**Article Full Title**

Effectiveness of Manual Therapy, Customised Foot Orthoses and Combined Therapy in the Management of Plantar Fasciitis-- a RCT

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**Paper Abstract**

Background: Plantar fasciitis (PF) is one of the most common causes of plantar heel pain. Objective: To evaluate the effectiveness of three different treatment approaches in the management of PF. Methods: Sixty-three patients (44 female, 19 men; 48.4 ± 9.8 years) were randomly assigned into a manual therapy (MT), customised foot orthosis (FO) and a combined therapy (combined) group. The primary outcomes of pain and function were evaluated using the American Orthopaedic Foot and Ankle Society-Ankle Hindfoot Scale (AOFAS-AHS) and the patient reported outcome measure (PROM) Foot Pain and Function Scale (FPFS). Data were evaluated at baseline (T0) and at follow-up sessions after 1 month, 2 months and 3 months (T1–T3). Results: All three treatments showed statistically significant (*p* < 0.01) improvements in both scales from T0 to T1. However, the MT group showed greater improvements than both other groups (*p* < 0.01). Conclusion: Manual therapy, customised foot orthoses and combined treatments of PF all reduced pain and function, with the greatest benefits shown by isolated manual therapy.

**NIH Risk of Bias Tool**

Quality Assessment of Controlled Intervention Studies

**Was the study described as randomized, a randomized trial, a randomized clinical trial, or an
RCT?**
Yes

**Was the method of randomization adequate (i.e., use of randomly generated assignment)?**

Cannot Determine, Not Reported, or Not Applicable

**Was the treatment allocation concealed (so that assignments could not be predicted)?**
Cannot Determine, Not Reported, or Not Applicable

**Were study participants and providers blinded to treatment group assignment?**
Yes

**Were the people assessing the outcomes blinded to the participants' group assignments?**
Yes

**Were the groups similar at baseline on important characteristics that could affect outcomes
(e.g., demographics, risk factors, co-morbid conditions)?**
Yes

**Was the overall drop-out rate from the study at endpoint 20% or lower of the number
allocated to treatment?**
Yes

**Was the differential drop-out rate (between treatment groups) at endpoint 15 percentage
points or lower?**
Yes

**Was there high adherence to the intervention protocols for each treatment group?**
Yes

**Were other interventions avoided or similar in the groups (e.g., similar background
treatments)?**
Cannot Determine, Not Reported, or Not Applicable

**Were outcomes assessed using valid and reliable measures, implemented consistently across
all study participants?**
Yes

**Did the authors report that the sample size was sufficiently large to be able to detect a
difference in the main outcome between groups with at least 80% power?**
Cannot Determine, Not Reported, or Not Applicable

**Were outcomes reported or subgroups analyzed prespecified (i.e., identified before analyses
were conducted)?**
Yes

**Were all randomized participants analyzed in the group to which they were originally
assigned, i.e., did they use an intention-to-treat analysis?**
Yes

**Were the included studies listed along with important characteristics and results of each
study?**
Yes

**Key Finding #1**

All three treatments, manual therapy, foot orthoses, and a combination of the two, displayed statistically and clinically significant improvements over three months with manual therapy in isolation yielding the strongest improvements.

**Key Finding #2**

Baseline outcome scores (prior to treatment) for the group receiving foot orthoses were higher than those in the group receiving manual therapy and a combination of the two, complicating the ability to compare progress data.

**Key Finding #3**

The risk and prevalence of back pain with plantar fasciitis is significant, therefore back pain was evaluated and treated, as well. Manual therapy performed was that of the foot joints and intervertebral segments of the spine.

**Paper Summary**

This study aims to compare manual therapy, foot orthoses, and a combination for the two treatments for plantar fasciitis pain and compounded low back pain. This study has weaknesses in a few areas. The inclusion criteria for participants include plantar fasciitis pain, but not low back pain despite the manual therapy treatment of both spine and foot. Low back pain was a variable observed, treated, yet not objectively measured for improvement. Additionally, the combination group (manual therapy and foot orthoses) may have experienced less improvement than isolated manual therapy because some participants complained of foot pain after being mobilized potentially due to a no longer suitable customized foot orthoses. Lastly, selection bias may have played a role in the stratification of groups because low back pain complaints were significantly more reported in the manual therapy group. This may have contributed to more success in this group. In contrast, baseline outcomes scores were higher in foot orthoses group than the other two groups leading to potentially less success in this group. The strengths of this study include reproducible standardized manual therapy, therapist-blinded treatment, and data collection every month for 3 months. This data should be cautiously interpreted and further research must be done to understand the best treatment(s) for plantar fasciitis.

**Please provide your clinical interpretation of this paper. Include how this study may impact clinical practice and how the results can be implemented.**

This study can impact clinical practice in how there can be more utilization of foot joint mobilization for the treatment of plantar fasciitis. Because customized foot orthoses also displayed clinical and statistical significance, both treatments can be considered. The methods of the study demonstrated some biases, so caution should be utilized when interpreting and implementing these treatment approaches.