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# Efficacy, Safety and Acupoint Selection of Acupuncture for Anxiety Disorders: A Systematic Review and Meta-Analysis Based on Shou Shen Theory

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**ADMINISTRATIVE INFORMATION**

**Support -** This study did not receive any funding in any form.

**Review Stage at time of this submission -** Completed but not published.

**Conflicts of interest -** None declared.

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**Amendments -** This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 7 September 2026 and was last updated on 7 September 2026.

## INTRODUCTION

**Review question / Objective** Anxiety disorders are common conditions associated with substantial functional impairment, and acupuncture has increasingly been investigated as a complementary therapeutic approach. This systematic review and meta-analysis evaluated the efficacy and safety of acupuncture-related interventions for anxiety and anxiety-related conditions and descriptively summarised acupoint selection patterns from the perspective of Shou Shen Theory.

**Condition being studied** Anxiety disorders, encompassing generalized anxiety disorder (GAD), panic disorder, social anxiety disorder, and specific phobias, are among the most prevalent and disabling mental health conditions worldwide.

## METHODS

**Participant or population** Participants with either primary anxiety disorders or secondary or associated anxiety symptoms occurring in the context of other medical, perioperative, procedural or situational conditions were eligible. For studies of primary anxiety disorders, diagnoses based on the Diagnostic and Statistical Manual of Mental Disorders (DSM), the International Classification of Diseases (ICD) or other validated clinical diagnostic criteria reported by the original studies were accepted. For studies of secondary, perioperative, procedural or situational anxiety, participants were eligible when anxiety symptoms were clearly defined by the original study and assessed using a validated anxiety-related scale or a prespecified anxiety outcome.

**Intervention** Interventions in the experimental group included acupuncture, electroacupuncture, moxibustion, warm acupuncture, scalp acupuncture, abdominal acupuncture, umbilical acupuncture, auricular acupuncture, other acupuncture-related therapies or acupuncture combined with conventional treatment. When combination therapy was used, the control group was required to receive the same conventional treatment as the experimental group, with acupuncture being the only additional intervention administered to the experimental group. No restrictions were imposed on treatment duration, treatment frequency, needle retention time or follow-up period for study eligibility. These intervention characteristics were extracted where available and considered when interpreting clinical heterogeneity.

**Comparator** The control group could include sham acupuncture, comfort care (defined as usual or supportive care provided according to the original study protocol), Western medicine treatment, psychotherapy, conventional treatment, no treatment, a waiting-list control, health education or other non-acupuncture interventions.

**Study designs to be included** We searched the following databases from their inception to 10 April 2026: PubMed, Embase, Web of Science, China National Knowledge Infrastructure, VIP, Wanfang, the Cochrane Library and ClinicalTrials.gov. For the PubMed search, Medical Subject Headings (MeSH) terms were used. Using the following combination of MeSH terms and free-text terms.

**Eligibility criteria** Randomised controlled trials were included. Studies that explicitly reported the use of a random number table, computer-generated randomisation, the lottery method or other random allocation methods were included. Studies that reported only 'randomisation' without specifying the method were included but were judged to have an unclear risk of bias for random sequence generation during the risk-of-bias assessment. Studies that clearly used quasi-random allocation methods, such as allocation by date of birth, admission order, medical record number or treatment sequence, were excluded.

**Information sources** We searched the following databases from their inception to 10 April 2026: PubMed, Embase, Web of Science, China National Knowledge Infrastructure, VIP, Wanfang, the Cochrane Library and ClinicalTrials.gov.

**Main outcome(s)** Included studies were required to report at least one of the following outcomes. Primary outcomes included the Hamilton Anxiety Rating Scale (HAM-A), the Self-Rating Anxiety Scale (SAS) and the total clinical effective rate. Secondary outcomes included adverse events, TCM syndrome scores, the Pittsburgh Sleep Quality Index, quality-of-life scores, recurrence rate, neurotransmitter indicators (e.g. 5-HT, noradrenaline, dopamine and GABA), HPA-axis-related indicators (e.g. cortisol, adrenocorticotropic hormone and corticotropin-releasing hormone) and inflammatory markers (e.g. interleukin [IL]-6, tumour necrosis factor-α and IL-10).

