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

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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
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Sponsors / Funding sources

1

Sponsor
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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
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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