Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 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

Country
Iran (Islamic Republic of)

Phone
+98 31 3529 1225

Email address
h.arghavani@spr.ui.ac.ir

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
City
Isfahan
Province
Isfehan
Postal code
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
Hamed Arghavani
Street address
Hezarjerib street, university of Isfahan
City
Isfahan
Province
Isfehan
Postal code
8174673441
Phone
+98 31 3529 1225
Email
hamed_arghavani1365@yahoo.com

Sponsors / Funding sources

1

Sponsor
Name of organization / entity
The University of Isfahan
Full name of responsible person
معاونت تحقیقات و فناوری دانشگاه اصفهان
Street address
, Deputy of Research and Technology of Isfahan University, University of Isfahan, Hezarjerib street
City
Isfahan
Province
Isfehan
Postal code
8174673441
Phone
+98 31 3793 2171
Email
rokni@sci.ui.ac.ir
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
Street address
University of Isfahan, Hezarjerib street
City
Isfahan
Province
Isfehan
Postal code
8174673441
Phone
+98 31 3529 1225
Email
hamed_arghavani1365@yahoo.com

Person responsible for scientific inquiries

Contact
Name of organization / entity
University of isfahan
Full name of responsible person
Hamed Arghavani
Position
1- PhD Candidate of Corrective Exercise and Sport Injury, Faculty of Physical Education, Esfahan Uni
Latest degree
Master
Other areas of specialty/work
Sport Medicine
Street address
Hezar jerib Blvd, University of Isfahan, Faculty of physical education, Isfahan.
City
Isfahan
Province
Isfehan
Postal code
8174673441
Phone
+98 31 3529 1225
Fax
Email
hamed_arghavani1365@yahoo.com

Person responsible for updating data

Contact
Name of organization / entity
University of isfahan
Full name of responsible person
Hamed Arghavani
Position
1- PhD Candidate of Corrective Exercise and Sport Injury, Faculty of Physical Education, Esfahan Uni
Latest degree
Master
Other areas of specialty/work
Sport Medicine
Street address
Hezar jerib Blvd, University of Isfahan, Faculty of physical education, Isfahan.
City
Isfahan
Province
Isfehan
Postal code
8174673441
Phone
+98 31 3529 1225
Fax
Email
hamed_arghavani1365@yahoo.com

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