Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 2026

COMPARISON OF THRUST MANIPULATION AND NON-THRUST MOBILIZATION TECHNIQUE ON PAIN AND FUNCTION IN ATHLETES WITH CHRONIC ANKLE SPRAIN.

Protocol summary

Study aim

To find the comparison of thrust manipulation and non-thrust mobilization technique on pain and function in athletes with chronic ankle sprain.

Design

Randomized Controlled trial: Total 16 participant will be recruited in the study. The subjects will be randomly assigned into two groups A & B with each containing 8 subjects according to their selection by lottery method.

Settings and conduct

The study will be conducted in Pakistan sports board complex and Model town football club.

Participants/Inclusion and exclusion criteria

Inclusion criteria: 1. Athletes with Ankle sprain > 6 weeks; grade 1 or grade 2 ankle sprain, as defined by the West Point Ankle Sprain Grading System Subjects 2. Between age 16-40 years old Athletes both male and female. 3. Positive Ankle Stress Test. 4. Have a numeric pain rating scale (NPRS) score greater than 3/10 in the last week. Exclusion criteria: Patients were excluded if they: Exhibited contraindications to manual therapy as noted 1. Exclusion criteria were red flags noted in the patient's medical screening questionnaire (eg, tumor, fracture, rheumatoid arthritis, osteoporosis, prolonged history of steroid use, or severe vascular disease). 2. Other exclusions included prior surgery to the distal tibia, fibula, ankle joint, or rear foot region (proximal to the base of the metatarsals); fracture; grade III ankle sprain fracture, or other absolute contraindications to manual therapy. 3. Recurrent ankle sprain.

Intervention groups

Group A, Will receive Thrust Manipulation and baseline treatment. Group B, Will receive Non-thrust mobilization and baseline treatment.

Main outcome variables

1. FAAM, Foot and Ankle Ability Measure, for primary outcome measure of the Foot and Ankle Ability Measure in activities of daily living. 2. NPRC, Numeric Pain Rating Scale, for measuring pain. 3. GRoC, Global rating of change, to score improvement in a patient.

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20190715044216N4**
Registration date: **2022-01-09, 1400/10/19**
Registration timing: **registered_while_recruiting**

Last update: **2022-01-09, 1400/10/19**
Update count: **0**

Registration date

2022-01-09, 1400/10/19

Registrant information

Name

Naveed Anwar

Name of organization / entity

Riphah International University

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Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2022-01-01, 1400/10/11

Expected recruitment end date

2022-06-30, 1401/04/09

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

COMPARISON OF THRUST MANIPULATION AND NON-THRUST MOBILIZATION TECHNIQUE ON PAIN AND FUNCTION IN ATHLETES WITH CHRONIC ANKLE SPRAIN.

Public title

COMPARISON OF THRUST MANIPULATION AND NON-THRUST MOBILIZATION TECHNIQUE ON PAIN AND FUNCTION IN ATHLETES WITH CHRONIC ANKLE SPRAIN.

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria:

Athletes with Ankle sprain > 6 weeks; grade 1 or grade 2 ankle sprain, as defined by the West Point Ankle Sprain Grading System Subjects Between age 16-40 years old Athletes. Positive Ankle Stress Test: a) Anterior talofibular ligament: Plantar flexion – inversion b) Calcaeno-fibular ligament: Neutral position – inversion. c) Posterior talofibular ligament: Dorsiflexion – inversion. d) Deltoid ligament: Plantar flexion – eversion 4. Have a numeric pain rating scale (NPRS) score greater than 3/10 in the last week.

Exclusion criteria:

Exhibited contraindications to manual therapy. Exclusion criteria were red flags noted in the patient's medical screening questionnaire (e.g. tumor, fracture, rheumatoid arthritis, osteoporosis, prolonged history of steroid use, or severe vascular disease). Other exclusions included prior surgery to the distal tibia, fibula, ankle joint, or rear foot region (proximal to the base of the metatarsals); fracture; grade III ankle sprain (as defined by the West Point Ankle Sprain Grading System) fracture, or other absolute contraindications to manual therapy. Recurrent ankle sprain.

