Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 2026

The Comparison Effectiveness and Durability of 8-week Motor Control Retraining (MCR) Program with and without Feedback on the Pain, Function and Shoulder Kinematic in Patient with Shoulder Impingement Syndrome (SIS) and Scapular Dyskinesia

Protocol summary

Study aim
The Comparison Effectiveness and Durability of 8-week Motor Control Retraining (MCR) Program with and without Feedback on the Pain, Function and Shoulder Kinematic in Patient with Shoulder Impingement Syndrome (SIS) and Scapular Dyskinesia

Design
The Present study has three intervention groups 1- Intervention group of motor control retraining 2- Intervention group of motor control retraining without feedback 3- Control intervention group with specific exercises of rotator cuff muscles randomised, superiority, parallel group trial

Settings and conduct
The first stage is the selection of students based on the entry criteria The second stage of grouping without blinding The third stage of the pre-test The fourth stage is two months of training The third stage of the post-test The place of testing was at sports medicine federation and Esteghlal South Sports Club.

Participants/Inclusion and exclusion criteria
Inclusion Criteria 1- People with shoulder impingement syndrome based on the clinical tests of Hawkins-Kennedy, Neer and dyskinesia based on the Kibbler test with the diagnosis of a specialist doctor 2- Painful arch in flexion and abduction movements 5- Pain intensity based on the VAS scale, whose minimum clinical difference (MCD) should be more than 2.5 (25 mm) points from a scale of 0 (no pain) to 10 (maximum pain). Exclusion Criteria 1-The history of neck and arm pain in the past or present 2- Having neck pain syndromes 3- Having thoracolumbar syndromes

Intervention groups
1- Intervention group of motor control retraining with feedback and with specific exercises of rotator cuff muscles 2- Intervention group of motor control retraining without feedback along with specific exercises of rotator cuff muscles 3- Control intervention group only with specific exercises of rotator cuff muscles

Main outcome variables
Pain, Function, Strength, Proprioception and Shoulder Kinematic

General information

Reason for update

Acronym

IRCT registration information
IRCT registration number: **IRCT20180414039299N1**
Registration date: **2023-04-14, 1402/01/25**
Registration timing: **retrospective**

Last update: **2023-04-14, 1402/01/25**
Update count: **0**

Registration date
2023-04-14, 1402/01/25

Registrant information

Name
Mohsen Moradi

Name of organization / entity
The University of Kharazmi

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Recruitment status
Recruitment complete

Funding source

Expected recruitment start date
2022-10-22, 1401/07/30
Expected recruitment end date
2022-12-21, 1401/09/30
Actual recruitment start date
2022-10-22, 1401/07/30
Actual recruitment end date
2022-12-21, 1401/09/30
Trial completion date
2022-12-21, 1401/09/30

Scientific title
The Comparison Effectiveness and Durability of 8-week Motor Control Retraining (MCR) Program with and without Feedback on the Pain, Function and Shoulder Kinematic in Patient with Shoulder Impingement Syndrome (SIS) and Scapular Dyskinesia

Public title
The Comparison Effectiveness and Durability of 8-week Motor Control Retraining (MCR) Program with and without Feedback on the Pain, Function and Shoulder Kinematic in Patient with Shoulder Impingement Syndrome (SIS) and Scapular Dyskinesia
Purpose
Treatment
Inclusion/Exclusion criteria
Inclusion criteria:
Individuals with shoulder impingement syndrome based on the clinical tests of Hawkins-Kennedy, Neer and dyskinesia based on the Kibbler test with the diagnosis of a specialist doctor
Exclusion criteria:
The history of neck and arm pain in the past or present Having neck pain syndromes Having thoracolumbar syndromes
Age
From **18 years** old to **28 years** old
Gender
Male

Phase
N/A
Groups that have been masked

- Outcome assessor

Sample size
Target sample size: **45**
Actual sample size reached: **45**
Randomization (investigator's opinion)
Randomized
Randomization description
Using randomized permuted block randomization (6 blocks of size 8), the three treatment combinations are independently assigned to participants in a 1:1:1 ratio (after initial assessment). Randomized sequence listing is done by computer (Pocock SJ. Clinical Trials: A Practical Approach. Wiley; 1983) and also by website (https://www.randomizer.org). This step will be ensured by a blind evaluator.
Blinding (investigator's opinion)
Single blinded
Blinding description
Outcome assessors will be blinded to group allocation. Participants will not be blinded to study and grouping, but will be blinded to the intervention they are receiving (there is an unavoidable risk of bias in this study that the intervention cannot be blinded to interventionists, patients). Before the evaluation, the necessary training will be given to the outcome evaluator in relation to how to evaluate the variables in order to prevent any questions and answers between the evaluator and the subjects.
Placebo
Not used
Assignment
Parallel
Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee
Name of ethics committee
Ministry of health and medical education
Street address
Iran St., No. 2
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Province
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45191744555
Approval date
2022-11-08, 1401/08/17
Ethics committee reference number
IR.SSRC.REC.1401.075

