Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 2026

Rehabilitation of Adhesive Capsulitis (Frozen Stage) Through Maitland Joint Mobilization and Soft Tissue Manual Physiotherapy: A Pre–Post Controlled Study

Protocol summary

Study aim
To evaluate the effectiveness of manual physiotherapy (including Maitland joint mobilization and soft tissue release techniques) on improving functional status, reducing pain, and increasing range of motion in patients with adhesive capsulitis (frozen shoulder)

Design
A randomized, parallel-group clinical trial with 60 patients. Stratified randomization was performed based on the clinical phases of the disease (freezing, frozen, thawing). Within each stratum, participants were randomly allocated to either the experimental or control group

Settings and conduct
This study is conducted at the Al-Zahra Rehabilitation and Physiotherapy Center, Gulab Devi Teaching Hospital, Lahore. The study is designed as an open-label tria

Participants/Inclusion and exclusion criteria
Inclusion Criteria: Age 40–65 years; Clinical diagnosis of adhesive capsulitis in the “Frozen” phase; History of symptoms >3 months; Restriction in active and passive shoulder ROM in at least two planes (specifically abduction and external rotation); Written informed consent. Exclusion Criteria: History of shoulder fracture; Full rotator cuff tear; Severe glenohumeral osteoarthritis; Shoulder surgery within the last 12 months; Intra-articular corticosteroid injection within the last 3 months; Severe systemic diseases or neurological/cognitive disorder

Intervention groups
Experimental Group: Standard manual physiotherapy (glenohumeral joint mobilization and soft tissue release) for 8–12 weeks, 2–3 sessions per week, 30–45 minutes per session. Control Group: Usual care consisting of a home exercise program and shoulder-care education for 8–12 weeks, with exercises performed 2–3 times daily; no hands-on manual therapy was provided by the physiotherapist.

Main outcome variables
Pain intensity (VAS/NPRS); Shoulder Range of Motion (ROM); Functional capacity (using validated outcome measures); Structural changes assessed via MRI

General information

Reason for update

Acronym

IRCT registration information
IRCT registration number: **IRCT20260920071124N1**
Registration date: **2026-10-09, 1405/07/17**
Registration timing: **registered_while_recruiting**

Last update: **2026-10-09, 1405/07/17**
Update count: **0**

Registration date
2026-10-09, 1405/07/17

Registrant information

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Abdossaleh Zar

Name of organization / entity
Persian Gulf University

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Recruitment status
Recruitment complete

Funding source

Expected recruitment start date
2026-09-27, 1405/07/05

Expected recruitment end date

2026-10-22, 1405/07/30

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Rehabilitation of Adhesive Capsulitis (Frozen Stage) Through Maitland Joint Mobilization and Soft Tissue Manual Physiotherapy: A Pre–Post Controlled Study

Public title

Effect of Maitland Joint Mobilization and Manual Physiotherapy on Rehabilitation of Frozen Shoulder (Adhesive Capsulitis)

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria:

Patients with adhesive capsulitis in freezing or frozen phase Age between 40 and 65 years Ability to read write and understand language Informed consent to participate in the study

Exclusion criteria:

History of shoulder surgery in the affected side Corticosteroid injection or physiotherapy in the last 6 months Uncontrolled diabetes or severe systemic disease Severe shoulder osteoarthritis or malignant tumors Neurological or cognitive disorders preventing cooperation

Age

From **40 years** old to **65 years** old

Gender

Both

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **20**

Randomization (investigator's opinion)

Randomized

Randomization description

This study utilized a stratified randomization method with individuals as the unit of randomization. Participants were initially stratified based on the three clinical phases of adhesive capsulitis (including the freezing, frozen, and thawing phases). Following stratification, in each stratum, 10 patients were randomly allocated to the intervention group, and 10 patients were allocated to the control group

Blinding (investigator's opinion)

Not blinded

Blinding description

Placebo

Not used

Assignment

Parallel

Other design features

A randomized, parallel-group clinical trial using stratified randomization based on the clinical phases of the disease

