Clinical Trial Protocol
Iranian Registry of Clinical Trials

06 Nov 2026

Comparing the Effect of Self-Administered Acupressure and Isometric Exercises on Pain and Quality of Life in Elderly with Knee Osteoarthritis

Protocol summary

Study aim

Determining the effect of self-administered acupressure and isometric exercises on pain and quality of life in elderly people with knee osteoarthritis

Design

This clinical trial includes three groups (self-administered acupressure, isometric exercises, and control groups). For random allocation of 126 eligible elderly people to the three groups, a simple random method (random numbers table) will be used.

Settings and conduct

Intervention is performed on elderly over 60 years old with knee osteoarthritis referred to comprehensive health service centers. Self-administered acupressure interventions and isometric exercises are taught separately to their respective groups by the researcher in one in-person training session. Then, participants perform the interventions for eight weeks, three days a week, for a total of 24 sessions at home and remotely.

Participants/Inclusion and exclusion criteria

Inclusion criteria: * Age >60 years, conscious. * Knee osteoarthritis (6 months to 5 years) with moderate to severe pain (VAS 40-70). * No underlying diseases, recent surgery, or skin infection. * Possession of a smartphone. Exclusion: * Worsening pain. * Absence for ≥3 sessions. * Withdrawal from the study.

Intervention groups

This study has three groups (two intervention groups and one control group). The self-administered acupressure and isometric exercises group includes clients with knee osteoarthritis who have pain along with at least three of the American Rheumatology Association's clinical criteria, and whose visual pain scale is between 4 and 7; they will receive the interventions. The control group is also based on the same criteria and performs their usual daily activities.

Main outcome variables

pain and Quality of life

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20150519022320N38**
Registration date: **2026-07-21, 1405/04/30**
Registration timing: **prospective**

Last update: **2026-07-21, 1405/04/30**
Update count: **0**

Registration date

2026-07-21, 1405/04/30

Registrant information

Name

Tayebeh Mirzaei

Name of organization / entity

Rafsanjan University of Medical Sciences

Country

Iran (Islamic Republic of)

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Recruitment status

recruiting

Funding source

Expected recruitment start date

2026-08-24, 1405/06/02

Expected recruitment end date

2026-11-11, 1405/08/20

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title
Comparing the Effect of Self-Administered Acupressure and Isometric Exercises on Pain and Quality of Life in Elderly with Knee Osteoarthritis

Public title
Effect of Self-Administered Acupressure and Isometric Exercises on Pain and Quality of Life in Elderly with Knee Osteoarthritis

Purpose
Supportive

Inclusion/Exclusion criteria

Inclusion criteria:
Individuals over 60 years old Individuals who are mentally alert and able to answer questionnaire questions Diagnosed with knee osteoarthritis (presence of pain along with at least 3 out of 6 clinical criteria from the American College of Rheumatology and a history of the disease for at least 6 months and a maximum of 5 years). Having pain for more than three months (chronic pain). A baseline score of 40-70 (out of 100) for knee pain on the VAS scale Absence of local skin infections or open skin in acupressure-related areas. No history of other autoimmune diseases, including lupus erythematosus, rheumatoid arthritis, and chronic neuropathic diseases such as diabetes. No intra-articular injection within the past three months. No history of knee surgery or severe knee trauma. Own a smartphone.

Exclusion criteria:
Worsening of disease symptoms Non-adherence to interventions for 3 or more sessions Unwillingness to continue cooperation in this study

Age
From **60 days** old

Gender
Both

Phase
N/A

Groups that have been masked
No information

Sample size
Target sample size: **126**

Randomization (investigator's opinion)
Randomized

Randomization description
After determining the framework of the samples, the data will be divided into 3 blocks A, B, C based on age and gender using block randomization. The first data in one of the 3 groups will be selected by simple random sampling using "Random allocation software", and in the next 2 groups, the data will be allocated similarly based on the software. After equal allocation of data to the 3 groups, the treatment methods were written on 3 separate sheets and one method was assigned to each group by drawing lots, and the self-administered acupressure intervention groups, isometric exercises, and the control group will be determined.

Blinding (investigator's opinion)
Not blinded

Blinding description

Placebo
Not used

Assignment
Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee
Research Ethics Committee of Rafsanjan University of Medical Sciences

Street address
Rafsanjan, Nurse Street, Rafsanjan School of Nursing and Midwifery

City
rafsanjan

Province
Kerman

Postal code
7718796755

Approval date
2026-07-12, 1405/04/21

Ethics committee reference number
IR.RUMS.REC.1405.050

Health conditions studied

1

Description of health condition studied
Knee osteoarthritis pain

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description
pain in elderly

Timepoint
All participants complete the visual pain scale before, during, and after the intervention.

