ABSTRACT

Background: Patellofemoral pain syndrome is one of the most common causes of knee pain, especially in the female population. Conflicting evidence exists on whether a multi-joint strengthening program produces a greater outcome when compared to a single joint approach.

Purpose: The aim of this systematic review and meta-analysis was to investigate the effectiveness of a multi-joint strengthening program compared to a traditional single joint strengthening program in reducing pain and improving function in females diagnosed with patellofemoral pain syndrome.

Study Design: Systematic Review and Meta-Analysis.

Methods: A computer-based search (population: women with patellofemoral pain syndrome, intervention: multi-joint strengthening exercises, comparator: single joint strengthening exercises, outcome: pain and function) was performed. Databases including PubMed, CINAHL, SPORTDiscus, Cochrane, PEDro, and Scopus were searched up to May 23, 2017 for randomized clinical trials published since 2004. A hand search of relevant articles and exploration of Grey Literature (including clinicaltrials.gov, Grey Literature Report, and Open Grey) was also completed. Data was extracted for the following information: exercises prescribed, outcome measures, and overall results from the study.

Results: Five studies, each of high quality based on the PEDro scale, met the inclusion criteria for this systematic review and meta-analysis. Statistically different outcomes were found that favored the multi-joint intervention group for short-term and long-term self-reported pain and functional pain, short-term functional performance, and long-term self-reported function.

Conclusion: The results of this review show that statistically significant data are available that favor implementing a multi-joint exercise program in comparison to a single joint program for the reduction of pain in females with patellofemoral pain syndrome. Limited statistical evidence, however, is available to support a multi-joint program over a single joint program in the improvement of short-term functional performance and long-term self-reported function in females with patellofemoral pain syndrome.

Key words: Hip, knee, multi-joint, patellofemoral pain syndrome, single-joint, strengthening program.

Level of Evidence: 1a

CORRESPONDING AUTHOR
Leigh Murray, PT, PhD
Professor
Walsh University
2020 East Maple St.
North Canton, OH 44720
E-mail: Lmurray@walsh.edu