

Clinical Trial Protocol

Iranian Registry of Clinical Trials

11 Sep 2026

Comparison of suboccipital myofascial release and diaphragm myofascial release on posture, pain and functional ability in patients with symptomatic forward head posture: A randomized clinical trial study

Protocol summary

Study aim

Comparison of the effects of suboccipital myofascial release and diaphragm myofascial release on posture, pain, and functional ability in patients with symptomatic forward head posture aged 18 to 40 years

Design

A controlled, double group, single blinded (assessor), randomized (Randomizer site), phase 3 clinical trial on 48 patients.

Settings and conduct

The study at Shiraz's School of Rehabilitation Sciences will compare diaphragm release, suboccipital release, and a control groups. Manual techniques are applied thrice weekly for four weeks, alongside therapeutic exercises for all groups. Blinding of evaluator is maintained by separating treatment and assessment roles.

Participants/Inclusion and exclusion criteria

Inclusion criteria: Age range 18 to 40 years; Neck pain for at least the past 6 weeks; CVA less than 49.9 degrees; Diaphragm tenderness; Average daily use of mobile phones and computers equal to 4 hours or more, or 4 continuous hours of computer use in a seated position. Exclusion criteria: Visual and auditory impairments; Neurological disorders; Balance disorders; History of surgery in the neck and spine area; History of any trauma to the cervical spine, such as whiplash injury

Intervention groups

Intervention groups: One of the intervention groups will receive suboccipital muscle release, and the other group will receive diaphragm muscle release. Both groups will also be provided with a common therapeutic exercise program. Control group: This group will receive only the same therapeutic exercise program.

Main outcome variables

Postural status, pain intensity, functional ability

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20250629066291N1**

Registration date: **2025-09-06, 1404/06/15**

Registration timing: **prospective**

Last update: **2025-09-06, 1404/06/15**

Update count: **0**

Registration date

2025-09-06, 1404/06/15

Registrant information

Name

Farzaneh Haghighat

Name of organization / entity

Country

Iran (Islamic Republic of)

Phone

+98 71 3230 5410

Email address

haghighat_fa@yahoo.com

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2025-09-20, 1404/06/29

Expected recruitment end date

2026-01-20, 1404/10/30

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Comparison of suboccipital myofascial release and diaphragm myofascial release on posture, pain and functional ability in patients with symptomatic forward head posture: A randomized clinical trial study

Public title

Comparison of suboccipital and diaphragm muscle release on posture, pain, and functional ability in patients with symptomatic forward head posture

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria:

Age range: 18 to 40 years Having reported neck pain for at least the past 6 weeks CVA angle must be less than 49.9 degrees Individuals must present tenderness in the diaphragm Average daily use of mobile phones and computers should be 4 hours or more, or 4 continuous hours of computer use in a seated position

Exclusion criteria:

Visual and auditory impairments Neurological disorders Balance disorders History of surgery in the neck and spine area History of any trauma to the cervical spine, such as whiplash injury Cognitive impairments Inflammatory diseases such as rheumatoid arthritis History of any fracture in the neck area Congenital defects in the neck area (e.g., torticollis) Respiratory diseases and shingles Professional athletes Cervical spinal canal stenosis Radicular pain related to the neck area Malignancy Fibromyalgia Undergoing physiotherapy treatment in the past six months Use of painkillers, anti-inflammatory drugs, or muscle relaxants in the past 72 hours History of clavicle and rib fractures

Age

From **18 years** old to **40 years** old

Gender

Both

Phase

3

Groups that have been masked

- Investigator
- Outcome assessor

Sample size

Target sample size: **48**

Randomization (investigator's opinion)

Randomized

Randomization description

The random assignment method in this study will be the blocked permutation method (number of blocks 8 and block size 4) which will be generated using randomizer site. The samples will be assigned in a 1:1 ratio. Opaque, sealed envelopes will be used to conceal the assignment.

Blinding (investigator's opinion)

Single blinded

Blinding description

The individual who performs the assessments is separate from the one who administers the treatments, and neither is aware of the other's work. The person responsible for randomization is also independent from both of the aforementioned individuals.

