

SOUTH BAYLO UNIVERSITY

**Acupuncture for Post Traumatic Stress Disorder: A Literature Review
of the Effectiveness of Acupuncture Treatment**

by

Alex Kwan

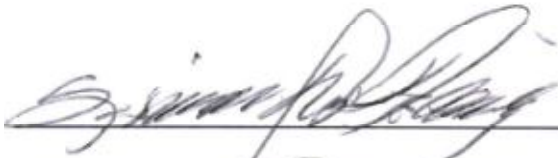
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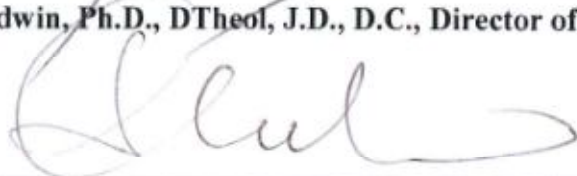
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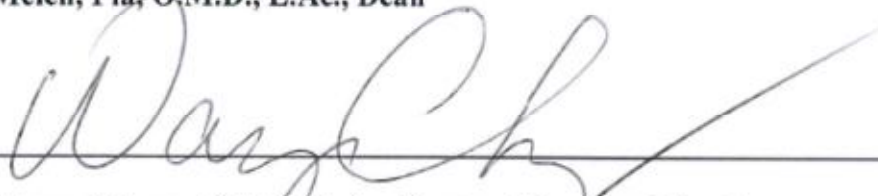
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ABSTRACT

The purpose of this study is to evaluate the current effectiveness of acupuncture for Post Traumatic Stress Disorder (PTSD). Since 2001 more than 1.5 million US military personnel have been deployed to Iraq or Afghanistan.^[1] It is estimated approximately 300,000 of the 1.5 million military personnel suffer from PTSD or major depression. PTSD is a disabling condition marked by a diverse of symptoms including anxiety, depression, insomnia, and body pain. PTSD develops following an event that involves life threat, serious injury, or death. War-zone exposure, assault, rape, torture, childhood physical or sexual abuse, natural disasters, and serious accidents are traumatic events that can trigger PTSD. Treatments of PTSD traditionally consist of psychosocial and pharmacological treatments. Psychosocial treatments consist of cognitive behavioral therapies (CBT) such as prolonged exposure and cognitive processing therapy. EMDR, eye movement desensitization and reprocessing has shown to be an effective treatment. Pharmacological treatments consist of the use of SSRIs, selective serotonin reuptake inhibitors, as well as antidepressants for the treatment of PTSD. With potential adverse

effects from drug interactions or cultural barriers with CBT, acupuncture provides a safe treatment option for patients with PTSD. This study aims to investigate the effectiveness of acupuncture on PTSD with the review of current research on this topic.

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I. INTRODUCTION

Since 2001 more than 1.5 million US military personnel have been deployed to Iraq or Afghanistan.^[1] It is estimated approximately 300,000 of the 1.5 million military personnel suffer from Post Traumatic Stress Disorder (PTSD) or major depression. Approximately 320,000 of the 1.5 million military personnel experiencing a mild concussion or brain injury during combat.^[2] PTSD also affects 7% - 9% of the US population.^[3] It is estimated motor vehicle accidents related PTSD may affect 2.5 million to 7 million people in the United States.^[4]

In 2013 the American Psychiatric Association (APA) revised the PTSD diagnostic criteria in the 5th edition of Diagnostic and Statistical Manual of Mental Disorders (DSM-5). DSM-5 classifies PTSD under the category of Trauma and Stressor Related Disorders. Diagnostic criteria include a history of exposure to a traumatic event and symptoms from each symptom cluster: intrusion, avoidance, negative alterations in mood and cognitions, and alterations in arousal and reactivity.^[5] The remaining criteria include concerns regarding duration of symptoms, functionality, and attribution of symptoms. Symptoms of intrusion include recurrent, involuntary, and intrusive memories; recurrent distressing dreams of the event; dissociative reactions (such as flashbacks) which may occur on a continuum from brief episodes to complete loss of consciousness; intense or prolonged distress after exposure to traumatic reminders; marked physiologic reactivity after exposure to trauma-related stimuli. Symptoms of avoidance include trauma-related thoughts or feelings; trauma-related external reminders (such as people, places, activities, etc.). Symptoms of negative alterations in mood and cognitions include inability to recall key features of the trauma (usually dissociative amnesia); persistent negative beliefs and

