



Qigong for healthcare: an overview of systematic reviews

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DECLARATIONS

Competing interests

None declared

Funding

MSL was supported by Korea Institute of Oriental Medicine (K10251)

Ethical approval

Not applicable

Guarantor

MSL

Contributorship

MSL and EE conceived the idea; MS wrote the first draft; all three authors contributed to the final draft

Acknowledgements

None

Reviewer

Li Li

Summary

Objectives Qigong has been recommended to improve health and prevent disease but the evidence is inconclusive. The aim of this overview was to critically evaluate all systematic reviews (SRs) of qigong for the treatment of any condition or symptom.

Design Literature searches were carried out in 11 electronic databases for all systematic reviews of the effectiveness of qigong in any indication. Reviews were defined as systematic if they included an explicit and repeatable methods section describing the search strategy and explicit inclusion/exclusion criteria.

Setting Retrospective review of medical database.

Participants Participants with any type of medical conditions of any severity were included.

Main outcome measures Evidence from each systematic review.

Results Ten systematic reviews were included. They related to a wide range of conditions. The primary studies and several of the reviews were associated with a high risk of bias. Five reviews concluded that qigong is effective and five reviews were inconclusive.

Conclusion The effectiveness of qigong is based mostly on poor quality research. Therefore, it would be unwise to draw firm conclusions at this stage.

Background

Qigong has become a popular form of complementary and alternative medicine. Proponents of qigong recommend it for a wide range of conditions, symptoms and situations, including stress management, hypertension, chronic pain, depression, insomnia, cardiac rehabilitation, immune function and for enhancing the quality of life (QOL) of cancer patients.¹

Qigong has been practised for many years in the East to improve health, prevent disease and prolong life.² The term qigong is composed of two words: 'qi' means energy flow and 'gong' means skill or achievement. There are numerous distinct forms of qigong which can be categorized into two main groups, internal qigong and external qigong.

Internal qigong refers to a physical and mental training method for the cultivation of oneself to

achieve optimal health in both mind and body. Internal qigong is similar to tai chi but its main differences are coordination of different breathing patterns and meditation. External qigong refers to a treatment where qigong practitioners direct or emit their qi-energy to the patient with the intention to clear qi-blockages or balance the flow of qi within that patient.

Qigong has its underpinnings in Eastern medicine and philosophy. So far, it has not been explained scientifically and, from a scientific point of view, it must seem biologically implausible. Despite the absence of a scientific basis, qigong has been submitted to numerous clinical trials and several systematic reviews of these data have recently been published. Unfortunately their conclusions are far from uniform.

The aim of this overview is to critically evaluate all systemic reviews of qigong as a treatment of any condition or symptom.

Methods

Electronic literature searches were carried out in May 2010 using Medline, Embase, Amed, CINAHL, the Cochrane Library, as well as six Korean medical databases and Chinese databases without restrictions of time or language. The search terms were MESH term of qigong AND (systematic review OR meta-analysis). In addition, our departmental files were hand-searched. We also contacted the Cochrane Complementary and Alternative Field Specialized Registry for further inclusion of systematic reviews. Abstracts of reviews thus located were inspected by two authors and those appearing to meet the inclusion criteria were retrieved and read in full by all three authors. Reviews were defined as systematic if they included an explicit and repeatable methods section describing the search strategy and explicit inclusion/exclusion criteria.

To be included, systematic reviews had to be concerned specifically with the effectiveness of qigong and include evidence from at least two controlled clinical trials. Systematic reviews evaluating qigong together with tai chi without evaluating the two approaches separately were excluded. We also excluded systematic reviews which evaluated the effects of qigong on healthy elderly and systematic reviews which included

mixed populations such as healthy and medical conditions were excluded.

Judgements about the quality of the primary studies were taken from the respective systematic reviews. The Overview Quality Assessment Questionnaire (OQAQ) was used to evaluate the methodological quality of all included systematic reviews.^{3,4} The OQAQ gives a score from 1 to 7; a score of three or less was considered as indicative of extensive or major flaws and a score of 5 or more as suggesting minor or minimal flaws. Two authors assess the OQAQ independently and discrepancies were settled by discussion.

