

Clinical Trial Protocol

Iranian Registry of Clinical Trials

10 Jun 2026

The Effect of Mulligan Mobilization on Static and Dynamic Balance in Patients with Moderate to Severe Knee Osteoarthritis.

Protocol summary

Study aim

The Effect of Mulligan Mobilization Technique with Conventional Physical Therapy on Balance in Patients with Moderate to Severe Knee Osteoarthritis

Design

Randomized Controlled Trial , Two Groups of treatment and Control with a Sample Size of 20 in each Group , Factorial Groups , double blind , Simple Randomised

Settings and conduct

This Study will be done in Physiotherapy Clinic of Isfahan University of Medical Sciences on Patients with Knee Osteoarthritis in Two Groups of Treatment and Control. Treatment of Treatment Group is Conventional Physical Therapy and Mulligan Mobilization and Control Group is Conventional Physical Therapy. Double Blind Study; Participates and Investigator of Inclusion and Exclusion Criteria and Patient Balance.

Participants/Inclusion and exclusion criteria

Inclusion Criteria; Moderate to Severe Unilateral Knee Osteoarthritis; Painful often; Independent in Standing and Walking Exclusion Criteria; any Active Knee Infection; Knee Surgery and Steroid Injection; any Musculoskeletal Disorder in Lower Limb and Low Back; any Orthopedic and Neurology and Rheumatoid Impairment Affected Balance; Sensory Loss;Uncorrected Visual and Vestibular Impairment

Intervention groups

Treatment Group, Conventional Physical Therapy with Mulligan Mobilization Control Group, Conventional Physical Therapy

Main outcome variables

Balance Improvement Prevention and Decrease Falling in Patients with Knee Osteoarthritis Decrease Pain Increase knee Range of Motion

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20181009041297N1**

Registration date: **2018-11-24, 1397/09/03**

Registration timing: **registered_while_recruiting**

Last update: **2018-11-24, 1397/09/03**

Update count: **0**

Registration date

2018-11-24, 1397/09/03

Registrant information

Name

Maryam Adeli

Name of organization / entity

Country

Iran (Islamic Republic of)

Phone

+98 31 3376 9071

Email address

m.adely@rehab.mui.ac.ir

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2018-06-22, 1397/04/01

Expected recruitment end date

2019-06-22, 1398/04/01

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

The Effect of Mulligan Mobilization on Static and Dynamic Balance in Patients with Moderate to Severe Knee Osteoarthritis.

Public title

Effect of Mulligan Mobilization Technique on Balance in Knee Osteoarthritis

Purpose

Diagnostic

Inclusion/Exclusion criteria

Inclusion criteria:

Moderate to Severe Knee Osteoarthritis Independent in Walking and Standing Knee Pain on Most Days of the Previous Month Unilateral Knee Pain

Exclusion criteria:

Active Infection in Knee Joint Patellofemoral Osteoarthritis Any Knee Surgery Any Musculoskeletal Disorder in Lower Limb and Low Back Severe Psychology Disorders Rheumatoid Arthritis Uncorrected Visual and Vestibular Impairment Tendon and Ligament Injuries Steroid Injection(3 month ago) Any Sensory Loss in Feet(diabetic) Unwilling to Participate Any orthopedic and Neurology Impairment Affected on Balance Fixed Knee Range of Motion

Age

From **40 years** old

Gender

Both

Phase

N/A

Groups that have been masked

- Participant
- Investigator
- Outcome assessor
- Data analyser

Sample size

Target sample size: **40**

Randomization (investigator's opinion)

Randomized

Randomization description

In this Study, Patients will Divide to two Groups Control and Treatment , through Simple Random Sampling by Flipping a Coin to Decide which Patient Goes to Control or Treatment Groups? in this way if one Group is Completed Quickly ,other Patients Go to another Group

Blinding (investigator's opinion)

Double blinded

Blinding description

In this Study, Participants are Aware of the Study's Research and the Type of Groups and Treatment, but They do not know what they are Receiving. Investigator of Inclusion and Exclusion Criteria and Balance Tests Before and After the Treatment and Analyzer of Data are also Blind

Placebo

Not used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Ethics committee of Isfahan University of Medical Science

Street address

Shahid Mirza Mohammad Barati Alley , Navab Safavi Avenue

City

Dorche

Province

Isfahan

Postal code

8431833531

Approval date

2018-06-10, 1397/03/20

Ethics committee reference number

IR.MUI.REC.1397.30135

Health conditions studied

1

Description of health condition studied

Knee Osteoarthritis

ICD-10 code

M17.1

ICD-10 code description

Other primary gonarthrosis

Primary outcomes

1

Description

Static and Dynamic Balance

Timepoint

Before and after treatment(Ten sessions)

Method of measurement

Duration of Maintaining Static Balance through One Leg Stance Test and Duration of Dynamic Balance through Time up and go Test

Secondary outcomes

empty

Intervention groups

1

Description

Intervention group: Conventional physical Therapy(pain relief and knee muscles strengthening exercises) and Mulligan Mobilization(a treatment technique)

Category

Diagnosis

2

Description

Control group: Conventional physical Therapy(pain relief and knee muscles strengthening exercises)

Category

Diagnosis

Recruitment centers

1

Recruitment center

Name of recruitment center

Isfahan Alzahra Hospital

Full name of responsible person

Maryam Adeli

Street address

Alzahra Hospital, Sofe Avenue

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8174675731

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Esfahan University of Medical Sciences

Full name of responsible person

Shaghayegh Hagh joy Javanmard

Street address

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8174673461

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research@mui.ac.ir

Grant name

Grant code / Reference number

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

Yes

Title of funding source

Esfahan University of Medical Sciences

Proportion provided by this source

100

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

Esfahan University of Medical Sciences

Full name of responsible person

Maryam Adeli

Position

Physiotherapy Student

Latest degree

Bachelor

Other areas of specialty/work

Physiotherapy

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Person responsible for updating data

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Sharing plan

Deidentified Individual Participant Data Set (IPD)

Undecided - It is not yet known if there will be 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

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

Informed Consent Form

Undecided - It is not yet known if there will be 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