expectations about oneself of the world; persistent distorted blame of self or others for causing the traumatic event or resulting consequences; persistent negative trauma-related emotions (such as fear, horror, anger, guilt, or shame); markedly diminished interest in (pre-traumatic) significant activities; feeling alienated from others (detachment or estrangement); constricted affect, persistent inability to experience positive emotions. Symptoms of alterations in arousal and reactivity include irritable or aggressive behavior; self-destructive or reckless behavior; hypervigilance; exaggerated startle response; problems in concentration; sleep disturbance. Along with impairment symptoms there is evidence persons with PTSD also experience depression,^[6] sleep disorders,^[7] and multiple somatic symptoms including chronic body pain.^[8-15]

Classical text of Traditional Chinese Medicine (TCM) does not have PTSD as a defined disorder. However, symptoms of PTSD including anxiety, depression, insomnia, and body pain can be helped by treatment of TCM. The role of TCM in the treatment of psychiatric diseases have existed 1100 BC and in the Shang Han Lun.^[16,17] Current TCM utilizes a diagnostic system that incorporates a pattern of differentiation to treat the individual with psychological disorder from the physical symptoms of the individual. With the development of a modern TCM diagnostic classification by Nityamo Sinclair-Lian and Michael Hollified the treatment of individuals with PTSD was categorized utilizing TCM diagnostic system.^[18]

PTSD

Posttraumatic stress disorder (PTSD) is a complex illness that develops following a stressful event of exceptional nature. PTSD is a common and complex illness with high

psychiatric and high medical comorbidity with impairment in daily function. PTSD is categorized as a Trauma and Stressor Related Disorder defined by the prevalence of 3 clusters of symptoms: re-experiencing, marked avoidance, and hyperarousal. The prevalence of PTSD is approximately 6-25%, with recent Iraq and Afghanistan war veterans having 13-16% prevalence. Car accidents, natural and human-caused disasters, childhood abuse, domestic violence, death of a loved one, witnessing violence, and war related events are events that comprise of traumatic exposure. The pathology of PTSD is stress exposure coupled with a response of severe fear and/or helplessness. It is often observed in the clinical environment individuals with PTSD continue to perceive threat even when the acute danger is no longer present. The individual make-up of the person affects whether they will be affected by PTSD following exposure. Genetics, morphologic, and social determinants affects the individual and the susceptibility they will develop PTSD.^[19-20] Individuals with PTSD are often times comorbid with other psychiatric disorders including mood, substance use, personality disorders, panic disorders, and major depressive disorders.^[21] Veterans with PTSD under the care of a primary physician, 87% are reported to have one or more comorbid psychiatric disorder, of which depression is the most common morbid disorder.^[22] In addition to psychiatric disorders patients with PTSD have a higher prevalence in cardiovascular diseases, arthritis, hypertension, autoimmune diseases, rheumatoid arthritis, psoriasis, fibromyalgia, and irritable bowel disease.^[23-27]

PTSD sufferers are reported to be stuck in the threat response as experienced in the original psychological trauma. The trauma triggers continue to feelings of fear and hypervigilance even as the acute danger is no longer present. The stationary stress

response involves many biological systems involving alterations to the central nervous system^[28], the hypothalamic-pituitary-adrenal axis^[29], and autonomic nervous system.^[30]

DSM-IV vs DSM-5

The basic elements of PTSD include traumatic stressor that defines the gate keeper criterion, re-experiencing the trauma, numbing and avoidance. These were the criteria as defined by DSM-III in 1980. In DSM-IV increased arousal and vigilance was added. DSM-5 elaborates on the gate keeper criteria, addition of a new stressor category, a more defined of the number of manifesting symptoms, and a regrouping of symptoms. A comparison of changes from DSM-IV to DSM-5 are listed in Table 1.

