Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 2026

The effects of exercise therapy plus Quadriceps , Gluteus Medius and Quadratus Lumborum self-myofascial-release on pain , function and balance in patients with patellofemoral pain through telerehabilitation

Protocol summary

Study aim
The aim of this study is to investigate the effects of exercise therapy plus Quadriceps , Gluteus Medius and Quadratus Lumborum self-myofascial-release on pain , function and balance in patients with patellofemoral pain (PFP)through telerehabilitation

Design
A randomized clinical trial with controlled, paralleled groups, single blind with a sample size of 60 people

Settings and conduct
Patients with PFP who refer to clinics affiliated to Shiraz University of Medical science will be divided into 2 groups randomly. The assessor will unaware of grouping patients and their allocation.

Participants/Inclusion and exclusion criteria
Patients with PFP that the onset of pain is more than1 month and they report 30 from 100 on the pain Visual Analogue Scale(VAS) in the last week also they have at least one trigger point in ipsilateral Gluteus Medius, Contralateral Quadratus Lumborum and Quadriceps and they are able to use internet properly are included in this study. Exclusion criteria including history of lower extremity injury and surgery, infections, neurologic and systemic diseases

Intervention groups
Intervention group: Patients with PFP will receive videos including exercise program and self-myofascial release techniques weekly for 4 weeks .They perform exercise 3 times a week and self-myofascial release techniques twice a week. In order to ensure that participants do exercise and techniques correctly, video calls will make. Control group: They are the same as intervention group, but they do not perform self-myofascial release techniques. On assessment day, everyone receives pamphlet.

Main outcome variables
Pain, function and balance

General information

Reason for update

Acronym

IRCT registration information
IRCT registration number: **IRCT20220628055300N1**
Registration date: **2022-07-27, 1401/05/05**
Registration timing: **prospective**

Last update: **2022-07-27, 1401/05/05**
Update count: **0**

Registration date
2022-07-27, 1401/05/05

Registrant information

Name
Safoora Akhavan Hariri

Name of organization / entity

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Iran (Islamic Republic of)

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+98 71 3627 1551

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Recruitment status
Recruitment complete

Funding source

Expected recruitment start date
2022-08-23, 1401/06/01

Expected recruitment end date
2023-01-20, 1401/10/30

Actual recruitment start date
empty

Actual recruitment end date
empty

Trial completion date
empty

Scientific title
The effects of exercise therapy plus Quadriceps , Gluteus Medius and Quadratus Lumborum self-myofascial-release on pain , function and balance in patients with patellofemoral pain through telerehabilitation

Public title
The effects of exercise therapy plus Quadriceps , Gluteus Medius and Quadratus Lumborum self-myofascial-release in patellofemoral pain through telerehabilitation

Purpose
Treatment

Inclusion/Exclusion criteria

Inclusion criteria:
People between the ages of 18 and 45 (both sexes). The onset of pain is more than 1 month which is aggravated by at least two of these activities prolonged sitting, squatting , kneeling ,running ,upstairs and downstairs ,jumping and landing also pain is at least 30 from 100 on visual analogue scale during activities. Unilateral anterior knee pain, prepatellar or retro patellar pain that person reports at least 30 from 100 on pain visual analogue scale in the last week. If the pain is bilateral, the side with more pain is considered. Positive Clarke's sign KUJALA questionnaire score is less than 85 The presence of trigger points in Gluteus Medius muscle of the affected side, Quadratus Lumborum on the opposite side and at least one part of the Quadriceps muscle. People have ability to use the Internet and virtual communication.

