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Using Tai Chi and Qigong to Treat Parkinson's Disease: An Application of Artificial Intelligence to Traditional Chinese Medicine

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ABSTRACT

Background: Parkinson's disease (PD) is a progressive neurodegenerative disorder with disabling motor and non motor symptoms, and current pharmacologic therapies often provide incomplete and time limited relief. Tai Chi and Qigong, traditional Chinese mind body practices, have been proposed as complementary interventions to improve balance, motor function, and quality of life in this population.

Objective: This study used an artificial intelligence (AI) assistant to systematically summarize and synthesize the evidence from randomized controlled trials, systematic reviews, and meta analyses evaluating Tai Chi and Qigong as adjunctive therapies for PD.

Methods: Studies were identified in PubMed and then processed with an AI system (Grok) to generate structured summaries of study design, participant characteristics, intervention protocols, key outcomes, mechanisms, limitations, and clinical implications. Eight eligible publications—primarily systematic reviews, meta analyses of systematic reviews, and randomized controlled trials—were included.

Results: Across studies, Tai Chi consistently improved balance, functional mobility, and fall rates, with several meta analyses reporting moderate effect sizes in favor of Tai Chi versus control conditions. Individual trials also demonstrated significant improvements in motor symptoms (e.g., Unified Parkinson's Disease Rating Scale part III scores) and selected neurocognitive measures following 12 week Tai Chi interventions. Qigong showed potential benefits for motor function, sleep quality, and other non motor symptoms, although the evidence base remains smaller and more heterogeneous. Effects on health related quality of life were mixed, with some reviews suggesting small, favorable but statistically non significant trends. Overall, the available literature indicates that Tai Chi and Qigong are safe and feasible complementary therapies for people with mild to moderate PD.

Conclusions: AI assisted evidence synthesis suggests that Tai Chi and Qigong can provide clinically meaningful adjunctive benefits for motor and selected non motor outcomes in PD, particularly in balance, mobility, fall prevention, and depressive symptoms. Given persisting methodological limitations, including small sample sizes, heterogeneous interventions, and limited long term follow up, high quality randomized trials with standardized protocols are needed to confirm and extend these findings. Nevertheless, integrating Tai Chi and Qigong into multidisciplinary PD management appears reasonable for appropriately selected and motivated patients.

Keywords: Tai Chi; Qigong; Parkinson's Disease; Balance; Motor Function; Gait; Non-Motor Symptoms; Meta-Analysis; Randomized Controlled Trial; Complementary Therapy; Neuroplasticity; Fall Prevention

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 Parkinson's disease. Parkinson's disease (PD) is a progressive neurodegenerative disorder characterized by motor symptoms such as tremor, rigidity, bradykinesia, and postural instability, as well as non-motor symptoms including depression, cognitive impairment, and sleep disturbances. Traditional pharmacological treatments often provide symptomatic relief but may not address all aspects of the disease or prevent progression. Tai Chi and Qigong, ancient Chinese mind-body practices involving slow, deliberate movements, breathing control, and meditation, have emerged as promising complementary therapies. This compilation summarizes 8 studies, primarily systematic reviews, meta-analyses, and RCTs, to evaluate their effects on PD patients, highlighting improvements in balance, mobility, motor function, and quality of life while exploring underlying mechanisms and practical implications.

Methodology

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

The Studies

The studies are summarized below.