Table 1. Changes in DSM-IV to DSM-5 ^[41]			
DSM-IV		DSM-5	
A1	The person experienced, witnessed, or was confronted with an event that involved actual or threatened death or serious injury or a threat to the physical integrity of self or others.	A1	Exposure to actual or threatened death, serious injury, or sexual violence in one (or more) of the following ways: 1. Directly experiencing the traumatic event(s). 2. Witnessing, in person, the event(s) occurred to a close family member or close friend, the event(s) must have been violent or accidental. 3. Learning that the traumatic event(s) occurred to a close family member or close friend. In cases of actual or threatened death of a family member or friend, the event(s) must have been violent or accidental. 4. Experiencing repeated or extreme exposure to aversive details of the traumatic event(s) (e.g. first responders collecting human remains; police officers repeatedly exposed to details of child abuse).
A2	The person's response involved intense fear, helplessness or horror	A2	Eliminated
B	The traumatic event is persistently re-experienced in one (or more) of the following ways:	B	Presence of one (or more) of the following intrusion symptoms associated with the traumatic event(s), beginning after the traumatic event(s) occurred:
B1	Recurrent and intrusive distressing		

<p>B2 B3 B4 B5</p>	<p>recollections of the event, including images, thoughts, or perceptions. Recurrent distressing dreams of the event. Acting or feeling as though the event were recurring (includes a sense of reliving the experience, illusions, hallucinations, and dissociative flashback episodes, including those that occur on awakening or when intoxicated). Intense psychological distress at exposure to internal or external cues that symbolize or resemble an aspect of the traumatic event. Physiological reactivity on exposure to internal or external cues that symbolize or resemble an aspect of the traumatic event.</p>	<p>B1 B2 B3 B4 B5</p>	<p>Recurrent, involuntary, and intrusive distressing memories of the traumatic event(s). Recurrent distressing dreams in which the content and/or affect of the dream are related to the traumatic event(s). Dissociative reactions (e.g. flashbacks) in which the individual feels or acts as if the traumatic event(s) were recurring. (Such reactions may occur on a continuum, with the most extreme expression being a complete loss of awareness of present surroundings.) Intense or prolonged psychological distress at exposure to internal or external cues that symbolize or resemble an aspect of the traumatic event(s). Marked physiological reactions to internal or external cues that symbolize or resemble an aspect of the traumatic event(s).</p>
<p>C C1 C2</p>	<p>Persistent avoidance of stimuli associated with the trauma and numbing of general responsiveness (not present before the trauma) as indicated by three (or more) of the following: Efforts to avoid thoughts, feelings, or conversations associated with the trauma. Efforts to avoid activities, places, or people that arouse recollections of the trauma.</p>	<p>C C1 C2</p>	<p>Persistent avoidance of stimuli associated with the traumatic event(s), beginning after the traumatic event(s) occurred, as evidenced by one or both of the following: Avoidance of or efforts to avoid distressing memories, thoughts or feelings about or closely associated with the traumatic event(s). Avoidance of or efforts to avoid external reminders (people, places, conversations, activities, objects, situations) that arouse distressing memories, thoughts, or feelings about or closely associated with the traumatic events.</p>
<p>C3 C7 C4 C5 C6</p>	<p>Inability to recall an important aspect of the trauma. Sense of foreshortened future (e.g. does not expect to have a career, marriage, children, or a normal life span). Markedly diminished interest or participation in significant activities. Feeling of detachment or estrangement from others. Restricted range of affect (e.g., unable to have loving feelings).</p>	<p>D D1 D2 D3 D4 D5 D6</p>	<p>Negative alterations in cognitions and mood that are associated with the traumatic event(s), beginning or worsening after the traumatic event(s) occurred, as evidenced by two or more of the following: Inability to remember an important aspect of the traumatic event(s) (typically due to dissociative amnesia and not to other factors such as head injury, alcohol, or drugs). Persistent and exaggerated negative beliefs or expectations about oneself, others, or the world (e.g. “I am bad”, “no one can be trusted”, “the world is completely dangerous”, “my whole nervous system is permanently ruined.”) Persistent distorted cognitions about the cause or consequence of the traumatic event(s) that lead the individual to blame himself/herself or others. Persistent negative emotional state (e.g. fear, horror, anger, guilt, or shame). Markedly diminished interest or participation in significant activities.</p>

