INPLASY PROTOCOL

To cite: Chang. Lumbopelvic Manipulation for Pain Relief in Patellofemoral Pain Syndrome: a Study Protocol for Systematic Review and Meta-analysis. Inplasy protocol 202320060. doi: 10.37766/inplasy2023.2.0060

Received: 14 February 2023

Published: 14 February 2023

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Support: **TSUM.**

Review Stage at time of this submission: **Preliminary searches.**

Conflicts of interest:
None declared.

Lumbopelvic Manipulation for Pain Relief in Patellofemoral Pain Syndrome: a Study Protocol for Systematic Review and Meta-analysis

Chang, KV[1].

Review question / Objective: **To investigate the effect of lumbopelvic manipulation (LPM) on pain improvement in the population with patellofemoral pain syndrome (PFPS).**
Eligibility criteria: **(1) Randomized controlled trials (RCTs) investigating change of pain intensity before and after LPM; (2) studies enrolling adult participants who were diagnosed with PFPS and (3) at least one reference group using treatments other than lumbopelvic manipulation.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 14 February 2023 and was last updated on 14 February 2023 (registration number INPLASY202320060).

INTRODUCTION

Review question / Objective: **To investigate the effect of lumbopelvic manipulation (LPM) on pain improvement in the population with patellofemoral pain syndrome (PFPS).**

Rationale: **There have been several studies investigating LPM on pain reduction in the PFPS population. However, the clinical effectiveness is still inconclusive.**

Condition being studied: **The effect of LPM on the PFPS population.**

METHODS

Search strategy: **Two authors will make independent electronic search in PubMed, Cochrane CENTRAL, and ClinicalTrials.gov**

with the combination of the following keywords: ("lumbopelvic manipulation" OR "lumbopelvic thrust manipulation" OR "lumbosacral manipulation" OR "lumbar manipulation" OR "pelvic manipulation") AND ("patellofemoral pain syndrome" OR "anterior knee pain") through the earliest record to February 2023.

Participant or population: Patients with patellofemoral pain syndrome.

Intervention: LPM.

Comparator: Controlled management like knee extensor strengthening exercise.

Study designs to be included: Randomized controlled trials.

Eligibility criteria: (1) Randomized controlled trials (RCTs) investigating change of pain intensity before and after LPM; (2) studies enrolling adult participants who were diagnosed with PFPS and (3) at least one reference group using treatments other than lumbopelvic manipulation.

Information sources: Two authors will make independent electronic searches in PubMed, Cochrane CENTRAL, and ClinicalTrials.gov.

Main outcome(s): The primary outcomes will be the changes in pain scores following LPM or controlled management. The validity and appropriateness of the pain scale used in each trial will also be examined by checking the pertinent references.

Data management: Two independent authors will extract data from the recruited studies, encompassing demographic data, study design, details of LPM and control regimens, and values of the primary outcomes.

Quality assessment / Risk of bias analysis: To investigate the methodological quality of the included studies, the Cochrane risk of bias tool for randomized trials (version 2, RoB 2, London, United Kingdom) will be used.

Strategy of data synthesis: The effect sizes are pooled by using a random-effects model. A two-tailed p value of less than 0.05 is considered statistically significant. We will use Hedges' g to quantify the study outcomes .I square and Cochran's Q statistics are also employed to evaluate the degree of heterogeneity across studies.

Subgroup analysis: Subgroup analyses based on the LPM regimens and reference arms are performed.

Sensitivity analysis: To confirm the robustness of the meta-analysis, the sensitivity analyses are performed using one-study removal method.

Language restriction: No limitation of languages.

Country(ies) involved: Taiwan.

Keywords: Manipulative therapy, patellofemoral pain syndrome, pelvic region, meta-analysis, systematic review.

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