Study 1 [31]

1. **Study Design**: This is a comprehensive updated review synthesizing findings from meta-analyses and systematic reviews on non-pharmacological interventions, including Tai Chi and Qigong, for depression in Parkinson's disease (PD), aggregating data from multiple randomized controlled trials (RCTs) without detailing individual study designs.
2. **Participant Details**: Aggregated from included studies, typically involving PD patients with varying stages and durations, but specific totals, age means/ranges, sex distributions, or condition specifics like Hoehn and Yahr stages are not detailed.
3. **Intervention Protocols**: Tai Chi and Qigong are described as mind-body exercises involving muscle stretching, coordination, relaxation, movement, and breathing control, typically of moderate intensity, but durations, frequencies, and session lengths are not specified.
4. **Key Findings**: Meta-analyses show significant antidepressant effects of Tai Chi and Qigong on PD depression compared to controls, with moderate effect sizes (e.g., SMD = -0.57, 95% CI [-0.94, -0.20], p = 0.003 for non-motor symptoms including depression), though specific stats for depression alone vary due to heterogeneity.
5. **Potential Mechanisms for Medical Professionals**: May promote hippocampal neurogenesis, serotonin biosynthesis, endogenous cannabinoid system activation, cerebral blood flow enhancement, and inhibition of neuroinflammation, mitochondrial impairment, and oxidative stress.
6. **Benefits for Tai Chi/Qigong Enthusiasts**: Enhances holistic well-being through physical-cognitive integration, potentially aiding Qi cultivation via improved energy flow, balance, and relaxation.
7. **Strengths**: Synthesizes recent trials and reviews for a broad perspective on complementary therapies.
8. **Limitations**: High heterogeneity in sample sizes, criteria, durations, and assessments; lack of long-term data and variable depression diagnosis methods.
9. **Clinical Recommendations**: Recommend as complementary approaches for PD depression, especially for motivated patients, but integrate with pharmacological treatments due to limited definitive evidence.

Study 2 [32]

1. **Study Design**: Systematic review and meta-analysis of systematic reviews evaluating Tai Chi's effects on functional mobility, balance, and falls in PD, including 16 studies identified up to October 2021.
2. **Participant Details**: Aggregated from included reviews, but specifics like total numbers, age means/ranges, sex distributions, or PD stages/durations are not provided.
3. **Intervention Protocols**: Tai Chi interventions, but types, durations, frequencies, and session lengths are not detailed.
4. **Key Findings**: Significant improvements in balance (SMD = -0.777, 95% CI [-0.921, -0.633], p = 0.000), functional mobility (SMD = -0.719, 95% CI [-0.944, -0.494], p = 0.000), and falls (SMD = -0.456, 95% CI [-0.668, -0.245], p = 0.000).
5. **Potential Mechanisms for Medical Professionals**: Not explained, though implied through enhanced postural stability and coordination.
6. **Benefits for Tai Chi/Qigong Enthusiasts**: Improves functional mobility and balance, contributing to holistic well-being and potential Qi cultivation via mindful movement.

7. **Strengths**: Meta-analysis of reviews provides robust synthesis.
8. **Limitations**: Lack of detailed participant and intervention data; potential heterogeneity not addressed.
9. **Clinical Recommendations**: Tai Chi shows promise for PD management; recommend as adjunct therapy for mobility and fall prevention.

Study 3 [33]

1. **Study Design**: Randomized controlled trial comparing long-term Tai Chi Chuan, aerobic exercise, and control on motor and neurocognitive performance in early-stage PD, with pre- and post-12-week assessments using UPDRS-III and event-related potentials during working memory tasks.
2. **Participant Details**: 56 participants (16 in Tai Chi group for final analysis), mean age 66.31±6.54 years, 7 males/9 females in Tai Chi group; early-stage PD (Hoehn and Yahr 1-2), mean duration 6.75±5.49 years.
3. **Intervention Protocols**: Yang-style short-form Tai Chi Chuan (24 postures), 12 weeks, twice weekly, 60-minute sessions including warm-up and postural control focus.
4. **Key Findings**: Significant UPDRS-III reduction (8.00±5.27 to 4.69±2.92, p=0.001); increased ERP P3 amplitude (11.86±1.55 μV to 13.40±1.29 μV, p=0.038); group×time interaction for UPDRS-III ($F [2,40] =11.47$, $p<0.001$, $\eta^2P=0.36$) and P3 ($F [2,40] =7.68$, $p=0.001$, $\eta^2P=0.27$).
5. **Potential Mechanisms for Medical Professionals**: Enhances prefrontal cortex activity and attention via rhythmic movements and mindfulness, improving cognitive processing and motor control.
6. **Benefits for Tai Chi/Qigong Enthusiasts**: Promotes mind-body integration for better attention and well-being, aligning with Qi flow through focused breathing and movement.
7. **Strengths**: First comparison of neurocognitive effects; high adherence (>85%), no adverse events.
8. **Limitations**: Assessed only in "on" medication state; limited to Yang-style; no biochemical markers.
9. **Clinical Recommendations**: Use Tai Chi for motor and cognitive improvements in early PD; explore styles for broader benefits.

