

Clinical Trial Protocol

Iranian Registry of Clinical Trials

20 Jul 2026

The effect of scapular kinematic chain exercises on function, scapulohumeral rhythm and shoulder joint position sense in gymnasts with scapular dyskinesia

Protocol summary

Study aim

The effect of scapular kinematic chain exercises on function, scapulohumeral rhythm and shoulder joint position sense in gymnasts with scapular dyskinesia

Design

The clinical trial consisted of an experimental group and a control group, with parallel and random groups. The Random allocation software was used for randomization

Settings and conduct

The present study is a quasi-experimental research with a pretest-posttest design with an experimental groups and one control group. 30 gymnasts with scapular dyskinesia are randomly divided into two test and control groups. Function, scapulohumeral rhythm and shoulder joint position sense variables are measured before and after exercise.

Participants/Inclusion and exclusion criteria

Inclusion criteria: At least 3 years of experience in gymnastics, Impaired shoulder movement; Exclusion criteria: History of fracture or surgery, Severe musculoskeletal disorders, Having pain during training

Intervention groups

The intervention group includes gymnasts with scapular dyskinesia who receive the intervention of scapular movement chain exercises. The control group included gymnasts with scapular dyskinesia who did not receive any intervention.

Main outcome variables

Function, Scapulohumeral rhythm, Shoulder joint position sense

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20200107046035N11**

Registration date: **2023-05-16, 1402/02/26**

Registration timing: **prospective**

Last update: **2023-05-16, 1402/02/26**

Update count: **0**

Registration date

2023-05-16, 1402/02/26

Registrant information

Name

Hossein Shahrokhi

Name of organization / entity

Hakim Sabzevari University

Country

Iran (Islamic Republic of)

Phone

+98 51 4401 2756

Email address

h.shahrokhi@hsu.ac.ir

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2023-05-20, 1402/02/30

Expected recruitment end date

2023-06-20, 1402/03/30

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

The effect of scapular kinematic chain exercises on function, scapulohumeral rhythm and shoulder joint position sense in gymnasts with scapular dyskinesia

Public title

The effect of scapular kinematic chain exercises in gymnasts with scapular dyskinesia

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria:

At least 3 years of experience in gymnastics Impaired shoulder movement

Exclusion criteria:

History of fracture or surgery Severe musculoskeletal disorders Having pain during training

Age

From **7 years** old to **15 years** old

Gender

Both

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **30**

Randomization (investigator's opinion)

Randomized

Randomization description

The simple Randomization Method was used to Assign Individuals to two Groups that in this Method It was done by Flip the coin method. This method is usually used to create a random sequence in two-group experiments in such a way that one of the study groups considers the A and the other group the B and based on the sample size, coins were tossed and Individuals are assigned to two random groups. Then, in Order not to Determine Which Group the Individuals will be Assigned to before Dividing them into two Groups, or in other words, Allocation Concealment, the Sequentially numbered, sealed opaque envelopes was used. This method is one of the common methods in concealing random allocation, which is abbreviated to SNOSE method. In this method, after a random sequence, a number of envelopes are prepared and each of the random sequences created is recorded on a card and the cards are placed in the envelopes respectively. In order to maintain a random sequence, the envelopes are numbered in the same way on the outer surface. Finally, the lids of the letter envelopes are glued and placed inside a box, respectively. At the beginning of the registration of participants, according to the order of entry of eligible participants into the study, one of the envelopes of the letter is opened and the assigned group of the participant is revealed.

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 sciences research institute

Street address

No. 3, 5th Alley, Miremad Street, Motahhari Street, Tehran, Iran.

City

Tehran

Province

Tehran

Postal code

1587958711

Approval date

2022-08-22, 1401/05/31

Ethics committee reference number

IR.SSRC.REC.1401.060

Health conditions studied

1

Description of health condition studied

Scapular Dysknesia

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description

Function

Timepoint

At the beginning of the study (before the start of the intervention) and after 8 weeks of intervention

Method of measurement

Upper limb functional stability test

2

Description

Scapulohumeral rhythm

Timepoint

At the beginning of the study (before the start of the intervention) and after 8 weeks of intervention

Method of measurement

Goniometer

3

Description

Shoulder joint position sense

Timepoint

At the beginning of the study (before the start of the intervention) and after 8 weeks of intervention

Method of measurement

Photography

Secondary outcomes

empty

Intervention groups

1

Description

Intervention group: The intervention group will perform scapular kinematic chain exercises. Kinematic chain exercises use types of isometric, concentric and eccentric contractions that take place simultaneously in different muscle groups and create multifaceted movement in each of the joints in the motion chain. These exercises will be done for 8 weeks and 3 sessions of 2 hours each week.

Category

Treatment - Other

2

Description

Control group: Without any training and just doing normal daily activities

Category

N/A

Recruitment centers

1

Recruitment center

Name of recruitment center

Raja University

Full name of responsible person

Zahra Moghiseh

Street address

Novrizian, Motahhari blvd.

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95834-34148

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+98 28 3367 7101

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Raja University

Full name of responsible person

Hadi Miri

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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

Raja University

Proportion provided by this source

5

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

Hakin Sabzevari University

Full name of responsible person

Hossein Shahrokhi

Position

Assistant professor

Latest degree

Ph.D.

Other areas of specialty/work

Sport injury and corrective exercise

Street address

Hakim sabzevari university - tohidshahr - Sabzevar

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Person responsible for scientific inquiries

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Full name of responsible person

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Latest degree

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Other areas of specialty/work

Corrective Exercise

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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

All potential data can be shared after people have not been identified

When the data will become available and for how long

Start the access period one year after printing the results

To whom data/document is available

Data will be available to academic and scientific researchers

Under which criteria data/document could be used

Any kind of functional analysis on the submitted data is allowed

From where data/document is obtainable

by Email: h.shahrokhi@hsu.ac.ir

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

by Email: h.shahrokhi@hsu.ac.ir and the reason for using the documents

Comments**Person responsible for updating data****Contact****Name of organization / entity**

Hakin Sabzevari University

Full name of responsible person

Hossein Shahrokhi

Position

Assistant professor

Latest degree

Ph.D.

Other areas of specialty/work

Sport injury and corrective exercise

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