Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 2026

Therapeutic utility of Mulligan traction straight leg raise stretch and proprioceptive exercise in treating osteoarthritis

Protocol summary

Study aim

The purpose of the present study to evaluate the synergistic effects of Mulligan Traction Straight Leg Raise Stretch and proprioceptive exercises in knee OA patients and effect of exercises to relive pain, stiffness and improve range of motion and functional ability of patients suffering from knee OA.

Design

The randomized clinical trial, double-blinded study use to investigate the effect of propioceptive and mulligan exercises in knee osteoarthritis.

Settings and conduct

Conduct at Muhammad physical therapy clinic and rehabilitation centre, Multan, Pakistan.

Participants/Inclusion and exclusion criteria

Inclusion criteria: 1) Age 40-65 years 2) Patients with diagnosed OA 3) Both genders 4) Patients with swelling in knee joints 5) Patients with pain in knee joints 6) Patients having difficulty in walking and climbing stairs Exclusion criteria: 1) Vascular neoplasia 2) Fibromyalgia 4) Radiculopathy 5) Neuropathy 6) Tumor 7) Joint fractures 8) Vestibular problems 9) Congenital disorders

Intervention groups

Group A will receive proprioceptive exercises, half squats, standing on just one foot, walking on the heel and toes, one-legged balance exercises and knee flexion and extension exercises while sat in a chair. Proprioceptive Exercise will be given 3 sessions/week for 8 weeks, with a total of 24 sessions, each lasting 45 minutes. Every exercise will be done for 1 to 2 minutes, with a 30-second break in between. Participants in the Mulligan Traction Straight Leg Raise Stretch group B will be the intervention 3 times a week for 30 minutes each session. Every session was involved performing 3 sets of 10 repetitions of straight leg lifts while using manual traction. Whereas Group C will be given both proprioceptive and MT-SLR.

Main outcome variables

Increase in ROM and functional ability, decrease in pain and inflammatory load in body.

General information

Reason for update

Some changes have been made

Acronym

IRCT registration information

IRCT registration number: **IRCT20230202057310N2**
Registration date: **2023-08-29, 1402/06/07**
Registration timing: **prospective**

Last update: **2024-09-25, 1403/07/04**
Update count: **3**

Registration date

2023-08-29, 1402/06/07

Registrant information

Name

Imran Ahmad Khan

Name of organization / entity

Muhammad Nawaz Shareef University of Agriculture, Multan

Country

Pakistan

Phone

+92 333 6120602

Email address

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Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2023-08-31, 1402/06/09

Expected recruitment end date

2024-03-02, 1402/12/12

Actual recruitment start date

empty

Actual recruitment end date
empty
Trial completion date
empty

Scientific title
Therapeutic utility of Mulligan traction straight leg raise stretch and proprioceptive exercise in treating osteoarthritis

Public title
Mulligan traction straight leg raise stretch and proprioceptive exercise in treating osteoarthritis
Purpose
Treatment
Inclusion/Exclusion criteria
Inclusion criteria:
Age 40-65 years Patients with diagnosed OA Both genders Patients with swelling in knee joints Patients with pain in knee joints Difficulty in walking and climbing stairs
Exclusion criteria:
Vascular neoplasia Fibromyalgia Radiculopathy Neuropathy Joint fractures Vestibular problems Congenital disorders Tumor
Age
From **40 years** old to **65 years** old
Gender
Both

Phase
1
Groups that have been masked

- Participant
- Data analyser

Sample size
Target sample size: **130**
More than 1 sample in each individual
Number of samples in each individual: **2**
Samples will be taken before and after treatment
Randomization (investigator's opinion)
Randomized
Randomization description
Allocation concealment occurs and patients will be recruited by using simple randomization through the Lottery method. lottery method carried out through sealed envelopes. Also the data analyser will be kept blind to minimize biasness
Blinding (investigator's opinion)
Double blinded
Blinding description
Participants will be blinded. Participants will be unaware of the type of treatments that will be evaluated after the completion of the intervention trial. Subjects will be completely unaware of the type and effects of both interventions. And in the same way data analyser will be kept blind by not knowing about the effects and group details
Placebo
Not used
Assignment
Parallel
Other design features
Patients were assessed by radiological finding (x-ray) and by physical assessment and by monitoring of biochemical parameters

Secondary Ids

empty

Ethics committees

1

Ethics committee
Name of ethics committee
The Institutional Ethical Committee of Muhammad Institute of Medical and Allied Sciences, Multan
Street address
HBL street, Sbzazar metro station, Bosan road, Multan, Pakistan
City
Multan
Postal code
66000
Approval date
2023-07-30, 1402/05/08
Ethics committee reference number
MIMAS/06/26/Maliha

