Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 2026

Comparative effects of Mikhled and Mckenzie Knee Exercise on Pain, Range of Motion and Function in Football players with Patellofemoral Pain Syndrome

Protocol summary

Study aim
To determine the effects of Mikhled vs. McKenzie Knee Exercise on Pain, range of motion and functional status in Football players with Patellofemoral Pain Syndrome

Design
The study design will be Randomized Clinical Trial with sample size of 56. It will be non probability convenient sampling and participants will randomized through sealed envelope method into two groups.

Settings and conduct
The study will be conducted at Farhan Physio and Rehab Clinic Peshawar Pakistan and our study duration will be 12 months.

Participants/Inclusion and exclusion criteria
Inclusion Criteria: • Regular Football Players • Age: 18 to 35 years. • Diagnosed cases of Patellofemoral pain syndrome • Willing to Participate on study Exclusion Criteria: • History of knee surgery in past 6 months. • Having other knee pathologies (ACL tear, meniscal Injury). • Inability to participate in study due to other medical condition

Intervention groups
There will be 2 groups Group A and Group B. Group A will be given Mikhled Exercises. The MKEP technique includes seven therapeutic level postures that should be held for 15-20 minutes each: Level one is supine, level two is on elbows, level three is half sitting, level four is prone, level five is bench long sitting, level six is bench prone, and level seven is bench supine. Our frequency will 3 session per week for 4 weeks and duration will be 45 mint. Group B will be given Mckinze Exercise. 1. Knee Extension Exercises includes Straight Leg Raise (SLR) and Heel Slides 2. Knee Flexion Exercises includes Prone Knee Flexion and Seated Knee Flexion exercises 3. Strength Exercises which includes quadriceps sets Our frequency will 3 session per week for 4 weeks. Duration of 1 session will be 45 mints

Main outcome variables
Data collection tools for Pain, Range of Motion and Functional status will be include: Numeric Pain Rating Scale, Goniometry and Kujala Scoring Questionnaires

General information

Reason for update

Acronym

IRCT registration information
IRCT registration number: **IRCT20250430065543N1**
Registration date: **2025-05-22, 1404/03/01**
Registration timing: **registered_while_recruiting**

Last update: **2025-05-22, 1404/03/01**
Update count: **0**

Registration date
2025-05-22, 1404/03/01

Registrant information

Name
Iqra Mubeen

Name of organization / entity
Riphah International University

Country
Pakistan

Phone
+92 343 7251576

Email address
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Recruitment status
Recruitment complete

Funding source

Expected recruitment start date
2024-07-07, 1403/04/17

Expected recruitment end date
2025-07-22, 1404/04/31

Actual recruitment start date
2025-01-15, 1403/10/26
Actual recruitment end date
2025-08-25, 1404/06/03
Trial completion date
2025-08-28, 1404/06/06

Scientific title
Comparative effects of Mikhled and Mckenzie Knee Exercise on Pain, Range of Motion and Function in Football players with Patellofemoral Pain Syndrome

Public title
Effects of Mikhled and Mckenzie Knee Exercise in Football player with patellofemoral Pain Syndrome
Purpose
Treatment
Inclusion/Exclusion criteria
Inclusion criteria:
Regular Football players Age: 18 to 35 years. Diagnosed cases of Patellofemoral pain syndrome Willing to Participate on study
Exclusion criteria:
History of knee surgery in past 6 months Having other knee pathologies (ACL tear, meniscal Injury). Inability to participate in study due to other medical condition
Age
From **18 years** old to **35 years** old
Gender
Both

Phase
N/A
Groups that have been masked

- Participant

Sample size
Target sample size: **56**
Actual sample size reached: **56**
Randomization (investigator's opinion)
Randomized
Randomization description
Participants will be randomized into 2 groups through sealed envelope method ensuring allocation concealment and minimizing bias. It will involve creating a series of numbered envelopes, each containing the treatment assignment for specific patients, and then assigning the envelope to patient upon consent. Group A will be given Mikhled Knee exercises and Group B will be given Mckenzie knee exercises.
Blinding (investigator's opinion)
Single blinded
Blinding description
Blinding in this study involve making participants are uninformed which participant which will be in which treatment group and which treatment will be given to which participant through sealed envelope method so it will be a single blinded study.
Placebo
Not used
Assignment
Parallel
Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee
Name of ethics committee
Ethics Committee of Riphah College of Rehabilitation and Allied Health Sciences
Street address
26- M Gulberg 3 Campus Lahore
City
Lahore
Postal code
05450
Approval date
2024-07-30, 1403/05/09
Ethics committee reference number
REC/RCR & AHS/24/0445