		D7	Feeling of detachment or estrangement from others. Persistent inability to experience positive emotions (e.g. inability to experience happiness, satisfaction, or loving feelings).
D	Persistent symptoms of increased arousal (not present before the trauma), as indicated by two (or more) of the following: D2 Irritability or outbursts of anger. D4 Hypervigilance. D5 Exaggerated startle response. D3 Difficulty concentrating. D1 Difficulty falling or staying asleep.	E E1 E2 E3 E4 E5 E6	Marked alterations in arousal and reactivity associated with the traumatic event(s), beginning or worsening after the traumatic event(s) occurred, as evidenced by two (or more) of the following: E1 Irritable behavior and angry outbursts (with little or no provocation) typically expressed as verbal or physical aggression toward people or objects. E2 Reckless or self-destructive behavior. E3 Hypervigilance. E4 Exaggerated startle response. E5 Problems with concentration. E6 Sleep disturbance (e.g. difficulty falling or staying asleep or restless sleep).
E	Duration of the disturbance is at least one month: Acute-when the duration of symptoms is less than three months. Chronic-when symptoms last three months or more.	F	Duration of the disturbance (criteria B, C, D, and E) is more than 1 month.
F	Requires significant distress or functional impairment.	G	The disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning.
		H	The disturbance is not attributable to the physiological effects of a substance (e.g. medication, alcohol) or another medical condition. With dissociative symptoms (with either depersonalization or derealization). With delayed expression: if the full diagnostic criteria are not met until at least 6 months after the event (although the onset and expression of some symptoms may be immediate).

Treatment of PTSD

Two main types of traditional treatments of PTSD are medications and/or psychotherapy. The U.S. Food and Drug Administration has approved two medications for treating PTSD, Paroxetine (Paxil) and sertraline (Zoloft). Both medications are SSRIs (selective serotonin reuptake inhibitors) a type of antidepressant medicine. The medications are used to help control PTSD symptoms such as sadness, worry, and anger.

Psychotherapy involves talking with a mental health professional to treat a mental illness. Therapy treatment for PTSD usually lasts 6 to 12 weeks, with some focusing on targeting the symptoms of PTSD directly. Other therapies focus on social, family, or job-related problems.

One helpful therapy is cognitive behavioral therapy, or CBT. Different forms of CBT include exposure therapy, cognitive restructuring, and stress inoculation training. Exposure therapy helps people face and control their fear. It exposes them to the trauma they experienced in a safe way. It uses mental imagery, writing, or visits to the place where the event happened. The therapist uses these tools to help people with PTSD cope with their feelings. Cognitive restructuring helps people make sense of the bad memories. Sometimes people remember the event differently than how it happened. They may feel guilt or shame about what is not their fault. The therapist helps people with PTSD look at what happened in a realistic way. Stress inoculation training is a therapy that tries to reduce PTSD symptoms by teaching a person how to reduce anxiety. Like cognitive restructuring, this treatment helps people look at their memories in a healthy way.

Other types of treatment can also help people with PTSD. People with PTSD should talk about all treatment options with their therapist.

Side Effects of SSRI

The most common side effects of sertraline and paroxetine include: headache, nausea, sleeplessness or drowsiness, agitation, and sexual problems. Some studies have suggested SSRIs may have unintentional effects on some people, especially adolescents

and young adults. In 2004, the Food and Drug Administration (FDA) conducted a thorough review of published and unpublished controlled clinical trials of antidepressants that involved nearly 4,400 children and adolescents. The review revealed that 4 percent of those taking antidepressants thought about or attempted suicide (although no suicides occurred), compared to 2 percent of those receiving placebos.

