Clinical Trial Protocol
Iranian Registry of Clinical Trials

10 Jun 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)

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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 Rehabilitaion School, Shiraz University of Medical Sciences
Full name of responsible person
Farzaneh Haghighat
Street address
Mehr Building, Shahid Chamran Hospital, Shahid Chamran Boulevard
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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
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Postal code
7134814336
Phone
+98 71 3212 2430
Email
vcrdep@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

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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