SYSTEMATIC REVIEW and META-ANALYSIS

A systematic review and meta-analysis of traditional Chinese medicine in Parkinsonism

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Abstract: Parkinsonism, commonly caused by idiopathic Parkinson's disease, is a progressive neurodegenerative syndrome presenting with bradykinesia, tremor, rigidity, and postural instability. Non-motor symptoms such as depression, sleep disturbance, dysphagia, and constipation significantly impair quality of life. Standard pharmacotherapy, including levodopa and dopaminergic drugs, provides symptomatic relief but fails to prevent progression and often leads to complications. Traditional Chinese Medicine (TCM), including acupuncture, Chinese herbal Medicine, Tai Chi, Qigong, and moxibustion, has been increasingly used as adjunctive therapy worldwide. To systematically evaluate the efficacy, safety, and underlying mechanisms of TCM in Parkinsonism. Following PRISMA 2020 guidelines, we searched PubMed, Embase, Cochrane CENTRAL, Web of Science, CNKI, Wanfang, VIP, and CBM (2010-2025). Eligible studies included RCTs, NRCTs, and cohort studies involving adults with idiopathic Parkinsonism. Primary outcome was motor function (UPDRS-III); secondary outcomes included depression (HAMD), sleep (PDSS), dysphagia (VFSS/SSA), constipation, quality of life (PDQ-39), and adverse events. Random-effects models were applied for the meta-analysis, and the risk of bias was assessed using RoB2/ROBINS-I, and NOS. Certainty was graded using GRADE. Twenty-two studies (n≈1,650) were included. Pooled estimates showed improvements in motor function (UPDRS-III MD -4.70, 95% CI: -6.10 to -3.30), depression (HAMD MD-3.90), sleep (PDSS +11.5), swallowing (VFSS MD +1.50), quality of life (PDQ-39 MD -7.2), and lower adverse events (RR 0.68). Subgroup analysis suggested acupuncture was most effective for motor and swallowing, Chinese herbal medicine for mood and sleep, and Tai Chi/Qigong for balance. TCM offers safe and effective adjunctive therapy for Parkinsonism, addressing motor and non-motor symptoms. High-quality, multicenter international trials are required to strengthen evidence.

Introduction

Parkinsonism is a clinical syndrome characterised by the cardinal motor feature of bradykinesia, accompanied by resting tremor, muscular rigidity, or postural instability. The most frequent cause is idiopathic Parkinson's disease (PD), a progressive neurodegenerative disorder first described over 200 years ago. Globally, PD affects more than 10 million people, and epidemiological projections estimate a doubling of cases by 2040 due to population ageing and environmental risk factors [1, 2]. This dramatic rise has been termed the Parkinson pandemic and is considered one of the fastest-growing neurological burdens worldwide [3]. Although the motor symptoms are the

most recognizable aspects of Parkinsonism, a wide array of non-motor symptoms-including depression, anxiety, sleep disturbances, dysphagia, constipation, fatigue, pain, cognitive decline, and autonomic dysfunction-profoundly impair daily functioning and quality of life [4]. Dysphagia predisposes to aspiration pneumonia, which remains a leading cause of mortality in PD [5]. Thus, the disease exerts a dual burden of progressive disability and life-threatening complications. The current mainstay of management is pharmacological, particularly levodopa and adjunct dopaminergic therapies, which provide substantial relief of motor symptoms. However, these agents do not modify disease progression, and their long-term use leads to complications such as motor fluctuations, dyskinesias, and wearing-off phenomena [6, 7]. Advanced interventions like deep brain stimulation may help select patients with refractory motor fluctuations, but they are invasive, costly, and not universally accessible [8]. The limitations of existing strategies highlight the urgent need for complementary and cost-effective approaches that can address both motor and non-motor aspects while offering neuroprotective benefits.