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Departmental Research Ethics Committee, Department of Sports Sciences & Physical Education, Universi

Street address

F7H8+HFV, Canal Rd, Quaid-i-Azam Campus, Lahore, Pakistan

City

Lahore

Postal code

0000054600

Approval date

2026-06-20, 1405/03/30

Ethics committee reference number

Ref. No. 652 / SPS

Health conditions studied

1

Description of health condition studied

Adhesive Capsulitis

ICD-10 code

M75.0

ICD-10 code description

Adhesive capsulitis of shoulder

Primary outcomes

1

Description

Pain severity

Timepoint

Measured at baseline (before intervention), and at the end of the 4th week

Method of measurement

Numeric Pain Rating Scale

2

Description

Shoulder joint range of motion for flexion and abduction

Timepoint

Measured at baseline (before intervention), and at the end of the 4th week

Method of measurement

Universal Goniometer

Secondary outcomes

empty

Intervention groups

1

Description
Intervention group: Manual Physiotherapy Based on the Maitland Concept Intervention description:Participants in the experimental group received a standardized manual physiotherapy program based on the Maitland concept. The intervention included glenohumeral joint mobilization and soft tissue mobilization of the surrounding muscles. Maitland grades I–IV were applied according to the participant's clinical presentation. Grades I and II were used when pain was the predominant limiting factor, whereas grades III and IV were used when capsular stiffness was predominant. Each treatment session lasted 30–45 minutes and was conducted 2–3 times per week for up to 12 weeks. Each session began with 10 minutes of moist heat applied to the shoulder and ended with phase-appropriate progressive therapeutic exercises. All interventions were delivered by the same qualified physiotherapist.

Category
Rehabilitation

2

Description
Control group: No Manual Physiotherapy Intervention Intervention description:Participants in the control group received usual care, consisting of a home exercise program and education on shoulder care, for 8–12 weeks. The exercises were performed 2–3 times daily, and participants received appropriate instructions regarding shoulder care and adherence to the exercise program. The control group did not receive any hands-on manual therapy from the physiotherapist.

Category
N/A

Recruitment centers

1

Recruitment center

Name of recruitment center
Ghulab Devi Teaching Hospital

Full name of responsible person
Muhammad Zayan

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Main ferozpur road opposite to arfa kareem tower Nishtar town, Lahore, Punjab, Pakistan

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity
N/A

Full name of responsible person
N/A

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Web page address
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Grant name
N/A

Grant code / Reference number

Is the source of funding the same sponsor organization/entity?
No

Title of funding source
N/A

Proportion provided by this source
100

Public or private sector
Private

Domestic or foreign origin
Foreign

Category of foreign source of funding
UN agencies and international organizations

Country of origin

Type of organization providing the funding
Other

Person responsible for general inquiries

Contact

Name of organization / entity
University of the Punjab

Full name of responsible person
Muhammad Zayan

Position
Researcher

Latest degree
Ph.D.

Other areas of specialty/work
Sport Medicine

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GH-21 Street no 3, Professor colony, opposite to Sheikh Zaid hospital, University of the Punjab Lahore,

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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
Rehabilitation of Adhesive Capsulitis (Frozen Stage) Through Maitland Joint Mobilization and Soft Tissue Manual Physiotherapy: A Pre-Post Controlled study

When the data will become available and for how long
8-Weeks

To whom data/document is available
Researcher, Academic Faculty and clinical affiliated with recognized research or academic institutions.

Under which criteria data/document could be used
The data may be used solely for academic research, systematic reviews, meta-analyses, or secondary statistical analyses related to physical therapy and musculoskeletal rehabilitation. Commercial use is strictly prohibited, and data sharing is contingent upon signing a data use agreement to ensure participant privacy.

From where data/document is obtainable
Corresponding authors

What processes are involved for a request to access data/document
Interested researchers must send a formal request email to the principal investigator outlining the study objective, methodology, and intended use of the data. Requests will be evaluated by the research team within 2 to 4 weeks. Upon approval and signature of the data transfer agreement, the de-identified dataset will be transmitted securely via email or cloud storage.

Comments