

# The Role of Acupuncture in Post-Traumatic Stress Disorder: A Literature Review

Felix Halim<sup>1</sup>, Sri Wahdini<sup>2</sup>

<sup>1</sup>Medical Acupuncture Specialist Program, Faculty of Medicine Universitas Indonesia,  
Jakarta, Indonesia

<sup>2</sup>Department of Parasitology, Faculty of Medicine Universitas Indonesia, Jakarta,  
Indonesia

[felixhalim39@yahoo.com](mailto:felixhalim39@yahoo.com)

Keywords: *Acupuncture, anxiety, auricular acupuncture, PTSD, sleep quality*

Abstract: Post-Traumatic Stress Disorder (PTSD) is psychiatric condition that arises following a traumatic experience and is closely linked with anxiety, depression, and suicidal ideation. Common among military veterans, disaster survivors, and abuse victims, PTSD can significantly impair daily functioning. Acupuncture has demonstrated potential in reducing psychological symptoms, including anxiety, depression, and sleep disturbances, which are commonly observed in patients with PTSD. This study aims to evaluate the role of acupuncture in managing PTSD symptoms. A literature search was conducted on June 10, 2024, using PubMed, Cochrane, and Scopus databases with relevant keywords. Four studies were selected, including two randomized controlled trials (RCTs), one systematic review, and one systematic review and meta-analysis. Acupuncture has been found to reduce amygdala activation, modulate amygdala functional connectivity, and balance the sympathetic and parasympathetic nervous systems, improving central network connectivity. Common acupuncture points include PC6 and auricular points such as MA-TF1 (Shenmen) and MA-IC (Heart). Results suggest that acupuncture may reduce PTSD symptoms, improve sleep quality, and decrease daytime dysfunction. However, further high-quality RCTs with standardized acupuncture protocols are needed.

## 1 INTRODUCTION


Post-Traumatic Stress Disorder (PTSD) is a psychiatric condition that occurs after experiencing or being exposed, either directly or indirectly, to traumatic experience. Although not everyone who experiences trauma develops PTSD, approximately 13 million adults in the United States suffer from this condition, with women (8 out of 100) being more likely to develop PTSD than men (4 out of 100). The incidence is even higher among specific populations, such as military veterans, displaced individuals, victims of natural disasters, and cases of abuse. PTSD is often associated with other psychiatric disorders, such as anxiety, major depression, and suicidal ideation, which can significantly impact overall health and mortality rates. (Lehavot et al., 2018; Qassem et al., 2021)

Patients with PTSD exhibit a range of negative symptoms related to the traumatic event, and these symptoms lead to limitations in their daily activities, work, and social interactions. This can be attributed to

the initial response after trauma, which results in a sudden surge of adrenaline due to sympathetic nervous system stimulation, changes in vital signs, and alterations in neuroendocrine levels and inflammatory responses. If left untreated, PTSD can develop into other psychiatric disorders and often leads to suicidal thoughts. Therefore, it is essential to address and prevent further progression of PTSD. (Mansour et al., 2023; Miao et al., 2018).

Several treatments are available for PTSD, including psychotherapy, pharmacotherapy, and acupuncture. Acupuncture has shown effectiveness not only in treating physical disorders but also in alleviating psychological disturbances such as anxiety, depression, and sleep disorders, all of which are common in PTSD patients. (Engel et al., 2014; Tang et al., 2023) This review aimed to examine the role of acupuncture in the management of PTSD, as well as to identify the acupuncture points most frequently used, thereby contributing to the existing clinical understanding of its potential role in PTSD treatment.

<sup>a</sup> <https://orcid.org/0009-0005-3095-3261>

<sup>b</sup> <https://orcid.org/0000-0001-9729-9114>

## 2 METHOD

A literature search was conducted in PubMed, Cochrane Library, and Scopus on June 10, 2024, covering studies published between 2014 and 2024. The search strategy was developed to identify articles related to PTSD and acupuncture interventions. The keywords were combined using the Boolean operators AND and OR, and the full search strategy for each database was provided in the Research Material. Following the initial search, the identified records were screened against predefined eligibility criteria to determine their relevance to the review objective.

