

The Effect of Traditional Chinese Medical Acupuncture (TCM) on Test Anxiety (A Pilot Study)

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Abstract

Introduction: This study investigated the effect of Traditional Chinese Acupuncture (TCM) as a treatment method for test anxiety.

Methods: This study was a prospective, single blind (participants), randomized, sham-controlled parallel-group clinical trial. Approval was obtained from a chiropractic college Institutional Review Board. A total of 14 chiropractic college students received TCM Acupuncture treatment. The experimental group received needle acupuncture treatments along the heart and pericardium meridians. The three points used for the Heart meridian were HT 4, HT 5, and HT 7. The three points treated along the Pericardium meridian were PC 4, PC 5, and PC 6. The control group received a sham treatment in which points unrelated to any meridians were treated with needle acupuncture. The needles used for both groups were Seirin J-Type needles measuring .20mm by 25mm.

Results: Fourteen subjects completed the study. No adverse events were reported. Data analysis by t-test showed significant change in test anxiety of the experimental group ($p < 0.001$) compared to the sham acupuncture group which also showed a significant change ($p=0.01$).

Conclusion: This study showed that the experimental and sham group both had a significant change in test anxiety but the experimental group was more significant. Further study should investigate the long term effects of this acupuncture treatment.

Key Index Terms: Acupuncture, Tradition Chinese Acupuncture Points

Introduction:

Test anxiety is a common issue among students. Test anxiety involves a psychological reaction of worry and dread while completing an examination. When the feelings of anxiety become overwhelming, it affects the student's ability to be able to complete the exam in a typical manner. Typical treatment options for this condition involve behavioral modification, psychotherapy, or pharmaceuticals. Although the medical treatments help to decrease the psychological responses in the body, they often produce negative side-effects that may hinder other aspects of the patient's life. Due to these side-effects, many anxiety sufferers are seeking a more holistic method to achieve these same psychological improvements. The outcome measurements in most studies rely solely on improvement of test scores, and not how the patient's life has changed.¹

Traditional Chinese medicine (TCM) acupuncture is a holistic technique in which needles are inserted at specific points on the body to balance the opposing forces of yin and yang and restore the flow of Qi. Qi is a form of energy believed to flow through the body along 14 main pathways called meridians, which are associated with certain organs of the human body. When yin and yang are in harmony, Qi flows freely within the body, and a person is considered healthy. When a person is sick, distressed, fatigued, or injured, there is thought to be an obstruction of Qi along one or more of the meridians. In TCM acupuncture, the stimulation of acupoints is believed to alter central nervous system activity and therefore, be rid of this obstruction of Qi.² Acupuncture is based on the theory of channels, which serve as pathways for Qi energy. On the course of the channels, acupuncture points are described, and by stimulating these points practitioners may achieve therapeutic effects. This study is based on an interest in seeking conservative care for anxiety disorders. Several studies have been done using acupuncture testing disorders other than anxiety, but the results from these studies showed positive effects on patient's anxiety levels. Acupuncture (auricular acupressure) is much more effective than psychotherapy in the treatment of competition stress syndrome, and is worth further study.³

Methods:

After obtaining approval from a chiropractic college Institutional Review Board and written informed consent, subjects who complained of test anxiety participated in this pilot study. Fourteen student patients were recruited from Logan College of Chiropractic to participate in this study.

Each subject filled out a PHCC Test Anxiety Questionnaire⁴ prior to treatment to establish a baseline for each participant's level of test anxiety. This credible questionnaire was chosen because it was not based solely on exam scores, but rather evaluated how participant's lives were affected by test anxiety. Each subject was either assigned to Group A (testing group), or Group B (sham group), based upon their order of arrival at the testing area. The subjects were informed of which group letter they had been assigned, but not made aware of what these groups designated. The acupuncturist was informed of which group the subjects had been assigned and proceeded with the testing procedure or sham procedure accordingly. Both treatment groups were treated for 30 minutes at each visit, and all points were stimulated bilaterally. The needles used for both groups were Seirin J-Type needles measuring .20mm by 25mm. Clean Needle Technique⁵ was utilized.

