
CLINICAL RESEARCH

Acupuncture as a Viable Adjunct to Psychotherapy for Generalized Anxiety Disorder

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Abstract—Objective: To observe the effectiveness of acupuncture as an adjunct therapy to solution-focused brief therapy (SFBT) in reducing anxiety levels. **Method:** Ten patients diagnosed of generalized anxiety disorder (GAD) by a licensed therapist were treated with acupuncture for six weeks. Each participant completed a generalized-anxiety-disorder-7 (GAD-7) survey before the treatment, once a week thereafter, and six weeks after the completion of the treatment. **Results:** All ten participants experienced a reduction in their experience of anxiety based on the GAD-7 assessment. Six weeks after acupuncture treatment, all of the ten participants still maintained their low GAD-7 scores. There were no adverse events associated with acupuncture treatment. **Conclusion:** Acupuncture is a viable adjunct therapy to SFBT in the treatment of GAD.

Keywords: acupuncture, generalized anxiety disorder, Solution-Focused Brief Therapy, GAD-7, integrative therapy

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INTRODUCTION

Generalized Anxiety Disorder (GAD) is a sub-category of the psychological disease known as anxiety. Approximately 40 million people in the United States are in treatment for GAD each year. Their daily lives are interrupted by excess and exaggerated worry and repetitive rumination that is considered the hallmark of this disorder [1]. Common symptoms include worry in the form of repetitive thoughts, inability to focus, being overwhelmed by even daily events with a sense of doubt about one's ability to cope with these events and emotional reactions not in proportion with a situation [1]. Physical manifestations are described by the person experiencing them as a panic attack. Western medicine views this disorder as an imbalance of neurochemicals such as serotonin and norepinephrine and therefore treats patients using anti-depressant medications to increase the amount of these neurochemicals in the brain. Selective Serotonin Reuptake Inhibitors (SSRIs) and Selective Norepinephrine Reuptake Inhibitors (SNRIs) are the medications commonly used and do show positive effects in treatment of anxiety. The down side to these medications is the slow onset of action, an increase in symptoms in the short term, a limited efficacy, tolerance, addiction and physical dependence and adverse side effects [2].

Among areas of the brain shown to be affected and of special interest in GAD are the anterior cingulate cortex, the amygdala, insula and the prefrontal cortex [3]. In particular, hyperactivity of the amygdala has been implicated in GAD as the source of persistent

and repetitive thoughts seen as a dysfunctional method of emotional processing [3, 4]. GAD sufferers showed decreased activity in the cingulate cortex and hyperactivity in the amygdala. SSRI's showed some ability to activate the cingulate cortex. This perhaps explains why these medications have some positive effect in the treatment of anxiety [3].

Psychotherapy is often recommended in the treatment of GAD. Solution-Focused Brief Therapy (SFBT) is one of the modern psychotherapies for this condition. Established by Steve De Shazer and Kim Berg, SFBT is designed to treat the patient by helping them envision a desired life and mapping out steps to achieving that vision. The therapy is intended to be relatively brief and goal oriented. Patients are encouraged to focus on the life they wish to have and an expectation of change is established [5, 6]. However, for some GAD cases, it takes too many visits to reduce initial anxiety symptoms with SFBT before underline issues can be addressed [7]. Thus, this study was trying to explore the possibility to reduce anxiety symptoms faster with acupuncture in the beginning of the psychotherapy.

Acupuncture has been suggested to be a promising treatment option for anxiety [8]. Research indicated that needle insertion activated neural and neuroactive components, called neural acupuncture unit (NAU), distributed in the skin, muscle and connective tissue surrounding the needle. NAU was defined as dense neural components, particularly afferent nerve fibers [2]. Needle manipulation sends signal along the

Table 1. GAD-7 Survey

Over the last two weeks, how often have you been bothered by the following problems?