Study 4 [34]

1. **Study Design**: Systematic review of 11 studies (7 RCTs, 4 quasi-experimental) on Tai Chi's effects on physical function and well-being in PD.
2. **Participant Details**: 548 participants, average age 68 years, 50% women; PD specifics like stages/durations not detailed.
3. **Intervention Protocols**: Tai Chi exercises, but durations, frequencies, and session lengths not specified.
4. **Key Findings**: Better balance and well-being improvements, but mixed results; no specific stats (SMD, p-values, CI) provided.
5. **Potential Mechanisms for Medical Professionals**: Not explained.
6. **Benefits for Tai Chi/Qigong Enthusiasts**: Enhances balance and well-being, supporting holistic health and Qi cultivation.
7. **Strengths**: Broad review of multiple designs.
8. **Limitations**: Needs rigorous designs, larger samples, adequate dosing, better measures.
9. **Clinical Recommendations**: Further research needed before widespread use; potential as adjunct for function.

Study 5 [35]

1. **Study Design**: Review of clinical trials including open-label, RCTs, and wait-list-controlled trials on Tai Chi and Qigong for PD.
2. **Participant Details**: 1-195 for Tai Chi, 7-98 for Qigong; typically adults >60 years, mild-moderate PD, but sex/stages/durations inconsistent.
3. **Intervention Protocols**: Tai Chi (Yang/Sun/Ai Chi styles), 5 days-24 weeks, 2-5 sessions/week, 60 minutes; Qigong (six-healing sounds/Baduanjin/Turo), 6 weeks-6 months, 2-5 sessions/week, 45-60 minutes.
4. **Key Findings**: Tai Chi improved balance (e.g., BBS effect size=1.03, p=0.04), quality of life (PDQ-39 effect size=1.03, p=0.04), falls (p<0.001); Qigong improved mUPDRS (p=0.038), sleep (p=0.045).
5. **Potential Mechanisms for Medical Professionals**: Enhances postural stability, coordination; reduces inflammation (e.g., TNF-α) for sleep/motor benefits.
6. **Benefits for Tai Chi/Qigong Enthusiasts**: Mind-body focus aids relaxation, Qi cultivation, emotional well-being.
7. **Strengths**: Variety of designs, large samples in key trials.
8. **Limitations**: Inconsistent reporting, small samples in some, no long-term data.
9. **Clinical Recommendations**: Safe complementary therapy for motor/non-motor symptoms; integrate into rehab.

Study 6 [36]

1. **Study Design**: Systematic review and meta-analysis of systematic reviews on Tai Chi and Qigong for health-related quality of life (HRQoL) in PD, including 7 reviews up to November 2018.
2. **Participant Details**: Aggregated, but totals, ages, sexes, PD stages/durations not specified.
3. **Intervention Protocols**: Tai Chi/Qigong, but types, durations, frequencies, lengths not detailed.
4. **Key Findings**: No significant HRQoL effect (SMD = -0.166, 95% CI [-0.676, 0.344], p=0.523), but small effect favors benefits.
5. **Potential Mechanisms for Medical Professionals**: Not explained.
6. **Benefits for Tai Chi/Qigong Enthusiasts**: Potential HRQoL gains support holistic well-being, Qi cultivation.
7. **Strengths**: Comprehensive database search, synthesis of reviews.
8. **Limitations**: Heterogeneity, small effect limits conclusions.
9. **Clinical Recommendations**: Potential benefits; further research needed for PD HRQoL.

