

Clinical Trial Protocol

Iranian Registry of Clinical Trials

30 Jun 2026

The effect of uphill walking on pain, range of motion, stride length, walking speed and disability in patients with knee osteoarthritis

Protocol summary

Summary

osteoarthritis is the degeneration of joint cartilage and subchondral bone that cause pain, morning stiffness and disability in patients. Knee osteoarthritis is the most prevalent rheumatism disease worldwide. Patients who suffer from knee osteoarthritis, walk with bent knee. Due to knee flexion, center of pressure of knee moves backward, and therefore flexion moment increases and quadriceps muscle must work with more forces and thereafter compressive force on patellofemoral joint is increased. The treatment that can move center of pressure anteriorly, such as walking on inclined surface, cause decrease of flexion moment arm in knee joint. People who participate in this research, at first, complete 3 questionnaires that involve demographic data, knee injury and osteoarthritis outcome score (KOOS) and visual analogue scale (VAS). Then knee flexion and extension range of motion, self-selected walking speed and stride length are measured. Afterward, participants are divided into two groups according to random assignment by individual method. Control group receives 10 sessions of routine physiotherapy. Intervention group receives 10 sessions of routine physiotherapy with 2 sets of walking at 1/1 meter per second on treadmill while treadmill surface is inclined to 8 degrees. Each set remains 15 minutes. The parameters that were described are measured again after the end of 10 sessions of physiotherapy and 20 days afterward.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT20171115034920N1**

Registration date: **2017-11-15, 1396/08/24**

Registration timing: **prospective**

Last update:

Update count: **0**

Registration date

2017-11-15, 1396/08/24

Registrant information

Name

parisa sedaghatnejad

Name of organization / entity

university of social welfare and rehabilitation science

Country

Iran (Islamic Republic of)

Phone

+98 26 3223 6984

Email address

pa.sedaghatnejad@uswr.ac.ir

Recruitment status

Recruitment complete

Funding source

personal

Expected recruitment start date

2017-11-22, 1396/09/01

Expected recruitment end date

2018-08-23, 1397/06/01

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

The effect of uphill walking on pain, range of motion, stride length, walking speed and disability in patients with knee osteoarthritis

Public title

the effect of uphill walking on knee osteoarthritis

Purpose

Treatment

Inclusion/Exclusion criteria

inclusion criteria : 2 and 3 grade of osteoarthritis based on Kell grenade Lawrence scale don't receive physiotherapy treatment for knee osteoarthritis ,one year before entry to research don't take intra articular injection from 3 month before entry to research don't have history of trauma,fracture,dislocation and surgery of knee joint lack of BMI above 30 kilogeram per square meter worst reported pain during last week , at least is 30 mm on the VAS lack of systemic arthritis don't use of walking assisting device exclusion criteria: injury or severe hypotension as a result of intervention intolerable increase of pain disinclination to participate in research 2 continuous session absence

Age

From **40 years** old to **65 years** old

Gender

Both

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)

Not blinded

Blinding description

Placebo

Not used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

university of social welfare and rehabilitation science

Street address

koodakyar alleu, daneshjoo street, evin

City

tehran

Postal code

Approval date

2017-10-18, 1396/07/26

Ethics committee reference number

IR.USWR.REC.1396.183

Health conditions studied

1

Description of health condition studied

knee osteoarthritis

ICD-10 code

M19.9

ICD-10 code description

Arthrosis, unspecified

Primary outcomes

1

Description

pain

Timepoint

preintervention-the end of 10 session- 20 days after the end of intervention

Method of measurement

visual analogue scale

2

Description

range of motion

Timepoint

preintervention-the end of 10 session- 20 days after the end of intervention

Method of measurement

goniometer

3

Description

walking speed

Timepoint

preintervention-the end of 10 session- 20 days after the end of intervention

Method of measurement

10 meter walking test

4

Description

stride length

Timepoint

preintervention-the end of 10 session- 20 days after the end of intervention

Method of measurement

distance division on stride number

Secondary outcomes

1

Description

disability

Timepoint

preintervention-the end of 10 session- 20 days after the end of intervention

Method of measurement

Knee injury and Osteoarthritis Outcome Score questionnaire

Intervention groups

1

Description

intervention: routine physiotherapy + walking on inclined treadmill

Category

Rehabilitation

2

Description

control: routine physiotherapy

Category

Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center

shams physiotherapy

Full name of responsible person

mohsen shams

Street address

Sina building , No339 , east 196 street , shahed square , tehranpars

City

tehran

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

university of social welfare and rehabilitation science

Full name of responsible person

parisa sedaghatnejad

Street address

no51 nabreh street azadeqan karaj city

City

karaj

Grant name

Grant code / Reference number

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

Yes

Title of funding source

university of social welfare and rehabilitation science

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

University of social welfare and rehabilitation sciences

Full name of responsible person

parisa sedaghatnejad

Position

master

Other areas of specialty/work

Street address

no51 nabreh street azadeqan karaj city

City

karaj

Postal code

3154744948

Phone

+98 26 3223 6984

Fax

Email

p.sedaghat93@gmail.com

Web page address

Person responsible for scientific inquiries

Contact

Name of organization / entity

University of social welfare and rehabilitation sciences

Full name of responsible person

parisa sedaghatnejad

Position

masters

Other areas of specialty/work

Street address

no51 nabreh street azadeqan karaj city

City

karaj

Postal code

3154744948

Phone

+98 26 3223 6984

Fax

Email

p.sedaghat93@gmail.com

Web page address

Person responsible for updating data

Contact

Name of organization / entity

University of social welfare and rehabilitation sciences

Full name of responsible person

parisa sedaghatnejad

Position

masters student

Other areas of specialty/work

Street address

no51 nabreh street azadeqan karaj city

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Web page address

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