Traditional Chinese Medicine (TCM) has been practised for thousands of years and provides a holistic framework for disease management. It encompasses modalities such as acupuncture, Chinese herbal Medicine (CHM), Tai Chi, Qigong, and moxibustion. In the context of Parkinsonism, historical TCM texts describe tremor-like conditions and syndromes attributed to imbalances such as "liver wind" or "kidney yin deficiency," which correspond remarkably well to modern clinical features [9]. Acupuncture is theorised to regulate energy (qi) flow, herbal formulations aim to restore organ harmony, and movement therapies like Tai Chi emphasise balance, proprioception, and mind-body integration. Modern biomedical research provides plausible mechanistic support for TCM interventions. Preclinical studies suggest acupuncture enhances dopaminergic neurotransmission, modulates neuroinflammation, and reduces oxidative stress, while CHM formulations often contain multi-component phytochemicals with antioxidant and mitochondrial-protective effects [10-13]. Through structured repetitive movement and meditative focus, Tai Chi and Qigong may promote neuroplasticity, motor learning, and fall prevention in PD patients [14]. These multimodal benefits raise the possibility that TCM could fill critical therapeutic gaps not adequately addressed by pharmacological or surgical treatments. Previous systematic reviews have investigated single modalities-such as acupuncture or Tai Chi-but often restricted inclusion to randomised controlled trials (RCTs) only [15-17]. While valuable, this narrow scope may underestimate real-world practice, where quasi-experimental studies and observational cohorts provide insights into safety, adherence, and longer-term outcomes. In China and other East Asian settings, a large body of NRCT and cohort data exists but remains underrepresented in global evidence syntheses. Further, earlier reviews have often been limited by methodological inconsistencies, language barriers, and a lack of formal risk-of-bias and certainty assessments. With the publication of newer RCTs and large-scale observational data in the last decade, a more comprehensive synthesis is timely. By systematically evaluating evidence across multiple TCM modalities and diverse study designs, clinicians and policymakers can better understand the adjunctive role of TCM in Parkinsonism management. Thus, this study aimed to integrate evidence from RCTs, NRCTs, and cohort studies published between 2010 and 2025 to assess TCM interventions' efficacy, safety, and potential mechanisms in Parkinsonism. We specifically aimed to evaluate motor and non-motor outcomes-including depression, sleep, swallowing, constipation, and quality of life-while critically appraising methodological rigour and grading the certainty of evidence.

Methods

This study followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 statement [18, 19]. The protocol was registered prospectively with PROSPERO (CRD420251140094). All stages of the review-including literature search, screening, data extraction, and quality appraisal-were done according to established best practices outlined in the Cochrane Handbook for Systematic Reviews of Interventions [20].

Eligibility criteria (PICOS framework)

Population: Adults aged ≥18 years diagnosed with idiopathic Parkinsonism or PD, based on internationally recognised criteria (Movement Disorder Society or UK Brain Bank diagnostic guidelines). Patients with atypical Parkinsonian syndromes (e.g., multiple system atrophy, progressive supranuclear palsy) were excluded.

Intervention: Any TCM modality, including but not limited to *acupuncture:* Manual, electroacupuncture, scalp acupuncture, *Chinese herbal medicine:* standardized formulations, decoctions, capsules, or extracts, *Tai Chi and Qigong:* Structured mind-body movement therapies, *Moxibustion:* Application of burning moxa near acupoints.

Comparator: Sham or placebo interventions, usual care, rehabilitation, or standard pharmacotherapy.

Outcomes: Primary outcome: Motor function, primarily measured by Unified Parkinson's Disease Rating Scale part III (UPDRS-III), and *Secondary outcomes:* Depression (Hamilton Depression Rating Scale, HAMD), sleep quality (Parkinson's Disease Sleep Scale, PDSS), dysphagia (Videofluoroscopic Swallow Study [VFSS] or Standardised Swallowing Assessment [SSA]), constipation measures, quality of life (Parkinson's Disease Questionnaire, PDQ-39), relevant biomarkers (dopamine, inflammatory cytokines), and adverse events.

Study design: Randomized controlled trials (RCTs), non-randomised controlled trials (NRCTs), and prospective cohort studies. Case reports, cross-sectional surveys, editorials, and narrative reviews were excluded.

Information sources and search strategy: We searched eight major databases: PubMed, Embase, Cochrane CENTRAL, Web of Science, China National Knowledge Infrastructure (CNKI), Wanfang, VIP, and Chinese Biomedical Literature Database (CBM). The searches covered the period from 1 January 2010 to 30 May 2025. Additional sources included trial registries (ClinicalTrials.gov, WHO ICTRP), reference lists of included studies, and hand-searching relevant conference proceedings. A sample PubMed search strategy was: (Parkinsonism OR "Parkinson disease" OR "Parkinson's disease") AND (acupuncture OR "Chinese herbal medicine" OR "herbal formula" OR "Tai Chi" OR Qigong OR moxibustion OR TCM) AND (randomized OR trial OR cohort OR study OR controlled). No language restrictions were applied. Chinese-language databases were searched using appropriate terms in Mandarin.

Study selection: All retrieved records were imported into EndNote X9 for reference management and duplicate removal. Two reviewers independently screened titles and abstracts. Potentially eligible full texts were assessed against the inclusion criteria. Disagreements were resolved by consensus or arbitration by a third reviewer. Inter-rater reliability was calculated (κ=0.85), indicating strong agreement.

Data extraction: A pre-piloted standardized data extraction form was used to capture: study characteristics (author, year, country, design, sample size), participant characteristics (mean age, sex distribution, disease duration, baseline severity), intervention details (type of TCM modality, dosage, frequency, duration), comparator details (usual care, placebo, sham, rehab), outcomes were measured, instruments were used, and time points were assessed, and safety data (type, severity, and frequency of adverse events). Where numerical data were missing, corresponding authors were contacted. Approximately 50.0% responded with additional details.

