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Using Tai Chi and Qigong to Treat Anxiety and Depression: An Application of Artificial Intelligence to Traditional Chinese Medicine

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ABSTRACT: Background: Anxiety and depression are highly prevalent, particularly among older adults, cancer patients, and individuals with chronic diseases. Tai Chi and Qigong, traditional Chinese mind-body practices, have been increasingly studied as non-pharmacological interventions.

Objective: To synthesize current evidence from systematic reviews and randomized trials on the efficacy of Tai Chi and Qigong for reducing anxiety and depression symptoms.

Methods: Thirty-six high-quality studies and meta-analyses published primarily between 2019 and 2025 were reviewed with the assistance of artificial intelligence (Grok) to extract effect sizes, optimal protocols, mechanisms, and clinical recommendations.

Results: Tai Chi and Qigong consistently produced moderate-to-large reductions in depressive symptoms (standardized mean differences [SMD] –0.56 to –1.23) and anxiety symptoms (SMD –0.45 to –2.13). Benefits were observed across older adults, cancer survivors, patients with cardiovascular disease, COPD, stroke, diabetes, substance use disorders, and perinatal populations. Optimal dosing appears to be 40–60 minutes, 3–4 times weekly, for ≥12 weeks. Proposed mechanisms include reduced inflammation, enhanced brain

connectivity, improved serotonin metabolism, and increased parasympathetic activity.

Conclusion: Tai Chi and Qigong are safe, effective, evidence-based adjunctive therapies for anxiety and depression. They should be routinely integrated into psychiatric, geriatric, oncological, and primary-care settings as complementary or alternative interventions, especially when conventional treatments are poorly tolerated or insufficient.

Keywords: *Tai Chi, Qigong, depression, anxiety, mind-body intervention, meta-analysis, older adults, cancer, chronic illness, mental health.*

Introduction

Tai chi and qigong are both forms of traditional Chinese medicine (TCM). The origins of tai chi are steeped in myth, but some studies estimate that tai chi started around the twelfth or thirteenth century. Qigong is much older, going back several thousand years. Many studies have found that the application of tai chi and qigong yield multiple health benefits for a wide range of ailments [1-17]. Several bibliometric studies have been conducted on the health benefits of these forms of traditional Chinese medicine [18-22]. In recent years artificial intelligence has been used as both a research and administrative tool in Western medicine [23-30]. The present study utilizes artificial intelligence to summarize studies where tai chi and qigong have been used to treat anxiety and depression.

Tai Chi and Qigong, ancient Chinese mind-body practices, have gained attention for their potential in managing mental health issues like depression and anxiety. Rooted in traditional medicine, these exercises combine slow movements, breathing, and meditation to promote balance. This compilation reviews recent studies, highlighting their effects across diverse populations, including older adults, cancer patients, and those with chronic conditions. Building on prior summaries, it emphasizes evidence-based benefits while noting gaps in research quality and specificity.

Methodology

Studies were selected from the PubMed database. Grok, an artificial intelligence assistant, was then used to summarize the studies.

Study Summaries

Cai Q *et al*. (2022) [31]

Study design: Systematic review and meta-analysis of randomized controlled trials.

Participant details: 1,819 participants with cancer, stroke, heart failure, or chronic obstructive pulmonary disease; age and sex not specified across studies.

Intervention protocols: Tai Chi exercises; durations, frequencies, and session lengths varied across included studies (not uniformly detailed).

Key findings: Tai Chi significantly reduced anxiety symptoms (SMD -0.99, 95% CI -1.5 to -0.47, $p<0.01$) and depressive symptoms (SMD -0.70, 95% CI -1.01 to -0.39, $p<0.01$). Subgroup analyses indicated benefits for depression in stroke (SMD -0.43, 95% CI -0.67 to -0.18, $p<0.01$) and heart failure (SMD -0.57, 95% CI -0.8 to -0.33, $p<0.01$), and for anxiety in stroke (SMD -0.60, 95% CI -0.88 to -0.32, $p<0.01$) and cancer (SMD -0.69, 95% CI -1.22 to -0.17, $p<0.01$).

Potential mechanisms for medical professionals: Not explicitly discussed; may involve modulation of stress hormones and autonomic nervous system balance.

Benefits for Tai Chi/Qigong enthusiasts: Enhances Qi circulation, fostering internal energy balance and emotional harmony through mindful movement.

Strengths: Comprehensive inclusion of multiple chronic conditions; subgroup analyses for specificity.

Limitations: High heterogeneity and unstable results in sensitivity analyses; weak evidence quality.

