

Clinical Trial Protocol

Iranian Registry of Clinical Trials

20 Jul 2026

The comparison of whole body vibration with frequency of 20 and 40 Hz on the transmissibility to the lower limb's joints and center of pressure sway in the postmenopausal women

Protocol summary

Study aim

Comparison of 20 and 40 Hz of whole body vibration on the center of pressure sway in postmenopausal women

Design

A clinical trial, self control, in 20 postmenopausal women, in five different modes of vibration frequency and amplitude on the whole body vibration plate. The order of the modes is randomly selected by the independent people by the envelopes in the package.

Settings and conduct

Individuals will participate in the training program voluntarily by installing a public call. The place of study is the movement Disorders Lab of Physical therapy, Tarbiat Modares University. To apply the WBV, the Uniphy Elektromedizin GmbH Fit Vibe (Fitvib) vibrating device. The participants will be placed on the WBV plate barefoot with semi-squat and will have one of the following modes: Off vibration (control), 20 Hz and 2 mm, 20 Hz and 4 mm, 40 Hz and 2 mm, 40 Hz and 4 mm. Except for the base position, which is the control, others will be randomly applied. Before and immediately after each of the above modes, the center of pressure sway will be recorded with Kessler force plate and Mars software. Each mode is composed of two 30-second intervals with a 10-second break between them. During vibration, the transmission of the acceleration (transmissibility) is measured at the level of the lower limb joints (Hip, Knee, and Ankle joints).

Participants/Inclusion and exclusion criteria

Inclusion criteria: At least one year after menopause - Ability to walk independently without aids - Exclusion criteria: Osteoporosis - Balance disturbance and fall history - Patient discomfort while working with whole body vibration

Intervention groups

A group of postmenopausal women who receive whole body vibration with frequency of 20 and 40 HZ

Main outcome variables

Transmissibility in hip, knee, ankle COP displacement
COP velocity path length

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20101017004952N11**

Registration date: **2022-03-05, 1400/12/14**

Registration timing: **prospective**

Last update: **2022-03-05, 1400/12/14**

Update count: **0**

Registration date

2022-03-05, 1400/12/14

Registrant information

Name

Giti Torkaman

Name of organization / entity

Tarbiat Modares University

Country

Iran (Islamic Republic of)

Phone

+98 21 8288 4509

Email address

torkamg@modares.ac.ir

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2022-03-06, 1400/12/15

Expected recruitment end date

2022-05-05, 1401/02/15

Actual recruitment start date

empty

Actual recruitment end date
empty

Trial completion date
empty

Scientific title
The comparison of whole body vibration with frequency of 20 and 40 Hz on the transmissibility to the lower limb's joints and center of pressure sway in the postmenopausal women

Public title
Effect of two frequencies of whole body vibration and transmissibility to the lower limb's joints in the postmenopausal women

Purpose
Health service research

Inclusion/Exclusion criteria
Inclusion criteria:
 At least one year after menopause Body mass 25-32 kg/m² Ability to stand while sitting without aids Ability to walk independently without aids Normal blood pressure and less than 140/90 at rest
Exclusion criteria:
 Osteoporosis Balance disturbance and fall history Vestibular disorders History of joint replacement surgery in the lower extremities Neuro-musculoskeletal disorders Cardiovascular problems Use of drugs that upset the balance system Patient discomfort during whole body vibration

Age
From **50 years** old to **70 years** old

Gender
Female

Phase
N/A

Groups that have been masked

- Outcome assessor

Sample size
Target sample size: **20**

Randomization (investigator's opinion)
N/A

Randomization description
Blinding (investigator's opinion)
 Single blinded
Blinding description
 The outcome measures will record and evaluate by a motion analysis system expert who does not know the steps and specifications of the frequency and amplitude of the whole body vibration device.

Placebo
Not used

Assignment
Single

Other design features

Secondary Ids
empty

Ethics committees

1

Ethics committee

Name of ethics committee

Research ethics committee of Tarbiat Modares University

Street address

Ale-Ahmad

City

Tehran

Province

Tehran

Postal code

1411713116

Approval date

2019-06-16, 1398/03/26

Ethics committee reference number

IR.MODARES.REC.1398.068

Health conditions studied

1

Description of health condition studied

Balance in postmenopausal women

ICD-10 code

R54

ICD-10 code description

Age-related physical debility

Primary outcomes

1

Description

Center of pressure displacement

Timepoint

Before and after vibration

Method of measurement

Force plate

2

Description

Center of pressure velocity

Timepoint

Before and after of vibration

Method of measurement

Force plate

3

Description

Path length

Timepoint

Before and after vibration

Method of measurement

Force plate

4

Description

Transmissibility in hip joint

Timepoint

Before and after vibration

Method of measurement

Accelerometer

5

Description

Transmissibility in knee joint

Timepoint

Before and after vibration

Method of measurement

Accelerometer

6

Description

Transmissibility in ankle joint

Timepoint

Before and after vibration

Method of measurement

Accelerometer

Secondary outcomes

1

Description

Difficulty score for deafferent modes

Timepoint

10-degree visual analogous scale

Method of measurement

Self report

Intervention groups

1

Description

Intervention group: postmenopausal women. A group of postmenopausal women who receive whole body vibration with frequency of 20 and 40 HZ. The participant will be placed on the WBV plate barefoot with semi-squat and will have one of the following modes: Off vibration (control), 20 Hz and 2 mm, 20 Hz and 4 mm, 40 Hz and 2 mm, 40 Hz and 4 mm. Before and immediately after each of the above modes, the center of pressure sway will be recorded. Each mode is composed of two 30-second intervals with a 10-second break between them. During vibration, the transmission of the acceleration (transmissibility) is measured at the level of the lower limb joints (Hip, Knee, and Ankle joints).

Category

Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center

Physical Therapy Lab, Tarbiat Modares University

Full name of responsible person

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Tarbiat Modares University

Full name of responsible person

Amir Abdolazadeh

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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

Tarbiat Modares University

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

Tarbiat Modares University

Full name of responsible person

Giti Torkaman

Position

Professor

Latest degree

Ph.D.

Other areas of specialty/work

Physiotherapy

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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

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

Yes - There is a plan to make this available

Data Dictionary

Yes - There is a plan to make this available

Title and more details about the data/document

The data will be presented in the prepared article after coding the participants. At the request of the reviewers, details of data and statistical methods will be provided.

When the data will become available and for how long

Access since May 2022

To whom data/document is available

Researchers in the field of physiotherapy and other health groups

Under which criteria data/document could be used

Researchers in the field of physiotherapy and other health groups can receive it upon formal request

From where data/document is obtainable

Giti Torkaman, Physical Therapy Department, Tarbiat Modares University

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

Upon receipt of the request, the data will be shared for up to one month

Comments