Data were extracted independently by two authors (EE & MSL) using predefined criteria (Table 1). Disagreements were resolved by discussion between the authors.

Results

Our searches generated 61 hits, and 10 articles met our inclusion criteria (Figure 1, Table 1).⁵⁻¹⁴ The systematic reviews had been published between 2004 and 2010 and originated from the following countries: Korea ($n = 4$), UK ($n = 2$), China ($n = 3$) and Sweden ($n = 1$). They included between 1 and 26 primary studies which, in many cases, were methodologically flawed. Apart from two systematic reviews specifically focused on external qigong,⁷ or any type of qigong,⁵ all systematic reviews focused on internal qigong.^{6,8-14} The systematic reviews related to a wide range of conditions: cancer,⁵ pain,^{6,7} diabetes,^{8,9} Parkinson's disease,¹⁰ hypertension,^{12,13} and any chronic condition.^{11,14} Some reviews included only randomized controlled trials,^{7,11-13} others included non-randomized controlled trials,^{5,6,8} while others again also included observational studies (Table 1).^{9,14}

Seven systematic reviews were associated with a low risk of bias^{5-8,11-13} but the quality of the primary studies included in these systematic reviews was poor in all cases. Five systematic reviews drew equivocal conclusions, and five systematic reviews concluded positively,^{7,11-14} i.e. that internal qigong was seemed to be effective hypertension,^{12,13} and external qigong may be effective for pain condition.⁷

For several indications, more than one systematic review was available. In these instances, there

Table 1
Systematic reviews of qigong for health conditions

Author (year) [ref]	Condition	Type of qigong	RCTs (n)	Quality of RCTs	Meta-analysis	Conclusion (quote)	Quality of SR OQAQ*	Result
Lee (2010) ⁵ Korea	Cancer	Any	6 RCTs (+ 5 non-RCTs)	Poor	No	... evidence does not show convincingly that qigong is effective ...	5	+/-
Lee (2009) ⁶ Korea	Pain	Internal	4 RCTs (+ 3 non-RCTs)	Poor	No	... evidence is not convincing enough ...	5	+/-
Lee (2007) ⁷ UK	Pain	External	5 RCTs	Poor	Yes	...evidence ... is encouraging...	7	+
Lee (2009) ⁸ Korea	Diabetes (type 2)	Internal	3 RCTs (+ 6 non-RCTs)	Poor	No	... evidence is insufficient ...	5	+/-
Xin (2007) ⁹ China	Diabetes	Internal	1 RCT (+10 UOSs)	Poor	No	...difficult to draw firm conclusion...	1	+/-
Lee (2009) ¹⁰ Korea	Parkinson's disease	Internal	3 RCTs (+ 1 non-RCT)	Poor	No	... evidence is insufficient ...	3	+/-
Ng (2009) ¹¹ China	Any chronic condition	Internal	26 RCTs	Poor	Yes	... qigong can be advocated as an adjunctive exercise therapy for older people with chronic conditions	7	+
Lee (2007) ¹² UK	Hypertension	Internal	12 RCTs	Poor	Yes	...some encouraging evidence...	7	+
Guo (2008) ¹³ China	Hypertension	Internal	9 RCTs	Poor	Yes	... qigong ... is better ... than no treatment ... but not superior to ... active controls	6	+
Kemp (2004) ¹⁴ Sweden	Any chronic conditions in the elderly	Internal	5 RCTs (+4UOSs and 1 survey)	Poor	No	The research ... implies some beneficial health and quality of life effects germane to older adults	1	+

*QAQ = Overview Quality Assessment Questionnaire. The overall score is from 1 to 7

OQAQ \leq 3 = extensive or major flaws; OQAQ \leq 5 = minor or minimal flaws. += overall positive; +/- = unclear; RCT = randomized clinical trial; UOS = uncontrolled observational study

