A qualitative review of the role of qigong in the management of diabetes

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CRD summary
This review evaluated the effectiveness of qigong in the management of diabetes. The authors appropriately pointed to the need for more methodologically rigorous evidence in this area. The primary studies included had several design flaws and there was potential for bias in the review process. In light of these limitations the reliability of the authors' conclusions is unclear.

Authors' objectives
To evaluate evidence of the effectiveness of qigong in the management of diabetes.

Searching
MEDLINE and PubMed were searched. Search terms were reported. All volumes of several journals were handsearched. International websites that were related to alternative medical approaches to diabetes prevention and management were searched. Papers written in English or Chinese published from 1980 onwards were included.

Study selection
The participants included in the studies were male and female hospital inpatients and outpatients or attendees of a rehabilitation clinic or qigong training class. Patients had Type 1 or Type 2 diabetes. Ages ranged from 14 to 75 years old.

Studies evaluating the effect of qigong on diabetes were eligible for inclusion. The included studies were of different styles of static and/or dynamic qigong and varied in duration (from 10 days to more than three years) and frequency.

Studies that reported objective measures of fasting blood glucose and/or haemoglobin A1c (HbA1c) before and after qigong were eligible for inclusion. Studies that did not objectively measure diabetes-related outcomes or that did not report the magnitude of change were excluded. The outcomes reported were fasting blood glucose (FBG), blood glucose two hours after glucose load (BG2h), fasting insulin (FIN), insulin at two hours post load (IN2h), HbA1c, triglycerides (TG), total cholesterol (TCH), body weight (BW) and body mass index (BMI).

Single-session trials and case studies were excluded. The study designs included in the review were not reported.

The authors stated neither how the papers were selected for review nor how many reviewers performed the selection.

Assessment of study quality
The authors did not state that they assessed validity.

Data extraction
The authors converted outcome measures to mmol/L where units of outcome measures were reported in mg/dL. The authors stated neither how the data were extracted for the review nor how many reviewers performed the data extraction.

Methods of synthesis
The studies were synthesised narratively by outcome measure. Tables were available for examination of between-study differences.

Results of the review
Eleven studies were included in the review (n=326). One study had a control group (n=26)

Ten studies reported decreases in fasting blood glucose in participants performing qigong. This ranged from 0.08mmol/L to 5.65mmol/L. The changes were statistically significant in seven studies.
Four studies measured changes in fasting insulin levels, which were inconsistent between studies. The results of three studies were reported; there was a statistically significant decrease of 9.65μu/mL in fasting insulin after 20 days (p<0.05) (one study), an increase of 5.58μu/mL after 21 days (one study) and an increase of 8.5μu/mL 2 hours after glucose load after 2-3 months.

Two studies assessed changes in HbA\(_1c\). One trial reported a statistically significant decrease of 0.8% after four months in the qigong group compared to the control group, which demonstrated a decrease of 0.12%. The other assessed HbA\(_1c\) after only 20 days and was discounted.

Four trials assessed change in total cholesterol. The decrease was statistically significant in two trials (p<0.05 and p<0.001). Of the four studies that reported change in triglyceride, three reported statistically significant improvements (p<0.05).

No trials reported significant changes in body mass index and body weight. None of the five studies that assessed change in diet during the study period reported any change. The one study that assessed change in activity reported no change during the intervention period. No statistically significant changes in medication were reported in the seven studies that assessed this outcome.

**Authors' conclusions**

Although qigong had beneficial effects on some of the metabolic risk factors for type 2 diabetes, methodological limitations made it difficult to draw firm conclusions about the benefits reported.

**CRD commentary**

The research question was well defined and the inclusion criteria were clear with regard to intervention, outcomes and study design; however, the authors stated that they searched for evidence for type 2 diabetes, but included both type 1 and type 2. The authors searched two appropriate databases and performed some handsearches, but they did not report any attempt to identify unpublished studies, which may have introduced publication bias. The searches were also restricted to papers in English and Chinese, increasing the possibility that some relevant studies were not included in the review. The authors reported neither how papers were selected for inclusion nor how data was extracted, so the robustness of the review process could not be assessed. The authors did not report that they assessed validity, so the quality of the primary studies was unknown (although the authors indicated that the primary studies included had methodological flaws such as lack of control group). There were several aspects of this review that were poorly reported and there was potential for bias in the review process. In light of these limitations the reliability of the authors’ conclusions is unclear.

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

**Practice**: The authors did not state any implications for practice.

**Research**: More rigorous studies were required to evaluate the effectiveness of qigong in the management and prevention of diabetes. Future studies should include control groups, participants should be representative of the community and medication effects should be assessed and controlled for. Also, the quality reporting of trials could be improved.

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