Acupuncture treatment of PTSD

Although classical text of TCM does not have PTSD as a defined disorder complementary and alternative medicine (CAM) therapies are widely used for mental health conditions. Acupuncture recognized as a mainstream therapy involving the insertion of piriform needles into certain points on the body known as acupuncture points. Acupuncture is commonly used for mental disorders such as anxiety^[31], dementia^[32], eating disorders^[33], schizophrenia^[34], and sleep disorders^[35].

Current TCM utilizes a diagnostic system that incorporates a pattern of differentiation to treat the individual with psychological disorder from the physical symptoms of the individual. In TCM the primary pattern of differentiation for PTSD is Heart Shen disturbances with Liver Qi stagnation and Kidney deficiency. Secondary diagnostic patterns such as Liver overacting on Spleen or Liver Fire would characterize the patient given the practitioners result of diagnosis. The development of a modern TCM diagnostic classification by Nityamo Sinclair-Lian and Michael Hollified the treatment of individuals with PTSD was categorized utilizing TCM diagnostic system^[18], Table 2. This system would utilize the basic points of Liv3, PC6, HT7, ST36, Sp6, Yintang and GB20, UB14, 15, 18, 20, 21, 23 to address the primary concern of heart shen/liver qi

stagnation/kidney deficiency. These 25 primary points would be the foundation of treatment for PTSD patients. Secondary points would consist of 15 choice points for which 3 would be chosen by the practitioner depending on the patients' secondary pattern of differentiation.

In Traditional Chinese Medicine external and internal conditions may be pathogenic to illness. The imbalance of a person in accordance to the five elements from the internal perspective include joy, sympathy, worry, grief, sadness, fear, and anger with fear and worry correlating to the internal event leading to PTSD. Acupuncture approaches the treatment of PTSD by working on both the emotional and somatic symptoms. The comorbidity of PTSD can be seen as the incorporation of multiple patterns of diseases based on imbalances of the five elements. As noted earlier the protocol developed by Nityamo Sinclair-Lian^[18] and Michael Hollified^[18] aims to address the comorbidity of PTSD with 3 choice points that would serve as a supplement to the primary points addressing PTSD.

TCM Pattern of Differentiation for PTSD

Table 2. Traditional Chinese Medicine Diagnosis and Acupuncture Treatment Protocol for PTSD ^[18]		
	Front Points	Back Points
Standard Protocol points for Grounding/Qi and Blood Deficiency	ST 36, SP 6	UB 20, UB 21
Primary Diagnostic Patterns		
Heart Shen Disturbances	HT 7, PC 6, Yintang	UB 14, UB 15
Liver Qi Stagnation	Liv 3, PC 6	GB 20, UB 18
Kidney Deficiency		UB 23
Secondary Diagnostic Patterns		
Liver Overacting on Spleen	Liv 13	UB 18, UB 20
Liver Overacting on Stomach	Liv 14	UB 18, UB 21
Stomach Fire	St 44	Du 14, UB 21
Liver Fire	Liv 2	Du 14, UB 18
Phlegm Heat	St 40	Du 14, UB 21
Phlegm Damp	Sp 9	UB 20
Heart Yin/Blood Deficiency	Ht 6	UB 17, UB 15
Spleen Qi/Yang Deficiency	Sp 3	UB 20, UB 23
Kidney Yin/Essence Deficiency	Ki 6	UB 52, UB 23
Kidney Yang/Qi Deficiency	Ki 7	DU 4, UB 23
Liver Yin/Blood Deficiency	Liv 8	UB 17, UB 18
Stomach Yin Deficiency	St 44	UB 21

II. METHODOLOGY

Research Method

The keywords “acupuncture” and “PTSD” or “Post Traumatic Stress Disorder” were used for searching. There are 29 articles on EBSCO and 300 articles on PUBMED. The year of publication and language type will not be restricted. Studies that were based on DSM-IV will be included. Therapies including “Tai Chi”, “meditation”, “massage”, “herbs”, and “herbal formula” will be excluded in this study. The aim of this article is to review the current available evidences for the effectiveness of acupuncture in the treatment of PTSD.