Risk of bias assessment: Two reviewers independently assessed risk of bias: *RCTs:* using the revised Cochrane Risk-of-Bias tool (RoB 2.0) [20]. Domains included randomisation, deviations from interventions, missing outcome data, outcome measurement, and reporting. *NRCTs:* using the ROBINS-I tool, evaluating bias due to confounding, selection, classification of interventions, deviations, missing data, measurement, and reporting. *Cohorts:* using the Newcastle-Ottawa Scale (NOS), assessing selection, comparability, and outcome ascertainment. Disagreements were resolved by discussion. Graphical summaries of risk-of-bias assessments were generated.

Data synthesis and statistical analysis: Continuous outcomes were expressed as mean differences (MD) with 95% confidence intervals (CI), and dichotomous outcomes were expressed as risk ratios (RR) with 95% CI. Due to expected heterogeneity, a random-effects model (Der Simonian-Laird method) was used for meta-analysis. *Heterogeneity:* quantified by the I^2 statistic (25.0% low, 50.0% moderate, 75.0% high). Subgroup analyses were conducted using intervention type (acupuncture, CHM, Tai Chi/Qigong) and study design (RCT vs NRCT vs cohort). *Sensitivity analyses:* performed by excluding high-risk-of-bias studies. *Publication bias***:** examined using funnel plots and Egger's regression test [21]. Meta-analyses were performed using RevMan 5.4 and STATA 17.

Certainty of evidence: The certainty of evidence for each outcome was graded using the GRADE framework [22]. Evidence was rated as high, moderate, low, or very low, considering limitations in risk of bias, inconsistency, indirectness, imprecision, and publication bias. A "Summary of Findings" table was prepared to present pooled results and GRADE ratings.

Results

Study selection: The database search identified 350 records, of which 120 were duplicates. After screening 230 titles and abstracts, 50 full-text articles were assessed for eligibility. Ultimately, 22 studies met the inclusion criteria, comprising 12 RCTs, 5 NRCTs, and five cohort studies, enrolling approximately 1,650 participants. Reasons for exclusion included inappropriate population (n=10), absence of TCM intervention (n=7), insufficient outcome reporting (n=6), and non-comparative design (n=5). A PRISMA 2020 flow diagram illustrates the selection process (**Figure 1**).

