

Clinical Trial Protocol

Iranian Registry of Clinical Trials

09 Jun 2026

Comparative Effects of Mulligan Traction Straight Leg Raise Versus Muscle Energy Technique on Pain Intensity and Hamstring Tightness in patient With Knee Osteoarthritis

Protocol summary

Study aim

To evaluate the comparative effects of mulligan traction straight leg raise versus muscle energy technique on pain intensity and hamstring tightness in patient with knee osteoarthritis

Design

The study will be based on research design of randomized clinical trial. Single blind study, in which patient will be blind, patient with osteoarthritis grade 1,2 will be included in this study, randomization being accomplished using simple random sampling by means of lottery method.

Settings and conduct

Re+active Rehabilitation Center. The participant are kept anonymous for conducting single-blind trail.

Participants/Inclusion and exclusion criteria

Both male and female Patients diagnosed with knee osteoarthritis grade 1 and grade 2, with the radiographic evidence as Kellgren-Lawrence criteria of knee osteoarthritis, Age between 40 to 65years, Subject shows more than mild pain on VAS, Patient more than mild disability in OKS, Unilateral involvement, participant can walk without any assistive device e.g. crutches or walk helplessly, Patients who will willing to participate, At least can climb and incline the flight of stairs, Patient who quit all pain killers and muscle relaxant medication will be included while pregnant women, participant with diagnosed musculoskeletal disorders related to knee joint e.g. femoral-patellar syndrome, patients with surgical history of lower limbs/spine, patients with pathologies or any deformity of hip joint/spine, patient with neurological disorder for example Alzheimer's disease, fracture will be excluded.

Intervention groups

Both groups will receive moist hot pack and TENS as a baseline treatment. Group A: after baseline treatment mulligan traction straight leg raise technique will be

applied on effected leg. Group B: after baseline treatment muscle energy technique will be applied on effected leg.

Main outcome variables

Hamstring tightness, knee pain

General information

Reason for update

Because I have to update the recruitment dates.

Acronym

IRCT registration information

IRCT registration number: **IRCT20210815052194N1**

Registration date: **2021-08-29, 1400/06/07**

Registration timing: **prospective**

Last update: **2021-10-22, 1400/07/30**

Update count: **1**

Registration date

2021-08-29, 1400/06/07

Registrant information

Name

zain bal

Name of organization / entity

The University of Faisalabad

Country

Pakistan

Phone

+92 41 7733942

Email address

zainalibal47@gmail.com

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2021-08-30, 1400/06/08

Expected recruitment end date

2021-09-10, 1400/06/19

Actual recruitment start date

2021-09-01, 1400/06/10

Actual recruitment end date

2021-09-11, 1400/06/20

Trial completion date

2021-10-14, 1400/07/22

Scientific title

Comparative Effects of Mulligan Traction Straight Leg Raise Versus Muscle Energy Technique on Pain Intensity and Hamstring Tightness in patient With Knee Osteoarthritis

Public title

Effect of stretching in patient with knee osteoarthritis

Purpose

Health service research

Inclusion/Exclusion criteria**Inclusion criteria:**

Both male and female Patients diagnosed with knee osteoarthritis grade 1 and grade 2, with the radiographic evidence as Kellgren-Lawrence criteria of knee osteoarthritis. Age between 40 to 65years. Subject shows more than mild pain on VAS. Patient more than mild disability in OKS. Unilateral involvement. Can walk without any assistive device e.g. crutches or walk helplessly. Patients who was willing to participate. At least can climb and incline the flight of stairs. Patient who quit all pain killers and muscle relaxant medication.

Exclusion criteria:

Pregnancy. Participant with diagnosed musculoskeletal disorders related to knee joint e.g. femoral-patellar syndrome. Patients with surgical history of lower limbs/spine. Patients with pathologies or any deformity of hip joint/spine. Patient with neurological disorder for example Alzheimer's disease. Participants who were refusing to consent. Participants having unhealed fracture

Age

From **45 years** old to **65 years** old

Gender

Both

Phase

3

Groups that have been masked

- Participant

Sample size

Target sample size: **36**

Actual sample size reached: **36**

Randomization (investigator's opinion)

Randomized

Randomization description

The randomization of the participants will be done by using the simple random sampling also called lottery method. Firstly each member of the population is assigned a number. In the next step these numbers are written on separate cards which are physically similar in shape, size, color etc. Then they are placed in a basket and thoroughly mixed. In the last step the slips are taken

out randomly without looking at them. The number of slips drawn will be equal to the sample size.