The experimental group received needle acupuncture treatments along the heart and pericardium meridians. The three points that were used for the Heart meridian were: HT 4, HT 5, and HT 7. HT 7 is located at the distal crease of the wrist, on the posterior border of the pisiform bone, in the depression at the radial side of the tendon of the flexor carpi ulnaris muscle. HT 5 is located 1 inch proximal to HT 7 and HT 4 is located 1.5 inches proximal to HT 7.

The three points this study treated along the pericardium meridian include: PC 4, PC 5 and PC 6. PC 6 is located 2 inches proximal to the middle of the most distal transverse crease of the wrist, between the tendons of the palmaris longus and flexor carpi radialis muscles. PC 5 is located one inch proximal to PC 6. PC 4 is located 3 inches proximal to PC 6, between the tendons of palmaris longus and flexor carpi radialis.

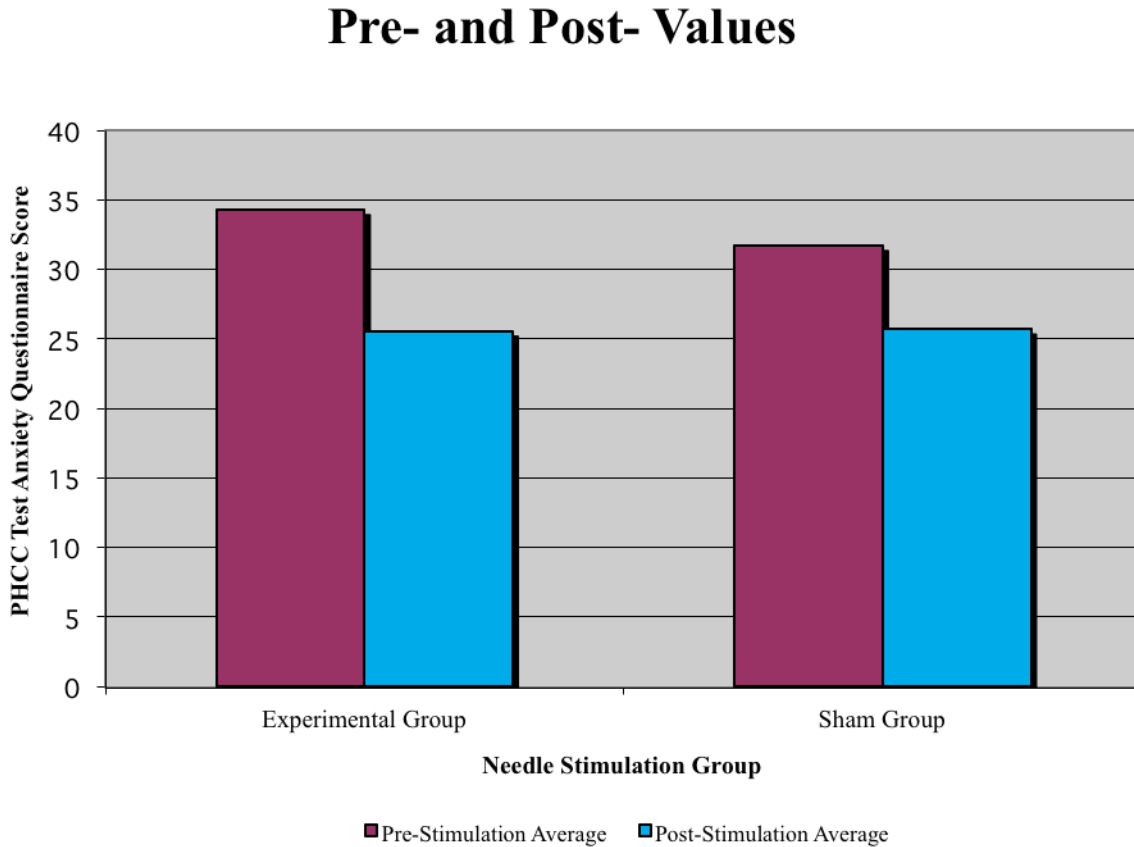
The control group of participants received a sham treatment in which a point unrelated to any meridians was treated with needle acupuncture. Following the study protocol, each sham point was treated bilaterally. The first point chosen for the sham treatment was located 5 inches inferior and 2 inches medial to the greater trochanter. Another point was located 3 inches inferior and 2 inches lateral to the inferior border of the patella. The last sham point was 3 inches inferior and 1 inch medial to the inferior border of the patella.