Method of measurement
visual pain scale(VAS)

2

Description
Quality of Life

Timepoint
All participants complete the 36-item Quality of Life Questionnaire (SF-36) before, during, and after the intervention.

Method of measurement
Quality of Life Questionnaire (SF-36)

Secondary outcomes

empty

Intervention groups

1

Description

Intervention group: The self-administered acupressure training group offers a 2-hour session for groups of 12 people. To prevent disorganization in training and participant delays, groups are trained separately on different days. This includes educational videos for home sessions, identifying target points, and pressure technique. It is performed by the conscious and aware elderly person themselves or by one of their family members. The method is as follows: participants first sit on a chair or the edge of a bed and identify 3 target points around their knee. Patients should hold the affected knee with their hand for 3 minutes and massage the area without gloves and without using oil or ointment until they feel the area has warmed up. Then, they should apply pressure to each identified point with their thumb for 3 minutes. This action continues for 3 minutes (for each point) and then is repeated at the next point for 3 minutes. This process should be done twice a day for 8 consecutive weeks (3 days a week). Acupressure is applied for three minutes at each point using the thumbs. Pressure is applied vertically and gradually increased from gentle to firm, slowly, gently, and continuously, without sudden or excessive force. Acupressure is applied to both painful knees of individuals with knee OA. The pressure should be firm and deep to massage each point, massaging each point until a numb sensation is felt. The participant should sit comfortably and breathe deeply. These maneuvers should not be performed immediately before or after strenuous exercise or meals. If the patient is unable to perform this method, they can ask for help from another person at home who has been trained by the researcher. Key points in the Dubbi acupressure group are (ST35) Dubbi below the outer patella, (ST36) Zusanli below the knee on the tibia, and (Yanglingquan) GB34: lower than the outer part of the knee, one cun below the head of the fibula. Bilaterally (if both knees are involved).

Category

Treatment - Other

2

Description

Intervention group: In the isometric exercise group, training is provided in a 60-minute in-person session by the researcher, along with instructional videos for home sessions. In the isometric exercise group, training is provided in groups of 12 people to prevent disorganization in training and participant delays; groups are trained separately on different days. Exercises are repeated 3 days a week (twice a day) for 8 weeks, for a total of 24 sessions. Movements suitable for the elderly, considering their limitations, are performed for 40 minutes, including 10 minutes of warm-up, 20 minutes of isometric exercises, and 10 minutes of cool-down. Seated and supine movements will be performed with 10 repetitions per item, holding for 10 seconds. Quadriceps isometric contractions (Quad Sets): Lie down or sit up. Contract the quadriceps muscle without moving the knee joint. Maintain the contraction for 10 seconds. Repeat 10 times for the injured knee. Lie down, bend one knee, and place a pillow under the heel of the other foot. Contract the quadriceps muscle without moving the knee joint, and simultaneously press the knee against the surface below. Maintain the contraction for 10 seconds. Repeat 10 times for the injured knee. Isometric exercises for hamstring muscles: Lie on your back with one leg bent and the sole of your foot on the ground. Grab the other leg from below the thigh with both hands and gently try to straighten your knee. Hold this position for 10 seconds and repeat 10 times for the injured knee. This causes contraction of the hamstring muscles. Semi-squat exercise: Stand between a door frame and place a pillow between your two knees. While pressing your knees together, bend them and go down (foot angle between 30 and 45 degrees). Stay in this position for 10 seconds, repeating 10 rounds. Pillow squeeze exercise: Sit on a flat surface with both legs straight. Place one pillow underneath and one pillow between your two knees. With both knees, simultaneously press the pillow between them and keep your legs as straight as possible so that your knees press against the pillow underneath. Hold this movement for 10 seconds and perform 10 times.

Category

Treatment - Other

3

Description

Control group: This group, with conditions similar to the intervention groups, receives no intervention and is told to continue their usual daily activities.

Category

Treatment - Other

Recruitment centers

1

Recruitment center

Name of recruitment center

Comprehensive Health Service Centers in Rafsanjan

Full name of responsible person

Dr. Tayebeh Mirzaei Khalilabadi

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Sponsors / Funding sources

1

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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
Rafsanjan 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
Rafsanjan University of Medical Sciences
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Position
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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