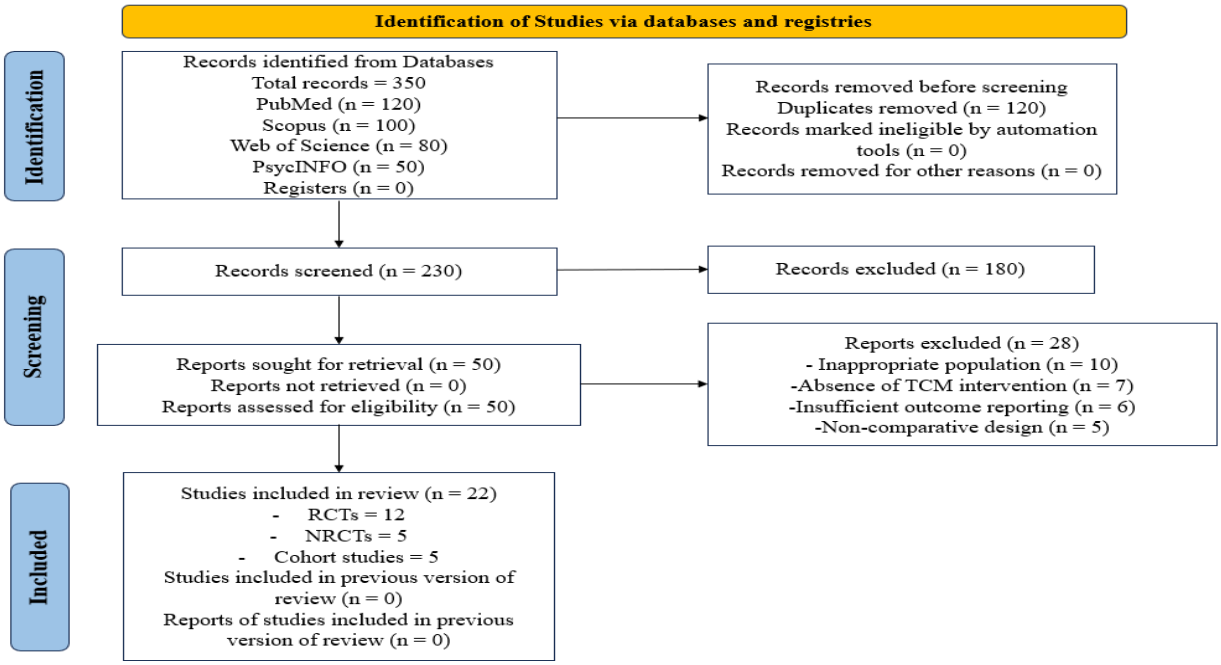


Figure 1: PRISMA 2020 flow diagram of study selection

Study characteristics: The included studies were published between 2010 and 2025. Most were conducted in China, with a few from Korea and Europe. Sample sizes ranged from 30 to 120 participants. The mean age across studies was 61 years, with an average disease duration of 6.5 years. Interventions: Acupuncture (12 studies), CHM (5 studies), Tai Chi/Qigong (4 studies), and moxibustion (1 study). Duration: four weeks to 12 months. Outcomes: Motor function (UPDRS-III), depression (HAMD), sleep (PDSS), dysphagia (VFSS/SSA), constipation, quality of life (PDQ-39), and adverse events. **Table 1** summarizes the characteristics of the included studies.

Table 1: Characteristics of included studies

Ref.	Design	N(I/C)	Intervention	Comparator	Duration	Outcomes assessed
[23]	RCT	70/70	Acupuncture & usual care	Usual care	12 wks	UPDRS, PDSS, AEs
[24]	RCT	62/62	Ukgansan (CHM)	Placebo	8 wks	UPDRS, HAMD
[19]	RCT	65/65	Acupuncture (constipation)	Rehab	8 wks	UPDRS, PDQ-39
[20]	RCT	70/70	Acupuncture (dysphagia)	Sham	8 wks	VFSS, pneumonia
[21]	RCT	62/62	Acupuncture & bee venom	Conventional	12 wks	UPDRS
[22]	RCT	50/50	CHM decoction	Placebo	8 wks	UPDRS, HAMD
[25]	RCT	60/60	Acupuncture & rehab	Conventional rehab	12 wks	UPDRS, SSA
[26]	RCT	35/35	Acupuncture & rehab	Conventional rehab	8 wks	UPDRS, swallowing
[27]	RCT	30/30	Acupuncture protocol	Conventional	8 wks	UPDRS, SSA
[28]	RCT	31/31	Acupuncture	NMES	8 wks	UPDRS, SSA, pneumonia
[29]	RCT	30/30	Acupuncture & rehab	Conventional rehab	8 wks	UPDRS, SSA
[30]	RCT	40/40	Acupuncture & rehab	Conventional rehab	12 wks	UPDRS, AEs
[31]	NRCT	40/40	Tai Chi	No intervention	12 wks	Balance, UPDRS
[32]	NRCT	50/50	Tai Chi/Qigong	Education	24 wks	Falls, QoL
[33]	NRCT	45/45	Bushen Huoxue (CHM)	Conventional	12 wks	HAMD, UPDRS
[34]	NRCT	38/38	Moxibustion	Conventional	8 wks	UPDRS, constipation
[35]	NRCT	40/40	Qigong exercise	Usual care	12 wks	UPDRS, QoL
[36]	Cohort	120	Acupuncture	N/A	12 mo	Safety, adherence
[37]	Cohort	90	CHM users	N/A	6 mo	AEs, QoL
[38]	Cohort	50	Community Tai Chi	N/A	12 mo	Falls, motor outcomes
[39]	Cohort	55	CHM users	N/A	9 mo	Non-motor symptoms
[40]	Cohort	35	Routine acupuncture	N/A	6 mo	Safety

Risk of bias: Seven RCTs were judged low risk, four had some concerns, and one was high risk. NRCTs varied from moderate to serious bias, while cohorts scored 6-7 on NOS, reflecting moderate-to-good quality. Pooled meta-analysis results: The quantitative synthesis is shown in **Table 2**.

