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Title

Are tai chi and qigong effective in the treatment of traumatic brain injury? A systematic review

Priority 1 (Research Category)

Systematic review, meta-analysis, or scoping review

Presenters

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Abstract

Context: Traumatic brain injury is a growing public health concern. Recent TBI management trends, including sub-threshold aerobic activity, multi-modal treatment strategies, and the potential role of inflammation in those with persistent symptoms, all suggest that the physical and cognitive exercise of tai chi/qigong could be beneficial.

Objective: To identify and assess the evidence for the efficacy of tai chi and qigong for the treatment of traumatic brain injury.

Study Design and Analysis: Systematic review. Quantitative analysis.

Setting or Dataset: The following databases were searched: MEDLINE, CINAHL Cochrane Library, Embase, China National Knowledge Infrastructure Database, Wanfang Database, Chinese Scientific Journal Database, and Chinese Biomedical Literature Database.

Population Studied: All clinical trials on TBI that studied tai chi/qigong alone or as a component of an intervention and had a comparison group were included. All participants were included regardless of age, sex, nationality, or treatment setting. All types and lengths of tai chi/ qigong treatment were included.

Intervention/ Instrument: Cochrane-based risk of bias assessments were conducted. Quality of evidence was assessed using the grading of recommendation, assessment, development, and evaluation (GRADE) system.

Outcome Measures: Primary outcome measures were return to school, sports, work, or usual activities. Secondary outcomes included any outcome measure.

Results: Three randomized controlled trials (RCTs) and two non-RCTs were assessed. Four trials used tai chi as the intervention and one trial used qigong. Primary and secondary outcome measures significantly varied. Certainty of evidence was higher for RCTs than non-RCTs. All four tai chi trials showed beneficial

outcomes for the tai chi group. For RoB 2.0 scores, one tai chi RCT had a low risk of bias and a high level of certainty; one had some concerns. For ROBINS-I scores, one non-RCT had moderate risk of bias and the other a serious risk of bias. The one qigong trial had a low risk of bias and a moderate level of certainty.

Conclusion: Given the high level of certainty from one RCT and the beneficial effects found in all four tai chi trials, there is sufficient signal to conduct a multi-centre trial on tai chi for TBI to increase statistical power and test tai chi against current TBI management. Based on a single trial, the signal for qigong is currently insufficient; another single centre RCT is indicated.