Age

From **16 years** old to **40 years** old

Gender

Male

Phase

3

Groups that have been masked

No information

Sample size

Target sample size: **16**

Randomization (investigator's opinion)

Randomized

Randomization description

According to aforementioned inclusion and exclusion criteria, participants were recruited and requested to take part in the study. Participants will fill written informed consent which is in both English and Urdu. Total 16 participant will be recruited in the study. The subjects will be randomly assigned into two groups A & B with each containing 8 subjects according to their selection by lottery method. There will be 16 slips marking with Group A on 8 slips & Group B on other 8 slips in the box. Each participant will be requested to randomly pick up a slip from the box. Slips which will be picked by the participant would not be put back in the box.

Blinding (investigator's opinion)

Not blinded

Blinding description

Placebo

Not used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Ethical committee of Riphah College pf Rehabilitation and Allied Health Sciences Faculty of Rehabili

Street address

Riphah International University, Quaid-e-Azam campus, 28-M Quaid e Azam Industrial Estate, Kot Lakhpat, Lahore

City

Lahore

Postal code

54000

Approval date

2021-06-14, 1400/03/24

Ethics committee reference number

S20C14G79024

Health conditions studied

1

Description of health condition studied

Chronic Ankle Sprain

ICD-10 code

S93.409

ICD-10 code description

Sprain of unspecified ligament of unspecified ankle

Primary outcomes

1

Description

Active Daily Living

Timepoint

Pre-Readings than post-readings after 8 weeks. 24 treatment sessions (3 sessions a week) will be given to the subjects.

Method of measurement

FAAM, Foot and Ankle Ability measure

2

Description
Physical Therapy outcomes
Timepoint
Pre-Readings than post-readings after 8 weeks. 24 treatment sessions (3 sessions a week) will be given to the subjects.
Method of measurement
GRoC, Global Rating of Change

3

Description
Pain
Timepoint
Pre-Readings than post-readings after 8 weeks. 24 treatment sessions (3 sessions a week) will be given to the subjects.
Method of measurement
NPRS, Numeric Pain Rating Scale

Secondary outcomes

empty

Intervention groups

1

Description
Intervention group 1: Treatment method will be thrust manipulation which will include the following techniques. Technique 1: Proximal tibiofibular joint: high-velocity manual intervention. Description of Technique; The therapist placed his second MCP in the popliteal fossa, then pulled the soft tissue laterally until the MCP was firmly stabilized behind the patient's fibular head. The therapist used the left hand to grasp the foot and ankle. The therapist externally rotated the leg and flexed the knee to the restrictive barrier. Once the restrictive barrier was met, the therapist applied a high-velocity, low-amplitude force through the tibia (directing the patient's heel toward his ipsilateral buttock). Technique 2: Distraction high-velocity manual physical therapy intervention. Description of Technique: The therapist grasped the dorsum of the patient's foot with interlaced fingers. Firm pressure with both thumbs was applied in the middle of the plantar surface of the forefoot. The therapist engaged the restrictive barrier by passively dorsiflexing the ankle and applying a long-axis distraction. The therapist pronated and dorsiflexed the foot to fine tune the barrier. The therapist applied a high-velocity, low amplitude force in a caudal direction. Technique 3: Talo-crural joint distraction thrust manipulation technique. Tool/Questionnaire: FAAM, NPRS and GRoC. Participants: 8 Duration of study: 6 months Frequency: Duration treatment will be 8 weeks (3 sessions per week and each session for 30 min) under the direct supervision of the therapist.
Category
Rehabilitation

