Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 2026

A comparison of the acute effects of myofascial, relaxation, and combined upper-body massage on scapular symmetry, performance, and upper-extremity power in young volleyball players

Protocol summary

Study aim
To compare the immediate effects of myofascial release, relaxation, and combined upper-body massage on scapular symmetry, upper-limb function, and power in young volleyball players

Design
A randomized, single-blind clinical trial with a pretest–posttest design and three parallel groups (two intervention groups and one control group) will be conducted on 30 young volleyball players. Convenience sampling and random allocation using the RAND function in Microsoft Excel will be employed.

Settings and conduct
Study Location: Akhtar Hospital, Tehran, Iran; Study Population: 30 young volleyball players aged 16–25 years with scapular asymmetry; Blinding Type: Single-blind; Blinding Method: Outcome assessors will be blinded to participants' group allocation.

Participants/Inclusion and exclusion criteria
Inclusion Criteria: Young volleyball players aged 16–25 years; at least two years of experience in volleyball; presence of scapular asymmetry. Exclusion Criteria: Presence of acute or chronic injuries requiring treatment; history of shoulder or spinal surgery within the previous 12 months; use of medications affecting the neuromuscular system; presence of health conditions that make participation in the study inappropriate.

Intervention groups
Intervention group 1 (Myofascial Release Massage Group): receiving a single 10-minute myofascial release massage session; Intervention group 2 (Combined Massage Group): receiving a single 10-minute massage session consisting of five minutes of myofascial release massage and five minutes of relaxation massage. Control group: Relaxation Massage Group; receiving a single 10-minute relaxation massage session using effleurage and gentle petrissage techniques.

Main outcome variables
Scapular symmetry; upper-limb function; upper-limb power

General information

Reason for update
Acronym
IRCT registration information
IRCT registration number: **IRCT20260321069007N6**
Registration date: **2026-11-22, 1405/09/01**
Registration timing: **prospective**

Last update: **2026-11-22, 1405/09/01**
Update count: **0**

Registration date
2026-11-22, 1405/09/01

Registrant information
Name
Razieh Yousefian Molla
Name of organization / entity
Country
Iran (Islamic Republic of)
Phone
+98 912 202 2730
Email address
razieh.yousefianmolla@iau.ac.ir

Recruitment status
Not yet recruiting
Funding source

Expected recruitment start date
2026-12-22, 1405/10/01
Expected recruitment end date
2027-01-21, 1405/11/01
Actual recruitment start date
empty

Actual recruitment end date
empty
Trial completion date
empty

Scientific title
A comparison of the acute effects of myofascial, relaxation, and combined upper-body massage on scapular symmetry, performance, and upper-extremity power in young volleyball players

Public title
A comparison of the acute effects of myofascial, relaxation, and combined upper-body massage in young volleyball players
Purpose
Treatment
Inclusion/Exclusion criteria
Inclusion criteria:
At least two years of experience in volleyball Presence of scapular asymmetry, as determined by Kibler's Lateral Scapular Slide Test (LSST)
Exclusion criteria:
No history of injury or surgery A history of receiving both therapeutic and non-therapeutic massage Lack of consent to participate in the study
Age
From **16 years** old to **25 years** old
Gender
Female

Phase
N/A
Groups that have been masked

- Outcome assessor
- Data analyser

Sample size
Target sample size: **30**
Randomization (investigator's opinion)
Randomized
Randomization description
In this study, eligible participants who meet the inclusion and exclusion criteria and provide written informed consent will be randomly assigned to one of three groups: the myofascial massage group, the relaxation massage group, or the combined massage group. The individual participant will serve as the unit of randomization. To ensure balanced group sizes, block randomization with variable block sizes will be employed. The random allocation sequence will be generated using Random Allocation Software with block sizes of six and nine. As the study consists of three groups, these block sizes were selected to maintain balanced allocation across groups within each block. For each block, all possible allocation arrangements among the three groups will be generated by the software, and the sequence of assignments will be determined completely at random. The randomization sequence will be generated by an individual who is not involved in the implementation of the study, and the researcher will have no role in either sequence generation or participant allocation. To maintain allocation concealment, group assignments will be placed in sequentially numbered, opaque, sealed envelopes according to the randomization sequence. Following participant enrollment and completion of baseline assessments, the appropriate envelope will be opened by the designated staff member, and the participant will be assigned to the corresponding study group.
Blinding (investigator's opinion)
Single blinded
Blinding description
In this study, blinding will be implemented to a limited extent, specifically at the outcome assessment level. Due to the nature of the intervention, participants will be aware of the type of massage they receive; therefore, participant blinding will not be feasible. Similarly, the principal investigator, intervention provider, and massage therapist will be aware of group allocation, as they will be actively involved in delivering the interventions. Consequently, blinding of these individuals will not be implemented. In contrast, outcome assessments will be performed by an assessor who will have no access to information regarding group allocation. The assessor will receive the data exclusively in the form of numerical codes. Furthermore, the data collection personnel will use coded identifiers during data recording and entry, without disclosing group allocation information to the outcome assessor. Data analysis will also be conducted using coded data. An independent Data and Safety Monitoring Committee (DSMC) will not be established for this study. In addition, the authors will use coded group identifiers during the preliminary data analysis, and group allocation will remain blinded until the completion of the initial analysis.
Placebo
Not used
Assignment
Parallel
Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee
Name of ethics committee
Research Ethics Committees of Islamic Azad University- Central Tehran Branch
Street address
Velayat University Complex, Salman Street, Khandan Street, Qaem Square, Artesh Boulevard, Sohanak.
City
Tehran
Province
Tehran
Postal code
1955847781
Approval date
2025-07-09, 1404/04/18