Placebo

Not used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Ethics committee of Shiraz University of Medical Sciences

Street address

Ethics committee, Research and Technology Vice-Chancellor, 7th floor, Central building of Shiraz University of Medical Sciences, Zand Street

City

Shiraz

Province

Fars

Postal code

7198754361

Approval date

2025-05-07, 1404/02/17

Ethics committee reference number

IR.SUMS.REHAB.REC.1404.006

Health conditions studied

1

Description of health condition studied

Forward head posture

ICD-10 code

R29.3

ICD-10 code description

Abnormal posture

Primary outcomes

1

Description

Head postural status

Timepoint

Before intervention; One day after intervention period

Method of measurement

Craniovertebral angle

2

Description

Pain intensity

Timepoint

Before intervention; One day after intervention period

Method of measurement

Numerical pain rating scale

3

Description

Functional ability

Timepoint

Before intervention; One day after intervention period

Method of measurement

Neck disability index

Secondary outcomes

empty

Intervention groups

1

Description

Intervention group1: Diaphragm release and therapeutic exercise. To perform diaphragm release, the patient sits upright, and the therapist, positioned behind them, wraps his/her hands around the patient's rib cage in such a way that their fingers are placed beneath the costal margin. To relax the rectus abdominis muscle, the patient bends their torso forward. During the patient's exhalation, the therapist grasps the lower ribs from the costal margin area and maintains this position for 5 to 7 minutes.

Category

Treatment - Other

2

Description

Intervention group2: Suboccipital release and therapeutic exercise. To perform suboccipital release, the patient is asked to lie on his/her back while the therapist sits on a chair at the level of the patient's head. The therapist's elbows are supported by the treatment table, and the forearms are positioned in supination. The patient is instructed to rest their head on the therapist's palms. Then, the therapist places the pads of four fingers from both hands on either side of the second cervical vertebra, just below the occipital area, and maintains pressure until a sensation of melting is felt. The duration of the intervention is 4 minutes.

Category

Treatment - Other

3

Description

Control group: Therapeutic exercise

Category

Treatment - Other

Recruitment centers

1

Recruitment center

Name of recruitment center

Clinic of Rehabilitation School, Shiraz University of Medical Sciences

Full name of responsible person

Farzaneh Haghighat

Street address

Mehr Building, Shahid Chamran Hospital, Shahid Chamran Boulevard

City

Shiraz

Province

Fars

Postal code

7194815644

Phone

+98 71 3624 0101

Email

rehabdep@sums.ac.ir

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Shiraz University of Medical Sciences

Full name of responsible person

Hamid Mohammadi

Street address

Research and Technology Vice-Chancellor, 7th floor, Central building of Shiraz University of Medical Sciences, Zand Street

City

Shiraz

Province

Fars

Postal code

7134814336

Phone

+98 71 3212 2430

Email

vrdep@sums.ac.ir

Grant name

Grant code / Reference number

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

Yes

Title of funding source

Shiraz University of Medical Sciences

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

Shiraz University of Medical Sciences

Full name of responsible person

Farzaneh Haghighat

Position

Assistant Professor

Latest degree

Ph.D.

Other areas of specialty/work

Physiotherapy

Street address

Mehr Building, Shahid Chamran Hospital, Shahid Chamran Boulevard

City

Shiraz

Province

Fars

Postal code

7194815644

Phone

+98 71 3624 0101

Email

haghighat_fa@yahoo.com

Shiraz University of Medical Sciences

Full name of responsible person

Farzaneh Haghighat

Position

Assistant Professor

Latest degree

Ph.D.

Other areas of specialty/work

Physiotherapy

Street address

Mehr Building, Shahid Chamran Hospital, Shahid Chamran Boulevard

City

Shiraz

Province

Fars

Postal code

7194815644

Phone

+98 71 3624 0101

Fax**Email**

haghighat_fa@yahoo.com

Web page address

Person responsible for scientific inquiries

Contact

Name of organization / entity

Shiraz University of Medical Sciences

Full name of responsible person

Farzaneh Haghighat

Position

Assistant Professor

Latest degree

Ph.D.

Other areas of specialty/work

Physiotherapy

Street address

Mehr Building, Shahid Chamran Hospital, Shahid Chamran Boulevard

City

Shiraz

Province

Fars

Postal code

7194815644

Phone

+98 71 3624 0101

Fax**Email**

haghighat_fa@yahoo.com

Web page address

Sharing plan

Deidentified Individual Participant Data Set (IPD)

Yes - There is a plan to make this available

Study Protocol

Undecided - It is not yet known if there will be 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

Not applicable

Data Dictionary

Not applicable

Title and more details about the data/document

Information collection form including primary and secondary outcomes, informed consent form and SPSS file

When the data will become available and for how long

After publication the results of the study

To whom data/document is available

Researchers working in academic and scientific institutions

Under which criteria data/document could be used

Only for recording information in scientific databases

From where data/document is obtainable

Correspondence with the project manager by email.

Haghighat_fa@yahoo.com

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

Maximum one month after sending the request by email

Comments

Person responsible for updating data

Contact

Name of organization / entity