

Clinical Trial Protocol

Iranian Registry of Clinical Trials

27 May 2026

Effect of perturbation training on kinetic factor, EMG, functional movement tests, quality of life and fear of falling in elderly people

Protocol summary

Study aim

The purpose is to provide a special balance training program for improving balance and fall prevention in elderly.

Design

In this experimental study, 60 elderly men with a history of falls were randomly assigned to 3 groups of anticipatory postural adjustment training, current balance training, and the control group, and the training groups were trained for 8 weeks. three arm parallel group randomized trial.

Settings and conduct

In this study, after grouping the samples randomly, two training groups individually performed their exercises under the supervision of the instructor at the sports club.

Participants/Inclusion and exclusion criteria

Inclusion criteria were included the men aged between 65 to 80 years, having the ability to walk without help, having the normal or corrected vision and hearing and positive response to the whole question of Physical Activity Readiness Questionnaire (PARQ). Exclusion criteria were included having abnormalities in the foot, score of less than 24 out of 30 on Mini-Mental State Examination.

Intervention groups

First intervention group: Apply a anticipatory postural adjustment focused training program. Second intervention group: Applying the current balance training program for the elderly Control group: no intervention

Main outcome variables

static balance, dynamic balance, center of pressure displacement, onset muscle contraction, balance confidence and quality of life in the elderly.

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20180618040132N1**

Registration date: **2018-09-01, 1397/06/10**

Registration timing: **retrospective**

Last update: **2018-09-01, 1397/06/10**

Update count: **0**

Registration date

2018-09-01, 1397/06/10

Registrant information

Name

Hamed Arghavani

Name of organization / entity

University of Isfahan

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Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2018-01-22, 1396/11/02

Expected recruitment end date

2018-02-24, 1396/12/05

Actual recruitment start date

2018-01-22, 1396/11/02

Actual recruitment end date

2018-02-24, 1396/12/05

Trial completion date

empty

Scientific title

Effect of perturbation training on kinetic factor, EMG, functional movement tests, quality of life and fear of falling in elderly people

Public title

The Effect of balance Exercises Training on Preventing Falling in the Elderly

Purpose

Treatment

Inclusion/Exclusion criteria**Inclusion criteria:**

men aged between 60 to 80 years, having the ability to walk without help having the normal or corrected vision and hearing positive response to the whole question of Physical Activity Readiness Questionnaire

Exclusion criteria:

having abnormalities in the foot score of less than 24 out of 30 on Mini-Mental State Examination

Age

From **60 years** old to **80 years** old

Gender

Male

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **60**

Actual sample size reached: **60**

Randomization (investigator's opinion)

Randomized

Randomization description

After considering the criteria of the research, the samples were randomly assigned with the help of a random number table.

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**

Institutional Review Board of Isfahan University of Medical Sciences

Street address

University of Medical Sciences, Hezarjerib street, Isfahan

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8174673441

Approval date

2018-03-07, 1396/12/16

Ethics committee reference number

IR.UI.REC.1396.065

Health conditions studied**1****Description of health condition studied**

elderly (fall)

ICD-10 code

W01

ICD-10 code description

Fall on same level from slipping, tripping and stumbling

Primary outcomes**1****Description**

Quality of life

Timepoint

First and after 12 weeks of practice

Method of measurement

SF36 survey

2**Description**

balance confidence

Timepoint

First and after 12 weeks of practice

Method of measurement

Activities-Specific Balance Confidence scale

3**Description**

center of pressure displacement

Timepoint

First and after 12 weeks of practice

Method of measurement

foot scan system was used

4**Description**

Electromyography

Timepoint

First and after 12 weeks of practice

Method of measurement

ME 6000 Electromyography

5**Description**

dynamic balance

Timepoint

First and after 12 weeks of practice

Method of measurement

Dynamic balance of subjects was measured by time up and go test.

6

Description

static balance

Timepoint

First and after 12 weeks of practice

Method of measurement

with functional reach test

Secondary outcomes

empty

Intervention groups

1

Description

Control group: No practice and doing everyday activities

Category

N/A

2

Description

First intervention group: anticipatory postural adjustment training group. they performed 8 weeks of APA-focused training (catching and throwing a ball) three sessions per week and each session one hour. The exercise protocol included 10 minutes of warm-up, 40 minutes of the main training and 10 minutes to cool-down. Variables such as the number (low/high), distance (near/far), the direction (inside the chest/overhead), the type of catching (ground/air), the weight and type of ball (light/heavy, volleyball, basketball, medicine ball), how to sit (fixed chair, movable chair and Swiss Ball), how to stand (large base of support/small base of support), and walking (slow/fast) during the program were manipulated to increase exercise pressure and exercise variation.

Category

Rehabilitation

3

Description

Second intervention group: current balance training group. they performed 8 weeks of training, three sessions per week and each session one hour. The exercise protocol included 10 minutes of warm-up, 40 minutes of the main training and 10 minutes to cool-down. Variables such as Joints flexibility exercises, muscle strength exercises, balance exercises and walking were modified during the program to increase exercise pressure and exercise variation.

Category

Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center

university of isfahan

Full name of responsible person

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

The University of Isfahan

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

The University of Isfahan

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

The University of Isfahan

Full name of responsible person

Hamed Arghavani

Position

PhD Candidate of Corrective Exercise and Sport Injury

Latest degree

Master

Other areas of specialty/work

Sport Medicine

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Person responsible for updating data**Contact****Name of organization / entity**

University of isfahan

Full name of responsible person

Hamed Arghavani

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

Yes - There is a plan to make this available

Informed Consent Form

Yes - There is a plan to make this available

Clinical Study Report

Yes - There is a plan to make this available

Analytic Code

Not applicable

Data Dictionary

Not applicable

Title and more details about the data/document

All data can be shared after unrecognizable people.

When the data will become available and for how long

Start the access period from 1 month after printing results up to 1 year.

To whom data/document is available

Only researchers working in academic and scientific institutions can access the data.

Under which criteria data/document could be used

Any use for scientific use and observance of ethics is permissible.

From where data/document is obtainable

Faculty of physical education, University of Isfahan, Hamed Arghavani hamed_arghavani1365@yahoo.com +98 9359799744

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

After filing an application by email or contact, data will be sent within a week.

Comments