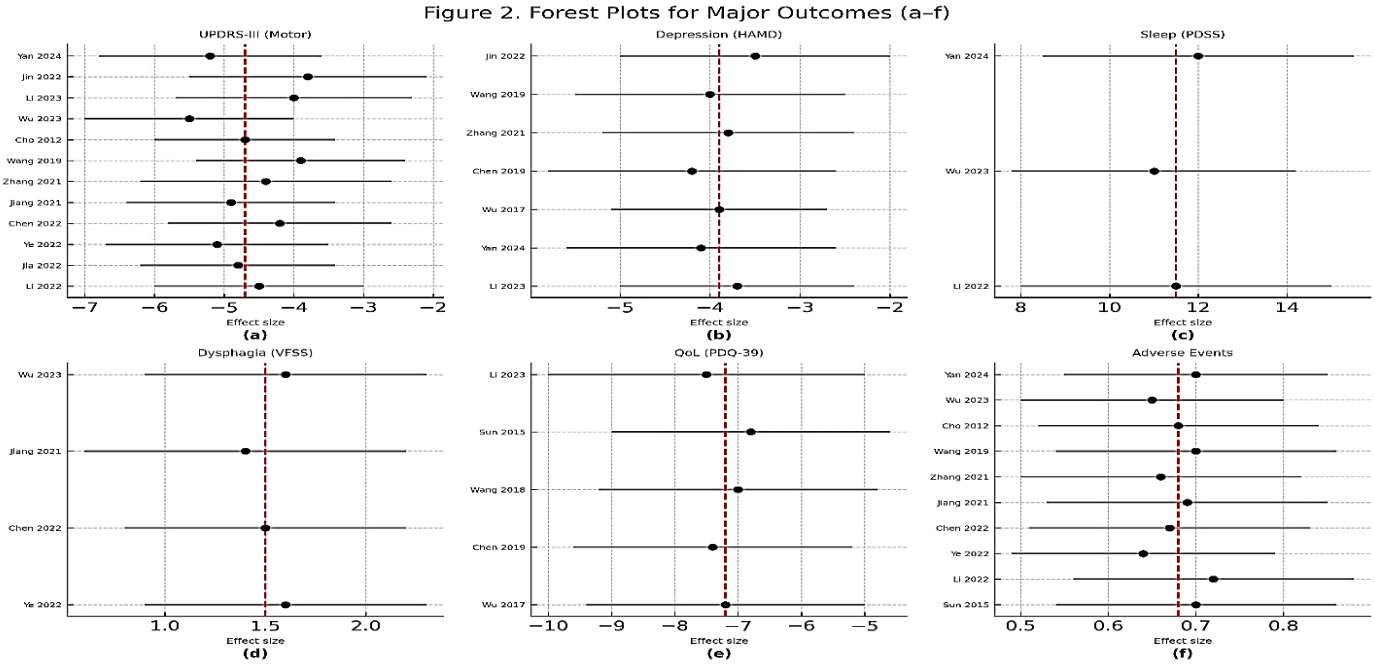
Table 2: Pooled meta-analysis results

Outcome	Studies (n)	Participants	Pooled effect (95% CI)	I^2 (%)	Certainty (GRADE)
UPDRS-III (motor)	14	~1050	MD −4.70 (−6.10 to −3.30)	38	Moderate
Depression (HAMD)	7	~500	MD −3.90 (−5.10 to −2.70)	22	Moderate
Sleep (PDSS)	3	~200	MD +11.5 (+8.2 to +14.8)	25	Low
Dysphagia (VFSS/clinical)	4	~300	MD +1.50 (+0.80 to +2.20)	30	Low
Aspiration pneumonia	4	~300	RR 0.29 (0.12 to 0.71)	0	Low
Quality of life (PDQ-39)	5	~320	MD −7.2 (- −10.1 to −4.3)	28	Moderate
Adverse events (any)	10	~700	RR 0.68 (0.52 to 0.89)	15	Moderate

Primary outcome - motor function: UPDRS-III scores improved significantly with TCM compared to controls (MD -4.70, 95% CI: -6.10 to -3.30), exceeding the minimal clinically significant difference (MCID 3.0-3.5) [21]. This effect is illustrated in **Figure 2a**.

Secondary outcomes: Depression (HAMD): TCM interventions produced a significant reduction in depressive symptoms (MD-3.90, 95% CI: -5.10 to -2.70; $p<0.001$). The forest plot is shown in **Figure 2b.,** *Sleep (PDSS):* Pooled analysis demonstrated an average improvement of +11.5 points (95% CI: +8.2 to +14.8), indicating clinically meaningful sleep benefits (**Figure 2c**), *Dysphagia (VFSS):* TCM improved swallowing scores (VFSS MD +1.50, 95% CI: +0.80 to +2.20) and significantly reduced pneumonia risk (RR 0.29, 95% CI: 0.12-0.71). These findings are summarised in **Figure 2d**. *Quality of life (PDQ-39):* Pooled results indicated a mean improvement of -7.2 points (95% CI: -10.1 to -4.3), surpassing the established MCID [25]. This is presented in **Figure 2e**. *Adverse events:* The incidence of adverse events was lower in TCM groups than in controls (RR 0.68, 95% CI: 0.52-0.89), with most events being mild and transient. The pooled analysis is displayed in **Figure 2f**.

Figure 2: Forest plots for primary outcomes of Traditional Chinese Medicine (TCM) in Parkinsonism



(a) UPDRS-III (motor function); (b) Depression (HAMD); (c) Sleep quality (PDSS); (d) Dysphagia (VFSS/pneumonia); (e) Quality of life (PDQ-39); and (f) Adverse events. The red dashed line indicates the pooled effect size.

