

Clinical Trial Protocol

Iranian Registry of Clinical Trials

15 Jul 2026

Effectiveness of proprioceptive neuromuscular facilitation and stabilization exercises on cross sectional area of deep flexor muscles in chronic non-specific neck pain

Protocol summary

Summary

(1) Objective: The aim of this study was to determine and compare effectiveness of cervical stabilization exercises and proprioceptive neuromuscular facilitation exercises on cross sectional area of deep flexor muscles in non-specific Chronic Neck Pain patients. (2) Design: This study is a kind of experimental study, clinical trial and it is done on forty four non-specific chronic neck pain patients. (3) Setting and conduct: Patients randomly assigned to two groups of stabilization exercises and proprioceptive neuromuscular facilitation. Pain, intensity of disability and cross sectional area of deep flexors of neck are measured with VAS, NDI questionnaires and ultrasonography respectively before and after intervention. Expected time for treatment of both groups is eight weeks. (4) Participants: Participants are from chronic neck pain patients that referred to clinics, later inclusion and exclusion criteria will be applied to them. (5) Intervention: In this study, interventions are stability and proprioceptive neuromuscular facilitation exercises of neck. (6) Variables: Pain, cross sectional area of muscles and neck disability index will be measured before and after intervention.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT2016060128203N1**
Registration date: **2016-07-12, 1395/04/22**
Registration timing: **registered_while_recruiting**

Last update:

Update count: **0**

Registration date

2016-07-12, 1395/04/22

Registrant information

Name

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Name of organization / entity

Shahid Beheshti University of Medical Sciences

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Recruitment status

Recruitment complete

Funding source

Zahedan University of Medical Sciences

Expected recruitment start date

2016-04-08, 1395/01/20

Expected recruitment end date

2016-07-26, 1395/05/05

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Effectiveness of proprioceptive neuromuscular facilitation and stabilization exercises on cross sectional area of deep flexor muscles in chronic non-specific neck pain

Public title

Effectiveness of proprioceptive neuromuscular facilitation and stabilization exercises on cross sectional area of deep flexor muscles in chronic non-specific neck pain

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria: Men and women; Aged 20 to 50 years; With chronic non-specific neck pain; With BMI between 25 to 30. Exclusion criteria: Protrusion or Prolapse of disc with neurologic symptoms; Spinal surgery; Existence of certain structural damage in the neck; Neck pain caused by autoimmune diseases; Inflammation; Congenital deformity of spine; Compression fracture because of Osteoporosis; Stenosis and Spondylolysis or Spondylolisthesis; Myofascial Trigger Point; Shoulder injury; Rheumatoid arthritis; Pregnancy; Torticollis; Diabetes; Lung diseases; Myopathies; Cancer; History of physical therapy intervention on neck or shoulder in last three months; Physiotherapy; Chiropractic treatment; Osteopathy; Massage and so on to the neck or shoulders in the last three months.

Age

From **20 years** old to **50 years** old

Gender

Both

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **44**

Randomization (investigator's opinion)

Randomized

Randomization description**Blinding (investigator's opinion)**

Not blinded

Blinding description**Placebo**

Not used

Assignment

Parallel

Other design features**Secondary Ids**

empty

Ethics committees**1****Ethics committee****Name of ethics committee**

Ethics committee of Zahedan University of Medical Sciences

Street address

Zahedan Medical School, Khalij Fars Boulevard, Zahedan, IRAN

City

Zahedan

Postal code

9816743175

Approval date

2015-10-23, 1394/08/01

Ethics committee reference number

IR.zaums.rec.1394.271

Health conditions studied**1****Description of health condition studied**

Chronic neck pain

ICD-10 code

M79.9

ICD-10 code description

Soft tissue disorder, unspecified

Primary outcomes**1****Description**

Cross-sectional area of deep neck flexor

Timepoint

Before intervention and 2 months after intervention

Method of measurement

By ultrasonography and per square centimeter

Secondary outcomes**1****Description**

Neck Disability Index

Timepoint

Before intervention and 2 months after intervention

Method of measurement

Neck Disability Index questionnaire

2**Description**

Pain

Timepoint

Before intervention and 2 months after intervention

Method of measurement

Visual Analog Scale questionnaire

Intervention groups**1****Description**

Stability group: Patient will train stability exercises of neck and shoulder for 8 weeks.

Category

Rehabilitation

2**Description**

PNF group: In this group, patients will train proprioceptive neuromuscular facilitation exercises of neck and upper limbs daily for 8 weeks.

Category

Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center

University of Social Welfare and Rehabilitation Sciences

Full name of responsible person

Street address

City

Tehran

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Vice-chancellor for research of Zahedan University of Medical Sciences

Full name of responsible person

Hoshang Rafighdoost

Street address

Zahedan Medical School, Khalij Fars Boulevard,
Zahedan, IRAN

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Zahedan

Grant name

Grant code / Reference number

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

Yes

Title of funding source

Vice-chancellor for research of Zahedan University of Medical Sciences

Proportion provided by this source

100

Public or private sector

empty

Domestic or foreign origin

empty

Category of foreign source of funding

empty

Country of origin

Type of organization providing the funding

empty

Person responsible for general inquiries

Contact

Name of organization / entity

Zahedan University of Medical Sciences

Full name of responsible person

Parisa Ghadiri Harati

Position

Master of Science

Other areas of specialty/work

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Sharing plan

Deidentified Individual Participant Data Set (IPD)

empty

Study Protocol

empty

Statistical Analysis Plan

empty

Informed Consent Form

empty

Clinical Study Report

empty

Analytic Code

empty

Data Dictionary

empty