

Clinical Trial Protocol

Iranian Registry of Clinical Trials

16 Sep 2026

Comparison of the effects of exergame and balance training on dynamic postural stability during jump landing in athletes with chronic ankle instability

Protocol summary

Study aim

Comparison of the effects of exergame and balance training on dynamic postural stability during jump landing in athletes with chronic ankle instability

Design

This research is a single-blind randomized clinical trial with a control group and a sample size of 26 individuals. Participants will be randomly assigned to two groups using the randomization.com website and a block randomization method.

Settings and conduct

After receiving the ethical code, banners will be posted in three private sports physiotherapy clinics. Volunteers who express interest in participating in the program will declare informed consent by signing a written consent form approved by the Tehran University of Medical Sciences Ethics Committee. Participants will be randomly assigned to two groups: intervention and control. The treatments will be conducted over 12 sessions (4 weeks, with 3 sessions per week). Overall, assessments will be performed before and after the completion of the treatment in this study. Additionally, the analyst will be blinded.

Participants/Inclusion and exclusion criteria

Inclusion criteria: The age range of 18-40 years; Both genders; Amateur athletes; History of a unilateral ankle sprain; Scoring 24 or lower on the Cumberland Ankle Instability Tool
Exclusion criteria: History of any fractures or surgeries in the lower extremity

Intervention groups

Balance exercises group: performing a series of leveled exercises. Exergame group: Performing a series of specified video games

Main outcome variables

Stability index and time to stabilization of different directions in lateral jump-landing. The Distance traveled in a single-leg jump test. The Time spent in lateral jump

test. The Kinesiophobia questionnaire scores

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20230124057209N1**

Registration date: **2023-12-22, 1402/10/01**

Registration timing: **prospective**

Last update: **2023-12-22, 1402/10/01**

Update count: **0**

Registration date

2023-12-22, 1402/10/01

Registrant information

Name

Sadaf Sepasgozar Sarkhosh

Name of organization / entity

Country

Iran (Islamic Republic of)

Phone

+98 911 829 5466

Email address

sadaf.sepasgozar@gmail.com

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2023-12-24, 1402/10/03

Expected recruitment end date

2024-06-14, 1403/03/25

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Comparison of the effects of exergame and balance training on dynamic postural stability during jump landing in athletes with chronic ankle instability

Public title

Comparison of the effects of exergame and balance training on dynamic postural stability

Purpose

Treatment

Inclusion/Exclusion criteria**Inclusion criteria:**

Age range of 18-40 years Both genders Amateur athletes (volleyball player, basketball player, or football player) engaging in moderate to vigorous physical activity (at least 3 times per week, each session lasting more than 30 minutes History of unilateral ankle sprain, at least 12 months prior to study entry (no more than 3 months since the last sprain at the time of study entry) Experience of recurrent episodes of ankle giving way or feelings of instability and having symptoms such as weakness, and decreased performance over the past year Scoring 24 or lower on the Cumberland Ankle Instability Tool

Exclusion criteria:

history of surgery or fractures in the ankle or lower extremity based on the patient's self-report No history of training with video games

Age

From **18 years** old to **45 years** old

Gender

Both

Phase

N/A

Groups that have been masked

- Outcome assessor

Sample size

Target sample size: **26**

Randomization (investigator's opinion)

Randomized

Randomization description

Randomization of individuals will be done through the randomization.com website using a block randomization method with the block size of 4. After the initial assessment, people are randomly placed in one of the two groups according to the order of their entry into the study. Additionally, to ensure blinding, opaque sealed and numbered envelopes are used, which will be provided to participants by the secretary who is not aware of the study.

Blinding (investigator's opinion)

Single blinded

Blinding description

Participants are not blind, and due to the study's design, therapist blinding is not possible. The assessor is blinded. In this way, the assessor is different from the therapist.

