

Clinical Trial Protocol

Iranian Registry of Clinical Trials

10 Jun 2026

Comparative effects of post isometric relaxation and myofascial release on range of motion and disability in volleyball players with glenohumeral internal rotation deficit

Protocol summary

Study aim

The purpose of this study is to compare the effectiveness of Post isometric relaxation and subscapularis release on range of Motion and disability in Volleyball Players with Glenohumeral Internal Rotation Deficit.

Design

Randomized Clinical Trial, Two parallel groups.

Settings and conduct

The data was collected from Volleyball athletes in Pakistan Sports Board, Lahore.

Participants/Inclusion and exclusion criteria

Inclusion Criteria: Age 15 to 30 years, Both male and female, Athlete with GIRD, Novice players. Exclusion Criteria: Abnormality in body biomechanics, shoulder injury, shoulder surgery, Any systemic pathology, Corticosteroid injection in (GHJ), All participants playing volleyball for 1 year.

Intervention groups

Post-isometric relaxation was given to group A. The participant was then instructed to perform a 5-second isometric contraction in the direction of external rotation, against an opposing force provided by the examiner at the distal forearm. The participant was instructed to internally rotate the arm toward the ground as a 30-second active assisted stretch was applied. The participant was instructed to relax. This protocol was performed for a total of 3 repetitions three times a week for 2 weeks. Myofascial release to subscapularis was given to group B. Myofascial release to subscapularis application was performed by applying a hot pack for 10 min and also sustain manual pressure with a therapy ball and strengthening exercises of periscapular muscles by a physiotherapist three times a week for 2 weeks.

Main outcome variables

Glenohumeral internal rotation range of motion in volleyball players.

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20210811052138N3**

Registration date: **2022-07-18, 1401/04/27**

Registration timing: **retrospective**

Last update: **2022-07-18, 1401/04/27**

Update count: **0**

Registration date

2022-07-18, 1401/04/27

Registrant information

Name

Halima Shoukat

Name of organization / entity

Riphah international university, Lahore

Country

Pakistan

Phone

+92 55 4284121

Email address

halima.shoukat@yahoo.com

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2022-03-01, 1400/12/10

Expected recruitment end date

2022-03-15, 1400/12/24

Actual recruitment start date

2022-03-01, 1400/12/10

Actual recruitment end date

2022-03-15, 1400/12/24

Trial completion date

2022-03-15, 1400/12/24

Scientific title

Comparative effects of post isometric relaxation and myofascial release on range of motion and disability in volleyball players with glenohumeral internal rotation deficit

Public title

Effects of post isometric relaxation and myofascial release in volleyball players with shoulder internal rotation deficit

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria:

Age between 15 to 30 years. Both male and female. Internal rotation range of motion less than 18 degrees to 20 degrees in the dominant shoulder as compared to the non-dominant one. Players that are practicing for thrice or more times in a week. Novice players.

Exclusion criteria:

Having any abnormality in body biomechanics. A Shoulder injury in the last 6 months. History of shoulder surgery. Any systemic pathology observed in the last 3 months. Corticosteroid injection in any glenohumeral joint (GHJ) in the last 3 months. Lack of active joint motion deficit of dominant side GHJ. All participants playing volleyball for 1 year.

Age

From **15 years** old to **30 years** old

Gender

Both

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **44**

Actual sample size reached: **40**

Randomization (investigator's opinion)

Randomized

Randomization description

Participants were selected by non-probability convenience sampling from the college setting. Each participant is allocated a number on enrollment in the study. Participants were randomly allocated into two groups by a random number sequence generated by a computer software program called "research randomizer". According to the number generated by a computer software, the participant is allocated into group in which that number falls. This software is used to generate 2 sets of 20 unique numbers via setting the range from 1-40 from least to greatest order.

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

Ethics Committee of Riphah College of Rehabilitation and Allied Health Sciences

Street address

Madar-e-Millat Road, Quaid-e-Azam Industrial Estate
Quaid e Azam Industrial Estate, Lahore, Punjab

City

Lahore

Postal code

54000

Approval date

2021-12-29, 1400/10/08

Ethics committee reference number

REC/RCR & AHS/21/0429

Health conditions studied

1

Description of health condition studied

Glenohumeral internal rotation deficit

ICD-10 code

M25.619

ICD-10 code description

Stiffness of unspecified shoulder, not elsewhere classified

Primary outcomes

1

Description

Glenohumeral internal rotation range of motion

Timepoint

Before intervention and 2 week after intervention

Method of measurement

We used a manual Goniometer to measure the range of motion of the involved shoulder and DASH (Disabilities of the Arm, Shoulder and Hand) Questionnaire is used to indicate the impact of an impairment on the level and disability.

Secondary outcomes

empty

Intervention groups

1

Description

Intervention group A: Treatment with Post isometric Muscle Energy Technique applied over the period of 2 weeks. Post isometric Muscle Energy Technique

application (experimental) to dominant side Glenohumeral joint horizontal abductors. The participant was in a supine position on the examination table. With the humerus supported and the participant's shoulder and elbow in 90° of abduction and flexion, respectively, the examiner passively moved the humerus into internal rotation until the first barrier of motion was reached. The participant was then instructed to perform a 5-second isometric contraction in the direction of external rotation, against an opposing force provided by the examiner at the distal forearm. Following the contraction, the participant was instructed to internally rotate the arm toward the ground as a 30-second active assisted stretch was applied. The participant was instructed to relax. This protocol was performed for a total of 3 repetitions three times a week for 2 weeks.

Category

Treatment - Other

2

Description

Intervention group B: Treatment with Myofascial release to subscapularis applied over the period of 2 weeks. Myofascial release to subscapularis application performed by applying hot pack for 10 min and also sustain manual pressure with therapy Ball and strengthening exercises of periscapular muscles by a physiotherapist three times a week for 2 weeks.

Category

Treatment - Other

Recruitment centers

1

Recruitment center

Name of recruitment center

Pakistan Sports Board and Coaching Centre (PSB)

Full name of responsible person

Wajiha Mushtaq

Street address

Ferozepur Rd, Block E 2 Gulberg III, Lahore, Punjab

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

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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

Riphah International University

Proportion provided by this source

10

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

Riphah International University

Full name of responsible person

Wajiha Mushtaq

Position

Student

Latest degree

Master

Other areas of specialty/work

Physiotherapy

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Assistant Professor

Latest degree

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Latest degree

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Sharing plan**Deidentified Individual Participant Data Set (IPD)**

No - There is not a plan to make this available

Justification/reason for indecision/not sharing IPD

There is no further information

Study Protocol

Undecided - It is not yet known if there will be a plan to make this available

Statistical Analysis Plan

Undecided - It is not yet known if there will be a plan to make this available

Informed Consent Form

Undecided - It is not yet known if there will be a plan to make this available

Clinical Study Report

Undecided - It is not yet known if there will be a plan to make this available

Analytic Code

Undecided - It is not yet known if there will be a plan to make this available

Data Dictionary

Undecided - It is not yet known if there will be a plan to make this available