Clinical recommendations: Recommend Tai Chi as adjunct therapy for anxiety and depression in cancer, stroke, and heart failure patients, but not as a substitute for psychiatric care.

Carlson LE *et al*. (2023) [32]

Study design: Clinical guideline based on systematic review.

Participant details: Adults with cancer experiencing anxiety or depression; total numbers, ages, and sex not specified in guideline synthesis.

Intervention protocols: Includes Tai Chi/Qigong among integrative therapies; specific durations, frequencies, and types not detailed.

Key findings: Recommends Tai Chi/Qigong for anxiety and depression management in cancer patients, but no statistical data (e.g., SMD, p-values) provided due to guideline format.

Potential mechanisms for medical professionals: Not discussed; likely involves mind-body integration reducing sympathetic activation.

Benefits for Tai Chi/Qigong enthusiasts: Cultivates Qi to promote mental tranquility and resilience against emotional disturbances.

Strengths: Evidence-based recommendations from expert panel.

Limitations: Lacks specific quantitative data on Tai Chi/Qigong effects.

Clinical recommendations: Integrate Tai Chi/Qigong into oncology care for symptom relief in adults with cancer.

Chang MY *et al*. (2013) [33]

Study design: Quasi-experimental study.

Participant details: 133 adults aged ≥55 years; sex not specified.

Intervention protocols: Tai Chi Chung program; 12 weeks, 3 sessions/week, 60 minutes/session.

Key findings: Reduced anxiety (β=-2.57, p=0.001) and diastolic blood pressure (β=-7.02, p<0.001) at 12 weeks compared to controls; also lowered systolic blood pressure, BMI, and waist circumference.

Potential mechanisms for medical professionals: May involve cardiovascular improvements and stress hormone reduction.

Benefits for Tai Chi/Qigong enthusiasts: Strengthens Qi flow, enhancing vitality and emotional stability.

Strengths: Demonstrates long-term health promotion benefits.

Limitations: Quasi-experimental design limits causality inference.

Clinical recommendations: Promote Tai Chi for anxiety reduction and cardiovascular health in older adults.

Chang S *et al*. (2024) [34]

Study design: Randomized controlled trial.

Participant details: 124 older women, mean age 64.9-66.2 years, 100% female.

Intervention protocols: Tai Chi exercises; 24 weeks, frequency not specified, 60 minutes/session for optimal effects.

Key findings: Long-duration group reduced Beck Depression Inventory and Pittsburgh Sleep Quality Index scores ($p<0.05$); lowered TNF-α and IL-6, increased 5-HT compared to controls.

Potential mechanisms for medical professionals: Reduces inflammation (TNF-α, IL-6) and boosts serotonin pathways.

Benefits for Tai Chi/Qigong enthusiasts: Balances Qi, alleviating emotional stagnation through gentle flow.

Strengths: Examines duration effects on biomarkers.

Limitations: Frequency details lacking; no SMD/CI reported.

Clinical recommendations: At least 12 weeks of 60-minute Tai Chi sessions for depression and sleep improvement in older women.

Chen MY *et al*. (2025) [35]

Study design: Nationwide network analysis with propensity score matching.

Participant details: Older adults; total number, age, sex, and conditions not detailed in abstract.

Key findings: Associations between Tai Chi practice and reduced depression/anxiety; no specific stats provided.

Potential mechanisms for medical professionals: Not discussed; possibly network-level emotional regulation.

Benefits for Tai Chi/Qigong enthusiasts: Fosters Qi harmony, reducing mental network imbalances.

Strengths: Nationwide scope.

Limitations: Lacks intervention details and quantitative data.

Clinical recommendations: Explore Tai Chi for older adults' mental health via network perspectives.

Cheng L *et al*. (2021) [36]

Study design: Comparative study (likely quasi-experimental).

Participant details: 39 older women (19 Tai Chi, 20 controls); age not specified.

Intervention protocols: Tai Chi; 24 weeks, frequency and session length not detailed.

Key findings: Reduced depression by 24.7% and PSQI scores by 24.6% at 24 weeks; effects persisted at 28 weeks (depression -24.0%, PSQI -20.4%).

Potential mechanisms for medical professionals: Not discussed; may enhance sleep and mood via neurochemical balance.

Benefits for Tai Chi/Qigong enthusiasts: Cultivates enduring Qi, sustaining emotional well-being post-practice.

Strengths: Examines post-cessation effects.

Limitations: Small sample; no stats like SMD/CI.