Exclusion criteria:
History of back, hip, ankle or other anatomical knee structures injury in previous 6 months History of lower limb trauma in recent 6 months History of knee surgery History of lower limb surgery Meniscus or knee ligaments injury Patellar tendinopathy History of patellar dislocation History of knee intra-articular injection in last 3 months Systemic or local infections Referral pain from lumbar region Writing and speaking inability Systemic diseases such as Rheumatoid Arthritis and other inflammatory joint diseases Neurological disease such as Multiple Sclerosis, history of stroke and any other nervous system problem Person has received physiotherapy due to his problem since 6 months ago. Sever lower limb deformity People who are suffering from cancer or history of chemotherapy

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

Gender
Both

Phase
N/A

Groups that have been masked

- Outcome assessor

Sample size
Target sample size: **60**

Randomization (investigator's opinion)
Randomized

Randomization description
Using of randomization software,60 numbers are dedicated to each case and the program defines 15 blocks of 4, 2 of which are allocated to exercise therapy plus Quadriceps , Gluteus Medius and Quadratus Lumborum self-myofascial-release through telerehabilitation group and the other 2 people are placed in exercise therapy through telerehabilitation group.

Blinding (investigator's opinion)
Single blinded

Blinding description
The person who evaluates the patients is completely unaware of grouping patients and their allocation.

Placebo
Not used

Assignment
Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee
Ethics committee in Research, Shiraz Faculty of Rehabilitation Sciences

Street address
Abiverdi1 Street, Chamran Blvd

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Shiraz

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Postal code
33669-71947

Approval date
2022-07-03, 1401/04/12

Ethics committee reference number
IR.SUMS.REHAB.REC.1401.016

Health conditions studied

1

Description of health condition studied
Patellofemoral pain

ICD-10 code
M25.56

ICD-10 code description
Pain in knee

Primary outcomes

1

Description
Pain

Timepoint
Before treatment, immediately after the last treatment session and two weeks after the end of the treatment

Method of measurement

Visual Analogue Scale

2

Description
Pressure pain Threshold
Timepoint
Before treatment and immediately after the last treatment session
Method of measurement
Algometer

3

Description
Function
Timepoint
Before treatment, immediately after the last treatment session and two weeks after the end of the treatment
Method of measurement
KUJALA questionnaire

4

Description
Lower extremity function
Timepoint
Before treatment, immediately after the last treatment session and two weeks after the end of the treatment
Method of measurement
Lower Extremity Functional Scale

5

Description
Balance
Timepoint
Before treatment, immediately after the last treatment session and two weeks after the end of the treatment
Method of measurement
Modified Star Excursion Balance Test

Secondary outcomes

empty

Intervention groups

1

Description
Intervention group: exercise therapy with Quadriceps, Gluteus Medius, Quadratus Lumborum self-myofascial release through telerehabilitation in patients with patellofemoral pain. On assessment day, they are given pamphlet including exercises and pictures related to them and advice about changing their poor habits such as avoiding sitting for a long time and sitting on a short chair then they will be received videos including exercise program and self-myofascial release every week for four weeks also video calls are made to them every week to ensure the correct way of doing the exercises .These people are asked to do exercises 3 times a week and before starting, use a cold pack on their knees for 20 minutes. Also, these people do self-myofascial release techniques on 2 of the 3 days.
Category
Rehabilitation

2

Description
Control group: exercise therapy through telerehabilitation in patients with patellofemoral pain. Pamphlet, exercise therapy program, exercises frequency, exercises video and video call for this group is the same as intervention group. They just do not perform self-myofascial release techniques.
Category
Rehabilitation

Recruitment centers

1

Recruitment center
Name of recruitment center
Shiraz School of Rehabilitation
Full name of responsible person
Sara Abolahrari-Shirazi
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Sponsors / Funding sources

1

Sponsor
Name of organization / entity
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Full name of responsible person
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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

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

Shiraz University of Medical Sciences

Full name of responsible person

Sara Abolahrari-Shirazi

Position

Assistant Professor

Latest degree

Ph.D.

Other areas of specialty/work

Physiotherapy

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M.Sc. Student

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Other areas of specialty/work

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Sharing plan

Deidentified Individual Participant Data Set (IPD)

No - There is not a plan to make this available

Justification/reason for indecision/not sharing IPD

There is no further information

Study Protocol

No - There is not a plan to make this available

Statistical Analysis Plan

No - There is not a plan to make this available

Informed Consent Form

No - There is not a plan to make this available

Clinical Study Report

No - There is not a plan to make this available

Analytic Code

No - There is not a plan to make this available

Data Dictionary

No - There is not a plan to make this available