The inclusion criteria specified that the studies should focus on male or female patients diagnosed with PTSD, with interventions involving acupuncture therapy. Only studies in the form of Randomized Controlled Trials (RCTs), Systematic Reviews, and/or Meta-Analysis were considered, and only articles published in English were included. Studies that were narrative reviews or opinion pieces, animal studies, or those with inaccessible full texts were excluded from the search.

## 3 RESULTS

The search yielded 86 articles from the Cochrane Library, 113 from PubMed, and 124 from Scopus. After screening the titles, abstracts, and full texts in accordance with the predefined inclusion and exclusion criteria, four studies were deemed eligible for inclusion in the review. These comprised two randomized controlled trials (RCTs), one systematic review, and one systematic review with meta-analysis, all of which examined the potential role of acupuncture therapy in the management of PTSD. A flow diagram of the study selection process is presented in Figure 1

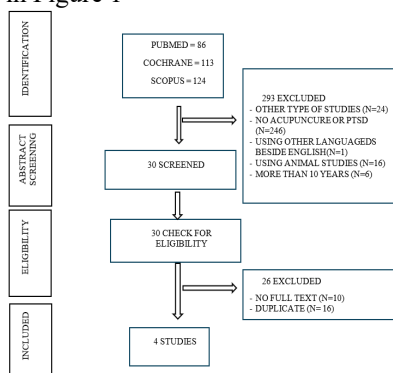


Figure 1. Flowchart of literature search

One RCT evaluated the combined effects of Transcutaneous Electrical Acupoint Stimulation (TEAS) and Cognitive Behavioral Therapy (CBT) across four groups involving a total of 240

participants. The treatment involved TEAS at the Pericardium 6 (PC6) acupoint bilaterally for 12 sessions. Participants who received TEAS combined with CBT and sertraline showed the most pronounced improvement in PTSD symptoms, based on scores from the Clinician-Administered PTSD Scale (CAPS), the PTSD Checklist-Civilian Version (PCL-C), and the 17-item Hamilton Depression Rating Scale (HAMD-17). This group also had the highest clinical response rate (95%) and remission rate (25%) compared to the other groups, which was associated with lower response and remission rates. No serious adverse events were reported during the study.(Feng et al., 2019)

Another study focused on veterans with PTSD and sleep disturbances, comparing the effects of auricular acupuncture with a control group receiving only standard PTSD therapy. The intervention group received auricular acupuncture three times a week for three weeks. Significant improvements were observed in sleep quality based on Pittsburgh Sleep Quality Index (PSQI), in the acupuncture group. However, no significant differences were found in actigraphy or the Consensus Sleep Diary, indicating that acupuncture may specifically target sleep disturbances rather than overall sleep behavior.(King et al., 2015)

A systematic review of 10 studies involving 292 participants assessed the effectiveness and safety of auricular acupuncture for trauma-related psychiatric disorders. The review found that auricular acupuncture led to improvements in PTSD symptoms, based on CAPS and HAMD, as well as sleep quality measured by the PSQI. However, the study highlighted the variability in treatment protocols and the need for more standardized approaches in acupuncture treatments for PTSD.(Kwon et al., 2020)

A meta-analysis of seven studies, with a total of 709 participants, examined the effects of manual and auricular acupuncture in treating PTSD. Participants in the acupuncture groups demonstrated a significant reduction in PTSD symptoms compared with those in the control group, including those receiving sham acupuncture, Cognitive Behavioral Therapy (CBT), or paroxetine. Significant improvements were also noted in functional status both post-treatment and at follow-up. However, no significant differences were found in quality of life or sleep outcomes. The studies also reported mild adverse effects, such as pain at the needle insertion site and minor bruising.(Grant et al., 2018)

## 4 DISCUSSION

### 4.1 Summary of Findings from Studies

The four studies included in this review collectively support the efficacy of acupuncture as an

adjunctive treatment for PTSD. Across the studies, acupuncture, whether through Transcutaneous Electrical Acupoint Stimulation (TEAS), auricular acupuncture, or manual body acupuncture, demonstrated positive effects in reducing PTSD symptoms, such as anxiety, depression, and sleep disturbances. These treatments showed improvements in PTSD symptom severity, clinical response, and functional status, with some studies highlighting additional benefits such as improved sleep quality. However, the variability in acupuncture protocols, including the points used and treatment duration, suggests that standardized approaches are needed for more conclusive results. (Feng et al., 2019; Grant et al., 2018; King et al., 2015; Kwon et al., 2020)