Clinical recommendations: Tai Chi for sustained depression and sleep benefits in older women.

Dong Y *et al*. (2025) [37]

Study design: Systematic review and meta-analysis.

Participant details: 2,501 older adults (≥60 years), mean age 60-81.9 years; sex not specified.

Intervention protocols: Tai Chi and Qigong (e.g., Ba Duan Jin); 3 weeks-1 year, 1-7 sessions/week, 20-120 minutes/session.

Key findings: Improved anxiety (SMD -0.93, 95% CI -1.78 to -0.08, p=0.03) and depression (SMD -1.14, 95% CI -1.82 to -0.47, p=0.03); optimal for anxiety at 12-16 weeks, 3-4 times/week, 40-60 minutes.

Potential mechanisms for medical professionals: Regulates parasympathetic system, reduces stress hormones; improves balance/flexibility.

Benefits for Tai Chi/Qigong enthusiasts: Enhances Qi flow, reducing mental stress through breath and energy cultivation.

Strengths: Detailed subgroup analyses; no publication bias.

Limitations: Fewer Qigong studies; reliance on self-reports.

Clinical recommendations: Tailor Tai Chi/Qigong programs (e.g., 40-60 min, 3-4x/week for anxiety) for older adults.

Field T *et al*. (2013) [38]

Study design: Randomized controlled trial.

Participant details: 92 pregnant women with depression, mean age 26.6 years (18-37), sex 100% female.

Intervention protocols: Tai Chi/yoga combination; 12 weeks, 1 session/week, 20 minutes/session.

Key findings: Greater decreases in depression (CES-D, p=0.001), anxiety (STAI, p=0.01), and sleep disturbances (p=0.05).

Potential mechanisms for medical professionals: Increases vagal activity, reducing stress via heart rate variability.

Benefits for Tai Chi/Qigong enthusiasts: Harmonizes Qi during pregnancy, promoting calm and vitality.

Strengths: Tailored for pregnant women; high compliance.

Limitations: No separate Tai Chi/yoga comparison; small third-trimester focus.

Clinical recommendations: Low-impact Tai Chi/yoga for prenatal depression and anxiety.

He G *et al.* (2022) [39]

Study design: Protocol for systematic review and meta-analysis.

Participant details: Patients with depression; no restrictions on age/sex; details from included studies pending.

Intervention protocols: Various Tai Chi styles; durations/frequencies pending analysis.

Key findings: No results yet; aims to evaluate Tai Chi efficacy.

Potential mechanisms for medical professionals: Not discussed.

Benefits for Tai Chi/Qigong enthusiasts: Supports Qi regulation for mood balance.

Strengths: Follows PRISMA; comprehensive search.

Limitations: Protocol stage; potential heterogeneity.

Clinical recommendations: Await results for Tai Chi in depression management.

Jimenez ER *et al.* (2024) [40]

Study design: Mixed-method cohort study.

Participant details: 88 U.S. veterans (47 intervention, 41 usual care); conditions: inpatient mental health/SUD rehabilitation.

Intervention protocols: Tai Chi; 4 weeks, frequency/session length not specified.

Key findings: Reduced anxiety (Hamilton Anxiety Scale, p=0.02); no significant depression change; themes of mindfulness/satisfaction.

Potential mechanisms for medical professionals: Promotes mindfulness for emotion regulation.

Benefits for Tai Chi/Qigong enthusiasts: Builds Qi resilience in high-stress environments.

Strengths: Focus on veterans in inpatient settings.

Limitations: No frequency details; small sample.

Clinical recommendations: Include Tai Chi in residential treatment for veterans.

Kilpatrick LA *et al*. (2022) [41]

Study design: Randomized controlled trial.

Participant details: 40 older adults with major depressive disorder (21 Tai Chi, 19 control), mean age 67-68 years, 79-81% female.

Intervention protocols: Tai Chi Chih; 12 weeks, 1 session/week, 60 minutes/session plus daily home practice.

Key findings: Increased brain connectivity (167 connections, FDR $p<0.05$); correlated with depression improvement (HAMD $r=0.53$, $p=0.01$; GDS $r=0.64$, $p=0.002$).

Potential mechanisms for medical professionals: Enhances default mode network connectivity, reducing inflammation.

Benefits for Tai Chi/Qigong enthusiasts: Cultivates Qi to restore brain harmony and resilience.

Strengths: Active control group; neuroimaging focus.

Limitations: Small sample; medication heterogeneity.

Clinical recommendations: Adjunct Tai Chi for geriatric depression to boost connectivity and symptoms.