Study 7 [37]

1. **Study Design**: Scoping review synthesizing 19 systematic reviews (74 trials) on Qigong, Tai Chi, Yoga for neurological diseases including PD.
2. **Participant Details**: Aggregated from 74 trials, but totals, ages, sexes, PD stages/durations not provided.
3. **Intervention Protocols**: Movement-based mindful exercises like Tai Chi/Qigong, but durations, frequencies, lengths not specified.
4. **Key Findings**: Improves balance, functional mobility in PD; no specific stats (SMD, p, CI).
5. **Potential Mechanisms for Medical Professionals**: Not explained.
6. **Benefits for Tai Chi/Qigong Enthusiasts**: Enhances balance/mobility for holistic well-being, Qi cultivation.
7. **Strengths**: Broad synthesis, overlap analysis (high for Tai Chi in PD).
8. **Limitations**: Low methodological quality, evidence certainty; high overlap.
9. **Clinical Recommendations**: Effective for balance/mobility; integrate as complementary.

Study 8 [38]

1. **Study Design**: Systematic review of RCTs and quasi-experimental studies on Tai Chi and Qigong as complementary treatments for PD.
2. **Participant Details**: Aggregated, but totals, ages, sexes, PD specifics not detailed.
3. **Intervention Protocols**: Tai Chi/Qigong therapies, but types, durations, frequencies, lengths not specified.
4. **Key Findings**: Potential benefits, but insufficient content for stats.
5. **Potential Mechanisms for Medical Professionals**: Not explained.
6. **Benefits for Tai Chi/Qigong Enthusiasts**: Supports well-being through mindful practice.
7. **Strengths**: Focus on complementary role.
8. **Limitations**: Insufficient content for detailed analysis.
9. **Clinical Recommendations**: Consider as adjunct; more research needed.

Concluding Comments

This AI assisted review of eight studies, including systematic reviews, meta analyses, and randomized controlled trials, indicates that Tai Chi and Qigong offer promising complementary benefits for individuals with Parkinson's disease. The most consistent findings relate to improvements in balance, functional mobility, and fall prevention, outcomes of clear clinical importance in a population at high risk for injury and loss of independence. In addition, selected trials report meaningful reductions in motor symptom severity and enhancements in neurocognitive measures, while some reviews suggest potential improvements in depressive symptoms and sleep, although the evidence for global health related quality of life remains mixed. From a mechanistic standpoint, Tai Chi and Qigong may exert their effects through a combination of neuromuscular training, postural control, attentional focusing, and mind body regulation, potentially influencing neuroplasticity, mood, and overall well being. While these pathways remain incompletely understood, they align with broader literature on movement based mindful exercises in neurological disorders. Importantly, the reviewed interventions were generally well tolerated, with high adherence and no serious adverse events reported, supporting their safety and feasibility as adjunctive therapies. However, several limitations temper the strength of current conclusions. Many studies involved small samples, short intervention periods, heterogeneous Tai Chi and Qigong styles and dosing, and incomplete reporting of PD stage, duration, and concomitant treatments. Meta analyses frequently noted high heterogeneity and limited certainty of evidence, and long term maintenance of benefits has not been adequately explored.

These methodological constraints underscore the need for rigorously designed, adequately powered randomized trials with standardized protocols, longer follow up, and consistent use of validated motor, non motor, and quality of life measures. The present project also highlights the potential value of artificial intelligence as a research tool in integrative medicine. By rapidly extracting, organizing, and synthesizing key features from a dispersed literature, AI can help clinicians and researchers gain an efficient overview of the evidence base, identify gaps, and generate hypotheses for future work. At the same time, AI generated summaries remain dependent on the quality and completeness of the underlying studies and should be viewed as complementary to, not a replacement for, traditional critical appraisal. In practical terms, Tai Chi and Qigong can reasonably be recommended as safe, low cost, and accessible adjuncts to standard pharmacologic and rehabilitative care for patients with mild to moderate PD who are medically cleared for exercise and interested in mind body approaches. Collaboration between neurologists, rehabilitation specialists, and experienced Tai Chi/Qigong instructors may facilitate appropriate program design, patient education, and monitoring. Future research should explore optimal styles, intensity, session frequency, and duration, as well as the differential responsiveness of motor versus non motor outcomes and the sustainability of benefits over time.

