

# Clinical Trial Protocol

## Iranian Registry of Clinical Trials

10 Jun 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

Parisa Ghadiri Harati

##### Name of organization / entity

Shahid Beheshti University of Medical Sciences

##### Country

Iran (Islamic Republic of)

##### Phone

+98 21 7754 2057

##### Email address

a\_karimi@bmsu.ac.ir

#### 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

**City**

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****Street address**

Zahedan Medical School, Khalij Fars Boulevard,  
Zahedan, IRAN

**City**

Zahedan

**Postal code****Phone**

+98 44900826

**Fax****Email**

ghadiri.pt93@gmail.com

**Web page address**

## Person responsible for scientific 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****Street address**

Zahedan Medical School, Khalij Fars Boulevard,  
Zahedan, IRAN

**City**

Zahedan

**Postal code**

۹۸۱۶۷۴۳۱۷۵

**Phone**

+98 21 4490 0826

**Fax****Email**

ghadiri.pt93@gmail.com

**Web page address**

## Person responsible for updating data

### 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****Street address**

Zahedan Medical School, Khalij Fars Boulevard,  
Zahedan, IRAN

**City**

Zahedan

**Postal code**

۹۸۱۶۷۴۳۱۷۵

**Phone**

+98 21 4490 0826

**Fax****Email**

ghadiri.pt93@gmail.com

**Web page address**

## 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*