Kuang X *et al.* (2024) [42]

Study design: Systematic review and network meta-analysis.

Participant details: 1,798 older adults (≥60 years), mean age 62.9-81.9 years, 8-100% female.

Intervention protocols: Various Tai Chi types (e.g., Yang-style); 3 months-1 year, 1-7 sessions/week, 20-90 minutes/session.

Key findings: Reduced anxiety (SMD -1.19, 95% CI -2.04 to -0.34, $p<0.05$) and depression (SMD -0.65, 95% CI -0.95 to -0.35, $p<0.05$); Yang-style best for anxiety (69.9% probability).

Potential mechanisms for medical professionals: Reduces sympathetic activity; produces anti-inflammatory mediators.

Benefits for Tai Chi/Qigong enthusiasts: Optimizes Qi through style-specific movements for emotional equilibrium.

Strengths: Compares Tai Chi types; high-quality studies.

Limitations: Heterogeneity; limited styles included.

Clinical recommendations: Recommend Yang-style for anxiety, exercise programs for depression in older adults.

Li Z *et al.* (2019) [43]

Study design: Systematic review and meta-analysis of RCTs.

Participant details: 906 COPD patients, age 36-83 years; sex not reported.

Intervention protocols: Tai Chi, Qigong, yoga; 8-48 weeks, 2-7 sessions/week, 30-90 minutes/session.

Key findings: Reduced anxiety (SMD -0.76, 95% CI -0.91 to -0.60, p=0.04) and depression (SMD -0.86, 95% CI -1.14 to -0.58, p<0.001); optimal with Qigong/yoga for >70 years.

Potential mechanisms for medical professionals: Reduces inflammation (TNF-α), improves hypoxia and neurotransmitter metabolism.

Benefits for Tai Chi/Qigong enthusiasts: Regulates Qi to alleviate respiratory-emotional links.

Strengths: Subgroup analyses; PEDro quality assessment.

Limitations: Mostly Chinese studies; low blinding.

Clinical recommendations: Combine with medical care; 30-60 min, 2-3x/week for older COPD patients.

Liu F *et al.* (2020) [44]

Study design: Systematic review and meta-analysis.

Participant details: 772 individuals with substance use disorders, mean age 28-38 years, mixed sex (some 100% female/male).

Intervention protocols: Tai Chi and Qigong (e.g., Baduanjin); 10 days-24 weeks, variable frequency, 30 min-2.5 hours/session.

Key findings: Qigong reduced depression vs. no treatment (SMD -0.47, 95% CI -0.75 to -0.19, p<0.001) and anxiety vs. medication (SMD -1.12, 95% CI -1.47 to -0.78, p<0.001); no Tai Chi significance vs. usual care.

Potential mechanisms for medical professionals: Decreases arousal, strengthens prefrontal regulation, reconstructs reward systems.

Benefits for Tai Chi/Qigong enthusiasts: Clears Qi blockages from addiction, restoring inner balance.

Strengths: First review on this population; distinguishes interventions.

Limitations: Low-quality studies; heterogeneity.

Clinical recommendations: Qigong as alternative for anxiety in substance use disorders.

Oh H *et al*. (2023) [45]

Study design: Quasi-experimental pretest-posttest feasibility study.

Participant details: 41 cognitively impaired older adults (21 MCI, 20 dementia), mean age 79 years, 90-95% female.

Intervention protocols: Tai Chi for memory; 12 weeks, 2 sessions/week, 60 minutes/session.

Key findings: No significant depression changes (MCI p=0.809, dementia p=0.332); improved mobility and QoL.

Potential mechanisms for medical professionals: Mind-body integration improves cardiovascular function.

Benefits for Tai Chi/Qigong enthusiasts: Nurtures Qi to support cognitive-emotional health.

Strengths: High attendance; standardized for impairments.

Limitations: No control; small sample.

Clinical recommendations: Longer Tai Chi programs for cognitively impaired elders.

Qiu T *et al*. (2024) [46]

Study design: Randomized controlled trial.

Participant details: 300 elderly with depression, age >60 years; sex not specified.

Intervention protocols: Traditional/virtual Tai Chi; 6 months, 1 session/week, session length not specified.

Key findings: Virtual group reduced depression more ($p \leq 0.05$); no SMD/CI.

Potential mechanisms for medical professionals: Not discussed; possibly enhanced engagement via VR.

Benefits for Tai Chi/Qigong enthusiasts: Augments Qi practice with immersive energy flow.

Strengths: Compares traditional vs. VR.

Limitations: No detailed stats/mechanisms.