2

Description
Intervention group 2 Treatment method will be Non-Thrust mobilization which will include the following techniques. Technique 1: Talocrural joint: anterior-to-posterior low-velocity manual physical therapy intervention. Description of Technique: The therapist used the left hand to firmly stabilize the lower leg at the malleoli. The therapist grasped the anterior, medial, and lateral talus with the right hand. The therapist applied a low-velocity, anterior to posterior oscillatory force to the talus. Tip: the therapist used the thigh to help stabilize the foot and to progressively increase the amount of ankle dorsiflexion. The therapist may need to adjust the amount of supination/pronation to optimize the technique. Technique 2: Weight-bearing talocrural joint: anterior-to-posterior low-velocity manual physical therapy intervention. Description of Technique: The therapist supported the arch of the foot and applied a stabilizing force (anterior-to-posterior-directed force) over the anterior talus. A belt (padded) was placed over the patient's distal posterior tibia and fibula and around the therapist's buttock region. The patient was guided into dorsiflexion of the involved ankle while, simultaneously, the therapist applied a posterior-to-anterior-directed force to the distal leg by leaning backward/pulling on the belt. As the patient dorsiflexes more, the therapist should squat down while leaning back to keep a direct posterior to anterior force at the talocrural joint (therefore following the plane of the joint). Technique 3: Lateral glides and eversion: low velocity manual intervention. Description of Technique: Talocrural joint lateral glide: the therapist grasped the malleoli just proximal to the talocrural joint with the left index finger/thumb and used the forearm to stabilize the patient's left leg against the table. The therapist placed the right thenar eminence on the talus just distal to the malleoli and grasped the rearfoot. The therapist used his body to impart a low-velocity oscillatory force to the talus through the right arm and thenar eminence. Subtalar joint lateral glide: the therapist shifted the left hand/forearm distally and grasped the talus with the left index finger/thumb. The therapist placed his right thenar eminence on the patient's medial aspect of the calcaneus and grasped the rearfoot. The therapist used his body to impart a low-velocity oscillatory force to the calcaneus through the right arm and thenar eminence. Tool/Questionnaire: FAAM, NPRS and GRoC. Participants: 8 Duration of study: 6 months Frequency: Duration treatment will be 8 weeks (3 sessions per week and each session for 30 min) under the direct supervision of the therapist.
Category
Rehabilitation

Recruitment centers

1

Recruitment center
Name of recruitment center
Pakistan Sports Board Lahore Coaching Centre

Full name of responsible person
Nasrullah Rana
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Ferozepur Rd, Block E 2 Gulberg III, Lahore, Punjab
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http://www.sports.gov.pk

2

Recruitment center
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Full name of responsible person
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Sponsors / Funding sources

1

Sponsor
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Lahore
Postal code
54000
Phone
+92 42 111 747 424
Email
admissions.lahore@riphah.edu.pk
Web page address
https://lahore.riphah.edu.pk/
Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
Yes
Title of funding source
Riphah International University
Proportion provided by this source
100
Public or private sector
Private
Domestic or foreign origin
Domestic
Category of foreign source of funding
empty
Country of origin
Type of organization providing the funding
Academic

Person responsible for general inquiries

Contact
Name of organization / entity
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Full name of responsible person
Dr Naveed Anwar, PT
Position
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Sharing plan

Deidentified Individual Participant Data Set (IPD)
Yes - There is a plan to make this available
Study Protocol
Yes - There is a plan to make this available
Statistical Analysis Plan
Yes - There is a plan to make this available
Informed Consent Form
Yes - There is a plan to make this available
Clinical Study Report
Yes - There is a plan to make this available
Analytic Code
Yes - There is a plan to make this available
Data Dictionary
Yes - There is a plan to make this available
Title and more details about the data/document
COMPARISON OF THRUST MANIPULATION AND NONTHRUST MOBILIZATION TECHNIQUE ON PAIN AND FUNCTION IN ATHLETES WITH CHRONIC ANKLE SPRAIN.
When the data will become available and for how long
The data will become available after the completion of the study. It will take take up to six months
To whom data/document is available
People working in academic institutions
Under which criteria data/document could be used
Author will review the request
From where data/document is obtainable
sohaibtahir14@yahoo.com
What processes are involved for a request to access data/document
Request will be entertained through email after which people working in academic institutions will be granted access
Comments