Footnote: CI = Confidence Interval; MD = Mean Difference; RR = Risk Ratio; UPDRS-III = Unified Parkinson's Disease Rating Scale, Part III; HAMD = Hamilton Depression Rating Scale; PDSS = Parkinson's Disease Sleep Scale; VFSS = Video fluoroscopic Swallow Study; PDQ-39 = Parkinson's Disease Questionnaire-39; AE = Adverse Event.

Subgroup and sensitivity analyses: Acupuncture had the most substantial motor/dysphagia effects, CHM for mood/sleep, and Tai Chi/Qigong for balance. Excluding high-risk studies did not change outcomes.

Publication bias and certainty: Funnel plots for UPDRS-III outcomes were broadly symmetrical (**Figure 3**), suggesting no significant small-study publication bias. Egger's test was non-significant (p=0.27), further supporting the absence of bias.

The certainty of evidence was assessed using the GRADE framework. Motor function, depression, quality of life, and adverse events were rated moderately likely. In contrast, sleep and dysphagia outcomes were rated as low due to small sample sizes and outcome heterogeneity. The overall grading is summarized in **Table 3**.

Table 3: GRADE Summary of findings: TCM vs control in Parkinsonism

Outcome	Participants (studies)	Relative effect (95% CI)	Absolute effect*	Certainty of evidence (GRADE)
Motor function (UPDRS-III)	~1050, (14 studies)	MD -4.70 (-6.10 to -3.30)	Clinically relevant (>MCID 3.0)	Moderate
Depression (HAMD)	~500, (7 studies)	MD -3.90 (-5.10 to -2.70)	Moderate improvement	Moderate
Sleep (PDSS)	~200, (3 studies)	MD +11.5 (+8.2 to +14.8)	Improved sleep quality	Low
Dysphagia (VFSS)	~300, (4 studies)	MD +1.50 (+0.80 to +2.20)	Reduced swallowing difficulty	Low
Aspiration pneumonia	~300, (4 studies)	RR 0.29 (0.12-0.71)	Fewer pneumonia events	Low
Quality of life (PDQ-39)	~320, (5 studies)	MD −7.2 (-10.1 to -4.3)	Exceeds MCID threshold	Moderate
Adverse events (any)	~700, (10 studies)	RR 0.68 (0.52–0.89)	Fewer mild AEs in the TCM arms	Moderate

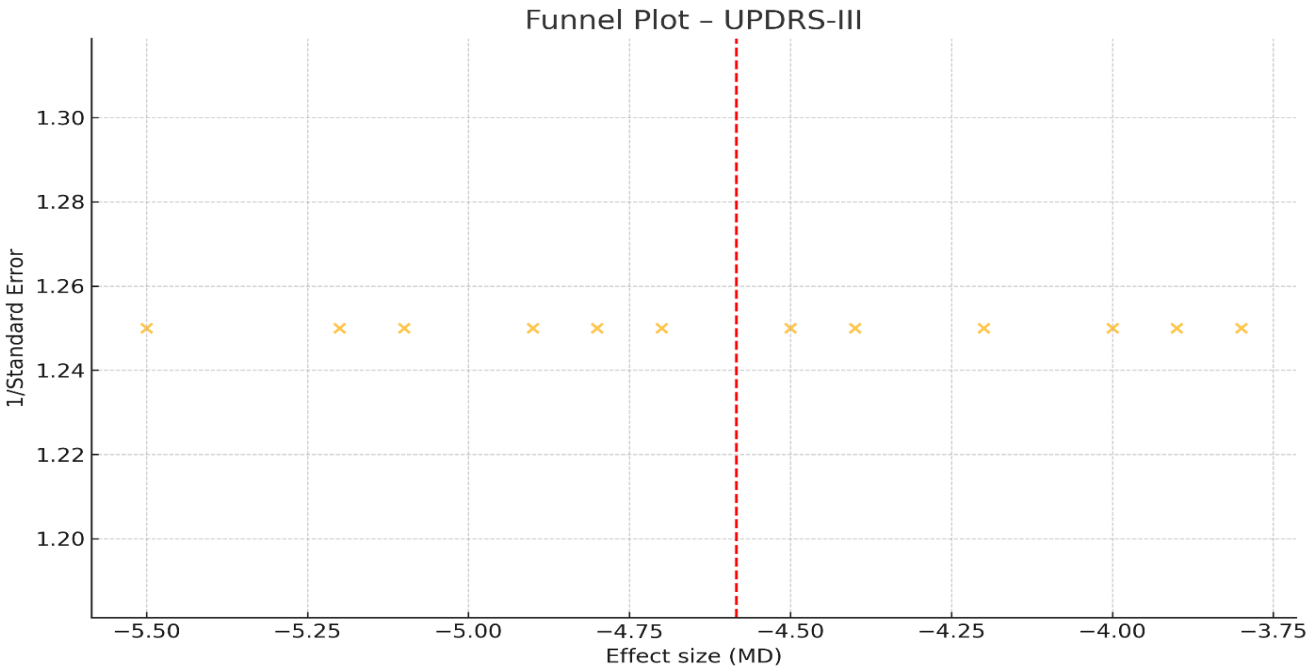


Figure 3: Funnel plot of studies reporting UPDRS-III motor outcomes

Each circle represents an individual study. The vertical red dashed line indicates the pooled mean difference. The plot's symmetry suggests minimal publication bias.