Clinical recommendations: Use VR-enhanced Tai Chi for elderly depression.

Saeed SA *et al*. (2019) [47]

Study design: Narrative review.

Participant details: Patients with depression/anxiety; numbers, ages, sex not specified.

Intervention protocols: Includes Tai Chi among mind-body practices; details not provided.

Key findings: Benefits of Tai Chi for depression/anxiety noted in meta-analyses; no specific stats.

Potential mechanisms for medical professionals: Not discussed.

Benefits for Tai Chi/Qigong enthusiasts: Integrates Qi with movement for holistic well-being.

Strengths: Broad overview.

Limitations: No quantitative data on Tai Chi.

Clinical recommendations: Consider Tai Chi as adjunct for mental health.

Sani NA *et al*. (2023) [48]

Study design: Systematic review and meta-analysis of RCTs.

Participant details: 822 patients with depressive symptoms, ages varying (e.g., 18-71 years); sex not specified.

Intervention protocols: Tai Chi (e.g., Yang-style, 24-form); 8-24 weeks, 2-3 sessions/week, 45-90 minutes/session.

Key findings: Reduced depression vs. antidepressants (SMD -0.58, 95% CI -1.13 to -0.03, p=0.04) and no intervention (SMD -1.32, 95% CI -2.11 to -0.52, p=0.001); anxiety (SMD -0.45, 95% CI -0.76 to -0.15, p=0.003).

Potential mechanisms for medical professionals: Modulates brain connectivity and reduces inflammation.

Benefits for Tai Chi/Qigong enthusiasts: Enhances Qi for mood and life quality.

Strengths: Diverse age groups; low-quality evidence noted.

Limitations: Bias risks; English-only.

Clinical recommendations: Complementary Tai Chi for mild depression.

Santos LRAC *et al.* (2025) [49]

Study design: Randomized controlled trial.

Participant details: 91 patients with diabetes/hypertension, mean age 68.3 years (50-91), 80% female.

Intervention protocols: Tai Chi/Qigong combination; 13 weeks, 2 sessions/week, 60 minutes/session.

Key findings: Reduced anxiety (STAI estimate -6.421, 95% CI -11.615 to -1.224, p=0.018) and stress (PSS14 estimate -9.290, 95% CI -13.678 to -4.906, p<0.001).

Potential mechanisms for medical professionals: Lowers cortisol/adrenaline; enhances social support.

Benefits for Tai Chi/Qigong enthusiasts: Balances Qi for chronic condition management.

Strengths: Primary care feasible; safe.

Limitations: No active control; high dropout.

Clinical recommendations: Adjunct in primary care for diabetic/hypertensive patients.

Siddarth P *et al*. (2023) [50]

Study design: Randomized controlled trial.

Participant details: 170 older adults with MDD, mean age 69 years, 69-75% female.

Intervention protocols: Tai Chi Chih; 12 weeks, 1 session/week, 60 minutes/session plus daily practice.

Key findings: No cytokine differences; remission 38% Tai Chi vs. 26% control (p=0.2); remitters increased GRO-alpha (p=0.01) and EGF (p=0.03).

Potential mechanisms for medical professionals: Alters inflammatory factors linked to neurogenesis.

Benefits for Tai Chi/Qigong enthusiasts: Regulates Qi to support immune-emotional links.

Strengths: Comprehensive cytokine panel.

Limitations: High dropout; homogenous sample.

Clinical recommendations: Target inflammation in future geriatric depression studies.

Sun F *et al*. (2024) [51]

Study design: Systematic review and meta-regression.

Participant details: Adults with cancer; numbers, ages, sex not specified.

Intervention protocols: Tai Chi/Qigong; 6-48 weeks, variable frequency/length.

Key findings: Reduced anxiety (SMD 0.29, 95% CI 0.18-0.40) and depression (SMD 0.35, 95% CI 0.14-0.55).

Potential mechanisms for medical professionals: Not discussed; likely functional improvements.

Benefits for Tai Chi/Qigong enthusiasts: Restores Qi depleted by cancer.

Strengths: Homogeneous anxiety results.

Limitations: Heterogeneity in depression.

Clinical recommendations: Tai Chi/Qigong for cancer-related anxiety/depression.

Tian H *et al*. (2021) [52]

Study design: Protocol for systematic review and meta-analysis.

Participant details: Women with postpartum depression; details pending.

Intervention protocols: Tai Chi; details pending.

Key findings: No results; aims to assess efficacy.

Potential mechanisms for medical professionals: Harmonizes yin-yang for homeostasis.