	Not at all sure (0 pts)	Several days (1 pts)	Over half of the days (2 pts)	Nearly every day (3 pts)
Feeling nervous, anxiety or on edge	○	○	○	○
Not being able to stop or control worrying	○	○	○	○
Worrying too much about different things	○	○	○	○
Trouble relaxing	○	○	○	○
Being so restless that so difficult to sit still	○	○	○	○
Being easily annoyed or irritable	○	○	○	○
Feeling afraid as if something awful might happen	○	○	○	○

meridians and along dermatomes to spinal segments up through the brain stem into the cortical, limbic and subcortical systems activating modulation of several neurotransmitters including serotonin in the brain. Several specific areas of the brain involved in GAD including the prefrontal cortex, the anterior cingulate cortex and the amygdala were identified as being regulated by acupuncture stimulation [2].

A review of literature reveals that clinical studies on treating anxiety with acupuncture are very limited. Most of the studies found treated specific diseases with anxiety-related symptoms such as post-traumatic stress disorder (PTSD), obsessive compulsive disorder (OCD), pre-surgical anxiety and dental anxiety [9, 10]. None of the publications studied on acupuncture as part of an integrated treatment for GAD. This paper presents a case-series study to examine the effectiveness of acupuncture as an adjunct therapy to SFBT for GAD.

MATERIALS AND METHODS

Ten patients participated in the six weeks of the study. Each of the ten participants in the study was referred by a licensed therapist and was diagnosed with GAD. Two were male, eight were female. Ages ranged from thirty-five years of age to sixty-six years of age. All patients continued in psychotherapy during the study. Among the ten participants only two of them, Patient #2 and #5, were on medication for anxiety. No recommendations were made concerning nutrition or lifestyle changes and no additional modalities of treatment were used.

All participants received the same acupuncture protocol, which consisted of GB 41 (Zu Lin Qi), SJ 5 (Wai Guan) bilateral and auricular Point Zero on the dominant side. All treatments were administered by the same acupuncturist using Asiamed Type J2540 sterile acupuncture needles for the body points and Asiamed Type J2015 sterile acupuncture needles for

the auricular point. For body acupuncture points, needles were inserted and manipulated until the *De Qi* sensation was reached. Needles were then retained for thirty minutes.

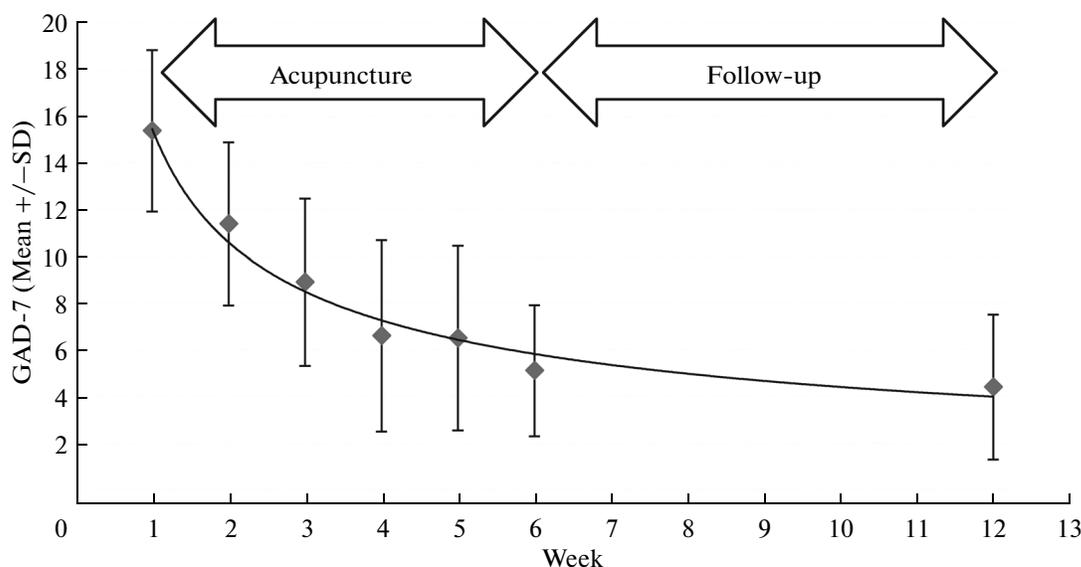
Each participant received eight acupuncture treatments over a six-week period. The study design required two sessions per week for the first two weeks and one session per week for the following four weeks. One participant had a death in the family and therefore skipped one entire week at week four. That participant did receive all eight treatments.