References

1. McGee RW (2005) Incorporating Tai Chi & Qigong into a Medical Practice. New York: Prime Publishing.
2. McGee RW (2005) The Health Benefits of Tai Chi & Qigong. New York: Prime Publishing.
3. McGee RW (2005) Utilizing Tai Chi & Qigong to Treat Cancer Survivors. New York: Prime Publishing.
4. McGee RW (2023) Recent Studies in Traditional Chinese Medicine (TCM). BJSTR 50(4): 41817-41820.
5. McGee RW (2023) Some Beneficial Health Effects of Tai Chi and Qigong. BJSTR 52(3): 43813-43817.
6. McGee RW (2023) Tai Chi, Qigong and the Treatment of Dementia. BJSTR 53(5): 45080-45085.
7. McGee RW (2025) Using Artificial Intelligence to Conduct Medical Research on Applications of Tai Chi and Qigong: A Case Study of Multiple Sclerosis. BJSTR 61(2): 53398-53402.
8. McGee RW (2025) Harnessing AI for Integrative Medicine: Exploring Grok 3's Role in Researching Qigong, Tai Chi, Yoga, and Mindfulness for College Students' Mental Health. American Journal of Biomedical Science & Research 26(4): 584-598.
9. McGee RW (2025) Exploring Tai Chi and Qigong for Genital Herpes Management: Insights from Related Diseases Using Artificial Intelligence. BJSTR 61(4): 53810-53824.
10. Douglas B, Douglas AW (2012) The Complete Idiot's Guide to T'ai Chi & QiGong. New York: Penguin.
11. Goodman F (2023) The Ultimate Book of Martial Arts. UK: Anness Publishing.
12. Liang SY, Wu WC (2014) Simplified Tai Chi Chuan. Wolfeboro, NH: YMAA Publication Center.
13. Tsao J (2021) Practical Tai Chi Training. San Diego: Tai Chi Healthways.
14. Tsao J (2023) 108 Answers to Tai Chi Practice. San Diego: Tai Chi Healthways.
15. Jahnke R (1997) The Healer Within. San Francisco: Harper.
16. Jahnke R (2002) The Healing Promise of Qigong. New York: Contemporary Books.
17. Korahais, A (2022) Flowing Zen: Finding True Healing with Qigong. Flowing Zen.
18. Chen J, Xue X, Xu J, Zeng J, Xu F (2022) Emerging Trends and Hotspots in Tai Chi Fall Prevention: Analysis and Visualization. Int J Environ Res Public Health 19(14): 8326.
19. Li W, Weng L, Xiang Q, Fan T (2022) Trends in Research on Traditional Chinese Health Exercises for Improving Cognitive Function: A Bibliometric Analysis of the Literature From 2001 to 2020. Front Public Health 9: 794836.
20. Liang L, Zhang M, Li K, Hou J, Wu C (2024) A trend of Tai Chi in osteoporosis research: A bibliometric analysis. Complement Ther Med 86: 103083.
21. Song C, Chen K, Jin Y, Chen L, Huang Z (2025) Visual analysis of research hotspots and trends in traditional Chinese medicine for depression in the 21st century: A bibliometric study based on citespace and VOSviewer. Heliyon 11(1): e39785.
22. Wu X, Liu Z, Xu C, Plönes T, Wang H (2024) The quality of life of patients with chronic obstructive pulmonary disease: a bibliometric analysis. J Thorac Dis 16(4): 2591-2603.
23. Murad Ali Khan (2025) Beyond Diagnosis Expanding the Frontiers of Healthcare with Artificial Intelligence. Biomed J Sci & Tech Res 60(2)-2025.
24. Abdulmajeed Faihan Alotaibi (2024) Ethical Guidelines of Integrating Artificial Intelligence in Healthcare in Alignment with Sustainable Development. Biomed J Sci & Tech Res 59(4).
25. Adrián P Hunis (2024) The Role of Artificial Intelligence in Oncology: Transforming Cancer Diagnosis and Treatment. Biomed J Sci & Tech Res 57(3)-2024.
26. Marcos A M Almeida, Matheus H C de Araujo (2023) The Use of Artificial Intelligence in the Classification of Medical Images of Brain Tumors. Biomed J Sci & Tech Res 53(4)-2023.
27. Philippe Funk (2023) Biomedical Computation Artificial Intelligence Challenges in Cloud Environments. Biomed J Sci & Tech Res 50(4).
28. Angela Hsu, Robin Zachariah, James Han, William Karnes (2023) Artificial Intelligence for Colonoscopy: Beyond Polyp Detection – A Review of where we are Today and where AIcan Take us. Biomed J Sci & Tech Res 49(3).
29. Sotiris Raptis, Christos Ilioudis, Vasiliki Softa, Kiki Theodorou (2022) Artificial Intelligence in Predicting Treatment Response in Non-Small-Cell Lung Cancer (NSCLC). Biomed J Sci & Tech Res 47(3).
30. Omar Sayyouh (2022) Machine Learning Application to Combat Superbugs in Hospitals: A Primer to Infection Prevention Practitioners. Biomed J Sci & Tech Res 44(5).
31. Angelopoulou E, Stanitsa E, Karpodini CC, Bougea A, Kontaxopoulou D, et al. (2023) Pharmacological and Non-Pharmacological Treatments for Depression in Parkinson's Disease: An Updated Review. Medicina (Kaunas) 59(8): 1454.
32. Aras B, Seyyar GK, Fidan O, Colak E (2022) The effect of Tai Chi on functional mobility, balance and falls in Parkinson's disease: A systematic review and meta-analysis of systematic reviews. Explore (NY) 18(4): 402-410.

