INPLASY PROTOCOL

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None declared.

Effects of traditional Chinese exercises on cognitive function in stroke patients：systematic review and meta analysis

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Review question / Objective: **To systematically evaluate the effect of traditional Chinese exercises on the intervention of cognitive function in stroke patients by Meta analysis statistical method.**

Eligibility criteria: **Inclusion criteria:①Population: Stroke patients with cognitive decline; ②Intervention: TCE or combined with other treatments; ③Control group: conventional rehabilitation treatment; ④Outcome: overall cognitive function, function of each cognitive domain, and brain evoked potential examination parameter. ⑤Study design: randomized controlled trial (RCT). Exclusion criteria: ①duplicate literature; ②reviews, systematic evaluations, conferences and basic studies; ③literatures with inconsistent study content.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 30 January 2023 and was last updated on 30 January 2023 (registration number INPLASY202310087).

INTRODUCTION

Review question / Objective: **To systematically evaluate the effect of traditional Chinese exercises on the intervention of cognitive function in stroke patients by Meta analysis statistical method.**

Condition being studied: **Stroke is the leading cause of disability and death in our population, and it mostly manifests clinically as severe motor and cognitive**

impairment, which not only has a serious impact on the patient's family but also adds to the burden on society. Studies have shown that more than 50% of stroke patients present with some degree of cognitive impairment. The risk of cognitive impairment is at least five times higher in stroke patients compared to the healthy population of the same age. Also, about 83% of recovering stroke patients still have ≥1 cognitive domain impairment, which seriously affects the recovery process of stroke patients. Therefore, cognitive function has become one of the important indicators to assess the outcome of stroke patients, and it is imperative to implement and promote safe and effective intervention methods. Traditional Chinese exercise (TCE), including BaDuanJin, TaiChi, and YiJinJing, plays an important role in the rehabilitation of stroke patients because of its gentle and soothing movements that relax the participant and make it suitable for long-term practice. TCE is not only convenient and easy to learn, but also improves the balance function, exercise tolerance and quality of life of stroke patients. Recent studies have suggested that TCE may be an effective intervention for slowing cognitive decline in stroke patients. However, no systematic review of the effects of TCE on cognitive function in stroke patients has been reported. Therefore, this study will systematically evaluate the intervention effects of TCE for cognitive function in stroke patients to provide an evidence-based basis for the implementation of TCE intervention.

METHODS

Search strategy: For example PubMed: #1="Stroke"[Mesh] OR (post-stroke OR cerebral ischemia OR cerebral infarction OR cerebral hemorrhage OR Apoplexy OR cerebrovascular accident OR cerebrovascular disease) [Title/Abstract];
#2=(cognition OR cognitive function OR processing OR language OR visuospatial OR attention OR memory OR executive function OR intelligence OR neuropsychological) [Title/Abstract];
#3=(Traditional Chinese exercise OR Qigong OR Tai Chi OR Yijinjing OR Baduanjin OR Wuqinxi OR Liuzijue)[Title/Abstract];
#4=(randomized controlled trial OR randomization OR randomized) [Title/Abstract];
#5=#1 AND #2 AND #3 AND #4.

Participant or population: Stroke patients with cognitive decline.

Intervention: The intervention measures were traditional Chinese exercises (BaDuanJin, TaiChi, LiuZiJue and YiJinJing) or combined with other treatments.

Comparator: Conventional rehabilitation treatment.

Study designs to be included: Randomized controlled trial.

Eligibility criteria: Inclusion criteria:①Population: Stroke patients with cognitive decline; ②Intervention: TCE or combined with other treatments; ③Control group: conventional rehabilitation treatment; ④Outcome: overall cognitive function, function of each cognitive domain, and brain evoked potential examination parameter. ⑤Study design: randomized controlled trial (RCT). Exclusion criteria: ①duplicate literature; ②reviews, systematic evaluations, conferences and basic studies; ③literatures with inconsistent study content.

Information sources: The following databases will be searched comprehensively from the construction to January 1, 2023.It includes four English databases, that is, PubMed, the Cochrane Library, EMBASE , Web of science. At the same time, four Chinese databases should be involved, which is China National Knowledge Infrastructure (CNKI), WANGFANG database, VIP database, Chinese BioMedical Literature Database (CBM).

Main outcome(s): The primary outcome measure was the total cognitive function. Three cognitive assessment scales were included, namely the Montreal Cognitive Assessment Scale(MoCA), the Mini-Mental State Examination Scale(MMSE), and the Loewenstein Occupational Therapy Cognitive Assessment (LOTCA). The secondary outcome measure was the Executive function, memory function, Brain evoked potential test parameter.

Data management: Chao Xue and Mingqing Hao were responsible for literature screening and data extraction, and after drawing the table to check each other, if the information in the table was inconsistent, they asked Lihua Chen to participate in the discussion and vote together, and the non-conforming literature was deleted. The table information drawn after data extraction mainly included: literature author, publication time of literature, location, sample size, intervention method, intervention frequency and period, observation index, and adverse events.

Quality assessment / Risk of bias analysis: Chao Xue and Mingqing Hao independently conducted the evaluation of the included literature according to the Cochrane Risk of Bias Assessment Tool, including: ①Random sequence generation; ②Allocation concealment; ③Blinding of participants and personnel; ④ Blinding of outcome assessment; ⑤Incomplete outcome data; ⑥Selective reporting; ⑦Other bias. If the results were inconsistent, Lihua Chen was asked to participate in the evaluation vote together.

Strategy of data synthesis: Meta-analysis was performed using RevMan 5.3 Mean difference (MD) was used as the combined effect size, and 95% confidence interval (CI) was stated. Heterogeneity was analyzed by $\chi 2$ test and I2 test, and if $P \geq 0.10$ and $I2 \leq 50\%$, the fixed effect model (FEM) was used; if $P < 0.10$ and $I2 > 50\%$, the source of heterogeneity was searched for, and if the heterogeneity was still significant after sensitivity analysis, the random effects model (REM) was used. The Meta-analysis process of this study was reviewed by statistical experts from Guizhou University of Traditional Chinese Medicine.

Subgroup analysis: If the necessary data are available, we will conduct a subgroup analysis.

Sensitivity analysis: When there was significant heterogeneity among multiple studies ($I2 > 50\%$, $P < 0.10$), sensitivity analysis must be performed to find the source of heterogeneity by deleting each study one by one to ensure that the heterogeneity among studies was within a reasonable range ($I2 \leq 50\%$, $P \geq 0.10$) and the Meta-analysis results were stable and reliable.

Language restriction: Chinese and English literature.

Country(ies) involved: China.

Keywords: stroke; cognitive function; traditional Chinese exercise; randomized controlled trial; Meta-analysis.

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