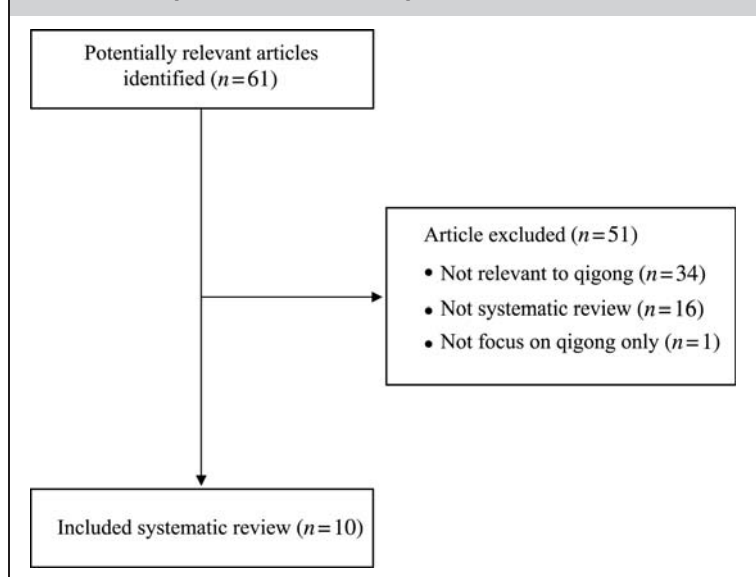
were some contradictions in the direction of the conclusion according to type of qigong. In the case of pain, external qigong showed positive results,⁷ while internal qigong failed to do so.⁶ Two systematic reviews were published for diabetes,^{8,9} and their conclusions were inconclusive. Unanimously positive conclusions emerged only for hypertension.^{12,13}

Thus the best evidence from these systematic reviews essentially suggests that qigong is effective for normalizing elevated blood pressure.

Discussion

Our overview shows that a limited number of systematic reviews of qigong have been published.

Figure 1
Flow chart of publication selection process



All of the systematic reviews have been published recently which indicates that the scientific interest in qigong is growing. The conclusions of the systematic reviews tended to be equivocal or contradictory or based on a poor quality systematic review. The only exceptions are the two systematic reviews on hypertension^{12,13} which both draw positive conclusions, but even these systematic reviews are based on poor quality primary data. Moreover, hypertension is readily, and reliably, treatable and we doubt that the effect size of qigong is larger than that of antihypertensive drugs.

Our literatures searches included English, Chinese and Korean databases, and were comprehensive. Yet we cannot be absolutely certain to have located all relevant articles. We did not hand-search the Chinese literature, which might contain more eligible systematic reviews. However, we employed comprehensive searches of several Chinese databases in an attempt to capture all published systematic reviews.

Our overview was aimed at evaluating systematic reviews rather than individual primary studies. Thus there is a risk of diluting the results of high quality studies with a majority of poor quality trials. Our overview may also have missed important details reported in the primary studies but not in the systematic reviews.

Finally, publication bias can lead to an under-representation of negative results. The phenomenon could also be important for the publication of systematic reviews.

The quality of the included systematic reviews was mixed but most of the quality of primary studies evaluated in these systematic reviews was poor with the most frequent limitations of the primary studies are small sample size and lack of proper control group. Until we do have more high quality clinical trials of qigong, it would be unwise to draw firm conclusions about its effectiveness. Even rigorous systematic reviews can be misleading if they are based on biased primary data.

Thus our overview of systematic reviews suggests that future qigong research should consider all necessary measure to minimize bias. Future clinical trials of qigong should follow the CONSORT guidelines.¹⁵ Similarly, systematic reviews of qigong should abide by the PRISMA guidelines¹⁶ to reduce the risk of bias.

In conclusion, several systematic reviews of qigong for a wide range of conditions have recently been published. Most of these systematic reviews were not conclusive and all were based on poor quality clinical trials. Given these important caveats, it would be unwise to draw firm conclusions about the effectiveness of qigong. Our overview does, however, suggest that this area merits further rigorous research.

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