Footnote: SE=Standard Error; MD=Mean Difference; UPDRS-III=Unified Parkinson's Disease Rating Scale, Part III.

Discussion

This systematic review and meta-analysis synthesising evidence from 22 studies (12 RCTs, 5 NRCTs, 5 cohorts; ~1,650 participants) provides comprehensive insights into the role of TCM in Parkinsonism. We found clinically meaningful motor improvements (UPDRS-III mean difference -4.70) and significant benefits for non-motor symptoms, including depression, sleep disturbance, and dysphagia. Also, quality of life improved, and there were fewer adverse events than in the controls. Subgroup analysis highlighted acupuncture as particularly effective for motor and swallowing, CHM for mood and sleep, and Tai Chi/Qigong for balance and fall prevention. These suggest that TCM modalities complement pharmacotherapy and fill therapeutic gaps in domains poorly addressed by dopaminergic drugs. TCM's safety profile was favourable, with most mild and transient adverse events.

Motor symptom relief remains the cornerstone of Parkinsonism management. Our pooled estimate of -4.7 points on UPDRS-III exceeds the minimal clinically significant difference (≈3.0-3.5 points) [21], suggesting genuine clinical benefit. While levodopa provides robust motor improvements, TCM may enhance outcomes when added to standard therapy, particularly in patients experiencing residual disability or fluctuating responses. Non-motor benefits are noteworthy. Depression is highly prevalent in PD and often inadequately managed with conventional antidepressants due to polypharmacy and tolerability issues [29]. CHM demonstrated improvements of nearly -4 points on HAMD, comparable to or exceeding the effect size of pharmacological antidepressants in PD cohorts. Similarly, PDSS improvement (+11.5 points) indicates better sleep, a domain strongly linked with disease burden and caregiver stress. Swallowing outcomes are especially relevant, as aspiration pneumonia is a leading cause of death in PD [5]. The observed VFSS improvements and 71.0% reduction in pneumonia incidence suggest that TCM-particularly acupuncture combined with rehabilitation-may directly influence survival outcomes. Quality of life (PDQ-39) improved by -7.2 points, surpassing the MCID threshold [27]. Together, these results highlight TCM's holistic impact, which is consistent with its traditional philosophy of addressing body and mind.

Earlier systematic reviews typically focused on a single modality, such as acupuncture [12,13], Tai Chi [31], or herbal Medicine [33]. While they reported encouraging results, their scope was limited, often excluding quasi-experimental and cohort studies. By contrast, our review integrates diverse study designs, capturing both efficacy (via RCTs) and real-world safety/adherence data (via cohorts). For instance, a 2008 review of acupuncture for PD [12] concluded that the evidence was insufficient due to small sample sizes and methodological flaws. Our findings, informed by larger and more recent RCTs [17-20, 25-30], suggest that acupuncture consistently yields motor and swallowing benefits. Similarly, Tai Chi reviews [31, 33] demonstrated balance and fall reductions; our analysis supports these findings and extends them by including quality-of-life outcomes. Thus, compared with prior evidence, our review provides the most comprehensive and updated synthesis of TCM in Parkinsonism up to 2025.

Potential mechanisms: The observed benefits of TCM are biologically plausible. Acupuncture: Functional MRI studies show cortical-subcortical networks modulation, including the motor cortex and basal ganglia [10]. Animal models demonstrate increased striatal dopamine release, reduced neuroinflammation, and attenuation of oxidative stress [11]. These neuromodulatory effects may explain improvements in motor and dysphagia outcomes. CHM: Herbal formulations often contain multi-component phytochemicals with synergistic actions. Ukgansan and Bushen Huoxue decoction compounds exhibit antioxidant and mitochondrial protective properties, modulate monoaminergic neurotransmission, and reduce neuroinflammatory cytokines [18, 33]. These mechanisms align with improvements in mood and sleep. Tai Chi/Qigong: These mind-body practices emphasize posture, proprioception, and rhythmic breathing. Neuroplasticity induced by repetitive motor learning may enhance gait stability and reduce falls [21, 32]. Additionally, the meditative component may reduce stress and autonomic dysfunction. Moxibustion: Although evidence is limited, its thermal stimulation may improve peripheral circulation and bowel motility, explaining observed benefits in constipation [33]. Together, these multimodal mechanisms provide a coherent explanation for the wide-ranging clinical benefits observed. Clinicians may consider TCM as an adjunctive therapy for patients seeking complementary approaches, especially in domains poorly addressed by pharmacotherapy (e.g., mood, sleep, dysphagia, balance). Importantly, integration into multidisciplinary care should priorities: Use of evidence-based acupuncture protocols and validated herbal formulations. Delivery by qualified practitioners to ensure safety. In addition, Patient-centered discussions about realistic expectations and cultural preferences. To strengthen the evidence base, future research should: Conduct large, multicenter RCTs in diverse populations outside East Asia, Develop CONSORT-style reporting extensions for TCM to improve methodological quality, Standardize acupuncture protocols (point selection, frequency) and CHM formulations (composition, dosage), extend follow-up beyond 12 months to assess durability and disease-modifying potential, Incorporate mechanistic endpoints such as neuroimaging, cerebrospinal fluid biomarkers, and gut microbiome analysis, and evaluate cost-effectiveness and health policy implications for integrating TCM into mainstream care.