#### 4.2 Mechanism of Acupuncture

The mechanism of acupuncture in treating PTSD is thought to involve the modulation of brain regions responsible for emotional regulation and stress response, particularly the amygdala. Acupuncture has been shown to reduce amygdala activation, which is central to the emotional and memory processing of traumatic experiences. By modulating the connectivity between the amygdala and other neural networks, such as the Default Mode Network (DMN), acupuncture may contribute to rebalancing sympathetic and parasympathetic nervous system activity. This balance reduces hyperarousal symptoms commonly seen in PTSD, such as intrusive thoughts, heightened anxiety, and emotional dysregulation, ultimately promoting relaxation and emotional stabilization. (Dhond et al., 2008; Hui et al., 2005)

#### 4.3 Acupuncture Protocols and Treatment Parameters

Common body acupuncture point for PTSD treatment is Pericardium 6 (PC6), and for auricular acupuncture point mostly used are Shenmen (MA-TF1), MA-IC (Heart), Kidney, Liver, and Sympathetic. Sessions generally last 30 to 60 minutes, with treatments occurring 2 to 3 times per week. The total number of sessions ranges from 12 to 36. Retention times for acupuncture needles are typically around 20 to 30 minutes, though ear acupuncture may also utilize ear seeds for prolonged effects. These acupuncture techniques are often combined with Cognitive Behavioral Therapy (CBT) or pharmacological treatments to enhance therapeutic outcomes.

#### 4.4 Safety of Acupuncture

Based on the result, safety profile of acupuncture for PTSD appears to be favorable, with minimal

adverse effects reported across the studies. Common side effects include mild to moderate pain at the needle insertion sites, superficial bleeding, and minor bruising. These effects were generally transient and did not lead to significant complications. None of the included studies reported any serious adverse events, suggesting that acupuncture is a safe treatment option for PTSD patients. However, it is important to note that the safety of acupuncture can depend on the skill and experience of the practitioner. Proper technique is essential to minimize risks, such as infection or injury.

### 5 LIMITATIONS

There are several limitations to this study. The search for relevant studies was restricted to the past 10 years, with the latest research published in 2020. This highlights a notable gap in the literature, as there is still limited research exploring the role of acupuncture in treating PTSD. Second, the search for studies in this review was conducted only in three databases, so there might be other studies that were not discussed in this review. The limited number of recent studies highlights the necessity for further research to fully explore and establish acupuncture as an effective and standardized treatment for PTSD.

### 6 CONCLUSION

This review highlights acupuncture as a promising adjunctive treatment for PTSD. The studies analyzed suggest that acupuncture is effective in alleviating key PTSD symptoms, including anxiety, depression, and sleep disturbances. The therapeutic benefits observed indicate that acupuncture can reduce symptom severity, improve sleep quality, and enhance functional status in PTSD patients. Additionally, acupuncture has a favorable safety profile, with minimal adverse effects, supporting its potential as a safe, non-invasive treatment option.

However, the review identified several limitations, such as small sample sizes, short follow-up periods, and inconsistencies in treatment protocols across studies. These limitations highlight the need for larger, more rigorous trials with standardized protocols to confirm acupuncture's long-term efficacy.

Although acupuncture appears to have potential as an adjunctive therapy for PTSD, further high-quality randomized controlled trials are needed to establish standardized treatment protocols and to clarify its role in evidence-based PTSD management.

## ACKNOWLEDGEMENTS

The author declares that there is no conflicts of interest or fungsing to disclose.