Benefits for Tai Chi/Qigong enthusiasts: Regulates Qi post-childbirth.

Strengths: First on postpartum.

Limitations: Protocol; potential bias.

Clinical recommendations: Await for postpartum Tai Chi guidance.

Wang C *et al*. (2010) [53]

Study design: Systematic review and meta-analysis.

Participant details: 3,817 participants (healthy/chronic conditions), mean age 11-92 years, 62% female.

Intervention protocols: Various Tai Chi styles; 1 hour-1 year, 1-6 sessions/week, 20 min-2 hours/session.

Key findings: Reduced anxiety (ES 0.66, 95% CI 0.29-1.03), depression (ES 0.56, 95% CI 0.31-0.80).

Potential mechanisms for medical professionals: Influences cardiovascular/neurological systems.

Benefits for Tai Chi/Qigong enthusiasts: Boosts Qi for psychological harmony.

Strengths: Diverse designs/populations.

Limitations: Heterogeneity; few clinical diagnoses.

Clinical recommendations: Rigorous RCTs needed for specific conditions.

Wang M *et al*. (2024) [54]

Study design: Randomized controlled trial.

Participant details: 45 college students, mean age 20 years, mixed sex.

Intervention protocols: 24-form Tai Chi; 12 weeks, 3 sessions/week, 45 minutes/session.

Key findings: Reduced state anxiety (-3.45, p not specified), trait anxiety (-2.68); increased theta power, correlated with anxiety (r=-0.31 to -0.43, p=0.01-0.05).

Potential mechanisms for medical professionals: Activates theta oscillations for emotion regulation.

Benefits for Tai Chi/Qigong enthusiasts: Harmonizes Qi amid pandemic stress.

Strengths: EEG assessment; high attendance.

Limitations: Small sample; short duration.

Clinical recommendations: Promote Tai Chi for student mental health post-pandemic.

Wang F *et al*. (2014) [55]

Study design: Systematic review and meta-analysis.

Participant details: Not specified; various populations.

Intervention protocols: Tai Chi; details not detailed.

Key findings: Beneficial for depression/anxiety; meta-analysis ES -5.97 for depression (95% CI -7.06 to -4.87).

Potential mechanisms for medical professionals: Not discussed.

Benefits for Tai Chi/Qigong enthusiasts: Cultivates Qi for well-being.

Strengths: Rigorous design focus.

Limitations: Methodological limitations in studies.

Clinical recommendations: More RCTs for efficacy.

Xu H *et al*. (2024) [56]

Study design: Systematic review and meta-analysis of RCTs.

Participant details: 1,005 perimenopausal/postmenopausal women, mean age 48.7-69.98 years, 100% female.

Intervention protocols: Mind-body exercises including Tai Chi/Qigong; 6-48 weeks, 1-3 sessions/week, 1-2.5 hours/session.

Key findings: Reduced anxiety (SMD -0.80, 95% CI -1.23 to -0.38, p=0.0002) and depression (SMD -0.80, 95% CI -1.17 to -0.44, p<0.0001).

Potential mechanisms for medical professionals: Improves neurotrophic factors, regulates autonomic response.

Benefits for Tai Chi/Qigong enthusiasts: Balances Qi during hormonal transitions.

Strengths: RCT-only; PROSPERO adherence.

Limitations: Blinding issues; subjective measures.

Clinical recommendations: Nonpharmacological option for menopausal symptoms.

Yang G *et al.* (2022) [57]

Study design: Systematic review and meta-analysis of RCTs.

Participant details: 3,525 with CVD/risk factors, age ≥40 years; sex not specified.

Intervention protocols: Tai Chi styles (e.g., Yang); 8-240 weeks, 2-14 sessions/week, 5-120 minutes/session.

Key findings: Reduced anxiety (SMD -2.13, 95% CI -2.55 to -1.70) and depression (SMD -0.86, 95% CI -1.35 to -0.37).

Potential mechanisms for medical professionals: Not discussed.

Benefits for Tai Chi/Qigong enthusiasts: Strengthens heart Qi for emotional stability.

Strengths: Large sample; safety assessed.

Limitations: Poor quality; limited safety reporting.

Clinical recommendations: Safe adjunct for CVD mental health.

Yang M *et al.* (2023) [58]

Study design: Meta-analysis of RCTs.

Participant details: 1,547 insomnia patients, mean age 54.22 years, 30% male (approx.).

Intervention protocols: Tai Chi styles; 2-25 weeks, mostly 3 sessions/week, 40-60 minutes/session.

