Review Article

A Sample Protocol for Using Tai Chi and Qigong to Treat Multiple Sclerosis: An Application of Artificial Intelligence to Traditional Chinese Medicine

Robert W McGee*

Fayetteville State University, Fayetteville, NC 28311 USA

*Corresponding author: Robert W McGee, Fayetteville State University, 732 Kensington Park Road, Fayetteville, NC 28311 USA.

Abstract

Background: Multiple sclerosis (MS) frequently leads to persistent problems with balance, gait, fatigue, and mood, which are not fully addressed by pharmacological therapy alone. Mind–body exercises such as tai chi and qigong may offer a low impact, scalable adjunct to standard care, but MS specific protocols have varied widely and are not always described in sufficient detail for replication.

Objective: To propose and describe a structured, group-based tai chi and qigong protocol tailored to adults with mild to moderate MS-related disability, suitable for testing in randomized controlled trials.

Methods: Using an artificial intelligence assistant to generate an initial outline, followed by expert refinement, a 12-week intervention was designed that combines a simplified Yang-style tai chi short form with a small set of standing and seated qigong exercises. The protocol specifies eligibility criteria, class frequency and duration, session structure, progression principles, control condition, and recommended outcome measures, including balance, functional mobility, fatigue, quality of life, mood, and falls.

Results: The proposed program consists of twice weekly, 45minute group classes over 12 weeks, with 24 supervised sessions and optional home practice 1-2 times per week. Each session includes warm up, core tai chi practice focusing on postural control and weight shifting, a brief qigong and breathing segment aimed at relaxation and fatigue management, and a cool down. The protocol is designed for participants with EDSS scores between 2.0 and 6.0 and includes explicit options for seated practice and use of assistive devices to enhance safety and accessibility.

Conclusions: This article provides a detailed tai chi and qigong protocol for people with MS that differs from previously published qigong only or single set approaches and is structured for rigorous evaluation in clinical trials. The design is intentionally flexible, allowing investigators and clinicians to adapt elements such as movement complexity and session frequency while preserving core features. AI-assisted protocol development, combined with clinical and instructional expertise, may facilitate the creation and refinement of similarly tailored mind–body programs for MS and other chronic neurological conditions.

Keywords: Tai Chi Qigong, Traditional Chinese Medicine, Mind-body Exercise, Neurorehabilitation, Balance Training, Fatigue Management, Quality of life, Artificial Intelligence, Protocol Development

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 create a sample protocol that can be used by practitioners to treat patients suffering from multiple sclerosis.

Multiple sclerosis (MS) is a chronic, immune-mediated disease of the central nervous system that frequently leads to impairments in balance, gait, fatigue, mood, and cognition, even when disease-modifying therapy is optimized. Many people with MS report a progressive loss of confidence in their mobility, fear of falling, and withdrawal from physical and social activities, which in turn can exacerbate deconditioning and psychological distress. Conventional rehabilitation programs that focus on strength, stretching, and task-specific gait training are helpful but may not fully address the complex interaction between motor control, fatigue, and emotional well-being that characterizes MS.

Tai chi and qigong, as low-impact, mind–body practices, are increasingly recognized as promising adjuncts to standard MS care. Their slow, coordinated movements require constant weight shifting, postural control, and attention to body alignment, offering a form of neuromotor training that can be scaled to different disability levels. At the same time, the emphasis on breathing, relaxation, and internal awareness provides an embedded stress-management component that may help alleviate fatigue and mood symptoms. Existing clinical studies and systematic reviews summarized in the companion MS review article suggest that such practices can improve balance, reduce fatigue and depression, and enhance quality of life in people with MS, although protocols have varied considerably in style, intensity, and duration. The present paper extends this line of work by proposing a structured, group-based tai chi and qigong protocol specifically tailored to adults with mild-to-moderate MS-related disability. Rather than focusing on a single qigong set, the protocol combines simplified Yang-style tai chi stepping patterns with a small number of standing and seated qigong exercises designed to target balance, lower-extremity control, and fatigue management. The protocol was generated with the assistance of an artificial intelligence system and then refined by the author to ensure clinical feasibility, safety, and alignment with MS rehabilitation goals. By specifying concrete details such as session structure, progression, and outcome measures, this article aims to offer researchers and clinicians a clearly defined intervention that can be tested in randomized controlled trials and adapted to different settings.