Health conditions studied

1

Description of health condition studied
shoulder impingement and scapular dyskinesia
ICD-10 code
M75.4
ICD-10 code description
Impingement syndrome of shoulder

Primary outcomes

1

Description
Pain
Timepoint
First, Measuring the parameters of pain in the post-test, and then after eight weeks, measuring the parameter of pain in the pre-test
Method of measurement

Pressure pain ergometer device to prepare a pain map. VAS Visual Scale to Measure pain intensity

2

Description
Function
Timepoint
First, measuring the parameter function in the post-test, and then after Eight weeks, Measuring the parameter of function in the pre-test
Method of measurement
Shoulder functional test with DASH questionnaire

3

Description
Strength
Timepoint
First, measuring the parameter of strength in the post-test, and then after eight weeks, Measuring the parameter of strength in the pre-test
Method of measurement
Biodex model 3 isokinetic device for measuring muscle strength

4

Description
Proprioception
Timepoint
First, Measuring the parameter proprioception in the post-test, and then after eight weeks, Measuring the parameter of proprioception in the pre-test
Method of measurement
Biodex model 3 isokinetic device for measuring proprioception

5

Description
Scapula Kinematics
Timepoint
First, Measuring the parameters of scapular kinematics in the post-test, and Then after eight weeks, Measuring the parameter of scapular kinematics in the pre-test
Method of measurement
Inclinometer to measure two-dimensional kinematics of the shoulder

Secondary outcomes

empty

Intervention groups

1

Description
Intervention group: motor control retraining to correct the alignment and coordination of the shoulder complex, Which Includes training for the proper orientation of the shoulder in the resting state, As well as controlling the optimal orientation during active arm movements. 2- Stretching and flexibility exercises..3) Special rehabilitation exercises for the anterior trapezius and dentate muscles to strengthen the scapular muscles. at first, Changes are made by the therapist based on the following guidelines. 1. The upper inner corner of the scapula should be at the level of the second dorsal vertebra. 2. The lower angle of the scapula should be at the level of the seventh dorsal vertebra. 3. The acromion should be higher than the upper inner border of the scapula. 4. The scapular spine should rotate 15 to 30 degrees in the coronal plane. 5. The angles of the Coracoid should be symmetrical. 6. The inner edge of the scapula should be 5-6 cm away from the spines of the vertebrae. 7. The Clavicle should have a little posterior rotation in the coronal plane. The method of these orientations should be taught by the therapist by listening and also by touching the subjects. Once again the scapula is placed in the normal position, the subjects respond to the scapular orientation control during arm elevation up to 90 degrees in three planes of motion. The movements should be done slowly and calmly and the movements should be done for 2 minutes. After mastering the shoulder orientation control by the subject, movement control exercises will begin. these exercises were performed for eight weeks, Three sessions a week and one hour in each session
Category
Rehabilitation

2

Description
Control group: the exercises used include rotator cuff exercises, these exercises as basic exercises. For all groups considered, In the desired protocol, The person performs exercises according to the provided program every week. Rest time between sets is 1:3 and between repetitions is 1:1.
Category
Rehabilitation

Recruitment centers

1

Recruitment center
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Sponsors / Funding sources

1

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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
Kharazmi University
Proportion provided by this source
50
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
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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

Information related to the variables of pain, kinematics, performance, strength and proprioception will be recorded in the pre-test and after eight weeks of training, The information of the variables mentioned in the post-test will be recorded and the results of the changes.

When the data will become available and for how long

After publishing the article/articles extracted from the study

To whom data/document is available

The data can be displayed and shared upon the reasonable request of Iran's Clinical Trial Registration Center, journals and academic people/researchers who are conducting research and scientific activities in this field.

Under which criteria data/document could be used

Data analysis and the use of documentation can only be done under the condition that their results are reported in scientific articles by academic researchers and authors. The necessary conditions for sending data and documents include: 1. Sending an email (preferably with valid university addresses) to one of the researchers of the study. 2. A brief and logical explanation related to the use of data or documents.

From where data/document is obtainable

Through request from researcher Amir Letafatkaramir letafatkaramir@yahoo.com

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

The applicant can request details from the researchers using the message sent by email within 7 to 10 days

Comments