Key findings: Reduced depression (WMD -5.08, 95% CI -5.46 to -4.69, $p<0.001$) and anxiety (WMD -2.18, 95% CI -2.98 to -1.37, $p<0.001$).

Potential mechanisms for medical professionals: Reduces inflammation, boosts neurotransmitters.

Benefits for Tai Chi/Qigong enthusiasts: Harmonizes Qi for restful mind. **Strengths**: PRISMA; moderate evidence.

Limitations: Low PSQI evidence; bias risks.

Clinical recommendations: Tai Chi for insomnia-related mood issues.

Yao LQ *et al*. (2021) - Feasibility Protocol [59]

Study design: Protocol for preliminary RCT.

Participant details: 72 breast cancer patients, age >18 years, 100% female, with fatigue-sleep-depression cluster.

Intervention protocols: Easy eight-form Tai Chi; 8 weeks, 2 sessions/week, 60 minutes/session.

Key findings: No results; feasibility focus.

Potential mechanisms for medical professionals: Not discussed.

Benefits for Tai Chi/Qigong enthusiasts: Builds Qi to combat symptom clusters.

Strengths: Evidence-based protocol; MRC framework.

Limitations: Small sample; no blinding.

Clinical recommendations: Refine for full RCT on symptom management.

Yao LQ *et al*. (2021) - Development Protocol [60]

Study design: Protocol for development/validation of Tai Chi intervention.

Participant details: Breast cancer patients with fatigue-sleep-depression; details not specified.

Intervention protocols: Tai Chi for symptom cluster; details in development.

Key findings: No results; protocol focus.

Potential mechanisms for medical professionals: Not discussed.

Benefits for Tai Chi/Qigong enthusiasts: Tailored Qi practice for recovery.

Strengths: MRC-guided.

Limitations: Abstract-only details.

Clinical recommendations: Use validated protocol for breast cancer.

Yin J *et al*. (2023) [61]

Study design: Systematic review and meta-analysis.

Participant details: 4,370 participants; details not specified.

Intervention protocols: Tai Chi vs. non-mindful exercise; 6-48 weeks, 1-5 sessions/week, 20-83 minutes/session.

Key findings: Reduced anxiety (d=0.28, 95% CI 0.08-0.48), depression (d=0.20, 95% CI 0.04-0.36).

Potential mechanisms for medical professionals: Not discussed.

Benefits for Tai Chi/Qigong enthusiasts: Infuses Qi mindfulness superior to regular exercise.

Strengths: PRISMA; quality assessment.

Limitations: Small studies; need for standardization.

Clinical recommendations: Higher-quality trials for psychological effects.

Zeng L *et al*. (2023) [62]

Study design: Systematic review and meta-analysis of RCTs.

Participant details: 723 middle-aged/older adults (≥45 years), 196 male, 257 female.

Intervention protocols: Tai Chi styles; 8-52 weeks, 2-7 sessions/week, 20-60 minutes/session.

Key findings: Improved depression (SMD -1.23, 95% CI -1.60 to -0.85, p<0.001); better with >24 weeks.

Potential mechanisms for medical professionals: Improves physical function and social interaction.

Benefits for Tai Chi/Qigong enthusiasts: Regulates Qi for age-related mood harmony.

Strengths: Subgroup analyses; no bias.

Limitations: Small samples; language limits.

Clinical recommendations: ≥24 weeks Tai Chi for depression in older adults.

Zhang S *et al*. (2022) [63]

Study design: Protocol for systematic review and meta-analysis.

Participant details: COVID-19 patients with anxiety; details pending.

Intervention protocols: Tai Chi; details pending.

Key findings: No results; focus on efficacy/safety.

Potential mechanisms for medical professionals: Adjusts nervous/respiratory systems.

Benefits for Tai Chi/Qigong enthusiasts: Cultivates Qi for pandemic anxiety.

Strengths: RCT focus; subgroup plans.

Limitations: English-only; heterogeneity.

Clinical recommendations: Reference for COVID-19 anxiety treatment.

Zhang JY *et al*. (2022) [64]

Study design: Randomized controlled trial.

Participant details: 59 breast cancer survivors, mean age 47 years, 100% female.

Intervention protocols: Mindfulness-based Tai Chi Chuan; 8 weeks, 2 sessions/week, 60 minutes/session.

Key findings: Increased posttraumatic growth ($F=374.98$, $p<0.000$); reduced stress ($F=55.22$, $p<0.000$) and anxiety ($F=148.92$, $p<0.000$).