The article selection process includes the inclusion of RCT of patients with PTSD. The use of acupuncture and electro acupuncture are included, with the exclusion of laser acupuncture and moxibustion. Acupuncture is defined as the insertion of piriform needles into the skin and underlying tissue at specific location on the body, including head, four limbs, and ear.

PTSD Evaluation: Self Report Measure

The Post-Traumatic Stress Symptom Scale-Self Report (PSS-SR) is a 17-item self-report scale used to diagnose PTSD (post-traumatic stress disorder) according to DSM-III-R (Diagnostic and Statistical Manual of Mental Disorders, 3rd Edition, revised) criteria. This tool assesses the severity of PTSD symptoms and contains the same 17 items as the PSS-I (Post-Traumatic Symptom Scale-Interview Version). This resource was identified by the NIH Disaster Research

Response project (DR2) for researchers looking for pre- and post-disaster data collection instruments.

PTSD Evaluation: Clinician-Administered Scale

The CAPS is a structured interview designed to make a categorical PTSD diagnosis and to provide a measure of PTSD symptom severity. The structure corresponds to the DSM-IV criteria, with B, C, and D symptoms rated for both frequency and intensity; these two scores are summed to provide severity ratings. Criteria A, E, and F are assessed with additional questions. CAPS-IV takes 30-60 minutes to administer with a trained professional. The scoring of CAPS is based on frequency scoring and intensity scoring.

A frequency score of 1 (scale 0 = "none of the time" to 4 = "most or all of the time") and an intensity score of 2 (scale 0 = "none" to 4 = "extreme") is required for a particular symptom to meet criterion. The diagnosis is then made according to the DSM-IV algorithm (i.e., 1 "B" Criteria, 3 "C" Criteria, and 2 "D" Criteria, along with A, E, and F). A severity score for each symptom is calculated by summing the frequency and intensity scores, which can then be summed for all 17 symptom questions and/or for the three symptom clusters.

PTSD Evaluation: Impact of Event Scale – Revised (IES-R)

The IES-R is a 22-item self-report measure that assesses subjective distress caused by traumatic events. The IES-R contains seven additional items related to the hyperarousal symptoms of PTSD, which were not included in the original IES. It is a revised version of the older 15-item version. Items of the IES_R correspond directly to 14 of the 17

DSM-IV symptoms of PTSD and are rated on a 5-point scale ranging from 0 ("not at all") to 4 ("extremely"). The IES-R yields a total score (ranging from 0 to 88).

III. RESULTS

The findings on research studies pertaining to the efficacy of acupuncture on PTSD are limited. The American Psychiatric Association first recognized PTSD as a disorder in 1980. The specific condition of PTSD is not an official disorder in Traditional Chinese Medicine. Therefore, the research into the efficacy of the subject will yield limited results.

The following results of the research yielded 1 RCT^[37] and 1 systematic review^[36] of published study specifically assessing the effectiveness of acupuncture in the treatment of PTSD. The 1 RCT is a randomized controlled pilot trial. The systematic review consists of a comparison of 4 RCT^[37-40] which will be discussed. Of the 4 RCT, one is conducted in the USA and three conducted in China. The Cochrane risk of bias for assessing the quality of RCTs were conducted on the 4 RCT yielding a low risk of bias in one RCT^[37] and unclear risk of bias in the other three RCT^[37-40]. The CONSORT 2010 checklist of reporting quality of RCTs was implemented in the four RCT^[36] with a total of 37 items in the checklist a fulfillment of 22 items (59.5%) was determined in one RCT^[37], 15 items (40.5%) in another RCT^[38], 9 items (24.3%) in another RCT^[39], and 8 items (21.6%) in the last RCT^[40]. The STRICTA guideline, an extension of CONSORT, consists of 17 item checklist for determining the completeness and transparency of controlled trails of acupuncture were assessed on the 4 RCTs^[36] yielding high quality in one RCT^[37,38], medium in one RCT^[39], and low in one RCT^[40]. A calculated effect size was conducted summarizing the effects of acupuncture on each outcome by recalculation for mean and standard deviation, the results are summarized on table 3.^[36] The results pertaining to ear

acupuncture along with impairment data were not included as to provide a better presentation of acupuncture treatments comparison.