In order to objectively gauge the effectiveness of the study, the GAD-7 survey was chosen as a method of measurement (Table 1). The GAD-7 is a standardized survey consisting of seven questions with four possible levels of anxiety for each question based on how often the participant has experienced each symptom over the previous two weeks. The GAD-7 survey was chosen not only because it is well accepted as a measurement of anxiety, but for its ease of administration. A score of 0–4 indicates minimal anxiety, 5–9 mild anxiety, 10–14 moderate anxiety and 15–21 severe anxiety. Using a threshold score of 10, the GAD-7 has a sensitivity of 89% and specificity of 82% for GAD [11, 12].

The survey was given to each participant before beginning acupuncture treatment to establish a baseline, and then administered once each week throughout the study. Another copy of the GAD-7 survey along with a self-addressed, stamped envelope was mailed to, completed and returned by each participant in the study for six-week post acupuncture treatment to identify residual benefits of the treatments. The data collected was entered into a MS-Excel spreadsheet for comparison and analysis.

RESULTS

GAD-7 scores for all ten participants over the observation period were listed in Table 2. The scores (mean \pm standard deviation) were plotted over the



Reduction of GAD-7 with Acupuncture Treatment. The GAD-7 scores (Mean +/- standard deviation) were plotted over time. An exponential trendline was fitted to the data series using MS Excel. The acupuncture period and follow-up period were labeled.

twelve-week observation time and shown in figure. An exponential trendline was fitted to the data series using MS Excel. The scores for all participants ranged from moderate to severe anxiety in their first visit. During the six-week period of acupuncture treatment, all of the participants showed graduate reduction in GAD-7 scores. Individually there was expected variance from week to week as the degree of anxiety triggering events can be expected to vary over any given time period. In the 6th visit, the GAD-7 scores reduced to the level of minimal to mild anxiety. There is a significant effect for GAD-7 score, $t(17) = 6.92$, $p < 0.001$, with the 1st week receiving higher score than the 6th week. This indicates that the reduction of the GAD-7 score from 1st week to 6th week is statistically significant. Interestingly six weeks after acupuncture stopped, all of the ten participants still maintained their low GAD-7 scores within the minimal to mild anxiety range. Statistical analysis also shows that there is no significant change in GAD-7 score between 6th week and 12th week follow-up. This suggests that acupuncture treatment, as an adjunct to psychotherapy, has a long-term effect on reducing anxiety symptoms. Moreover, there were no adverse events associated with acupuncture treatment.

DISCUSSION

Psychotherapy such as SFBT is often recommended in the treatment of GAD. However, for some GAD cases, it takes too many visits to reduce initial anxiety symptoms with SFBT before underline issues can be addressed. Here, we present a pilot study that acupuncture is an effective therapy, as an adjunct to

SFBT, to reduce anxiety symptoms within a six-week period. Moreover, all participants maintained the low anxiety level for six weeks even after the acupuncture treatment is finished. This suggests that the combination of acupuncture with SFBT shows a prolonged effect on reduction of anxiety symptoms. The integrative protocol improves clinical efficacy for GAD and could be a promising option to save money and time for GAD patients. Further studies with large sample size and controlled design are needed.

Among the ten participants only two of them, Patient #2 and #5, were on SSRIs, medication for anxiety. Patient #2 titrated off of medication during the six-week treatment period of the study due to side effect and remained off medication after the study. Patient #5 remained on medication with no changes in dosage during the course of study. This suggests that the integrative protocol helps GAD patients no matter if they are on anti-anxiety medication or not. It also suggests that it is safe to use the integrative protocol shown in the study with SSRIs clinically in the treatment of GAD.