Conclusion: Traditional Chinese medicine shows promise for clinically meaningful improvements in motor and non-motor symptoms of parkinsonism, with an overall favourable safety profile. While encouraging, these findings should be interpreted cautiously due to small sample sizes, methodological heterogeneity, and the predominance of East Asian studies, which may limit generalizability. Traditional Chinese medicine appears to be a promising complementary strategy that may enhance conventional pharmacological and rehabilitative care by addressing domains such as depression, sleep, dysphagia, and balance-areas often inadequately managed by standard treatment alone, and with further high-quality evidence, it could be more formally integrated into multidisciplinary management frameworks and future clinical guidelines.

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مراجعة منهجية وتحليل تلوي للطب الصيني التقليدي في علاج مرض باركنسون

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ملخص: مرض باركنسون، الذي يُسببه عادةً مرض باركنسون مجهول السبب، هو متلازمة عصبية تنكسية تقدمية، تتميز ببطء الحركة، ورعشة، وصلابة، وعدم استقرار في الوضعية. تُؤثر الأعراض غير الحركية، مثل الاكتئاب، واضطراب النوم، وعسر البلع، والإمساك، سلبًا على جودة الحياة بشكل ملحوظ. يُخفف العلاج الدوائي التقليدي، بما في ذلك ليفودوبا وأدوية الدوبامين، من الأعراض، ولكنه لا يمنع تطور المرض، وغالبًا ما يؤدي إلى مضاعفات. يُستخدَم الطب الصيني التقليدي، بما في ذلك الوخز بالإبر، والأعشاب الصينية، والتاي تشي، وتشي غونغ، والكي، بشكل متزايد كعلاج مُكمِّل عالميًا. لتقييم فعالية الطب الصيني التقليدي وسلامته وآلياته الأساسية في علاج مرض باركنسون بشكل منهجي. باتباع إرشادات PRISMA 2020، بحثنا في PubMed وEmbase وCochrane CENTRAL وWeb of Science وCNKI وWanfang وVIP وCBM (2010-2025). شملت الدراسات المؤهلة تجارب عشوائية مُحكمة (RCTs)، وتجارب غير عشوائية مُحكمة (NRCTs)، ودراسات جماعية شملت بالغين مصابين بمرض باركنسون مجهول السبب. كانت النتيجة الأولية هي الوظيفة الحركية (UPDRS-III)؛ وشملت النتائج الثانوية الاكتئاب (HAMD)، والنوم (PDSS)، وعسر البلع (VFSS/SSA)، والإمساك، وجودة الحياة (PDQ-39)، والآثار الجانبية. طُبقت نماذج الآثار العشوائية في التحليل التلوي، وقُيِّم خطر التحيز باستخدام RoB2/ROBINS-I وNOS. تم تصنيف اليقين باستخدام مقياس GRADE. شملت الدراسة اثنتين وعشرين دراسة (عددها ≈ 1650). أظهرت التقديرات المجمعة تحسنًا في الوظائف الحركية (UPDRS-III MD -4.70، 95% CI: -6.10 إلى -3.30)، والاكتئاب (HAMD MD -3.90)، والنوم (PDSS +11.5)، والبلع (VFSS MD +1.50)، وجودة الحياة (PDQ-39 MD -7.2)، وانخفاضًا في الآثار الجانبية (RR 0.68). أشار تحليل المجموعات الفرعية إلى أن الوخز بالإبر كان الأكثر فعالية في تحسين الحركة والبلع، بينما كان الطب الصيني العشبي أكثر فعالية في تحسين المزاج والنوم، وتاي تشي/تشي غونغ في تحسين التوازن. يقدم الطب الصيني التقليدي علاجًا مساعدًا آمنًا وفعالًا لمرض باركنسون، حيث يعالج الأعراض الحركية وغير الحركية. هناك حاجة إلى تجارب دولية عالية الجودة ومتعددة المراكز لتعزيز الأدلة.