, and decreased concentration.\(^{45}\)

Although many clinical studies of auricular acupuncture treatment for substance abuse have been published, the results are far from conclusive. In a randomized
controlled trial of 82 cocaine-dependent methadone-maintained patients, Avants et al\textsuperscript{46} found that those assigned to acupuncture treatment were significantly more likely to provide cocaine-negative urine samples than were controls. Margolin et al\textsuperscript{47} repeated the study protocol (\( N = 620 \)) but found no difference between the groups. The latter authors posited that the discrepancy in outcome may have resulted from factors such as differences between counseling protocols. Also, a participation payment in the second study may have fostered retention of more severely addicted and unmotivated patients. Table 3 provides a substance-specific list of clinical studies.

**COMMENT**

Psychiatric illness is both common and complex, with conventional therapeutic options limited by partial efficacy, toxicity, and poor patient compliance. Acupuncture is a safe and effective treatment option that, along with other CAM treatments, patients with psychiatric illness choose far more often than do nonpsychiatric patients. When used in conjunction with conventional therapies, CAM treatment modalities such as acupuncture do not decrease adherence to conventional medical treatment.\textsuperscript{52-65} Although patient compliance is high for acupuncture treatment of chronic pain,\textsuperscript{66} it remains to be shown that psychiatric patients would be as compliant.

Many of the studies cited regarding the Axis 1 psychiatric diagnoses presented are either not yet convincing (as with schizophrenia) or show conflicting results (as with substance abuse). Better studies of disorders such as depression have been conducted, although it is still not possible to recommend routine use of acupuncture for this disorder.\textsuperscript{67} The Cochrane Corporation, via its *Cochrane Database of Systematic Reviews*, has investigated the efficacy of acupuncture treatment for depression,\textsuperscript{68} schizophrenia,\textsuperscript{69} and cocaine dependence.\textsuperscript{70} Each review reached the same conclusion: because of poor design and a limited number of studies, there is no evidence that acupuncture is effective for any of these conditions.

A recent Institute of Medicine committee was formed at the request of the National Center for Complementary and Integrative Medicine of the US National Institutes of Health to define principles that will guide the research agenda for CAM. The committee recommendation was that “the same principles and standards of evidence of treatment effectiveness apply to all treatments, whether currently labeled as conventional medicine or CAM.”\textsuperscript{71} At the same time, however, the world of conventional medicine is expected

<table>
<thead>
<tr>
<th>TABLE 3. Clinical Trials of Auricular Acupuncture for Substance Abuse</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source</td>
</tr>
<tr>
<td>--------</td>
</tr>
<tr>
<td><strong>Alcohol</strong></td>
</tr>
<tr>
<td>Bullock et al\textsuperscript{48}</td>
</tr>
<tr>
<td>Bullock et al\textsuperscript{49}</td>
</tr>
<tr>
<td>Bullock et al\textsuperscript{50}</td>
</tr>
<tr>
<td>Karst et al\textsuperscript{51}</td>
</tr>
<tr>
<td>Sapir-Weise\textsuperscript{52}</td>
</tr>
<tr>
<td>Trumpler et al\textsuperscript{53}</td>
</tr>
<tr>
<td>Zalewska-Kaszubska et al\textsuperscript{54}</td>
</tr>
<tr>
<td><strong>Cocaine</strong></td>
</tr>
<tr>
<td>Avants et al\textsuperscript{46}</td>
</tr>
<tr>
<td>Margolin et al\textsuperscript{47}</td>
</tr>
<tr>
<td>Avants et al\textsuperscript{55}</td>
</tr>
<tr>
<td>Bullock et al\textsuperscript{56}</td>
</tr>
<tr>
<td>Lipton et al\textsuperscript{57}</td>
</tr>
<tr>
<td>Margolin et al\textsuperscript{58}</td>
</tr>
<tr>
<td>Otto et al\textsuperscript{59}</td>
</tr>
<tr>
<td>Schwartz et al\textsuperscript{60}</td>
</tr>
<tr>
<td><strong>Heroin</strong></td>
</tr>
<tr>
<td>Washburn et al\textsuperscript{61}</td>
</tr>
</tbody>
</table>

Note. RCT = randomized controlled trial.
to take CAM seriously. For this to happen, future researchers must conduct large and controlled studies, unlike most of the studies presented here, which are small and, at best, exhibit limited statistical power. Such studies would allow mental health professionals to consider acupuncture a complementary treatment with the potential to augment current therapy and increase the frequency of positive outcomes without increasing the risk for potentially harmful effects.

NOTE

For comments and further information, address correspondence to Dr Noah Samuels, The Center for Integrative Complementary Medicine, Shaare Zedek Medical Center, P.O.B. 3235, Jerusalem 91031, Israel (e-mail: refplus@netvision.net.il).

REFERENCES


Behavioral Medicine welcomes all submissions of pertinent manuscripts.

Behavioral Medicine is an interdisciplinary journal of research and practice that deals with psychosocial influences on health and behavior. It publishes original research studies, both experimental and clinical; evaluation studies; review articles; case reports; and book reviews.

In addition, the journal welcomes three-part coordinated submissions on a theme topic that deal in depth with (a) a review of the literature on a health problem that can be treated through the use of psychological or behavioral intervention, (b) the evidence from research for the value of the behavioral intervention, and (c) an analysis of the policy implications of the therapy and means of introducing it into mainstream training and health practice. The economic impact of new or evolving therapies may be included in the discussion.

Manuscripts must include an abstract, index terms, and a brief biographical statement about the author. All manuscripts should adhere to the style and conventions of the American Medical Association Manual of Style, 9th edition. Manuscripts should be double-spaced in MS Word files with 8.5 x 11 in. (22 x 28 cm) page setup and 1 in. (2.5 cm) margins. Use 10-point Times or New York font. Use separate files for the main text, any tables, any figures, and any appendixes.

Manuscripts should be prepared according to the Guidelines for Contributors found in each issue or at www.heldref.org. Submit manuscripts online at http://mc.manuscriptcentral.com/bmed. You can create an author account by clicking the link at the top righthand corner of the site.
Subscribe Today and Access Content Online!

*The Journal of General Psychology* publishes human and animal research reflecting various methodological approaches in all areas of experimental psychology. It covers topics such as physiological and comparative psychology, sensation, perception, learning, and motivation as well as cognition, memory, language, aging, and substance abuse. Mathematical, statistical, methodological, and other theoretical investigations are also reported. The journal especially features studies that establish functional relationships, involve a series of integrated experiments, or contribute to the development of new theoretical insights or practical applications.

**Quarterly; ISSN 0022-1309**

Regular Annual Subscription Rates:

- **Individual:** $180 online only, $189 print and online
- **Institutional:** $219 online only, $219 print only, $264 print and online
  Add $14 for postage outside the U.S.

CALL OR VISIT US ONLINE TO SUBSCRIBE!

Libraries may order through subscription agents.

Subscription Offices:
PO Box 830350
Birmingham, AL 35283-0350
P. 866.802.7059 F. 205.995.1588
heldref@subscriptionoffice.com
www.heldref.org