Clinical Trial Protocol
Iranian Registry of Clinical Trials

07 Nov 2026

Effects of virtual reality training versus traditional balance training on balance and fall risk in people with multiple sclerosis

Protocol summary

Summary

The purpose of this double-blinded, randomized controlled trial study is to compare the effect of virtual reality training versus traditional balance training on balance and fall risk in people with multiple sclerosis. Inclusion criterias include: ability to stand and walk independently, maximum score of 53 on BBS, EDSS below 5/5 and MMSE more than 24. Persons are ineligible for the study if they have an exacerbation of symptoms due to relapse within 3 months of the baseline measurement and any musculoskeletal or neurological conditions except MS limiting balance or gait. Forty patients with MS will be assigned randomly in virtual reality training or traditional balance training (control) group. Participants will receive 45 minutes training session, 3 times per week for 6 weeks. The participants in the traditional balance training group will receive common balance activities while participants in virtual reality training group will practice balance activities using Kinect. Outcome measures for assessing Various aspects of balance and risk of fall are force plate, Timed Up and Go, 10 meter Walk gait speed, Berg Balance Scale, Activities Specific Balance Confidence and Fall Efficacy Scale International. All measures will be collected at baseline and at the end of training.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT2017110737286N1**
Registration date: **2017-11-17, 1396/08/26**
Registration timing: **prospective**

Last update:
Update count: **0**

Registration date

2017-11-17, 1396/08/26

Registrant information

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Farshad Molhemi
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Recruitment status

Recruitment complete

Funding source

Ahvaz Jundishapur University of Medical Science

Expected recruitment start date

2017-12-06, 1396/09/15

Expected recruitment end date

2018-12-06, 1397/09/15

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Effects of virtual reality training versus traditional balance training on balance and fall risk in people with multiple sclerosis

Public title

Effect of two types of exercises on balance performance in patients with multiple sclerosis

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria: A definite diagnosis of MS, relapsing-remitting or secondary progressive types, as diagnosed

by a neurologist; Ability to stand independently; Ages between 18-64 years; Ability to walk independently; Maximum score of 53 on the Berg Balance Scale; MMSE more than 24; EDSS below 5/5 Exclusion criteria: Experiencing an exacerbation of symptoms due to relapse within 3 months of the baseline measurement; Any musculoskeletal or neurological conditions except MS limiting balance or gait; Uncorrected Auditory or visual impairment; Pregnancy; Involving in the other planned treatment; Using drugs which affecting balance or gait.

Age
From **18 years** old to **64 years** old

Gender
Both

Phase
N/A

Groups that have been masked
No information

Sample size
Target sample size: **40**

Randomization (investigator's opinion)
Randomized

Randomization description

Blinding (investigator's opinion)
Double blinded

Blinding description

Placebo
Not used

Assignment
Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee
Ahvaz Jundishapur University of Medical Science

Street address
Ground floor, Vice Chancellor for Research and Technology, Ahvaz Jundishapur University of Medical Science

City
Ahvaz

Postal code
6135715794

Approval date
2017-10-28, 1396/08/06

Ethics committee reference number
IR.AJUMS.REC.1396.558

Health conditions studied

1

Description of health condition studied
Multiple Sclerosis

ICD-10 code
G35

ICD-10 code description
Multiple sclerosis

Primary outcomes

1

Description
Static balance

Timepoint
Before and after intervention

Method of measurement
Force plate

2

Description
Dynamic balance

Timepoint
Before and after intervention

Method of measurement
Time Up and Go Test, 10 meter walk test

3

Description
Functional balance

Timepoint
Before and after intervention

Method of measurement
Berg balance scale

4

Description
Balance Confidence

Timepoint
Before and after intervention

Method of measurement
Activities Specific Balance Confidence

5

Description
Fear of falling

Timepoint
Before and after intervention

Method of measurement
Fall efficacy scale international

Secondary outcomes

empty

Intervention groups

1

Description
Control group: Perform traditional Balance exercises; Participants received 45-minute individualized (1 trainer to 1 participant) training sessions, 3 times a week for 6 weeks.

Category
Rehabilitation

2

Description
Intervention group: Perform Balance exercises using Kinect; Participants received 45-minute individualized (1 trainer to 1 participant) training sessions, 3 times a week for 6 weeks.

Category
Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center
Musculoskeletal Rehabilitation Research Center

Full name of responsible person
Zahra Najarzadeh

Street address
Musculoskeletal Rehabilitation Research Center, School of Rehabilitation Sciences, Ahvaz Jundishapur University of Medical Sciences,

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity
Ahvaz Jundishapur University of Medical Science

Full name of responsible person
Dr. Mohamad Badvi

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Ground floor, Vice Chancellor for Research and Technology, Ahvaz Jundishapur University of Medical Science

City
Ahvaz

Grant name

Grant code / Reference number

Is the source of funding the same sponsor organization/entity?
Yes

Title of funding source
Ahvaz Jundishapur University of Medical Science

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
Musculoskeletal Rehabilitation Research Center, Ahvaz Jundishapur University of Medical Sciences, Ah

Full name of responsible person
Farshad Molhemi

Position
MSc Student of Physical Therapy

Other areas of specialty/work

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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