

Clinical Trial Protocol

Iranian Registry of Clinical Trials

16 Sep 2026

effects of 6-week corrective-plyometric training with and without visual feedback on lower extremity Biomechanics and dynamic balance in junior female athletes with dynamic knee valgus

Protocol summary

Study aim

comparing the effects of corrective-plyometric exercises with and without visual feedback on landing biomechanics and dynamic balance in female athletes with dynamic knee valgus

Design

Two arm parallel group randomised trial with single blinding, on 26 female athletes.

Settings and conduct

Both experimental groups will receive the same exercise protocol but in two different rooms in Miresmaili sport complex in Tehran city. One room in which feedback group will practice has full-mirrored walls. Exercise group will practice in another room without mirrored walls. Before each exercise, the examiner defines, and shows the correct alignment and ideal performance to the participants. In single blinding, assessor is not aware of subjects' information and their tests data are processed based on their given numbers, instead of their names.

Participants/Inclusion and exclusion criteria

Inclusion criteria: observing knee dynamic valgus by single-leg squat test and regular physical and sports activity between the last 3-5 years. Exclusion criteria: suffering from spine or lower extremity diseases, history of fracture, sprain, or strain in lower extremity, history of spine or lower extremity surgery, using any medicine or painkiller.

Intervention groups

Exercise group: They practice 30 minutes of corrective exercises and jump-landing exercises without receiving feedback for 6 weeks (3sessions each week). Feedback group: They practice 30 minutes of corrective exercises and jump-landing exercises in front of a mirror to receive visual feedback for 6 weeks (3sessions each week). Control group: They do not receive any exercises and follow their daily sports routines.

Main outcome variables

Kinematics (angles) of hip, knee, and ankle joints, Kinetics (moments and reaction forces) of hip, knee, and ankle joints, Dynamic balance in anterior, posteromedial, and posterolateral directions.

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20180626040244N1**

Registration date: **2020-11-21, 1399/09/01**

Registration timing: **registered_while_recruiting**

Last update: **2020-11-21, 1399/09/01**

Update count: **0**

Registration date

2020-11-21, 1399/09/01

Registrant information

Name

Rahman Sheikhhoseini

Name of organization / entity

Allameh Tabataba'i University

Country

Iran (Islamic Republic of)

Phone

+98 21 4839 4134

Email address

rahmanhoseini@atu.ac.ir

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2020-10-13, 1399/07/22

Expected recruitment end date

2020-12-15, 1399/09/25

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

effects of 6-week corrective-plyometric training with and without visual feedback on lower extremity Biomechanics and dynamic balance in junior female athletes with dynamic knee valgus

Public title

effects of 6-week corrective-plyometric training with and without visual feedback on dynamic knee valgus

Purpose

Prevention

Inclusion/Exclusion criteria**Inclusion criteria:**

Observing dynamic knee valgus by performing single leg squat test Regular physical activity between 3 to 5 years

Exclusion criteria:

suffering from spine or lower extremity disorders history of fracture, sprain, or strain in lower extremity history of spine or lower extremity surgery using any medicine or painkiller

AgeFrom **10 years** old to **14 years** old**Gender**

Female

Phase

N/A

Groups that have been masked

- Investigator

Sample sizeTarget sample size: **26****Randomization (investigator's opinion)**

Randomized

Randomization description

After screening, by simple randomization participants will be divided into 3 groups of control (8 participants), exercise (8 participants), and feedback (10 participants). The randomization is going to be done by random numbers chart, by considering numbers between 0 to 8 for control group, 8 to 16 for exercise group, and 16 to 26 for feedback group. The researcher will choose one of the numbers and move through a previously determined direction and register the number and give it to the related group.

Blinding (investigator's opinion)

Single blinded

Blinding description

In this study, the assessor (who is the researcher) is blinded to the participants' information (single blinding), and the results of participants tests are analyzed based on participants' given number and without knowing their names. That information includes participants names, and weight, height, and age information.

Placebo

Not used

Assignment

Parallel

Other design features**Secondary Ids**

empty

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

University of Social Welfare and Rehabilitation Sciences

Street address

kodakyar Ave., daneshjo Blvd.,Evin

City

Tehran

Province

Tehran

Postal code

1985713871

Approval date

2019-05-19, 1398/02/29

Ethics committee reference number

IR.USWR.REC.1398.007

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

Dynamic knee valgus

ICD-10 code

M21.06

ICD-10 code description

Valgus deformity, not elsewhere classified, knee

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

lower extremity kinematics in 3 motion planes

Timepoint

before starting the interventions, and after 6 weeks of exercise interventions

Method of measurement

8 Vicon motion capture cameras, a Kistler force plate

2**Description**

lower extremity kinetics in 3 motion planes

Timepoint

before starting the interventions, and after 6 weeks of exercise interventions

Method of measurement

8 Vicon motion capture cameras, a Kistler force plate

3

Description

Dynamic balance

Timepoint

before starting the interventions, and after 6 weeks of exercise interventions

Method of measurement

Y-balance kit

Secondary outcomes

empty

Intervention groups

1

Description

Intervention group 1: This group will practice 6 weeks of plyometric-exercises with visual feedback during the exercises from a mirror in a sports gym. Each week includes 3 sessions of practice which takes 30 minutes. Exercises include squats, balance training, and jump-landing exercises.

Category

Prevention

2

Description

Intervention group 2: This group will practice 6 weeks of plyometric-exercises without any visual feedback during the exercises, in a sports gym. Each week includes 3 sessions of practice which takes 30 minutes. Exercises include squats, balance training, and jump-landing exercises.

Category

Prevention

3

Description

Control group: This group will not receive any exercises from the assessor and continues their daily routine activities.

Category

N/A

Recruitment centers

1

Recruitment center

Name of recruitment center

Arash Miresmaieli sports complex

Full name of responsible person

Mahdis Dadfar

Street address

Majidiyeh park - Majidiyeh street - Shamsabad

City

Tehran

Province

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Postal code

1671843111

Phone

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Email

mahdisidadfar3@gmail.com

Web page address

<http://ptmodares.ir/>

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Allameh Tabataba'i University

Full name of responsible person

Dr Habib Honari

Street address

West Azadi sports complex entrance, Hakim highway

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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

Allameh Tabataba'i 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

Allameh Tabatabai University

Full name of responsible person

Rahman Sheikh Hoseini

Position

Assistant professor

Latest degree

Ph.D.

Other areas of specialty/work

Physiotherapy
Street address
West Azadi sports complex entrance, Hakim highway
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Person responsible for scientific inquiries

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Person responsible for updating data

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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

After publication, the data which will be also presented in the article, will be given to the researchers in Excel format which includes the pre and post interventions' results of landing tests' biomechanical analysis and dynamic balance, for future studies like meta-analysis studies.

When the data will become available and for how long

After publication

To whom data/document is available

The published data of the current study will be accessible for the researchers in the academic institutes and universities, and also people who work in the industry.

Under which criteria data/document could be used

After publishing the article, the data will be used in future researches, like meta-analysis or other types of researches.

From where data/document is obtainable

Responding author

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

Sending via an email

Comments