Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 2026

The Effect of an 8-week Exercise Program Focused on Anticipatory postural Adjustments on Static and Dynamic balance in pri-fatigue and post-fatigue Elderly women

Protocol summary

Study aim

Investigating the Effect of Balance Exercises Focused on Anticipatory Postural Adjustments on Motor Performance, Quality of Life, and Balance Confidence in Older Women, Before and After Fatigue

Design

This study is a quasi-experimental pretest–posttest design with a control group. Participants were recruited through voluntary convenience sampling and, after baseline assessments, were allocated to intervention and control groups using matched-pair randomization generated by Random Allocation Software.

Settings and conduct

This study will be conducted on older women over 60 years of age residing in Isfahan, Iran. Participants will be recruited through voluntary convenience sampling from the elderly female population of Isfahan. After baseline assessments, participants will be allocated into intervention and control groups using matched-pair randomization. All outcomes were assessed in both groups before and after fatigue.

Participants/Inclusion and exclusion criteria

Inclusion criteria include age ≥60 years, completion of informed consent, and absence of medical or ethical contraindications to participate in exercise. Exclusion criteria include failure to complete the assessments, absence from more than one-third of the 8-week training sessions (more than 8 sessions), or presence of lower limb length discrepancy.

Intervention groups

Intervention group: Older women >60years performing 8 weeks of balance training focused on anticipatory postural adjustments. Control group: Older women (>60 years) receiving no intervention during the study period.

Main outcome variables

The primary outcome is the change in static balance (Functional Reach Test), dynamic balance (Timed Up and Go test), and quality of life (SF-36 questionnaire) in older women before and after the training intervention and under pre- and post-fatigue conditions.

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20251121068066N10**
Registration date: **2026-05-04, 1405/02/14**
Registration timing: **prospective**

Last update: **2026-05-04, 1405/02/14**
Update count: **0**

Registration date

2026-05-04, 1405/02/14

Registrant information

Name

Atiyeh Hesari

Name of organization / entity

Country

Iran (Islamic Republic of)

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Email address

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Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2026-05-31, 1405/03/10

Expected recruitment end date

2026-07-23, 1405/05/01

Actual recruitment start date

empty

Actual recruitment end date
empty
Trial completion date
empty

Scientific title
The Effect of an 8-week Exercise Program Focused on Anticipatory postural Adjustments on Static and Dynamic balance in pri-fatigue and post-fatigue Elderly women

Public title
The Effect of an 8-week Exercise Program Focused on Anticipatory postural Adjustments on Static and Dynamic balance in pri-fatigue and post-fatigue Elderly women
Purpose
Treatment
Inclusion/Exclusion criteria
Inclusion criteria:
No medical or ethical contraindications for participating in the exercises (including visual, auditory, cardiopulmonary, communicative, etc.) Minimum age of 60 years Completion of the informed consent form
Exclusion criteria:
Absence of leg length discrepancy Failure to complete the tests and participate in the training sessions (The training program is designed for an 8-week period with 3 sessions per week, totaling 24 one-hour sessions. Participants who miss more than one-third of the sessions—i.e., 8 sessions—for any reason will be excluded from the study.)
Age
From **60 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
The participants were first matched based on weight and height. Each matched pair was then randomly allocated to one of the two groups using block randomization and random sequences generated by the Random Allocation Software. The allocation process was conducted by an independent individual to minimize allocation bias.
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, Islamic Azad University, Isfahan Branch (Khorasgan)
Street address
Jey Sharqi Street, Arghavanieh, Daneshgah Boulevard, Islamic Azad University, Isfahan Branch (Khorasgan), Isfahan
City
Isfahan
Province
Isfehan
Postal code
39998-81551
Approval date
2024-08-27, 1403/06/06
Ethics committee reference number
IR.IAU.KHUISF.REC.1403.318

Health conditions studied

1

Description of health condition studied
Age-related balance impairment in older women
ICD-10 code
ICD-10 code description
Age-related balance impairment in older women

Primary outcomes

1

Description
Static Balance: The ability to maintain static balance in older women.
Timepoint
Before the start of the intervention and after the 8-week intervention period, assessed under both pre-fatigue and post-fatigue conditions.
Method of measurement
Assessed using the Functional Reach Test. The maximum forward reach distance without stepping is measured, and the difference between the initial and maximal reach positions is recorded in centimeters.

2

Description
Dynamic Balance:The ability to maintain balance during movement and mobility.
Timepoint
Before the intervention and after completion of the intervention, under both pre-fatigue and post-fatigue conditions.
Method of measurement
Assessed using the Timed Up and Go (TUG) test. The time required to stand up from a chair, walk 3 meters,

turn, walk back, and sit down is recorded in seconds.

3

Description
Quality of Life: Health-related quality of life in older women.
Timepoint
Before the intervention and after the completion of the 8-week intervention.
Method of measurement
Assessed using the validated SF-36 questionnaire, which evaluates multiple domains of quality of life and provides a score ranging from 0 to 100.

Secondary outcomes

empty

Intervention groups

1

Description
Control group: Older women (>60 years) receiving no intervention during the study period.
Category
Treatment - Other

2

Description
Intervention group: Elderly women aged over 60 years participated in an 8-week exercise program focusing on enhancing the anticipatory postural adjustment mechanism of balance control. Training was performed three sessions per week, with each session lasting 60 minutes (10 minutes warm-up, 40 minutes main exercises, and 10 minutes cool-down). The main exercises consisted of ball throwing and catching tasks with progressive manipulation of variables such as throwing distance, direction, type of throw, ball weight, and body posture (changes in base of support). The program was progressively designed to challenge anticipatory balance mechanisms and improve motor function and balance control in older adults.
Category
Treatment - Other

Recruitment centers

1

Recruitment center
Name of recruitment center
Novin Clinic
Full name of responsible person
Sarah Bayat
Street address
4th Floor, Omits Building, Bozorgmehr St., between Rokn-od-Dowleh St. and Hasht Behesht Crossroad, Isfahan, Iran
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Sponsors / Funding sources

1

Sponsor
Name of organization / entity
Islamic Azad University, Isfahan Branch (Khorasgan)
Full name of responsible person
Gholamreza Talebi
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Jey Sharqi Street, Arghavanieh, Daneshgah Boulevard, Islamic Azad University, Isfahan Branch (Khorasgan), Isfahan
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khosrojalali@gmail.com
Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
Yes
Title of funding source
Islamic Azad University, Isfahan Branch (Khorasgan)
Proportion provided by this source
50
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
Islamic Azad University, Isfahan Branch (Khorasgan)
Full name of responsible person
Hamed Arghavani
Position
Assistant professor

Latest degree
Ph.D.
Other areas of specialty/work
Corrective movements
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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