

Clinical Trial Protocol

Iranian Registry of Clinical Trials

08 Jul 2026

Effect of three trainings method on neuromuscular function and performance in female basketballists

Protocol summary

Study aim

The aim of this study is comparison of neuromuscular, strength & combined trainings effects on proprioception & balance in female basketballists.

Design

The present study is a semi-experimental study in which the effect of several special training programs that were introduced by researchers in preventing lower limb injuries of female athletes, was evaluated on the balance and performance of female basketball players.

Settings and conduct

Islamic Azad University of Shiraz

Participants/Inclusion and exclusion criteria

The subjects were 42 female basketballists with mean age, height and weight of 20.73 ± 1.88 year, 172.47 ± 6.57 cm and 63.54 ± 4.98 kg, Body mass index was (21.36 ± 1.17) , as well as in 3 experimental and 1 control groups that completed 6 weeks and 3 times per week neuromuscular, strength and combined trainings.

Intervention groups

After selecting the subjects according to inclusion & exclusion criteria, as well as completing the consent form, these subjects were randomly divided into three experimental groups (neuromuscular, strength, and combined) and control group, then all subjects a pre-test was used to measure variation that included knee proprioception (using isokinetic biodex850-000-30) & dynamic balance (using functional balance test). Subjects in control group continued their daily exercise without doing any special exercises, as usual, while the experimental group was neuromuscular, strength, and combined training group for six weeks (three sessions per week and each session for 35 to 50 minutes, the first week and the second 35 minutes - the third and fourth minutes of the 40 minutes - the fifth and sixth 50 minutes) under the direct supervision of the examiner in special training programs.

Main outcome variables

Knee proprioception; Dynamic balance

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20190723044314N1**

Registration date: **2019-11-26, 1398/09/05**

Registration timing: **retrospective**

Last update: **2019-11-26, 1398/09/05**

Update count: **0**

Registration date

2019-11-26, 1398/09/05

Registrant information

Name

Zahra Rahimi

Name of organization / entity

Islamic azad university of shiraz

Country

Iran (Islamic Republic of)

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Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2019-07-23, 1398/05/01

Expected recruitment end date

2019-09-23, 1398/07/01

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Effect of three trainings method on neuromuscular function and performance in female basketballists

Public title

Effect of training on neuromuscular function

Purpose

Prevention

Inclusion/Exclusion criteria**Inclusion criteria:**

Statistical population of this study comprise Shiraz professional female basketball players. This research be ready within the age of 19-25 years . at least 3 years of membership in the Super League teams and the first batch of Fars province have. have a normal BMI . normal menstrual cycle.

Exclusion criteria:

Pain in lower extremities and spine in the past year. labor history fracture and dislocation and any surgery in the lower extremities and spine in the past year There laxity by Beeton test Malalignment of the lower limb (Genuvarum, genuvalgum, genurecurvatum, tibial rotation , femur anti version, flatfoot) Tear and ligament injuries, meniscus & joint capsule injuries .

Age

From **19 years** old to **25 years** old

Gender

Female

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **60**

Randomization (investigator's opinion)

Randomized

Randomization description

Blocked sample randomized: each sample have a code with use Excel software(42 code) and randomly division to three trainings group1(Neuromuscular group), 2(Strength group),3(Combined group) and control group. Control group accomplish no training protocol and have routine training .

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

Sport Science Research Institute of Iran

Street address

No.3, 5th St., Mir Emad St.,Motahari Ave.

City

tehran

Province

Tehran

Postal code

1587958711

Approval date

2019-07-01, 1398/04/10

Ethics committee reference number

IR.SSRC.REC.1398.070

2**Ethics committee****Name of ethics committee**

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Approval date

2019-07-16, 1398/04/25

Ethics committee reference number

IR.SSRI.REC.1398.503

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

Effect of three trainings method on neuromuscular function and performance in female basketballists

ICD-10 code**ICD-10 code description****Primary outcomes****1****Description**

Dynamic Balance & Knee proprioception

Timepoint

Before Interference & 6 weeks after Trraining Interference

Method of measurement

Iso Kinetic Biodex Divice

Secondary outcomes

empty

Intervention groups

1

Description

Intervention group:1- Neuromuscular training group(15 training:8plyometric &7 balance.In first & second week are 8 trainings & gradually in 6 weeks 3 plyometric & 4 balance trainings add to training program. Right accomplishment tecnic in first session have learn.This trainings do at 20 to 40 minutes in 6 weeks.Time training /rest in first &second weeks is 1/3 , in 3th & 4th weeks 2/1 & in 5th & 6th weeks 1/1)

Category

Other

2

Description

Intervention group:2-strength training group(15 training for lower extremity strengthening specially hamstrings & quadriceps that first & second weeks include 9 trainings & gradually in 6 weeks 6 trainings add to training program. Right accomplishment tecnic in first session have learn.This trainings do at 20 to 40 minutes in 6 weeks.Time training /rest in first &second weeks is 1/3 , in 3th & 4th weeks 2/1 & in 5th & 6th weeks 1/1)

Category

Other

3

Description

Intervention group: 3-combined training group(In this group combination of 1&2 trainig group is :16 training that 8 plyometric & balance& 8 lower extremity strengthening . First & second weeks include 10 trainings & gradually in 6 weeks 6 trainings add to training program. Right accomplishment tecnic in first session have learn.This trainings do at 20 to 40 minutes in 6 weeks.Time training /rest in first &second weeks is 1/3 , in 3th & 4th weeks 2/1 & in 5th & 6th weeks 1/1)

Category

Other

4

Description

Control group:(samples in this group do no training protocol except routine team training program).

Category

Other

Recruitment centers

1

Recruitment center

Name of recruitment center

Islamic Azad University of Shiraz

Full name of responsible person

Zahra Rahimi

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Accessorial research center of Shiraz Islamic Azad University.

Full name of responsible person

Mohammad Mehdi Jabbari

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Grant name

Accessorial research center of Shiraz Islamic Azad University.

Grant code / Reference number

ندارد

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

Yes

Title of funding source

Accessorial research center of Shiraz Islamic Azad University.

Proportion provided by this source

20

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

Islamic Azad University of Shiraz

Full name of responsible person

Zahra Rahimi

Position

Assistant professor

Latest degree

Ph.D.

Other areas of specialty/work

Sport Injury

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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

No - There is not a plan to make this available

Analytic Code

No - There is not a plan to make this available

Data Dictionary

No - There is not a plan to make this available

Title and more details about the data/document

nothing

When the data will become available and for how long

nothing

To whom data/document is available

nothing

Under which criteria data/document could be used

nothing

From where data/document is obtainable

nothing

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

nothing

Comments

The subjects are healthy athletes