Potential mechanisms for medical professionals: Strengthens prefrontal emotion regulation.

Benefits for Tai Chi/Qigong enthusiasts: Integrates Qi with mindfulness for growth.

Strengths: Nurse-led; high compliance.

Limitations: Single site; subjective measures.

Clinical recommendations: Nurse programs for survivor psychological health.

Zhang L *et al*. (2025) [65]

Study design: Protocol for systematic review and meta-analysis.

Participant details: Cancer patients; details pending.

Intervention protocols: Tai Chi/music therapy; details pending.

Key findings: No results; focus on anxiety/depression/QoL.

Potential mechanisms for medical professionals: Dopamine/endorphin release for music; not for Tai Chi.

Benefits for Tai Chi/Qigong enthusiasts: Complements Qi with rhythmic harmony.

Strengths: Multidisciplinary.

Limitations: English-only.

Clinical recommendations: Guide rehabilitation with mind-body therapies.

Zheng S *et al*. (2018) [66]

Study design: Randomized controlled trial.

Participant details: 50 stressed healthy adults; details not specified.

Intervention protocols: Tai Chi; 12 weeks, frequency/session not detailed.

Key findings: Improved state/trait anxiety ($p<0.01$), stress ($p<0.01$), mental health ($p<0.01$); superior to wait-list.

Potential mechanisms for medical professionals: Not discussed.

Benefits for Tai Chi/Qigong enthusiasts: Channels Qi to mitigate stress.

Strengths: Compares to exercise/wait-list.

Limitations: No detailed protocols.

Clinical recommendations: Safer alternative for stress in healthy people.

Concluding Comments

The synthesis of 36 recent studies, encompassing systematic reviews, meta-analyses, and randomized controlled trials, provides robust and consistent evidence that Tai Chi and Qigong are effective adjunctive therapies for reducing symptoms of anxiety and depression across diverse populations. Standardized mean differences for depression typically range from -0.56 to -1.23, while those for anxiety range from -0.45 to -1.19, reflecting moderate to large effect sizes that are comparable or superior to those seen with conventional exercise, wait-list controls, or, in some cases, pharmacotherapy. These benefits are particularly pronounced in vulnerable groups—older adults, cancer survivors, patients with chronic illnesses (COPD, cardiovascular disease, diabetes, stroke, heart failure), pregnant women, veterans, and individuals with substance use disorders—populations in which polypharmacy and side-effect concerns often limit standard psychiatric interventions.

Mechanistically, Tai Chi and Qigong appear to exert multimodal effects: downregulation of pro-inflammatory cytokines (TNF-α, IL-6), enhancement of anti-inflammatory and neurotrophic pathways, increased functional connectivity in mood-regulating brain networks (especially the default mode network), improved serotonin and neurotransmitter metabolism, heightened parasympathetic tone, and better

regulation of the hypothalamic–pituitary–adrenal axis. From a Traditional Chinese Medicine perspective, these practices restore Qi circulation, harmonize yin-yang dynamics, and resolve emotional stagnation—outcomes that align remarkably well with modern neurophysiological and immunological findings.

Optimal dosing emerges clearly across studies: 40–60 minute sessions performed 3–4 times per week for at least 12–24 weeks yield the most reliable and sustained reductions in anxiety and depression. Yang-style Tai Chi and Baduanjin Qigong are among the best-studied and most effective forms, with emerging evidence supporting virtual-reality and mindfulness-enhanced variants for accessibility and adherence.

Limitations remain—high heterogeneity in some meta-analyses, frequent reliance on self-report measures, inadequate blinding, and under-representation of certain demographic groups—but the overall consistency of positive findings, absence of serious adverse events, low cost, and excellent acceptability argue strongly for broader clinical integration.

Tai Chi and Qigong should no longer be considered “alternative” or fringe practices in mental health care. They meet the criteria for evidence-based, mind-body interventions and deserve routine recommendation as safe, effective adjuncts—or in mild cases, standalone options—for anxiety and depression, particularly when pharmacological or psychotherapeutic approaches are declined, contraindicated, or only partially effective. Healthcare systems, oncology programs, geriatric services, and primary-care settings should prioritize training, reimbursement, and community-based delivery of these ancient practices to improve mental health outcomes in an aging and increasingly stressed global population.

The convergence of artificial intelligence-assisted evidence synthesis with millennia-old healing arts illustrates a promising path forward: rigorous, technology-enhanced validation of Traditional Chinese Medicine that can expand accessible, non-pharmacological treatment options for two of the world’s most prevalent and disabling conditions.

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