Psychophysiological outcomes of health qigong for chronic conditions: a systematic review
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CRD summary
This review concluded that there was some positive evidence to support clinical benefits of qigong, although it may not be superior to other conventional treatments. As the review had some methodological limitations and included studies of low quality, the conclusions should be treated with some caution.

Authors' objectives
To assess the psychophysiological and clinical benefits of health qigong (HQG) for chronic conditions

Searching
A range of databases were searched for articles in English: EBM Reviews, Cochrane Central Register of Controlled Trials (CENTRAL), MEDLINE, EMBASE and CINAHL. CAJ Full Text Database Medicine/Hygiene was searched for articles in Chinese. Search terms were reported. Citations of studies shortlisted for assessment were also searched for additional studies.

Study selection
Randomised Controlled Trials (RCTs) in human populations that were published between 1997 to 2006 in peer-reviewed journals were eligible for inclusion. Participants needed to have a chronic condition and could be of any age. The intervention needed to be health qigong or self-practice qigong. Qigong could involve: individual, self-practice; group-based practice with or without a complementary home programme; and instruction of a certified qigong master or use of audiovisual training materials or could be integrated with another therapy such as mindfulness therapy or group discussion provided that health qigong occupied no less than half of the treatment time. Interventions using external qigong or emitted qi therapy by a qi master were excluded. Static forms of qigong such as Zen meditation were excluded. Outcome measures included biomarkers or physiological parameters and ability tests and/or questionnaires related to clinical outcomes.

The authors did not state how the studies were selected for the review.

Average age of participants was 52.5 years. Hypertension was the most commonly studied clinical condition. Qigong was delivered in a variety of forms. Study duration varied. Control groups included educational support, discussion session, exercise training, supervised training activities, dietary advice and exercise treatment, sham or simulated qigong, emergency care for acute symptoms, external diaphragm pacer (EDP) treatment, herbal medicine, walking, usual care or usual lifestyle, waiting list and no treatment.

Assessment of study quality
The quality of the studies was assessed independently by the authors using the Jadad scale of randomisation, blinding and withdrawals and loss to follow-up.

Data extraction
Data were extracted independently by the authors using a specially designed data extraction form. Effect sizes were estimated from the difference between study group means divided by variances pooled from both treatment and control groups.

Methods of synthesis
Similar outcome variables from different studies with participants of a comparable age range (defined as an age difference not larger than 20 years) were pooled. Weighted mean differences and 95% confidence intervals (CIs) were calculated.

Results of the review
Twenty-six RCTs were included in the review (n=796). Twenty trials had a Jadad score of 2 or less. Major limitations included poor descriptions of randomisation and blinding procedures, unblinded outcome assessors, poor monitoring of compliance and high percentage of loss to follow-up. A sample size of less than 30 was reported in half of the studies.

Twelve RCTs used a control group with a conventional therapy or attention placebo and 14 compared qigong to a control group that received no treatment. In general, qigong participants had better outcomes when compared to no intervention and trials where control participants received a conventional therapy or attention placebo showed inconsistent results. Nine trials found qigong to be superior to conventional therapy or attention placebo and three trials suggested similar effects.

Statistically significant results when compared to control groups were observed for 12 of 17 outcome parameters related to immune cell counts, blood lipids, blood pressure, cardiac function, ventilatory function, pain and mood. Qigong resulted in better outcomes for white blood counts, lymphocytes, stroke volume, peak early transmitral filling velocity (VE), peak late transmitral filling velocity (VA), difference between VE and VA, forced vital capacity, forced expiratory volume at first second, total cholesterol, systolic blood pressure, diastolic blood pressure and depressive mood scores. No statistically significant results were noted for natural killer cells, high-density lipoprotein, low-density lipoprotein, triglyceride and pain as assessed by SF-36 (Medical Outcomes Study 36-Item Short-Form Health Survey).

**Authors' conclusions**

There was some positive evidence to support clinical benefits of qigong, although it may not be superior to other conventional modalities.

**CRD commentary**

This review had broad inclusion criteria for participants, interventions and outcomes. Study design was restricted to RCTs. Searching was based on a range of databases and included Chinese-language studies, which was appropriate for the topic area. However, unpublished material was not eligible and it appeared that influence of publication bias was not investigated. Quality was assessed and overall quality of the research briefly described. A pooled analysis may not have been appropriate given the clinical diversity of studies. Elements of the review process to minimise bias and error were not described in full. Given these concerns and the limited quality of the included primary studies, the authors' conclusions should be treated with some caution.

**Implications of the review for practice and research**

**Practice:** The authors stated that in view of its safety, minimal cost and potential clinical benefit, health qigong could be advocated as an adjunctive therapy for the elderly with chronic conditions.

**Research:** The authors stated that studies with more rigorous randomisation and blinding procedures and with a compatible convention therapy or attention placebo control group should be implemented. Studies should have a minimum size of 30 participants and examine compliance with therapy.

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