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Effectiveness of frequency and duration of Traditional Chinese Gong Fu practice on symptom relief in patients with knee osteoarthritis : a systematic evaluation and meta-analysis

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ADMINISTRATIVE INFORMATION

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Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 22 December 2024 and was last updated on 22 December 2024.

INTRODUCTION

Review question / Objective This study aimed to evaluate the impact of Traditional Chinese Gong Fu exercise frequency and duration on pain relief in patients with knee osteoarthritis (KOA).A systematic review was conducted, including randomized controlled trials (RCTs) that examined the effect of Gong Fu exercises on KOA pain. Relevant studies were identified through searches of PubMed, the Cochrane Central Register of Controlled Trials, the Physiotherapy Evidence Database, and the Cumulative Index to Nursing and Allied Health Literature. The exercise regimens in the selected trials were categorized based on type, frequency, and duration, with subsequent subgroup analyses performed.

Condition being studied Osteoarthritis (OA) is a prevalent musculoskeletal disorder characterized by the progressive degeneration of joint cartilage, particularly affecting the hip and knee joints. It is recognized as a leading cause of disability, especially among the elderly population, with knee osteoarthritis being notably prominent . The condition leads to a reduction in joint space, increased friction between bones, and ultimately, a loss of joint mobility . Patients with osteoarthritis commonly report pain and limited mobility, which significantly diminishes their quality of life. Consequently, effective pain relief is a primary focus in clinical management .This systematic review and meta-analysis of randomized controlled trials (RCTs) aims to investigate the effects of exercise frequency and duration on knee pain relief.

METHODS

Participant or population Patients with knee osteoarthritis (KOA).

Intervention The frequency and duration differences of the Traditional Chinese Gong Fu exercise, particularly Tai Chi and Baduanjin ,on

pain relief in patients with knee osteoarthritis (KOA)..

Comparator Other exercises and different frequency and duration on pain relief in patients with knee osteoarthritis (KOA).

Study designs to be included RCT.

Eligibility criteria Patients with knee osteoarthritis associated with traditional Gong Fu.

Information sources PubMed, EMBASE, Cochrane Library, CNKI, VIP, and WanFang Medical Online databases.

Main outcome(s) Three primary outcome measures were assessed: joint pain, joint stiffness, and physical activity function,and variations in exercise frequency and duration significantly influence the effectiveness of Gong Fu exercises, with frequency and duration differences affecting pain relief outcomes in Tai Chi.

Quality assessment / Risk of bias analysis The Cochrane Collaboration tool extracted and assessed their risk of bias.

Strategy of data synthesis Meta-analysis was performed using RevMan 5.2 and Rx64 4.0.2 software.The results of the combined trial data revealed significant statistical heterogeneity between trials in pain, stiffness, and physical activity function scales, as indicated by I^2values of 73%, 72%, and 75%. To explore this variability, we performed subgroup analysis by categorizing the exercise interventions based on the frequency and duration of the exercises.

Subgroup analysis A systematic review was conducted, including randomized controlled trials (RCTs) that examined the effect of Gong Fu exercises on KOA pain. Relevant studies were identified through searches of PubMed, the Cochrane Central Register of Controlled Trials, the Physiotherapy Evidence Database, and the Cumulative Index to Nursing and Allied Health Literature. The exercise regimens in the selected trials were categorized based on type, frequency, and duration, with subsequent subgroup analysesperformed.

Sensitivity analysis Given the high level of heterogeneity and risk of bias, a sensitivity analysis was performed to determine the robustness of the composite outcome.It was performed by deleting each study.

Country(ies) involved China.

Keywords Knee Osteoarthritis; Traditional Chinese Exercises; Pain Relief; Meta-Analysis.

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