Clinical Trial Protocol
Iranian Registry of Clinical Trials

07 Nov 2026

Studying the Effects of Nordic Walking on Balance, Cognitive Function and Disabilities Related to Knee Osteoarthritis in Elderly Women

Protocol summary

Study aim
Determining the effects of Nordic walking on pain, balance, cognitive function, and disability associated with knee osteoarthritis in elderly women

Design
This clinical trail study has a control group, with parallel groups, single-blind, randomized with Generator Random Allocation software.

Settings and conduct
Subjects who meet the conditions for entry into the study will be invited to the study. After that, the demographic characteristics of the subjects and the study outcomes will be assessed in the pre-test. The intervention will be carried out for six weeks, three sessions per week, and each session will last 60 minutes in an open space. After the end of the interventions, post-tests will be taken to determine the effectiveness of the intervention.

Participants/Inclusion and exclusion criteria
Entry requirements for the study: Age over 45 to 65 years Having the American College of Rheumatology clinical criteria for Knee Osteoarthritis Chronic Knee pain on most days, for at least 3 months, pain score of at least4 on a Visual analog pain scale Conditions for not entering the study: Uncontrolled diabetes Body mass index greater than or equal(BMI>40kg>m2), patients With severe obesity Physiotherapy or Knee surgery (Within the past 12 months)

Intervention groups
In the Nordic walking group, participants must use Nordic poles while walking. In the normal walking group, no special equipment is required and it is done as daily walks. In the control group, in order to comply with ethical issues in the research, study interventions will also be applied to the control group after the completion of the research.

Main outcome variables
Balance, Muscle strength, Motor function, cognitive function, Quality of life

General information

Reason for update

Acronym

IRCT registration information
IRCT registration number: **IRCT20241027063512N1**
Registration date: **2024-11-24, 1403/09/04**
Registration timing: **prospective**

Last update: **2024-11-24, 1403/09/04**
Update count: **0**

Registration date
2024-11-24, 1403/09/04

Registrant information

Name
Sosan Panjalizad

Name of organization / entity
The University of Kermanshah

Country
Iran (Islamic Republic of)

Phone
+98 83 3822 2539

Email address
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Recruitment status
Recruitment complete

Funding source

Expected recruitment start date
2025-04-09, 1404/01/20

Expected recruitment end date
2025-07-11, 1404/04/20

Actual recruitment start date
empty

Actual recruitment end date
empty

Trial completion date
empty

Scientific title
Studying the Effects of Nordic Walking on Balance, Cognitive Function and Disabilities Related to Knee Osteoarthritis in Elderly Women

Public title
Studying the effects of Nordic Walking and Simple Walking on the quality of life of Women With Knee Osteoarthritis

Purpose
Prevention

Inclusion/Exclusion criteria

Inclusion criteria:
Age over 45 to 65 years Chronic Knee pain on most days, for at least 3 months, pain score of at least4 on a Visual analog pain scale No intra-articular injections in the past 3 months Having the American College of Rheumatology clinical criteria for Knee Osteoarthritis

Exclusion criteria:
Uncontrolled diabetes Body mass index greater than or equal(BMI>40kg>m2), patients With severe obesity Lower limb arthroplasty Intra-articular steroid injections (within the past 6 months) Systemic arthritis Neuromuscular disorders that interfere with daily functioning, such as (stroke, uncontrolled muscle stiffness, tumor, etc.) Patients who are unable to walk without assistive devices Patients who have undergone other exercise or nutritional treatments in the past three months Neuromuscular diseases (such as MS and Parkinson's) that interfere with exercise programs Fractures and surgery in the lower extremities Use of any other type of therapeutic intervention during the period in which the subjects are in the study

Age
From **45 years** old to **65 years** old

Gender
Female

Phase
N/A

Groups that have been masked

- Outcome assessor

Sample size
Target sample size: **45**

Randomization (investigator's opinion)
Randomized

Randomization description
The output of the Generator Random Allocation software will be performed by a person not involved in the research, and the subjects will be randomly assigned to one of the experimental or control groups.

