

Clinical Trial Protocol

Iranian Registry of Clinical Trials

27 Jul 2026

Comparison of the Effects of Sensorimotor Training versus Hip, Knee & Trunk Strengthening Exercise on Pain & Function of Patients with Patellofemoral Pain Syndrome - A Randomized Controlled Trial

Protocol summary

Registration timing: **prospective**

Study aim

Comparison of the Effects of Sensorimotor Training versus Hip, Knee & Trunk Strengthening Exercise on Pain & Function of Patients with Patello Femoral Pain Syndrome.

Last update: **2021-09-29, 1400/07/07**

Update count: **1**

Registration date

2019-08-01, 1398/05/10

Design

Design: Two arm parallel treatment group randomized trial. Blinding: The outcome assessor will be blind in this study. Randomization::40 participants will be randomly allocated to the 2 groups via permuted block randomization.

Registrant information

Name

Sobhan Sobhani

Name of organization / entity

Shiraz University of Medical Sciences

Country

Iran (Islamic Republic of)

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Settings and conduct

This study will be done in Clinic and Rehabilitation Sciences Research Center, Shiraz University of Medical Sciences, Shiraz ,Iran on individual with Patello Femoral Pain Syndrome.

Recruitment status

Recruitment complete

Funding source

Participants/Inclusion and exclusion criteria

Inclusion criteria: People aged 18 to 40 years with unilateral knee anterior pain, Positive diagnostic tests of PFPS, Pain reports during specific activities Non-inclusion criteria: People with lower limbs have other problems, such as a stroke or a history of surgery.

Expected recruitment start date

2019-07-23, 1398/05/01

Expected recruitment end date

2019-10-23, 1398/08/01

Actual recruitment start date

2019-09-04, 1398/06/13

Actual recruitment end date

2020-05-05, 1399/02/16

Trial completion date

2020-06-05, 1399/03/16

Intervention groups

Intervention group 1: Sensorimotor exercise Intervention group 2: strengthening exercise(Hip, Knee & Trunk)

Main outcome variables

Pain, Function, Strength, Balance

Scientific title

Comparison of the Effects of Sensorimotor Training versus Hip, Knee & Trunk Strengthening Exercise on Pain & Function of Patients with Patellofemoral Pain Syndrome - A Randomized Controlled Trial

General information

Reason for update

The recording of the start and end time of sampling was performed

Acronym

IRCT registration information

IRCT registration number: **IRCT20151118025105N5**

Registration date: **2019-08-01, 1398/05/10**

Public title

Comparison of the Effects of Sensorimotor Training versus Hip, Knee & Trunk Strengthening Exercise on patellofemoral pain syndrome

Purpose

Treatment

Inclusion/Exclusion criteria**Inclusion criteria:**

Persons 18 to 40 years old with unilateral knee anterior pain Starting spontaneous pain without any reports of knee injury Knee pain report at least previous three months Pain reporting in two or more cases in activities such as climbing of stairs, scatt, kneeling, jumping and prolong sitting Moderate pain report between 3 to 7 in Numerical Pain Rating Scale at least one week Pain during pressure testing of the patella grind positive test or tenderness of medial and lateral facets

Exclusion criteria:

People with other knee injuries such as knee ligament injury, patellar instability, meniscal injuries, tendinopathy and osteoarthritis. Any injury of hip, ankle and spine Surgical history on the lower extremity The difference in the length of the lower limbs Peripheral and central nervous system disorders People who take topical, oral and injectable drugs during the course of treatment People who use medications that affect balance over the past 48 hours, as well as those who have any problems such as hearing impairments that affect balance History of drug and alcohol abuse

Age

From **18 years** old to **40 years** old

Gender

Both

Phase

N/A

Groups that have been masked

- Investigator
- Outcome assessor
- Data analyser

Sample size

Target sample size: **40**

Actual sample size reached: **40**

Randomization (investigator's opinion)

Randomized

Randomization description

participants will be randomly allocated with random block method each block size is 4 to the 2 groups. A list of randomized 4-letter permutations of the letters A and B representing groups one and two Produced with Random Allocation Random Software and the criterion is the allocation of people in groups. For example, if the ABBA permutation is generated in the first block Shows the first person in group A, Second and third in group B and the fourth in the group A. There are 10 blocks in total.

Blinding (investigator's opinion)

Single blinded

Blinding description

In this study, the outcome assessor as well as data analyzer will be blinded to the group allocation.

Placebo

Not used

Assignment

Parallel

Other design features**Secondary Ids**

empty

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

Ethics Committee of Shiraz Rehabilitation Sciences School

Street address

School of Rehabilitation Sciences, Abiverdi 1 Street, Chamran Blvd

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Shiraz

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Postal code

33669-71947

Approval date

2019-03-18, 1397/12/27

Ethics committee reference number

IR.sums.rehab.rec.1397.026

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

patellofemoral pain syndrome

ICD-10 code

M22.2

ICD-10 code description

Patellofemoral disorders

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

Pain

Timepoint

Pre and post intervention (after 4 weeks) and during follow up (after 4 weeks)

Method of measurement

Anterior Knee Pain Scale

2**Description**

Function

Timepoint

Pre and post intervention (after 4 weeks)

Method of measurement

Step Down Test

Secondary outcomes

1

Description

Hip and Knee muscle strength(knee extensor+ hip abductor and external rotator)-Trunk flexor- Trunk extensor

Timepoint

Pre and post intervention (after 4 weeks)

Method of measurement

Hand Held Dynamometer

2

Description

Balance

Timepoint

Pre and post intervention (after 4 weeks)

Method of measurement

Modified Star Excursion Balance Test

Intervention groups

1

Description

Intervention group: intervention group 1This group will receive the sensory motor exercise for 12 sessions during a period of 4 weeks(Three sessions per week) and each session will contain 3 exercises and duration of each exercise is 5 minutes. The exercises are performed in four situations, both using ball and balance board, and without using the device.

Category

Rehabilitation

2

Description

Intervention group 2: This group will receive the hip, knee and trunk strengthening exercise for 12 sessions during a period of 4 weeks(Three sessions per week). for progress strengthenin exercise Which are done with weightcuff We use the 70% 1 Repetitive Movement, which is re-evaluated weekly and For other exercises Which are done without weightcuff progress is By changing position and increase the number of exercises.

Category

Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center

Physiotherapy Clinics in Shiraz city

Full name of responsible person

Sobhan Sobhani

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Shiraz University of Medical Sciences

Full name of responsible person

Dr. Ghasemi Unes

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<http://research.sums.ac.ir/fa/contact-information/index.html>

Grant name

Grant code / Reference number

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

Yes

Title of funding source

Shiraz 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

Person responsible for general inquiries

Contact

Name of organization / entity

Shiraz University of Medical Sciences

Full name of responsible person

Sobhan Sobhani

Position

Assistant Professor, PT, PhD

Latest degree

Ph.D.

Other areas of specialty/work

Physiotherapy

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Latest degree

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Other areas of specialty/work

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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