Table 3: Randomized Controlled Trails and Prospective Clinical Trials of Acupuncture for PTSD ^[36]				
	Hollifield[37] (2007)	Zhang[38] (2010)	Zhang[39] (2010)	Zhang[40] (2011)
N value	84	276	92	91
Treatment Types	(A) Acupuncture (n=29) (B) Cognitive Behavioral Therapy (n=28) (C) Wait List Control (n=27)	(A) Electro-Acupuncture (n=69) (B) Oral SSRI (n=69)	(A) Electro-Acupuncture + Moxa (n=46) (B) Oral SSRI (n=46)	(A) Acupuncture + Cognitive Behavioral Therapy (n=67) (B) Cognitive Behavioral Therapy (n=24)
Acupuncture Points Used	Liv3, PC6, HT7, ST36, SP6, GB20, UB14, UB15, UB18, UB20, UB 21, UB23, Yintang plus 3 additional secondary points	Electro: GB20, Du20, Du24, EX-HN1	Electro: GB20, DU20, DU24 Moxa: UB23, UB52, DU4	PC8
Total Number of Acupuncture Treatments	24	36	Electro-Acupuncture: 18 Moxa: 36	3-4
Frequency of treatments	2x12	3x12	Electro-Acupuncture: 3x6 Moxa: 3x12	Once every other week
Retention time of Acupuncture needle	25-40 min	30 min	30 min	30 min
PTSD, Anxiety, Depression Measurement Scales	(1) PTSD (PSS-SR) (2) Depression (HSCL-25) (3) Anxiety (HSCL-25)	(1) PTSD (CAPS) (2) Depression (HAMD) (3) Anxiety (HAMA)	(1) PTSD (CAPS) (2) Depression (HAMD) (3) Anxiety (HAMA)	(1) PTSD (IES-R) (2) PTSD (Self Compiled Questionnaire)
Results as calculated by Y. Kim et. al.^[36]	(1) A vs B: P =0.36, ES, -0.26 A vs C: P =0.001, ES, -0.98 B vs C: P=0.004, ES, -0.85 (2) A vs B: P =0.92, ES, 0.03 A vs C: P =0.02, ES, -0.68 B vs C: P=0.008, ES, -0.80 (3) A vs B: P =0.39, ES, -0.25 A vs C: P =0.003, ES, -0.91 B vs C: P=0.008, ES, -0.79	(1) A vs B: P =0.43, ES, -0.13 (2) A vs B: P =0.14, ES, 0.03 (3) A vs B: P =0.34, ES, -0.16	(1) A vs B: P < 0.00001, ES, -1.77 (2) A vs B: P < 0.00001, ES, -1.96 (3) A vs B: P < 0.00001, ES, -1.53	(1) A vs B: P < 0.00001, ES, -1.56 (2) A vs B: P = 0.01, ES, -0.59

Outcome

The Hollified study compared Acupuncture versus waitlist, acupuncture versus CBT, and CBT versus waitlist. The implementation of a waitlist provided a comparison of a control group. The outcome of acupuncture treatment versus waitlist was significant in measurement scales of PTSD [PSS-SR] ($P = 0.001$, $ES = -0.98$), in the measurement scale of depression [HSCL-25] ($P=0.02$, $ES = -0.68$), and in the measurement scale of anxiety [HSCL-25] ($P = 0.003$, $ES=-0.91$). The comparison of acupuncture versus CBT was not significant, indicating a minimal difference in outcome of the therapies of CBT versus Acupuncture for PTSD ($P =0.36$, $ES, -0.26$), depression ($P =0.92$, $ES, 0.03$), and anxiety ($P =0.39$, $ES, -0.25$). Acupuncture was more effective than the waitlist group.^[36]

In the study of electro acupuncture versus SSRI the outcome was not significant in the measurement of scale of PTSD [CAPS] ($P =0.43$, $ES, -0.13$), not significant in the measurement scale of depression [HAMD] ($P =0.14$, $ES, 0.03$), and not significant in the measurement scale of anxiety [HAMA] ($P =0.34$, $ES, -0.16$). Electro-acupuncture had the same effect as SSRI.^[36]