Ethics committee reference number
IR.IAU.CTB.REC.1404.094

Health conditions studied

1

Description of health condition studied
Scapula Asymmetry
ICD-10 code
M95.8
ICD-10 code description
Other specified acquired deformities of musculoskeletal system

Primary outcomes

1

Description
Scapula Symmetry
Timepoint
Outcome assessments will be conducted at two time points: baseline (pre-intervention), before the intervention begins, and immediately post-intervention, following completion of the massage session.
Method of measurement
Kibler's Lateral Scapular Slide Test

Secondary outcomes

1

Description
Upper limb performance
Timepoint
Outcome assessments will be conducted at two time points: baseline (pre-intervention), before the intervention begins, and immediately post-intervention, following completion of the massage session
Method of measurement
Upper limb Y test

2

Description
Upper limb power
Timepoint
Outcome assessments will be conducted at two time points: baseline (pre-intervention), before the intervention begins, and immediately post-intervention, following completion of the massage session.
Method of measurement
Throwing the medicine ball test

Intervention groups

1

Description
Intervention Group 1: Myofascial Release Massage Group. Participants in this group will receive a single 10-minute session of myofascial release massage. The intervention will be administered by a trained practitioner familiar with myofascial release techniques to reduce soft-tissue restrictions and muscle tension in the upper body and shoulder girdle. Before the intervention, baseline assessments of scapular symmetry, upper-limb function, and upper-limb power will be conducted. The intervention will involve the application of gentle, controlled pressure to soft tissues, identification of areas with increased tension or restricted mobility, and maintenance of sustained pressure over these areas. Myofascial release techniques will target muscles and soft tissues associated with scapular movement and control, including the pectoralis minor and major, trapezius, levator scapulae, rhomboids, and related shoulder-girdle tissues. Pressure will be applied gradually and adjusted according to each participant's tolerance to avoid severe pain or substantial discomfort. In areas of soft-tissue restriction, sustained pressure will be maintained for a duration appropriate to the tissue response and may be accompanied by gentle soft-tissue stretching when indicated. Immediately after the 10-minute myofascial release massage session, post-intervention assessments will be performed, including scapular symmetry using the Lateral Scapular Slide Test (LSST), upper-limb function using the Upper Quarter Y-Balance Test, and upper-limb power using the medicine ball throw
Category
Rehabilitation

2

Description
Intervention Group 2: Combined Myofascial Release and Relaxation Massage Group. Participants in this group will receive a single 10-minute session of combined massage consisting of five minutes of myofascial release massage followed by five minutes of relaxation massage. The intervention is designed to combine the potential effects of myofascial release techniques on soft-tissue restrictions with the relaxing effects of relaxation massage in the upper body and shoulder-girdle region. Before the intervention, baseline assessments of scapular symmetry, upper-limb function, and upper-limb power will be conducted. During the first five minutes, myofascial release techniques will be applied, including identification of areas with increased tension or soft-tissue restrictions, application of gentle and sustained pressure, and, when appropriate, controlled soft-tissue stretching. This component will focus on muscles and tissues associated with scapular movement and control, including the pectoralis minor and major, trapezius, levator scapulae, rhomboids, and other related shoulder-girdle tissues. During the second five minutes, relaxation massage techniques, including effleurage, gentle petrissage, and smooth, rhythmic strokes, will be applied to the target areas. This component will aim to reduce residual muscle tension and promote relaxation of the soft tissues. Pressure intensity, movement speed,
Category
Rehabilitation

