

Clinical Trial Protocol

Iranian Registry of Clinical Trials

10 Jun 2026

The effect of postural control training using unstable sitting on knee joint pain and function in patients with patellofemoral pain syndrome

Protocol summary

Summary

The purpose of this study is to evaluate the effect of core postural control training using unstable sitting on pain and function in patients with patellofemoral pain syndrome. Patients with patellofemoral pain syndrome complaining gradual anterior knee pain during last 3 months and age between 18 to 45 years old are included. The patients with any previous knee trauma or other pathologies such as meniscus and ligament injuries are excluded. Minimal sample size for this study was determined as 15 patients in each group. Patients will randomly assigned either to control or intervention groups. Both groups will receive conventional physical therapy exercises for patellofemoral pain syndrome during 4 weeks (12 sessions), while the intervention group will receive core postural control training using unstable sitting device as well. Variables including pain intensity, function via Kujala questionnaire, functional step down test and postural control of trunk and core region will be measured for each patient in first and 12th sessions.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT2016120415932N12**

Registration date: **2017-01-07, 1395/10/18**

Registration timing: **prospective**

Last update:

Update count: **0**

Registration date

2017-01-07, 1395/10/18

Registrant information

Name

Alireza Motealleh

Name of organization / entity

Shiraz University of Medical Sciences

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Recruitment status

Recruitment complete

Funding source

Rehabilitation Faculty of Shiraz University of Medical Sciences

Expected recruitment start date

2017-01-20, 1395/11/01

Expected recruitment end date

2017-06-05, 1396/03/15

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

The effect of postural control training using unstable sitting on knee joint pain and function in patients with patellofemoral pain syndrome

Public title

The effect of core training using unstable sitting in patients with patellofemoral pain syndrome

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria: Women aged 18 to 45 years old with unilateral or bilateral patellofemoral pain syndrome; anterior or retropatellar knee pain during at least 2 following activities: prolonged sitting, ascending or descending stair, squatting, kneeling, jumping and

running; pain on palpation of medial and lateral patellar facets and positive patellar grind test; an insidious onset of symptoms not related to trauma for the last 3 months; Kujula scores less than 85 out of 100; numeric rate scale scores ranging 3 to 10 during last week. Exclusion criteria: Other knee joint pathologies such as meniscus and ligament injuries, osteoarthritis and tendon impairments; patellar subluxations or dislocations; referral pain from other joints including lumbar spine, hip and sacroiliac joints and spinal fractures; previous knee surgery; neuromuscular, metabolic and rheumatology diseases; pregnancy.

Age

From **18 years** old to **45 years** old

Gender

Female

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **30**

Randomization (investigator's opinion)

Randomized

Randomization description**Blinding (investigator's opinion)**

Single blinded

Blinding description**Placebo**

Not used

Assignment

Parallel

Other design features**Secondary Ids**

empty

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

Shiraz University of Medical Sciences

Street address

Central Building of Shiraz University of Medical Sciences, Zand street, Shiraz

City

Shiraz

Postal code**Approval date**

2016-07-17, 1395/04/27

Ethics committee reference number

IR.SUMS.REC.1395.69

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**

Postural control of trunk and core

Timepoint

First and 12th sessions

Method of measurement

Force plate

2**Description**

Pain intensity

Timepoint

First and 12th sessions

Method of measurement

Numeric Rate Scale (NRS)

Secondary outcomes**1****Description**

Functional stepping

Timepoint

First and 12th sessions

Method of measurement

Step down test

2**Description**

Function

Timepoint

First and 12th sessions

Method of measurement

kujula questionnaire

Intervention groups**1****Description**

Intervention group: The same as control group plus postural control training exercise using unstable sitting. Patients will be asked to control their balance on unstable sitting and hold it as long as possible (3 set, 6 minutes). In order to progress the training, 3 unstable sitting with 3 different diameters (24, 30 and 50 cm) are provided.

Category

Rehabilitation

2

Description

Control group: Stretching exercises for quadriceps, hamstring, iliotibial band and calf muscles (3 repetition, 30 second hold); quadriceps setting, terminal knee extension, straight leg raise and hip abductor and external rotator strengthening exercise (3 set, 10 second hold).

Category

Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center

Physiotherapy clinic of Shiraz School of Rehabilitation

Full name of responsible person

Dr. Alireza Motealleh

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NO.32, Abiverdi 1 Avenue, Chamran Blvd, Shiraz

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Sponsors / Funding sources

1

Sponsor

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Shiraz University of Medical Sciences Building, Zand Street, Shiraz.

City

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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

empty

Domestic or foreign origin

empty

Category of foreign source of funding

empty

Country of origin

Type of organization providing the funding

empty

Person responsible for general inquiries

Contact

Name of organization / entity

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Forouzan Foroughi

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Sharing plan

Deidentified Individual Participant Data Set (IPD)

empty

Study Protocol

empty

Statistical Analysis Plan

empty

Informed Consent Form

empty

Clinical Study Report

empty

Analytic Code

empty

Data Dictionary

empty