Placebo

Not used

Assignment

Parallel

Other design features**Secondary Ids**

empty

Ethics committees**1****Ethics committee****Name of ethics committee**

School of Nursing and Midwifery and School of Rehabilitation - Tehran University of Medical Sciences

Street address

Research and Technology Affairs Department, Room 605, 6th Floor, Tehran University of Medical Sciences Headquarters Building, Intersection of Keshavarz Boulevard and Ghods Street

City

Tehran

Province

Tehran

Postal code

1417653761

Approval date

2023-01-21, 1401/11/01

Ethics committee reference number

IR.TUMS.FNM.REC.1401.146

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

Chronic Ankle Instability

ICD-10 code

S93.4

ICD-10 code description

Sprain of ankle

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

AP/ML/ vertical and resultant Stability Index during lateral jump landing

Timepoint

Before starting the intervention and 48 h after the last session

Method of measurement

Force Plate device(Bertec Corporation,Columbus, OH, USA)

2**Description**

AP/ML/ vertical and resultant Time to Stabilization during lateral jump landing

Timepoint

Before starting the intervention and 48 h after the last session

Method of measurement

Force Plate device(Bertec Corporation,Columbus, OH, USA)

Secondary outcomes

1

Description

Kinesiophobia

Timepoint

Before starting the intervention and 48 h after the last session

Method of measurement

Tampa Scale

2

Description

The Time spent in lateral jump test

Timepoint

Before starting the intervention and 48 h after the last session

Method of measurement

Chronometer

3

Description

The Distance traveled in single leg jump test

Timepoint

Before starting the intervention and 48 h after the last session

Method of measurement

Tape Measure

Intervention groups

1

Description

Intervention group: The participant stays on the balance board of the Nintendo Device(Nintendo Co.Ltd., Kyoto, Japan) and plays 12 games each game has three difficulty levels (beginner, advanced, and expert), each level having four sub-levels (unstable, amateur, professional, and champion). The participant's level is determined based on the number of stars: 1 star (unstable), 2 stars (amateur), 3 stars (professional), and 4 stars (champion). If a participant is capable of playing a game at a certain level, they advance to the next level. The selection order of games in each session is based on the participants' preferences.

Category

Treatment - Devices

2

Description

Control group:In this group, participants will perform a series of routine exercises over 12 sessions, with each session lasting one hour and conducted three times a week. The exercises include stretching of the gastrocnemius and soleus muscles, dorsiflexion and plantar flexion resistance exercises with a resistance band, neuromuscular exercises such as standing on one foot with eyes open and closed, ball throwing and shooting, and progressive balance exercises such as single-leg hops and jumps with a target on one foot. The exercises have varying levels of difficulty and progress over time.

Category

Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center

Dr.Forough Rehabilitation Clinic

Full name of responsible person

Sadaf.Sepasgozar

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2

Recruitment center

Name of recruitment center

Esteghlal Clinic

Full name of responsible person

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3

Recruitment center

Name of recruitment center

Faculty of Rehabilitation, Tehran University of Medical

Sciences

Full name of responsible person

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Tehran University of Medical Sciences

Full name of responsible person

Dr.Akbar.Fotoohi

Street address

Tehran Province, Tehran, District 6, Pour Sina St,
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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

Tehran University of Medical Sciences

Proportion provided by this source

30

Public or private sector

Private

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

Tehran University of Medical Sciences

Full name of responsible person

Sadaf Sepasgozar Sarkhosh

Position

Student

Latest degree

Bachelor

Other areas of specialty/work

Physiotherapy

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Person responsible for scientific inquiries

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Full name of responsible person

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Assistant Professor

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Ph.D.

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Person responsible for updating data

Contact

Name of organization / entity

Tehran University of Medical Sciences

Full name of responsible person

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Latest degree

Bachelor

Other areas of specialty/work

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Sharing plan

Deidentified Individual Participant Data Set (IPD)

Undecided - It is not yet known if there will be a plan to make this available

Study Protocol

Undecided - It is not yet known if there will be a plan to make this available

Statistical Analysis Plan

Undecided - It is not yet known if there will be a plan to make this available

Informed Consent Form

Undecided - It is not yet known if there will be a plan to make this available

Clinical Study Report

Undecided - It is not yet known if there will be a plan to make this available

Analytic Code

Undecided - It is not yet known if there will be a plan to make this available

Data Dictionary

Undecided - It is not yet known if there will be a plan to make this available