3

Description

Control group:Relaxation Massage GroupParticipants in this group will receive a single 10-minute session of relaxation massage. The intervention will aim to promote muscle relaxation, reduce soft-tissue tension, and enhance relaxation in the upper body and shoulder-girdle region. Before the intervention, baseline assessments of scapular symmetry, upper-limb function, and upper-limb power will be conducted.The relaxation massage session will consist of a series of classical massage techniques, including effleurage (smooth, continuous, longitudinal strokes over the muscles), petrissage (gentle kneading and compression of soft tissues), and slow, rhythmic movements intended to facilitate muscle relaxation. The massage will focus on muscles associated with the shoulder girdle and upper body, including the trapezius, deltoid, pectoral muscles, and muscles surrounding the scapula. Pressure will be gentle and consistent, and the speed and rhythm of the strokes will be adjusted to promote relaxation and reduce muscle tension. In this group, specific myofascial release techniques involving sustained, targeted pressure over areas of soft-tissue restriction will not be applied.Immediately after the 10-minute relaxation massage session, post-intervention assessments will be performed, including scapular symmetry using the Lateral Scapular Slide Test (LSST), upper-limb function using the Upper Quarter Y-Balance Test, and upper-limb power using the medicine ball throw test. All assessments will follow the same standardized procedures used at baseline.

Category

Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center
Akhtar Hospital

Full name of responsible person
Aliasghar Jamebozorgi

Street address
Akhtar Hospital, Shariati St., Rumi Bridge, Sharifi Manesh St., Azar Dead End, Tehran

City
Tehran

Province
Tehran

Postal code
1964714960

Phone
+98 21 2200 1072

Email
akhtarhospital@sbmu.ac.ir

Sponsors / Funding sources

1

Sponsor

Name of organization / entity
Islamic Azad University

Full name of responsible person
Mohammadreza Tanhaei Ahari

Street address
Central Administrative Building, Islamic Azad University, Central Tehran Branch, Soheini Street, East Artesh Highway, Tehran, Iran.

City
Tehran

Province
Tehran

Postal code
1955847781

Phone
+98 21 7368 1158

Email
ict@iauctb.ac.ir

Grant name

Grant code / Reference number

Is the source of funding the same sponsor organization/entity?
Yes

Title of funding source
Islamic Azad University

Proportion provided by this source
100

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

Name of organization / entity
Islamic Azad University

Full name of responsible person
Razieh Yousefian Molla

Position
Assistant Professor

Latest degree
Ph.D.

Other areas of specialty/work
Sport Medicine

Street address
Faculty of Physical Education and Sport Sciences, Velayat University Complex, Salman Street, Khandan Street, Ghaem Square, Artesh Boulevard, Soohanak, Tehran, Iran

City
Tehran

Province
Tehran

Postal code

1955847781

Phone
+98 21 2248 1622

Email
razieh.yousefianmolla@iau.ac.ir

Person responsible for scientific inquiries

Contact

Name of organization / entity
Islamic Azad University

Full name of responsible person
Razieh Yousefian Molla

Position
Assistant Professor

Latest degree
Ph.D.

Other areas of specialty/work
Sport Medicine

Street address
Faculty of Physical Education and Sport Sciences, Velayat University Complex, Salman Street, Khandan Street, Ghaem Square, Artesh Boulevard, Soohanak, Tehran, Iran

City
Tehran

Province
Tehran

Postal code
1955847781

Phone
+98 21 2248 1622

Email
razieh.yousefianmolla@iau.ac.ir

Person responsible for updating data

Contact

Name of organization / entity
Islamic Azad University

Full name of responsible person
Razieh Yousefian Molla

Position
Assistant Professor

Latest degree
Ph.D.

Other areas of specialty/work
Sport Medicine

Street address
Faculty of Physical Education and Sport Sciences, Velayat University Complex, Salman Street, Khandan Street, Ghaem Square, Artesh Boulevard, Soohanak, Tehran, Iran

City
Tehran

Province
Tehran

Postal code
1955847781

Phone
+98 21 2248 1622

Email
razieh.yousefianmolla@iau.ac.ir

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 de-identifying individuals

When the data will become available and for how long
The access period starts after the publication of the results

To whom data/document is available
Researchers working in academic and scientific institutions

Under which criteria data/document could be used
Researchers at universities, such as faculty members, will be allowed to conduct any statistical and clinical analysis

From where data/document is obtainable
Applicants can contact the responsible researcher by sending an email (razieh.yousefianmolla@iau.ac.ir) or calling (0098 9122022730).

What processes are involved for a request to access data/document
The researcher will receive the items within a maximum of two weeks after sending the email or making the phone call

Comments