Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 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

City
Lahore

Postal code
54000

Phone
+92 42 99230383

Email
psblahore@hotmail.com

Web page address
http://www.sports.gov.pk/Detail/ODNmZDljYTMtNmIyOS00YzU3LWFhNmMtZjcxNGM5NjI4NzZm

Sponsors / Funding sources

1

Sponsor

Name of organization / entity
Riphah International University

Full name of responsible person
Halima Shaukat

Street address
28-M, Quaid-e Azam, Industrial Estate Kot Lakhpat, Lahore

City
Lahore

Postal code
55400

Phone
+92 42 111 747 424

Email
halima.shaukat@yahoo.com

Web page address
https://riphah.edu.pk/lahore

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

Street address
Madar-e-Millat Road, Quaid-e-Azam Industrial Estate Quaid e Azam Industrial Estate.

City
Lahore

Province
Punjab

Postal code
54000

Phone
+92 42 35126110

Fax
+92 51 8313141

Email
Wajiha3030@gmail.com

Web page address
https://www.riphah.edu.pk/

Person responsible for scientific inquiries

Contact

Name of organization / entity
Riphah International University
Full name of responsible person
Halima Shoukat
Position
Assistant Professor
Latest degree
Ph.D.
Other areas of specialty/work
Physiotherapy
Street address
Madar-e-Millat Road, Quaid-e-Azam Industrial Estate
Quaid e Azam Industrial Estate.
City
Lahore
Province
Punjab
Postal code
54000
Phone
+92 42 35126110
Fax
+92 51 8313141
Email
halima.shoukat@yahoo.com

Person responsible for updating data

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
Street address
Madar-e-Millat Road, Quaid-e-Azam Industrial Estate
Quaid e Azam Industrial Estate.
City
Lahore
Province
Punjab
Postal code
54000
Phone
+92 42 35126110
Fax
+92 51 8313141
Email
Wajiha3030@gmail.com
Web page address
https://www.riphah.edu.pk/

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