After all treatment visits were completed, the participants completed the same PHCC Test Anxiety Questionnaire that they had completed prior to the start of treatment. T-test analysis was done to compare pre and post-treatment PHCC Test Anxiety Questionnaire scores to determine study significance.

Results:

Fourteen subjects completed the study. The participants were evenly divided between the experimental group and the sham group. Prior to treatment, the subjects were asked to fill out the PHCC Test Anxiety Questionnaire. The average score for the experimental group pre-treatment was 34.28 out of a possible 50 points (SD = 4.27). The average score for the sham group pre-treatment was 31.71 out of 50 possible points (SD = 7.23). The subjects received between three and five treatments using the protocol previously described. Post-treatment, the subjects were given the same questionnaire to complete. The experimental group post-treatment scores averaged of 25.57 (SD = 7.09), and the sham group post-treatment scores averaged 25.71 (SD = 6.97). Data analysis by t-test showed a significant change in test anxiety of the experimental group ($p < 0.001$) compared to the sham acupuncture group which also showed a significant change ($p = 0.01$). No adverse events were reported.

Figure 1. Pre- and Post- Values for Experimental and Sham Points



Discussion:

The results of this trial supported the hypothesis that needle acupuncture of TCM points HT 4, HT 5, HT 7, PC 4, PC 5, and PC 6 were effective in decreasing test anxiety with more statistical significance than sham acupuncture. The seven participants who received TCM acupuncture to the experimental points listed above had an average decrease in PHCC Test Anxiety Questionnaire scores by nine points. The seven participants in the sham group saw an average decrease of six points when pre and post treatment scores were compared. Therefore, it can be concluded that the stimulation of the experimental points was 1.5 times more effective than the sham treatment for decreasing levels of test anxiety.

According to Chinese medicine, an imbalance of chi in a particular meridian or organ can cause physical, mental, and emotional symptoms. Emotions such as test anxiety can result from an imbalanced flow of chi, and each emotion affects this flow in a different way. When one is anxious or fearful, the chi descends to the feet, which explains the sinking feeling one may experience when anxious.⁶

A well designed study by Wang found that auricular acupuncture is an effective therapy for the treatment of anxiety disorders.⁷ Acupuncture redirects chi into a more balanced flow and provides support to the underlying energetic spheres affected by anxiety, helping to resolve the cause or effects of stress. Acupuncture releases tension in the muscles which allows increased flow of blood, lymph, and nerve impulses to affected areas, decreasing the overall levels of stress. Acupuncture is also effective in relieving the physical symptoms associated with stress-related and anxiety disorders, such as: diarrhea, headaches, heart palpitations, insomnia, and nausea. The study by Wang recommended treatment sessions lasting approximately ten to twelve weeks.⁷ Therefore, it would be of value to investigate longer treatment protocols utilizing the points from this pilot study.

Conclusion:

In this study, both the sham and experimental groups showed a statistically significant result, however, the experimental group was much more significant. Continued study with a much larger sample size with RCTs designed to investigate the influence of non-specific factors is recommended. It should be noted that this study also seems to support the placebo effect being significant as seen in other studies.

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