Methodology

Perplexity, an artificial intelligence assistant, was given information about the ailment and was instructed to create a sample protocol for treating the ailment using either tai chi or qigong. The author then edited the results for clarity. The results are presented below.

Protocol: Group-Based Tai Chi and Qigong for Multiple Sclerosis

a)   Objective

To evaluate the feasibility and effectiveness of a 12-week, group-based tai chi and qigong program in improving balance, functional mobility, and fatigue in adults with MS.

b)   Study Design

i.   Type: Parallel group randomized controlled trial (tai chi/qigong vs. usual care education control).

ii.   Duration: 12-week intervention with assessments at baseline, week 6, week 12, and week 24 (follow up).

iii.   Setting: Outpatient neurology or rehabilitation clinic, with small group classes conducted in a gym or exercise studio.

c)   Participants

a.   Sample size: 60 participants (30 per group), allowing for 20–25% attrition and powered to detect a moderate effect size on balance outcomes.

b.   Inclusion criteria:

i.   Age 18–70 years.

ii.   Definite MS (McDonald criteria), any subtype.

iii.   Expanded Disability Status Scale (EDSS) between 2.0 and 6.0 (ambulatory with or without aid).

iv.   Stable disease-modifying and symptomatic medications for at least 4 weeks.

v.   Ability to stand independently for at least 2 minutes with or without assistive device.

c.   Exclusion criteria:

a.   Relapse or corticosteroid use within the last 6 weeks.

b.   Other neurological, musculoskeletal, or cardiopulmonary conditions that preclude participation in light-to-moderate exercise.

c.   Significant cognitive impairment interfering with following simple group instructions.

d.   Randomization and Blinding

a.   Randomization: 1:1 allocation using computer-generated random sequences, concealed in sealed opaque envelopes.

b.   Blinding: Outcome assessors blinded to group assignment; participants and instructors not blinded.

Intervention Group: Tai Chi and Qigong Program

Overall structure

i.   Frequency: Two supervised sessions per week for 12 weeks (24 sessions total).

ii.   Session length: 45 minutes (including warm up and cool down).

iii. Group size: 6–10 participants per class.

iv.   Home practice: Encouraged 1–2 times per week using a printed handout or video of the short form (10–15 minutes).

Session format (45 minutes)

Warm up (10 minutes)

a.   Seated or standing joint loosening (neck, shoulders, spine, hips, knees, ankles).

b.   Gentle breathing and body-awareness exercises (abdominal breathing, shoulder rolls, weight shifting in place).

Core tai chi segment (20 minutes)

a)   Simplified 8 movement Yang-style sequence adapted for MS, focusing on:

i.   Opening and closing the form (postural alignment, weight transfer).

ii.   Parting the wild horse's mane (forward and diagonal weight shift).

iii. White crane spreads wings (single leg loading with upper-extremity control).

iv.   Brush knee and push (coordinated step and arm movement).

v.   Wave hands like clouds (lateral stepping with trunk rotation).

vi.   Repulse monkey (backward stepping within safe limits).

b)   Initial sessions emphasize individual components (static weight transfer, partial steps, supported stances); later sessions link movements into a continuous short form performed at comfortable speed.

Qigong and breathing segment (10 minutes)

a.   Two to three simple standing or seated qigong exercises, such as:

i.   Lifting the sky (gentle upper extremity elevation with coordinated breathing).

ii.   Opening and closing the chest (horizontal arm arcs with inhalation/exhalation).

iii. Centering the Qi (hands over lower abdomen with slow abdominal breathing).

b.   Focus on cultivating relaxation, internal awareness, and pacing to manage fatigue.