33. Chang CL, Lin TK, Pan CY, Wang TC, Tseng YT, et al. (2024) Distinct effects of long-term Tai Chi Chuan and aerobic exercise interventions on motor and neurocognitive performance in early-stage Parkinson's disease: a randomized controlled trial. Eur J Phys Rehabil Med 60(4): 621-633.

34. Ćwiękała Lewis KJ, Gallek M, Taylor Piliae RE (2017) The effects of Tai Chi on physical function and well-being among persons with Parkinson's Disease: A systematic review. J Bodyw Mov Ther 21(2): 414-421.

35. Deuel LM, Seeberger LC (2020) Complementary Therapies in Parkinson Disease: a Review of Acupuncture, Tai Chi, Qi Gong, Yoga, and Cannabis. Neurotherapeutics 17(4): 1434-1455.

36. Fidan O, Seyyar GK, Aras B, Colak E, Aras O (2019) The effect of Tai Chi and Qigong on health-related quality of life in Parkinson's disease: a systematic review and meta-analysis of systematic reviews. Int J Rehabil Res 42(3): 196-204.

37. García Muñoz C, González García P, Casuso Holgado MJ, Martínez Calderón J, Heredia Rizo AM (2023) Are movement-based mindful exercises (QIGONG, TAI CHI, AND YOGA) beneficial for stroke and Parkinson's disease? A scoping review. Complement Ther Med 72: 102912.

38. Kamieniarz A, Milert A, Grzybowska Ganszczyk D, Opara J, Juras G (2021) Tai Chi and Qi Gong therapies as a complementary treatment in Parkinson's disease - a systematic review. Complement Ther Med 56: 102589.

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