INPLASY

Effects of short foot training on patients with flatfeet: a systematic review and Meta-analysis of randomized controlled studies

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Cheng, JL[1]; Han, DM[2]; Qu, JY[3]; Liu, ZC[4]; Huang, Y[5].

Corresponding author:
Zicai Liu

liuzicai1997@outlook.com

Author Affiliation:
Gannan Medical University.

ADMINISTRATIVE INFORMATION

Support - Gannan Medical University.

Review Stage at time of this submission - Piloting of the study selection process.

Conflicts of interest - None declared.

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Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 24 December 2023 and was last updated on 24 December 2023.

INTRODUCTION

Review question / Objective This Meta-analysis will quantitatively evaluate the effect of short foot training on patients with flatfoot, and provide evidence to inform the clinical approach to short foot training in patients with flat feet.

Condition being studied Flatfoot is a common foot condition with a prevalence of 11.2-29.0% in adults.The most widely used conservative treatments for flatfoot are orthotic therapy and exercise therapy.Studies have shown that SFE can reduce FPI in patients with flat feet , increase ankle stability, and effectively strengthen the MLA of the foot .But most are small sample studies, and it is unclear whether changes in intervention factors affect outcomes.

METHODS

Participant or population Patients with flat feet.

Intervention SFE, or SFE combines other treatments.

Comparator Other forms of intervention or without intervention.

Study designs to be included The type of study must be a randomized controlled clinical trial.

Eligibility criteria Inclusion criteria (PICOS);Exclusion criteria:(1)People(P): Patients with flat feet, (2)Intervention(I): SFE, or SFE combines other treatments(3)Control(C): Other forms of intervention or without intervention. (4)Outcome(O): The primary outcome was the Navicular drop (ND), and the secondary outcomes

were the foot posture index (FPI).(5)Study(S): The type of study must be a randomized controlled clinical trial. (1) People with other foot problems (such as ankle instability) OR systemic conditions i.e. neuropathy, diabetes, rheumatological conditions. (2) Incomplete data or article content; (3) Significant risk of bias (Methodological flaws in the design, behavior, or analysis); (4) Systematic overviews, secondary analyses, and conference abstracts; (5) Repeat literature.

Information sources We will search eight databases , including CNKI, WANFANG, VIP, and CBM in Chinese and PubMed, Cochrane, Web of Science, and Embase in English. The time frame for searching the literature was in March 2023 for each database build.English database search terms and search formulas: (flat foot OR talipes valgus OR talipes calcaneovalgus) AND (short foot exercises OR physical therapy OR neurophysiotherapy).

Main outcome(s) The primary outcome indicator was navicular drop.As the data were continuous variables, so we used mean differences (MD) and 95% confidence intervals (CI) for the analysis.

Additional outcome(s) The secondary outcome indicator was foot posture index.As the data were continuous variables, so we used mean differences (MD) and 95% confidence intervals (CI) for the analysis.

Quality assessment / Risk of bias analysis The risk of bias for each study was assessed by two investigators using the Cochrane Handbook for Systematic Reviews of Interventions, with two other investigators consulted to resolve any disputes, in seven areas including random allocation protocol, allocation protocol concealment, investigator and subject blinding, outcome assessment blinding, completeness of outcome data, selective reporting bias and other sources of bias. Each potential bias was categorized as high-risk, unclear, and low-risk. All results were recorded through Revman 5.4.

Strategy of data synthesis Meta-analysis was performed via Review Manager (RevMan) version 5.4 software. As the data were continuous variables, so we used mean differences (MD) and 95% confidence intervals (CI) for the analysis. If heterogeneity was found to exceed 50%, a random effects model was used in the meta-analysis. Corresponding subgroup or sensitivity analyses were performed to explore sources of heterogeneity. In addition, funnel plots were used to assess the publication bias of the studies. In this systematic review and meta-analysis, most of the RCTs we included reported data on parameters of the left and right foot, and considering the avoidance of population bias (left or right flatfoot), we included data on both the left and right foot for the meta-analysis.

Subgroup analysis If heterogeneity was found to exceed 50%, a random effects model was used in the meta-analysis. Corresponding subgroup analyses was performed to explore sources of heterogeneity.

Sensitivity analysis If heterogeneity was found to exceed 50%, a random effects model was used in the meta-analysis. Corresponding subgroup analyses was performed to explore sources of heterogeneity.

Country(ies) involved China.

Keywords Pes Planus, Flexible Flatfoot, Flatfeet, Short foot exercises (SFE), Meta-analysis.

Contributions of each author

Author 1 - Jinling Cheng - Author 2 Contributed to the conception and design of the study, searched and screened the articles, and did the data analysis.Author1 helped check the grammar problems and checked the data problems.
Email: jl1472582022@163.com
Author 2 - Dongmiao Han - Author 2 Contributed to the conception and design of the study, searched and screened the articles, and did the data analysis,and made the final revision of the article and approved the final version.Author 2 who have made the same contribution should be regarded as co-first authors.
Email: 1041175261@qq.com
Author 3 - Jiayang Qu - Author 3 are Responsible for the quality assessment content.
Email: jayoungqu@163.com
Author 4 - Zicai Liu - Author 4 after consultation, some controversial issues were resolved.Author 4 helped check the grammar problems and checked the data problems.Author 4 made the final revision of the article and approved the final version.
Email: liuzicai1997@outlook.com
Author 5 - Ying Huang - Author 5 YH provided the funds.Author 5 after consultation, some controversial issues were resolved.
Email: 527267288@qq.com