Cool down and reflection (5 minutes)

a.   Slow walking or seated relaxation.

b.   Brief body scan and opportunity for participants to report perceived exertion and any symptoms.

Progression and adaptation

a.   Weeks 1-4: Emphasis on safety, supported stances (near chairs or bars), and learning individual movements; more seated options for those with greater fatigue or instability.

b.   Weeks 5–8: Gradual increase in challenge via longer periods of single leg loading, larger step lengths as tolerated, and smoother transitions between movements.

c.   Weeks 9-12: Practice of the full simplified form continuously for 10–15 minutes, with minor variations to maintain engagement; individualized modifications (reduced step size, use of assistive device) as needed.

Instructors need not be certified in tai chi, but should have experience with clinical populations, and receive an orientation to MS-specific safety issues (heat sensitivity, fatigue, fall risk).

Control Group: Usual Care Plus Education

Participants continue their standard medical and rehabilitation care and attend three 60-minute group education sessions over 12 weeks (e.g., MS self-management, general physical activity and fall-prevention advice, stress-management education but no structured movement practice). They are asked not to begin tai chi or similar classes during the study period.

Outcome Measures

a.   Primary outcome

i.   Balance: Berg Balance Scale (BBS).

b.   Secondary outcomes

ii.   Functional mobility: Timed Up and Go (TUG) and 10 Meter Walk Test (comfortable speed).

iii. Fatigue: Modified Fatigue Impact Scale (MFIS).

iv.   Quality of life: Multiple Sclerosis Impact Scale 29 (MSIS 29).

v.   Mood: Hospital Anxiety and Depression Scale (HADS).

vi.   Falls: number of falls and near-falls recorded monthly using a simple diary.

c. Assessment schedule

i. Baseline (week 0), mid intervention (week 6), post intervention (week 12), and follow up (week 24).

Data Analysis

a. Analysis will follow intention to treat principles, with mixed effects linear models used to examine group × time interactions for continuous outcomes and appropriate count models for falls.

b. Effect sizes (Cohen's d) and 95% confidence intervals will be reported for primary and key secondary outcomes.

Safety Monitoring

a. Adverse events (falls during class, symptom exacerbations temporally related to sessions) will be recorded and reviewed by the study clinician.

b. Sessions may be shortened or modified when participants report high fatigue or heat sensitivity.

Conclusion

This article presents a tai chi and qigong protocol specifically designed for adults with mild to moderate multiple sclerosis, emphasizing group-based training, functional stepping patterns, and integrated breathing and relaxation techniques. Unlike protocols that focus on a single qigong set, the present design combines a simplified Yang-style short form with a small repertoire of adaptable qigong exercises, allowing instructors to tailor difficulty and posture (standing vs. seated) to individual capacity. The inclusion of structured progression over 12 weeks, along with clearly defined home practice recommendations, makes the intervention suitable for implementation in neurology or rehabilitation clinics and for evaluation in randomized controlled trials.

At the same time, this protocol should be regarded as a flexible template rather than a rigid prescription. Clinicians and researchers may choose to alter specific elements-such as the number of weekly sessions, the proportion of time devoted to tai chi versus qigong, or the complexity of the movement sequence-based on local resources, patient preferences, and safety considerations. Provided that such modifications are documented and systematically evaluated, this adaptability is consistent with both traditional tai chi practice and contemporary rehabilitation principles, which emphasize individualized, person-centered care.

The protocol also illustrates how artificial intelligence can contribute to the design of mind–body interventions for MS by helping to structure session content, progression, and outcome selection in a transparent way. AI-generated outlines, when critically reviewed and refined by clinicians and experienced instructors, can accelerate the development of testable programs and facilitate harmonization of protocols across research sites. Future studies using this or similar protocols should examine not only efficacy on balance, mobility, and fatigue, but also mechanisms such as changes in motor control, self-efficacy, and activity levels, and should include longer-term follow up to assess durability of benefits. As this evidence base grows, tai chi and qigong may come to occupy a more defined role within multidisciplinary MS rehabilitation pathways.

Acknowledgement

None.

Conflict of Interest

None.

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