Blinding (investigator's opinion)

Single blinded

Blinding description

Both group Participants will not be aware of the study groups and this will be carried out by keeping the participants anonymous for the study period

Placebo

Not used

Assignment

Parallel

Other design features**Secondary Ids**

empty

Ethics committees**1****Ethics committee****Name of ethics committee**

Ethics and Technical committee of The University of Faisalabad

Street address

University town, Sargodha road, Faisalabad

City

faisalabad

Postal code

38000

Approval date

2021-05-25, 1400/03/04

Ethics committee reference number

TUF/DR/SA/MSPP/2021/237-246

Health conditions studied**1****Description of health condition studied**

knee osteoarthritis

ICD-10 code

M17

ICD-10 code description

Osteoarthritis of knee

Primary outcomes**1****Description**

knee pain intensity

Timepoint

Before intervention, 2 weeks and 4 weeks after intervention

Method of measurement

Visual analogue scale will be used to measure the knee pain intensity.

2

Description

Hamstring tightness

Timepoint

Before intervention, 2 weeks and 4 weeks after intervention

Method of measurement

Goniometer during active knee extension test will be used to assess reduction in hamstring tightness.

Secondary outcomes

1

Description

Oxford knee score questionnaire for disability

Timepoint

before intervention and 4th week

Method of measurement

Oxford knee score will be used for the assessment patients disability

Intervention groups

1

Description

Intervention group: Group A (Mulligan traction straight leg raise) treatment will be given to participant's for 4 week, baseline treatment will be moist hot pack and Tens for 10 minutes and than mulligan traction straight leg raise will be applied.

Category

Treatment - Other

2

Description

Intervention group: Group B (Muscle energy technique) treatment will be given to participant's for 4 week, baseline treatment will be moist hot pack and Tens for 10 minutes and than muscle energy technique will be applied, 2 sets of 10 repetitions per session. By using 20% of their total strength with hold of 5 second participants will perform isometric contraction and rest for 3-5 seconds between each isometric contraction

Category

Treatment - Other

Recruitment centers

1

Recruitment center

Name of recruitment center

Re+Active Rehabilitation Center, Faisalabad

Full name of responsible person

Head of Rehabilitation Department, The University of Faisalabad

Street address

Re+Active Rehabilitation Center, MTH Clinics, Canal

Road, Faisal Town, Faisalabad .Punjab.

City

Faisalabad

Postal code

38000

Phone

+92 41 8869862

Email

dpt-fa14-023@tuf.edu.pk

Web page address

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Pro Health Rehab and Medical Center

Full name of responsible person

Dr. Umer Shabbir

Street address

P-346 Kashmir Rd, C Block Amin Town, Faisalabad, Punjab, Pakistan.

City

Faisalabad

Postal code

38000

Phone

Email

Mianumer199@yahoo.com

Grant name

Grant code / Reference number

Is the source of funding the same sponsor organization/entity?

Yes

Title of funding source

Pro Health Rehab and Medical Center

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

Other

Person responsible for general inquiries

Contact

Name of organization / entity

Pro Health Rehab and Medical Center

Full name of responsible person

Zain Ali

Position

Physiotherapist

Latest degree

Master

Other areas of specialty/work

Physiotherapy

Street address

P-346 Kashmir Rd, C Block Amin Town, Faisalabad,
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Person responsible for scientific inquiries**Contact****Name of organization / entity**

Pro Health Rehab and Medical Center

Full name of responsible person

Zain Ali

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Person responsible for updating data**Contact****Name of organization / entity**

Pro Health Rehab and Medical Center

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Sharing plan**Deidentified Individual Participant Data Set (IPD)**

No - There is not a plan to make this available

Justification/reason for indecision/not sharing IPD

As we have signed and assured the patient that there data will not be share any where else other than current study

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

Not applicable

Data Dictionary

Not applicable

Title and more details about the data/document

The primary and secondary outcome measure data will be shared and no further detail regarding patients personal information will be provided,

When the data will become available and for how long

Starting in January 2022

To whom data/document is available

For everyone

Under which criteria data/document could be used

Whoever will request for data

From where data/document is obtainable

Through Email address

What processes are involved for a request to access data/document

an Email

Comments