

Clinical Trial Protocol

Iranian Registry of Clinical Trials

10 Jun 2026

Comparison the effect of neck stabilization exercise and dynamic neuromuscular stabilization on pain intensity, forward head angle and muscle activity of employees with chronic non-specific neck pain

Protocol summary

Study aim

The effect of neck stabilization exercise and dynamic neuromuscular stabilization exercise on forward head posture and muscle activity in patients with chronic non-specific neck pain

Design

Retrospective studies with two intervention group and one control group, with parallel groups, double-blind, slot-drawing method, phase 2 on 42 patients

Settings and conduct

In the pre-test, pain intensity, electrical activities (erector spinae, sternocleidomastoid, upper trapezius), head forward angle are measured. Then groups 1 and 2 received a 6-week intervention, while no intervention was performed in the control group. At the end again pain intensity, electrical activities (erector spinae, sternocleidomastoid, upper trapezius), head forward angle are measured. Measurements were performed at Razi University, Kermanshah. Exercises were performed at the Razi University, Kermanshah.

Participants/Inclusion and exclusion criteria

Having persistent neck pain for more than 3 month, Neck pain for which the specialist doctor did not mention a specific cause, No specific structural damage in the neck, women

Intervention groups

The experimental groups received an 6-week corrective exercise (CE) program. The control group was asked to maintain their ordinary daily activities and not to participate in any exercise programs.

Main outcome variables

Pain intensity, forward head angle, electrical activity of upper trapezius neck, sternocleidomastoid, cervical erector spine .

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20200622047888N3**

Registration date: **2023-11-14, 1402/08/23**

Registration timing: **retrospective**

Last update: **2023-11-14, 1402/08/23**

Update count: **0**

Registration date

2023-11-14, 1402/08/23

Registrant information

Name

Aynollah Sakinepoor

Name of organization / entity

Kharazmi University, Tehran, Iran

Country

Iran (Islamic Republic of)

Phone

+98 83 4522 6103

Email address

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Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2023-05-05, 1402/02/15

Expected recruitment end date

2023-05-17, 1402/02/27

Actual recruitment start date

2023-05-05, 1402/02/15

Actual recruitment end date

2023-05-17, 1402/02/27

Trial completion date

2023-05-17, 1402/02/27

Scientific title

Comparison the effect of neck stabilization exercise and dynamic neuromuscular stabilization on pain intensity, forward head angle and muscle activity of employees with chronic non-specific neck pain

Public title

neck stabilization and dynamic neuromuscular stabilization exercises and muscle activity

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria:

Subjects who had persistent neck pain (more than three months). Subjects who used the computer for at least four hours a day Subjects who got score three from the visual analog scale one week before the pre-test.

Subjects who got score between 3 and 7 in the visual pain grading system (scale 0=10 cm). Neck pain for which the specialist doctor did not mention a specific cause Subjects who were female.

Exclusion criteria:

Neck pain for which a specialist doctor has mentioned a specific cause. Specific structural damage in the neck, neck disc Spine surgery

Age

From **32 years** old to **50 years** old

Gender

Female

Phase

N/A

Groups that have been masked

- Outcome assessor
- Data analyser

Sample size

Target sample size: **45**

Actual sample size reached: **42**

Randomization (investigator's opinion)

Randomized

Randomization description

The participants were randomly assigned to two intervention groups (intervention group one: dynamic neuromuscular stabilization and intervention group two: neck stabilization exercise), and control group by drawing a number from 1 to 54, prepared in advance by the trainer and placed in sealed envelopes in a box. The number envelopes were placed inside a box. The trainer was asked to pick 15 envelopes from the numbers inside the box for each group. The randomization sequence was not disclosed until participants had completed their baseline assessments. The assessor was blinded to group allocation

Blinding (investigator's opinion)

Double blinded

Blinding description

The randomization sequence was not disclosed until patients completed their baseline assessments. The statistician and the assessor were blind to group allocation. Patients were not blind to the interventions

(intervention group one: dynamic neuromuscular stabilization and intervention group two: neck stabilization exercise), but did not know which group was the treatment therapy.

Placebo

Not used

Assignment

Parallel

Other design features

Secondary Ids

1

Registry name

Secondary trial Id

Registration date

2023-11-02, 1402/08/11

Ethics committees

1

Ethics committee

Name of ethics committee

Research Ethics Committees of Hormozgan University of Medical Sciences

Street address

Imam Hossein Street

City

Bandar Abas

Province

Hormozgan

Postal code

7919693116

Approval date

2023-08-04, 1402/05/13

Ethics committee reference number

IR.HUMS.REC.1402.219

Health conditions studied

1

Description of health condition studied

chronic non-specific neck pain

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description

Electrical activity of muscles

Timepoint

The electrical activity of muscles were measured before and six weeks after the stabilization exercise and dynamic neuromuscular stabilization exercises

Method of measurement

The ground reaction forces is measured by sixteen

channel electromyography device

Secondary outcomes

1

Description

Forward head angle

Timepoint

Forward head angle was measured before and after the six the neck stabilization exercise and dynamic neuromuscular stabilization exercises

Method of measurement

Forward head was measured by photogrammetric method.

2

Description

Pain intensity

Timepoint

pain intensity was measured before and after the six the neck stabilization exercise and dynamic neuromuscular

Method of measurement

Pain intensity was measured by the numeric pain rating scale method.

3

Description

Electrical activity of muscles

Timepoint

Electrical activity of muscles was measured before and after the six the neck stabilization exercise and dynamic neuromuscular

Method of measurement

Electrical activity of muscles was measured by electromyography device.

Intervention groups

1

Description

Intervention group1: Intervention group 1: In this group the electrical activity of muscles, pain intensity and forward head angle is respectively measured by electromyography device, the numeric pain rating scale (NPRS), camera respectively. Then Subjects receive neck stabilization exercise for six weeks, and then at the end of the six weeks the electrical activity of muscles is measured again. Training sessions consist of six weeks with three training sessions per week for one hour.

Category

Treatment - Other

2

Description

Intervention group2: Intervention group 2: In this group the electrical activity of muscles, pain intensity and forward head angle is respectively measured by

electromyography device, the numeric pain rating scale (NPRS), camera respectively. Then Subjects receive dynamic neuromuscular stabilization exercise for six weeks, and then at the end of the six weeks the electrical activity of muscles is measured again. Training sessions consist of six weeks with three training sessions per week for one hour.

Category

Treatment - Other

3

Description

Control group: The control group was asked to maintain their ordinary daily activities and not to participate in any exercise programs

Category

Treatment - Other

Recruitment centers

1

Recruitment center

Name of recruitment center

Razi University, Kermanshah

Full name of responsible person

Ainollah Sakinepoor

Street address

Street Hor

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6761753164

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

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Full name of responsible person

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Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
No
Title of funding source
It is a personal financial source
Proportion provided by this source
100
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
Persons

Person responsible for general inquiries

Contact

Name of organization / entity
The Razi University, Kermanshah
Full name of responsible person
Ainollah Sakinepoor
Position
PhD, sport injury and corrective exercises
Latest degree
Ph.D.
Other areas of specialty/work
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Person responsible for updating data

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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 more information

Study Protocol

No - There is not a plan to make this available

Statistical Analysis Plan

No - There is not a plan to make this available

Informed Consent Form

No - There is not a plan to make this available

Clinical Study Report

No - There is not a plan to make this available

Analytic Code

No - There is not a plan to make this available

Data Dictionary

No - There is not a plan to make this available