Health conditions studied

1

Description of health condition studied
Patellofemoral Pain Syndrome
ICD-10 code
ICD-10 code description

Primary outcomes

1

Description
Pain, Range of Motion and Function
Timepoint
3 session per week 4 weeks. Duration of 1 session will be 45 mints.
Method of measurement
Numeric Pain Rating scale, Goniometry and Kujala Scoring Questionnaire

Secondary outcomes

empty

Intervention groups

1

Description
Intervention group: A Mikhled Knee Exercises, MKEP technique includes seven therapeutic level postures that should be held for 15-20 minutes each: Level one is supine, level two is on elbows, level three is half sitting, level four is prone, level five is bench long sitting, level six is bench prone, and level seven is bench supine. The same activity is included in each level but is presented differently as follows: The patient was taught to dorsiflex

and to straighten the knee joint. The patient was instructed to elevate one leg 15 inches above the ground while keeping the knee extended. The patient was instructed to stretch his or her leg outward in an abduction stance while maintaining a straight knee. The patient was instructed to keep one leg outside of the body and bend it for 30 degrees. The patient was instructed to straighten his or her knee while maintaining horizontal leg position. The patient was instructed to position his leg inside in a manner similar to a second step, and then to return to step one and take a 30-second rest. Our frequency will 3 session per week for 4 weeks. Duration of 1 session will be 45 mints.

Category

Treatment - Other

2

Description

Intervention group: B Mckenzie Knee Exercises which include Straight Leg Raise (SLR):• Lie on your back with your legs straight.• Lift your affected leg off the ground, keeping it straight.• Hold for a few seconds and then lower it back down.• Repeat 10-15 times.Heel Slides:• Lie on your back with your knees bent.• Slide your affected heel towards your buttocks.• Slide it back to the starting position.• Repeat 10-15 times.2. Knee Flexion Exercises:Prone Knee Flexion:• Lie on your stomach with your legs straight.• Bend your affected knee, bringing your heel towards your buttocks.• Hold for a few seconds and then straighten your leg.• Repeat 10-15 times.Seated Knee Flexion:• Sit on a chair with your feet flat on the floor.• Bend your affected knee, lifting your foot off the ground.• Hold for a few seconds and then lower your foot back down.• Repeat 10-15 times.3. Strength Exercises:Quadriceps Sets:• Sit or lie down with your legs straight.• Tighten your thigh muscles (quadriceps) and hold for 10 seconds.• Relax and repeat 10-15 times 3 session per week for 4 weeks. Duration of 1 session will be 45 mints.

Category

Treatment - Other

Recruitment centers

1

Recruitment center

Name of recruitment center

Dr. Farhan Physio and Rehab Clinic Peshawar Pakistan

Full name of responsible person

Farhan Haleem

Street address

Babu Gari, Warsak Road Peshawar Pakistan

City

Peshawar

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25000

Phone

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Email

Farhan.Haleem002@gmail.com

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Riphah International University, Lahore

Full name of responsible person

Dr. Danish

Street address

25 Raza Saeed Rd, Bhabra Block M Gulberg III, Lahore, Punjab

City

Lahore

Postal code

54660

Phone

+92 345 7946009

Email

54192@students.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, Lahore

Proportion provided by this source

40

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

Riphah International University, Lahore

Full name of responsible person

Iqra Mubeen

Position

Student

Latest degree

Bachelor

Other areas of specialty/work

Physiotherapy

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Other areas of specialty/work

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Person responsible for updating data

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Name of organization / entity

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Position

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Latest degree

Bachelor

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

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

Undecided - It is not yet known if there will be 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

Yet to be decided as the study will be complete in the next 3 month

When the data will become available and for how long

Yet to be decided as the study will be complete in the next 3 month

To whom data/document is available

To all the researcher community and clinicians

Under which criteria data/document could be used

For research purpose purpose and evidence based practice at clinics

From where data/document is obtainable

Google Scholar and PubMed

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

Nil

Comments