Clinical Trial Protocol
Iranian Registry of Clinical Trials

08 Nov 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 properioception (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 properioception ; 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

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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, genurecorvatum, 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
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1587958711
Approval date
2019-07-01, 1398/04/10
Ethics committee reference number
IR.SSRC.REC.1398.070

2

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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 properioception
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 tecnics 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 tecnics 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 tecnics 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
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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

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Zahra Rahimi

Position
Assistant proffesor

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