# Clinical Trial Protocol
# Iranian Registry of Clinical Trials

22 Nov 2026

## The effect of corrective exercises on balance in hyperkyphotic elderly women

## Protocol summary

**Summary**

Objectives: Women with hyperkyphosis have impaired balance and increased body sway, which can increase their risk of falls. Impaired balance, mobility, and postural stability are the main risk factors for falling. This study examined the effectiveness of corrective exercises on mobility, postural stability, and balance in hyperkyphotic elderly women. Design: In this randomized controlled trial, participants were randomly assigned to an experimental group and a control group. Setting and conduct: The subjects in exercise group participated in an 8 week (3 sessions a week) corrective exercise program. But the control group didn't participate in any intervention. Participants: 30 adults (60- 75 years old) who lived in Arak and didn't have any of these conditions: geriatric patients with orthopedic disease in the last 5 years, diabetes, Alzheimer's, Parkinson's, cancer or visually impaired, heart problems limiting activity, The use of assistive devices (such as canes and walkers), weakness, fainting and dizziness, subjects with vestibular disorders, subjects with head injuries, people who were not able to perform the exercise protocol and procedures. Intervention: corrective exercise program was prescribed to The subjects in exercise group in 8 week (3 sessions a week). Main outcome measures: Time up and go (TUG), turn 180 test, flexicurve ruler, Berg balance scale were used in pre and post-test for evaluation of mobility, postural stability, kyphosis degree and balance. The number of falls and fear of falling were also recorded.

## General information

**Acronym**

**IRCT registration information**

IRCT registration number: **IRCT2014090319024N1**
Registration date: **2016-01-10, 1394/10/20**
Registration timing: **retrospective**
Last update:
Update count: **0**

**Registration date**

2016-01-10, 1394/10/20

**Registrant information**

**Name**
Fahime Mahmoudi
**Name of organization / entity**
Arak University
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Iran (Islamic Republic of)
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**Recruitment status**

**Recruitment complete**

**Funding source**

Investigator

**Expected recruitment start date**

2014-01-21, 1392/11/01

**Expected recruitment end date**

2014-06-20, 1393/03/30

**Actual recruitment start date**

empty

**Actual recruitment end date**

empty

**Trial completion date**

empty

**Scientific title**

The effect of corrective exercises on balance in hyperkyphotic elderly women

**Public title**

The effect of corrective exercises on balance in hyperkyphotic elderly women

**Purpose**

Treatment

**Inclusion/Exclusion criteria**
Major exclusion criteria: geriatric patients with orthopedic disease in the last 5 years; diabetes; Alzheimer's; Parkinson's; cancer; visually impaired; heart problems limiting activity; The use of assistive devices (such as canes and walkers); weakness; fainting; dizziness; subjects with vestibular disorders; subjects with head injuries; people who were not able to perform the exercise protocol and procedures. Major inclusion criteria: elderly women (60- 75 years old) who lived in Iran, Arak.
**Age**
From **60 years** old to **75 years** old
**Gender**
Female

**Phase**
2-3
**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**
Ethics committee of Arak University of Medical Sciences
**Street address**
Arak University of Medical Sciences,Sardasht, Arak, Iran
**City**
Arak
**Postal code**
**Approval date**
2014-02-24, 1392/12/05
**Ethics committee reference number**
92-159-19

## Health conditions studied

### 1

**Description of health condition studied**
Balance in hyperkyphotic elderly women
**ICD-10 code**
M40.0
**ICD-10 code description**
Postural kyphosis

## Primary outcomes

### 1

**Description**
Mobility
**Timepoint**
Pre and post test
**Method of measurement**
Time Up and Go Test

### 2

**Description**
Postural Stability
**Timepoint**
Pre and post test
**Method of measurement**
Turn 180 Test

### 3

**Description**
Balance
**Timepoint**
Pre and post test
**Method of measurement**
Berg Balance Scale

## Secondary outcomes

### 1

**Description**
Kyphosis Degree
**Timepoint**
Pre and post test
**Method of measurement**
Flexicurve ruler

## Intervention groups

### 1

**Description**
The subjects in exercise group participated in an 8 week (3 sessions a week) corrective exercise program.
**Category**
Treatment - Other

### 2

**Description**
The control group didn’t participate in any intervention.
**Category**
Treatment - Other

## Recruitment centers

**1**

**Recruitment center**
**Name of recruitment center**
Jahandideh Daily Geriatric Rehabilitation Center
**Full name of responsible person**
Jahan ban
**Street address**
Jahandideh Daily Geriatric Rehabilitation Center, Meisam street, Shahid Beheshti street, Arak, Iran
**City**
Arak

## Sponsors / Funding sources

**1**

**Sponsor**
**Name of organization / entity**
Vice chancellor for research, Arak University
**Full name of responsible person**
Doctor Alireza Fazlaali
**Street address**
Vice chancellor for research, Arak University, Oloum Alley, Shariati Square, Arak, Iran
**City**
Arak
**Grant name**
**Grant code / Reference number**
**Is the source of funding the same sponsor organization/entity?**
Yes
**Title of funding source**
Vice chancellor for research, Arak University
**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**
Arak University
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Fahime Mahmoudi
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M.Sc of Physical Training and Sport Sciences
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## Person responsible for scientific inquiries

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## Person responsible for updating data

**Contact**

## 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*