Anxiety patients often complaint other symptoms such as palpitations, irritability, fatigue, headaches and sleep difficulties. According to Chinese medicine, their patterns of differentiation often fall into the Liver Qi Stagnation, Heart/Spleen deficiency, Heart/Kidney disharmony or Kidney Deficiency. However, some anxiety patients show a different theme that their thoughts are so jumbled, scattered and persistent that they just cannot sort out what to do next, or even what they want to do next. Simple decisions become difficult. They feel out of balance emotionally and when there is an increase in pressure from the outside they

Table 2. GAD-7 Scores for All Participants

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 12
Pt 1	18	17	14	5	5	5	8
Pt 2	16	12	11	12	10	9	9
Pt 3	8	10	2	1	0	2	0
Pt 4	16	13	10	7	5	4	3
Pt 5	19	6	9	6	6	5	8
Pt 6	18	13	11	15	14	10	6
Pt 7	16	15	8	5	6	4	3
Pt 8	13	11	12	7	11	8	5
Pt 9	11	5	3	1	2	2	1
Pt 10	19	12	9	7	6	2	1

feel totally overwhelmed and experience acute instances that they describe as panic attacks. Their therapists work with them using an outcome or solution-based process, but they are easily stuck, unable to move ahead. Without good decision making it is not possible to set out plans, but difficult to determine how to implement them. According to Chinese medicine, the Gall Bladder system is in charge of judgment or decision making. The decision making abilities of these anxiety patients seem to be stagnated or lacking in energy, almost as though there is Qi stagnation in the Gallbladder, or Gallbladder Qi Deficiency in Chinese medicine. Therefore, the first acupuncture point developed in the protocol is Zu Lin Qi (GB41), a point on the Gallbladder meridian used to soothe Qi stagnation due to emotional stress. Zu Lin Qi (GB41) is also the confluent point of the Dai Mai, an Extraordinary Vessel, the belt that revolves around emotional issues and represents the ability to pull the scattered thoughts and feeling together. The Dai Mai on an emotional level has the ability to influence the creative flexible approach and allow for negotiation [13].

The second acupuncture point in the protocol, Wai Guan (SJ5) is the confluent point of the Yang Wei Mai, another Extraordinary Vessel. It is associated in both traditional Chinese medicine and the Five Element practice with boundaries regulating what is allowed in and what is kept out therefore regulating social relationships and gathering and assimilating cues from the environment [14]. As the opening point of Yang Wei it is the defense of the exterior and Wei Qi. The Nan Jing, an ancient classic of Chinese medicine, states that an imbalance between Yin Wei and Yang Wei would result in obsessive thinking, loss of will and a lack of self-control [15]. Zu Lin Qi (GB41) and Wai Guan (SJ5), a traditional pair, can be used clinically to treat psycho-emotional disturbances [14].

Finally, auricular Point Zero is the location of the umbilicus in the inverted fetus model developed by Nogier [16]. Recent research in Europe has defined

Point Zero as the location of the Cingulate Cortex [17], where the anxiety patients shown decrease in activity. The Point Zero is used in the study as a centering or balancing point producing a homeostasis in energy, hormones and brain activities [16]. This pilot study was also designed to test the hypothesis if these three points, a combination of body and auricular acupuncture, is able to provide the desired effect. The result shows that all ten participants respond the protocol well and their anxiety symptoms are all significantly reduced. It indicates that these three points is an effective combination to treat anxiety-related clinical conditions.

As with other studies that used acupuncture alone or as one part of treatment for anxiety, this study found that acupuncture does have a positive effect in the management of anxiety symptoms. It is not possible to make a direct comparison of those studies with this one, because none of the other studies, even the limited few treating GAD or used a specific protocol as was used in this study. In addition, the majority of studies were treating a wide variety of sub-categories of anxiety with a wide variety of point selections and treatment durations. The results of this pilot study with three distinct points to treat the symptoms of GAD, in our opinion, are more effective than what many consider the traditional point selections. Although the sample size is small, the positive results in this study still suggest that for patients suffering from GAD, the integrative approach in the study is an effective and viable option.

CONCLUSIONS

This pilot study indicates that the three-point acupuncture protocol is effective therapy adjunct to SFBT for GAD. This integrative approach may provide long-term benefit for GAD and is a viable option to patients with anxiety-related conditions. Further clinical stud-

ies with large sample size and properly controlled design are warranted.

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