

INPLASY PROTOCOL

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None declared.

Effects of Tai chi on physical function and mental cognition in patients with traumatic brain injury: A systematic review and meta-analysis

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Review question / Objective: This meta-analysis aimed to assess the impact of Tai chi on TBI patients.

Condition being studied: Traumatic brain injury (TBI) was the main cause of death and morbidity in the world. The prognosis of TBI patients was poor, and the risk of intracranial hypertension, cerebral hernia and death was high.

Eligibility criteria: 1) Not written in English; 2) Insufficient data or irrelevant results; 3) There was no full text available; 4) Commentary articles and conference summaries were excluded. The intervention group included those who used TC for any form of physical activity intervention.

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 03 November 2022 and was last updated on 03 November 2022 (registration number INPLASY2022110012).

INTRODUCTION

Review question / Objective: This meta-analysis aimed to assess the impact of Tai chi on TBI patients.

Rationale: Traumatic brain injury had adverse effects on patients' function and quality of life, leading to increased risk

events or mortality. The practice of Tai Chi (TC) was related to the improvement of many aspects related to health. But the evidence of Tai Chi on the physical and mental health outcomes of TBI individuals were limited.

Condition being studied: Traumatic brain injury (TBI) was the main cause of death

and morbidity in the world. The prognosis of TBI patients was poor, and the risk of intracranial hypertension, cerebral hernia and death was high.

METHODS

Participant or population: The subject was 18 years old or older and has a history of brain injury.

Intervention: Tai chi was used as exercise intervention for patients with brain injury.

Comparator: The control group did not use TC. There were no limits to the time of intervention and follow-up. Tai chi.

Study designs to be included: This evaluation was included in a randomized controlled trial, including a parallel, crossover design or waiting list.

Eligibility criteria: 1) Not written in English; 2) Insufficient data or irrelevant results; 3) There was no full text available; 4) Commentary articles and conference summaries were excluded. The intervention group included those who used TC for any form of physical activity intervention.

Information sources: PubMed, Embase, Cochrane Library.

Main outcome(s): The primary outcome was measured by the collection of quality of life, depression, personality, and sleep scales.

Quality assessment / Risk of bias analysis: We will assess the risk of bias in the included studies according to the recommendations in the Methods section of the Cochrane Manual 5.1.0.

Strategy of data synthesis: Stata 16.0 were used for statistical analysis. The outcomes will be presented as the relative risk, mean difference, or standardized mean difference and its 95% CI. The statistical significance will be assessed for P<0.05. A fixed effects model will be used if there is no statistical heterogeneity across the studies;

otherwise, the random effects model will be considered.

Subgroup analysis: If there is enough research, we will conduct a group analysis.

Sensitivity analysis: If there are confounding factors to adjust the study, we will conduct a sensitivity analysis.

Country(ies) involved: China.

Keywords: Tai chi; Traumatic brain injury; Meta-analysis; somatic function.

Dissemination plans: These findings will be published in scientific conferences or peer-reviewed scientific journals.

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