**Quality assessment / Risk of bias analysis** The methodological quality of the included studies was independently assessed by two reviewers using the Cochrane Risk of Bias 2.0 (RoB 2.0) tool. In the event of disagreement, consensus was reached through discussion. Where consensus could not be reached, a third reviewer made the final decision. The risk of bias was assessed using the RoB 2.0 tool across the following five domains: (1) bias arising from the randomisation process, (2) bias due to deviations from the intended interventions, (3) bias due to missing outcome data, (4) bias in the measurement of the outcome and (5) bias in the selection of the reported result. Each domain was classified as 'low risk', 'some concerns' or 'high risk', and an overall risk-of-bias judgement was assigned to each study. The overall risk of bias was determined as follows: studies were rated as 'low risk' when all domains were judged to be at low risk, as 'some concerns' when at least one domain was judged as having some concerns and no domain was judged as high risk and as 'high risk' when at least one domain was judged as high risk.

**Strategy of data synthesis** To examine acupoint selection patterns, two reviewers independently extracted details of the acupuncture-related interventions from each included study, including the type of acupuncture-related intervention, the body or auricular acupoints used, laterality, whether the prescription was fixed or individualised and the stated treatment rationale, where available. The two reviewers also independently extracted acupoint information and assigned each acupoint to the corresponding Shou Shen category. Disagreements were resolved through discussion, and unresolved discrepancies were adjudicated by a third reviewer. Auricular points were analysed separately from body acupoints because of differences in their anatomical and theoretical systems. A descriptive analysis of acupoint selection patterns was then performed. The frequency of each acupoint was calculated according to the number of studies in

which it was used, rather than the number of needles or treatment sessions. Acupoint frequency was calculated at the study-arm level. For each eligible acupuncture treatment arm, an acupoint was counted once if it was included in the treatment protocol, regardless of whether it was applied unilaterally or bilaterally, repeated across treatment sessions or used multiple times within the same treatment arm. When a study included multiple eligible acupuncture treatment arms, each arm was counted separately; treatment arms that did not meet the eligibility criteria were excluded from the frequency analysis. Because the included studies differed substantially in intervention design and reporting detail, the acupoint-pattern analysis was descriptive and exploratory, and no formal statistical analysis of the association between specific acupoints and clinical effect sizes was performed.

**Subgroup analysis** Meta-analysis was conducted using Review Manager (RevMan) version 5.4. For dichotomous outcomes, risk ratios (RRs) with 95% confidence intervals (CIs) were calculated. For continuous outcomes, mean differences (MDs) with 95% CIs were used when the same outcome was measured using the same instrument across studies, including scale-specific anxiety outcomes (e.g. HAM-A, SAS, State–Trait Anxiety Inventory and Amsterdam Preoperative Anxiety and Information Scale), visual analogue scale scores and recovery-related scales when pooled separately by instrument. Standardised MDs (SMDs) with 95% CIs were used when similar constructs were measured using different instruments. Continuous outcomes analysed as MDs or SMDs were pooled using the inverse-variance method, whereas dichotomous outcomes analysed as RRs were pooled using the Mantel–Haenszel method. Safety outcomes were planned for quantitative synthesis when comparable adverse-event definitions and arm-specific event counts were available. When adverse events were inconsistently defined or reported only narratively, the safety findings were summarised narratively.

**Sensitivity analysis** Heterogeneity was assessed using the $\chi^2$ test and the $I^2$ statistic. An $I^2$ value >50% was considered to indicate substantial heterogeneity, in which case a random-effects model was applied; otherwise, a fixed-effect model was used. To explore potential sources of heterogeneity, exploratory subgroup analyses were performed according to the clinical context of anxiety and the type of acupuncture-related intervention when sufficient studies were available. Formal meta-regression and extensive sensitivity analyses were not performed, because of the small number of included studies and the limited number of studies within each subgroup. Where quantitative pooling was inappropriate, the findings were synthesised descriptively. Quantitative pooling was not performed when fewer than two studies reported the same outcome in a sufficiently comparable format, when outcome definitions or measurement instruments were considered too heterogeneous to permit meaningful synthesis, when essential numerical data were unavailable or could not be converted or when adverse events were reported only narratively without extractable event counts for each group.

**Country(ies) involved** China - Affiliated Hospital of Hebei University.

**Keywords** acupuncture; electroacupuncture; meta-analysis; traditional Chinese medicine.

**Contributions of each author**
Author 1 - Hongyun Cai.
Author 2 - Ying Qi.
Author 3 - Lijing Wang.