Blinding (investigator's opinion)
Single blinded

Blinding description
The evaluator will not have any Knowledge of the type of intervention assigned to the groups during the pre-test evaluation phase.

Placebo
Not used

Assignment
Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee
Research Ethics Committee, Razi University of Kermanshah

Street address
Unit 6, Apadana Complex, Shahid Loghmani Alley, North Shahid Fahmideh Blvd., Farhangian Phase 1

City
Kermanshah

Province
Kermanshah

Postal code
۶۷۱۴۷۴۷۸۶۳

Approval date
2024-10-23, 1403/08/02

Ethics committee reference number
IR.RAZI.REC.1403.031

Health conditions studied

1

Description of health condition studied
Knee osteoarthritis

ICD-10 code
M23.8

ICD-10 code description
Other internal derangements of knee

Primary outcomes

1

Description
Assessing pain intensity

Timepoint
Measuring pain intensity before and after the test

Method of measurement
Measuring pain intensity with the McGill Index

Secondary outcomes

1

Description
Balance assessment

Timepoint
Measurement before the intervention and after the intervention

Method of measurement
Technobody device,Pro-kin252N

2

Description
Muscle strength assessment
Timepoint
Measurement before the intervention and after the intervention
Method of measurement
pull-push dynomometer

3

Description
Proprioception of the knee joint assessment
Timepoint
Measurement before the intervention and after the intervention
Method of measurement
Inclinometer device

4

Description
Motor function assessment
Timepoint
Measurement before the intervention and after the intervention
Method of measurement
Osteoarthritis Index Questionnaire, Up&Go Test, 40 Merer Walking Time

5

Description
Cognitive function assessment
Timepoint
Measurement before the intervention and after the intervention
Method of measurement
Montreal Cognitive Assessment questionnaire

6

Description
Checking the level of quality of life
Timepoint
Measurement before the intervention and after the intervention
Method of measurement
Medical Outcomes Study Short Form Scale (SF-36)

Intervention groups

1

Description
Intervention Group 1: This group, which consists of 15 participants, walks with the help of adjustable Nordic walking poles. The duration of our intervention is six weeks, three sessions per week, each session lasting 60 minutes, which takes place outdoors. Each training session includes 15 minutes of warm-up, 35 minutes of walking, and 10 minutes of cool-down.
Category
Rehabilitation

2

Description
Second intervention group: In this group, which consists of 15 subjects, regular walking (without any equipment) is done outdoors for six weeks, three sessions per week, for 60 minutes. Of this time, 15 minutes are dedicated to warming up, 35 minutes to walking, and 10 minutes to returning to the starting position.
Category
Rehabilitation

3

Description
Control group: They do not receive any intervention. After the intervention is completed, healthy lifestyle education is provided.
Category
Lifestyle

Recruitment centers

1

Recruitment center
Name of recruitment center
Razi University
Full name of responsible person
Sosan Panjalizad
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Zakaria Razi Boulevard, Razi University, Faculty of Sport Sciences
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Sponsors / Funding sources

1

Sponsor
Name of organization / entity
Razi University of Kermanshah
Full name of responsible person
Nabi Ahmadi
Street address
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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
Razi University of Kermanshah
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
Razi University of Kermanshah
Full name of responsible person
Sosan Panjalizad
Position
Student
Latest degree
Bachelor
Other areas of specialty/work
Others
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Sharing plan

Deidentified Individual Participant Data Set (IPD)
Yes - There is a plan to make this available
Study Protocol
Yes - There is a plan to make this available
Statistical Analysis Plan
Not applicable
Informed Consent Form
Yes - There is a plan to make this available
Clinical Study Report
Not applicable
Analytic Code
Not applicable
Data Dictionary
Not applicable
Title and more details about the data/document

Information about the study outcomes will be shared.

When the data will become available and for how long

Access period starts 6 months after results are published.

To whom data/document is available

Sports science researchers and researchers at academic institutions

Under which criteria data/document could be used

Research in the relevant field of work

From where data/document is obtainable

Susan Panjalizad, sosanpanjali@gmail.com

What processes are involved for a request to access data/document

Sending a request from the requester, reviewing that request from the researcher, and responding immediately

Comments