Health conditions studied

1

Description of health condition studied
Knee osteoarthritis with grade 1,2 and 3
ICD-10 code
M17
ICD-10 code description
Osteoarthritis of knee

Primary outcomes

1

Description
Pain and functional disability
Timepoint
8 weeks
Method of measurement
Numerical Pain Rating Scale, Pain catastrophizing scale, The Western Ontario and McMaster Universities Arthritis Index (WOMAC)

2

Description
Range of motion
Timepoint
8 weeks
Method of measurement
The Western Ontario and McMaster Universities Arthritis Index (WOMAC)

Secondary outcomes

1

Description
Inflammatory biomarkers
Timepoint
8 weeks
Method of measurement
Complete blood count (CBC) and interleukins measurement

Intervention groups

1

Description
Intervention group: Group A will receive proprioceptive exercises, half squats, standing on just one foot, walking on the heel and toes (with eyes open and closed), one-legged balance exercises using a heating pad, and knee flexion and extension exercises while sat in a chair. Proprioceptive Exercise group A will be given 3 sessions/week for 8 weeks, with a total of 24 sessions, each lasting 45 minutes. The exercises in their program will develop from static to dynamic, including single-leg stances and balance exercises on unstable surfaces, starting with low-to-moderate intensity balance and stability exercises. Every exercise will be done for 1 to 2 minutes, with a 30-second break in between.
Category
Treatment - Other

2

Description
Intervention group: Group-B The total treatment regimen will be 8 weeks, including 24 sessions, participants in the Mulligan Traction Straight Leg Raise Stretch (MT-SLR) group B get the intervention 3 times a week for 30 minutes each session. Every session will involve performing 3 sets of 10 repetitions of straight leg lifts while using manual traction. The traction force will be adjusted according to each individual's comfort level and the repetitions were held for 15–20 seconds each.
Category
Treatment - Other

3

Description
Intervention group: Group C will be given both proprioceptive and MT-SLR The total treatment regimen will be 8 weeks, including 24 sessions, participants in the Mulligan Traction Straight Leg Raise Stretch (MT-SLR) get the intervention 3 times a week for 30 minutes each session. Proprioceptive Exercise group will be given in 3 sessions/week for 8 weeks, with a total of 24 sessions, each lasting 45 minutes.
Category
Treatment - Other

Recruitment centers

1

Recruitment center
Name of recruitment center
Muhammad physical therapy clinic and rehabilitation center, Multan
Full name of responsible person
Maliha Khalid Khan
Street address
HBL street, near Sbzazar metro station, Bosan road, Multan, Pakistan
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Multan
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+92 312 6827130
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malihatareen1997@gmail.com

Sponsors / Funding sources

1

Sponsor
Name of organization / entity
Muhammad Nawaz Sharif University of Agriculture
Full name of responsible person
Imran Ahmad Khan
Street address
Agriculture Complex, Old Shuja Abad Rd,
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imranahmadkhandurrani@gmail.com
Grant name
Student fund
Grant code / Reference number
08/26/2023/MNSUAM
Is the source of funding the same sponsor organization/entity?
Yes
Title of funding source
Muhammad Nawaz Sharif University of Agriculture
Proportion provided by this source
70
Public or private sector
Public
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
Muhammad Institute of Medical and Allied Sciences, Multan, Pakistan

Full name of responsible person
Saman Iqbal

Position
Final year student of DPT

Latest degree
Medical doctor

Other areas of specialty/work
Physiotherapy

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HBL street, sbzazar station, Bosan road, Multan, Pakistan

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Person responsible for scientific inquiries

Contact

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Position
Coordinator Department of Pharmacy

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Ph.D.

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Person responsible for updating data

Contact

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Maliha Khalid Khan

Position
Demonstrator

Latest degree
Medical doctor

Other areas of specialty/work
Physiotherapy

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Sharing plan

Deidentified Individual Participant Data Set (IPD)
Yes - There is a plan to make this available

Study Protocol
Undecided - It is not yet known if there will be 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
Undecided - It is not yet known if there will be a plan to make this available

Analytic Code
Undecided - It is not yet known if there will be a plan to make this available

Data Dictionary
Undecided - It is not yet known if there will be a plan to make this available

Title and more details about the data/document
The title is COMPARATIVE ANALYSIS OF MULLIGAN AND PROPRICEPTIVE EXERCISES IN KNEE OSTEOARTHRITIS.

When the data will become available and for how long
N/A

To whom data/document is available
N/A

Under which criteria data/document could be used
N/A

From where data/document is obtainable
N/A

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

Comments
N/A