## REFERENCES

- Dhond, R. P., Yeh, C., Park, K., Kettner, N., & Napadow, V. (2008). Acupuncture modulates resting state connectivity in default and sensorimotor brain networks. *Pain*, *136*(3), 407–418. <https://doi.org/10.1016/j.pain.2008.01.011>
- Engel, C. C., Cordova, E. H., Benedek, D. M., Liu, X., Gore, K. L., Goertz, C., Freed, M. C., Crawford, C., Jonas, W. B., & Ursano, R. J. (2014). Randomized effectiveness trial of a brief course of acupuncture for posttraumatic stress disorder. *Medical Care*, *52*(12), S57–S64. <https://doi.org/10.1097/MLR.0000000000000237>
- Feng, B., Zhang, Y., Luo, L. Y., Wu, J. Y., Yang, S. J., Zhang, N., Tan, Q. R., Wang, H. N., Ge, N., Ning, F., Zheng, Z. L., Zhu, R. M., Qian, M. C., Chen, Z. Y., & Zhang, Z. J. (2019). Transcutaneous electrical acupoint stimulation for post-traumatic stress disorder: assessor-blinded, randomized controlled study. *Psychiatry and Clinical Neurosciences*, *73*(4), 179–186. <https://doi.org/10.1111/pcn.12810>
- Grant, S., Colaiaco, B., Motala, A., Shanman, R., Sorbero, M., & Hempel, S. (2018). Acupuncture for the treatment of adults with posttraumatic stress disorder: a systematic review and meta-analysis. *Journal of Trauma and Dissociation*, *19*(1), 39–58. <https://doi.org/10.1080/15299732.2017.1289493>
- Hui, K. K. S., Liu, J., Marina, O., Napadow, V., Haselgrove, C., Kwong, K. K., Kennedy, D. N., & Makris, N. (2005). The integrated response of the human cerebro-cerebellar and limbic systems to acupuncture stimulation at ST 36 as evidenced by fMRI. *NeuroImage*, *27*(3), 479–496. <https://doi.org/10.1016/j.neuroimage.2005.04.037>
- King, H. C., Spence, D. L., Hickey, A. H., Sargent, P., Elesh, R., & Connelly, C. D. (2015). Auricular acupuncture for sleep disturbance in veterans with post-traumatic stress disorder: a feasibility study. *Military Medicine*, *180*(5), 582–590. <https://doi.org/10.7205/MILMED-D-14-00451>
- Kwon, C. Y., Lee, B., Kim, S. H., & Tu, W. J. (2020). Effectiveness and safety of ear acupuncture for trauma-related mental disorders after large-scale disasters: a PRISMA-compliant systematic review. *Medicine (United States)*, *99*(8). <https://doi.org/10.1097/MD.00000000000019342>
- Lehavot, K., Goldberg, S. B., Chen, J. A., Katon, J. G., Glass, J. E., Fortney, J. C., Simpson, T. L., & Schnurr, P. P. (2018). Do trauma type, stressful life events, and social support explain women veterans' high prevalence of PTSD? *Social Psychiatry and Psychiatric Epidemiology*, *53*(9), 943–953. <https://doi.org/10.1007/s00127-018-1550-x>
- Mansour, M., Joseph, G. R., Joy, G. K., Khanal, S., Dasireddy, R. R., Menon, A., Barrie Mason, I., Kataria, J., Patel, T., & Modi, S. (2023). Post-traumatic stress disorder: a narrative review of pharmacological and psychotherapeutic interventions. *Cureus*. <https://doi.org/10.7759/cureus.44905>
- Miao, X. R., Chen, Q. B., Wei, K., Tao, K. M., & Lu, Z. J. (2018). Posttraumatic stress disorder: From diagnosis to prevention. In *Military Medical Research* (Vol. 5, Issue 1). BioMed Central Ltd. <https://doi.org/10.1186/s40779-018-0179-0>
- Qassem, T., Aly-ElGabry, D., Alzarouni, A., Abdel-Aziz, K., & Arnone, D. (2021). Psychiatric comorbidities in post-traumatic stress disorder: detailed findings from the adult psychiatric morbidity survey in the english population. *Psychiatric Quarterly*, *92*(1), 321–330. <https://doi.org/10.1007/s11126-020-09797-4>
- Tang, X., Lin, S., Fang, D., Lin, B., Yao, L., Wang, L., Xu, Q., Lu, L., & Xu, N. (2023). Efficacy and underlying mechanisms of acupuncture therapy for PTSD: evidence from animal and clinical studies. In *Frontiers in Behavioral Neuroscience* (Vol. 17). Frontiers Media S.A. <https://doi.org/10.3389/fnbeh.2023.1163718>