INPLASY PROTOCOL

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Conflicts of interest:
None declared.

Effectiveness and safety of Tui Na combined with physiotherapy in the treatment of obese knee osteoarthritis: a systematic review and meta-analysis

Wang, XB[1]; Xu, J[2]; Zhang, HT[3]; Gao, LQ[4]; Wang, HY[5].

Review question / Objective: **Obesity is an important predisposing factor for knee osteoarthritis. Obesity-related knee osteoarthritis affects people's daily activities, causing dysfunctions such as squatting and stair climbing and subsequently affecting the quality of life. Chinese massage therapy (Tui Na) and physical therapy are simple, effective, and safe interventions preferred over medications and surgery. This study aimed to evaluate the effectiveness and safety of Tui Na combined with physiotherapy in treating obesity-related knee osteoarthritis.**
Condition being studied: **Obesity is an important predisposing factor for knee osteoarthritis. Obesity-related knee osteoarthritis affects people's daily activities, causing dysfunctions such as squatting and stair climbing and subsequently affecting the quality of life. Chinese massage therapy (Tui Na) and physical therapy are simple, effective, and safe interventions preferred over medications and surgery.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 17 December 2022 and was last updated on 17 December 2022 (registration number INPLASY2022120069).

INTRODUCTION

Review question / Objective: **Obesity is an important predisposing factor for knee osteoarthritis. Obesity-related knee osteoarthritis affects people's daily activities, causing dysfunctions such as squatting and stair climbing and subsequently affecting the quality of life. Chinese massage therapy (Tui Na) and physical therapy are simple, effective, and safe interventions preferred over medications and surgery. This study aimed**

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METHODS

Participant or population: For the selection of patients with osteoarthritis of the knee, the KOA diagnostic criteria established by the American College of Rheumatology (ACR) or the Chinese Orthopaedic Association (COA) were used as a reference. The groupings were based on the body mass index (BMI) classification used by the World Health Organization: normal weight (BMI <25 kg/m2), overweight (BMI ≥25 and <30 kg/m2), and obese (BMI ≥30 kg/m 2).

Intervention: The intervention in the trial group will include massage combined with physical therapy, mainly general massage, finger pressure, Chinese massage, relaxation, manual lymphatic drainage, etc. There was no limit to the method, duration, and frequency of massage. Physical therapy interventions include hot and cold compress, neuromuscular electrical stimulation, transcutaneous electrical nerve stimulation, low-level laser therapy (LLLT), etc.

Comparator: The intervention in the control group was pharmacotherapy, placebo, etc.

Study designs to be included: We only included randomized controlled clinical trials of Tui Na combined with physical therapy for treating obesity KOA with no restriction on publication status, and language restricted to English and Chinese.

Eligibility criteria: Our research will include: patients of any age group are identified as having obese knee osteoarthritis by any accepted diagnostic criteria.

Information sources: Databases such as PubMed, EMBASE, Cochrane, Web of Science, Central Register of Controlled Trials, China Knowledge Network (CNKI), China Biomedical Literature Database (CBM), Wanfang Data, Veep (VIP Information) will be searched for relevant randomized controlled trials to obtain kinds of literature on the treatment of obesity-related knee osteoarthritis.From the database's inception until October 1, 2022, randomized controlled clinical trials related to Tui Na combined with physical therapy intervention for obesity-related knee osteoarthritis will be included.

Main outcome(s): Primary outcome Western Ontario and McMaster Universities Osteoarthritis Index Scale (WOMAC).

Quality assessment / Risk of bias analysis: Two investigators will independently assess the risk of bias using the Cochrane Collaboration Risk of Bias Assessment Tool. Risk will be assessed for the following areas of bias: random sequence generation, allocation concealment, blinded subjects and therapists, blinded assessors, incomplete outcome data, selective outcome reporting, and other biases. Results will be assessed as low, high, and uncertain risks. Disagreements were resolved by discussion with a third investigator.

Strategy of data synthesis: Review Manager 5.3, provided by the Cochrane Collaboration Network, will be used for the meta-analysis. Dichotomous results will be analyzed using relative risks, and continuous results will be analyzed using mean differences with 95% confidence intervals or standardized mean differences. Based on heterogeneity, we choose different effect models. When statistical heterogeneity is low (p >0.1, or I2 < 50), we use a fixed effects model to combine the data; otherwise, a random effects model is used. However, we would perform a

descriptive analysis if this could not be performed.

Subgroup analysis: To assess the heterogeneity of this study, we performed subgroup analyses based on the following factors: gender, age, type of KOA, type of Tui Na or physical therapy, site of pain, control group, duration of treatment, and duration of therapy.

Sensitivity analysis: Sensitivity analyses were performed to assess the robustness and reliability of the pooled results. Studies with a high risk of bias were excluded. Meta-analyses were repeated when there was significant statistical heterogeneity to assess quality and robustness based on sample size and insufficient data.

Country(ies) involved: China.

Keywords: Tui Na; Physiotherapy; Obesity; Osteoarthritis of the knee; Systematic evaluation.

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