In the study of Acupuncture plus CBT versus CBT alone the outcome was significant in the measurement scale of PTSD [IES-R] ($P < 0.00001$, $ES, -1.56$) and PTSD [self-compiled questionnaire] ($P = 0.01$, $ES, -0.59$). Electro acupuncture plus CBT was more effective than CBT alone.^[36]

In the study of electro acupuncture plus moxa versus SSRI the outcome was significant in the measurement scale of PTSD [CAPS] ($P < 0.00001$, $ES, -1.77$), depression [HAMD] ($P < 0.00001$, $ES, -1.96$), and anxiety [HAMA] ($P < 0.00001$, $ES, -1.53$). Electro acupuncture plus moxa was more effective than SSRI.^[36] A meta-analysis was conducted

on electro acupuncture plus moxibustion versus oral SSRI. The results showed a significant favorable effect of electro acupuncture plus moxibustion on CAPS outcome (2 studies, n = 115, ES, -3.19; 95% CI: -3.93 to -2.46, $P < 0.00001$, heterogeneity: $x^2 = 0.50$, $P = 0.48$, $I^2 = 0\%$), on the depression outcome (2 studies, n = 115, ES, -1.76; 95% CI: -2.21 to -1.31, $P < 0.00001$, heterogeneity: $x^2 = 1.04$, $P = 0.31$, $I^2 = 4\%$), on anxiety outcome (2 studies, n = 115, ES, -1.14; 95% CI: -1.44 to -0.84, $P < 0.00001$, heterogeneity: $x^2 = 0.62$, $P = 0.43$, $I^2 = 0\%$).^[36]

IV. DISCUSSION

The review of four RCTs^[37-40] discussed from the systematic review^[36] on the effectiveness of acupuncture for treatment of PTSD indicates acupuncture may be efficacious for reducing symptoms of PTSD. This conclusion is mainly based on the findings of one high quality RCT^[37] compared with wait-list control group. This high quality RCT was in accordance to Cochrane risk of bias assessment, CONSORT 2010 checklist, and STRICTA checklist. The results of this study suggest acupuncture alone had the same effect as CBT and SSRI. However, the combination of acupuncture with moxibustion yielded better results than SSRI and acupuncture combined with CBT yielded better results than CBT alone.

There were limitations to the study. A standardization of acupuncture points used should be implemented in future studies to find a conformity between studies. The diagnostic system proposed by Nityamo Sinclair-Lian and Michael Hollified^[18] provided a thorough pattern of differentiation in accordance to Chinese Medicine and provides a uniform acupuncture point treatment while allowing some flexibility for addressing individual health specific concerns. In addition, a comparison between acupuncture, electro-acupuncture, electro-acupuncture plus moxa, acupuncture plus CBT was conducted. There was not a uniform treatment with acupuncture alone or acupuncture with one set modality comparison. A parallel comparison of RCT's should be provided for a more complete assessment.

A conformity to current APA DSM-5 interpretation of PTSD should be provided. The 4 RCT discussed were based on the DSM-III and DSM-IV assessment criteria for PTSD. The DSM-5 self-reported checklist is PCL-5 which supersedes the PSS-SR and the

clinician administered DSM-5 CAPS-5 superseding the CAPS should be utilized for future studies.

V. CONCLUSION

The current sample size of studies is too small to bring a definitive decision on the effectiveness of acupuncture for PTSD. Although results from each of the 4 RCT assessed in this study are encouraging, more rigorous studies using a standardized acupuncture points while conforming to the current DSM-5 standard are needed to determine the efficacy of acupuncture for PTSD.

VI. REFERENCES

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APPENDIX 1: Abbreviation Table

Abbreviation	Definition
APA	American Psychiatric Association
CBT	Cognitive Behavior Therapy
DSM	Diagnostic and Statistical Manual of Mental Disorders
EDMR	Eye Movement Desensitization and Reprocessing
PTSD	Post Traumatic Stress Disorder
SSRI	Selective Serotonin Reuptake Inhibitors
TCM	Traditional Chinese Medicine