

Clinical Trial Protocol

Iranian Registry of Clinical Trials

10 Jun 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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Pakistan

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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 of 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

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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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Ferozpur Rd, Block E 2 Gulberg III, Lahore, Punjab

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2**Recruitment center****Name of recruitment center**

Model Town Football Club

Full name of responsible person

Ch Shayan

Street address

F8VF+63C, Model Town, Lahore, Punjab

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Lahore

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54000

Phone

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Sponsors / Funding sources**1****Sponsor****Name of organization / entity**

Riphah International University

Full name of responsible person

Dr Syed Muhmmad Shakeel Ur Rehman

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Quaid e Azam Industrial Estate, Lahore, Punjab

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admissions.lahore@riphah.edu.pk

Web page address

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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**

Riphah International University

Full name of responsible person

Dr Naveed Anwar, PT

Position

Associate professor

Latest degree

Ph.D.

Other areas of specialty/work

Physiotherapy

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Person responsible for scientific inquiries**Contact****Name of organization / entity**

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Ph.D.

Other areas of specialty/work

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Full name of responsible person

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Other areas of specialty/work

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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/documentCOMPARISON 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 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/documentRequest will be entertained through email after which
people working in academic institutions will be granted
access**Comments**