

Clinical Trial Protocol

Iranian Registry of Clinical Trials

27 Jul 2026

Evaluating the efficacy of therapeutic exercises and trigger points dry needling in patients with forward head posture

Protocol summary

Study aim

The aim of this study will be to compare effectiveness of exercise therapy and and trigger points dry needling on neck and shoulder angle, pain intensity and quality of life of patients.

Design

The study is a phase 3 clinical trial that will be performed on 60 patients. Patients will be randomly assigned to two groups of exercise therapy and Dry Needling using the envelope method.

Settings and conduct

This study will be performed as a single (blindness evaluator of intervention outcome) in Besat Hospital in Hamadan.

Participants/Inclusion and exclusion criteria

Participants in the study will be patients aged 14 to 65 years with with forward head posture that will be diagnosed based on clinical criteria. comorbidity with other musculoskeletal diseases, spinal diseases, neurological and motor diseases, history of shoulder surgery and vascular diseases are the exclusion criteria.

Intervention groups

Intervention: Patients in the exercise therapy group will be under the supervision of the therapist, twice a week for 20 minutes (three stretching exercises and four strength exercises). To increase patients' resistance, all exercises are started lightly, including 2 sets of 15, and gradually the intensity, number of sets and repetition of movements will be increasing. The second group of Dry Needling trigger points (TrPs) will be performed. The neck and shoulder girdle muscles will first be evaluated by a specialist with experience in finding TrPs. Dry Needling is performing on a bed in a quiet room for 10 minutes by inserting an acupuncture needle 0.3 mm in diameter and 50 mm long into the TrPs. Needle is raised and lowered 3 to 5 times and then removed. As with the exercise therapy group, treatment sessions in this group are twice a week for 12 weeks

Main outcome variables

The outcomes of the intervention include changes in neck and shoulder angle, pain score and quality of life of patients.

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20151123025202N17**

Registration date: **2021-07-17, 1400/04/26**

Registration timing: **prospective**

Last update: **2021-07-17, 1400/04/26**

Update count: **0**

Registration date

2021-07-17, 1400/04/26

Registrant information

Name

Abbas Moradi

Name of organization / entity

Hamedan University of Medical Of Science

Country

Iran (Islamic Republic of)

Phone

+98 81 3838 0097

Email address

a.moradi@umsha.ac.ir

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2021-08-06, 1400/05/15

Expected recruitment end date

2022-02-04, 1400/11/15

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Evaluating the efficacy of therapeutic exercises and trigger points dry needling in patients with forward head posture

Public title

Treatment of forward head posture

Purpose

Treatment

Inclusion/Exclusion criteria**Inclusion criteria:**

Diagnosis of forward head posture abnormalities according to clinical criteria Age 65-14 years

Exclusion criteria:

Comorbidity of other musculoskeletal diseases, spinal diseases, neurological and motor diseases History of shoulder surgery Vascular diseases

Age

From **14 years** old to **65 years** old

Gender

Both

Phase

3

Groups that have been masked

- Outcome assessor

Sample size

Target sample size: **60**

Randomization (investigator's opinion)

Randomized

Randomization description

We made 60 cards and write letter V on 30 for Intervention and on the other 30 letter D for the control group. Then put them inside the envelope with aluminum wrap and put in a box. At the time of patient arrival, one of the envelopes randomly will be selected and will be opened, based on selected letter V or D patients will be assigned to exercises therapy or dry needling group. The sampling process will be continues until all the cards are selected

Blinding (investigator's opinion)

Single blinded

Blinding description

In this study, the person evaluating the angle of head, neck and shoulders in the image taken by digital camera and analyzed computer software, pain score of patients with visual analog scale and quality of life of patients with SF-12 scale will be blinded regarding to intervention groups .

Placebo

Not used

Assignment

Parallel

Other design features**Secondary Ids**

empty

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

Ethics committee of Hamadan University of Medical Science

Street address

Shahid Fahmideh Ave

City

Hamadan

Province

Hamadan

Postal code

6517838697

Approval date

2021-01-30, 1399/11/11

Ethics committee reference number

IR.UMSHA.REC.1399.924

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

forward head posture

ICD-10 code

M95.9

ICD-10 code description

Acquired deformity of musculoskeletal system, unspecified

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

Changes neck and shoulder angle

Timepoint

Before the intervention and at the end of week 12 of the intervention

Method of measurement

Taking a photo of the profile of the body, analysis with a computer

2**Description**

Pain severity

Timepoint

Before the intervention and at the end of week 12 of the intervention

Method of measurement

Visual Analogues Scale

Secondary outcomes

1

Description

Quality of life associated with forward head posture

Timepoint

Before and 12 weeks after the intervention

Method of measurement

Questionnaire SF-12

Intervention groups

1

Description

Intervention group: The duration of treatment in this study will be 3 months (12 weeks). Exercise therapy sessions will be performed twice a week for 20 minutes under the supervision of a therapist. The exercise therapy protocol will include three stretching exercises and four strength exercises aimed at correcting the condition of the neck and shoulders position. Strength training is designed for rotator cuff activity, minor fear, infra-spinatus, scapular stabilizing muscles (upper and lower trapezius), rhomboids, and deep neck flexors. Stretching exercises are designed to stretch the shortened pectoralis minor muscles and the SCM neck muscles and the scapula lift. The exercise program is performed under the direct supervision of the therapist to ensure the correctness of the exercises. To increase patients' resistance, all exercises are started lightly, including 2 sets of 15, and gradually increase the intensity, number of sets and repetition of movements. The average duration of exercise will be 20 minutes and the exercise sequence is random.

Category

Rehabilitation

2

Description

Intervention group: For patients in the Dry Needling group of trigger points (TrPs), the neck and shoulder girdle muscles, including the trapezius, SCM, sub-occipital, scapula, scale, pectoralis major, and infra-spinatus muscles, will first be evaluated by a experienced specialist to finding TrPs. . The identified TrPs are marked for each patient in an anatomical shape. For Dry Needling, patients will be asked to lie in a comfortable bed in a quiet room for 10 minutes. Dry Needling is then performed by inserting an acupuncture needle 0.3 mm in diameter and 50 mm in length into the identified TrPs. The needle is raised and lowered for 3-5 times and then removed. As in the exercise therapy group, treatment sessions in this group will be twice a week for 12 weeks.

Category

Treatment - Devices

Recruitment centers

1

Recruitment center

Name of recruitment center

Besat Hospital

Full name of responsible person

Lobat Majidi

Street address

Shahid Beheshti Blv

City

Hamedan

Province

Hamadan

Postal code

6514845411

Phone

+98 81 3264 0020

Email

besat@umsha.ac.ir

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Hamedan University of Medical Sciences

Full name of responsible person

Saeid Bashirian

Street address

Shahid Fahmide Ave

City

Hamadan

Province

Hamadan

Postal code

6517838677

Phone

+98 81 3838 0717

Fax

+98 81 3838 0130

Email

vc_research@umsha.ac.ir

Web page address

Grant name

Grant code / Reference number

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

Yes

Title of funding source

Hamedan 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

Email

lobat.majidi@gmail.com

Person responsible for general inquiries**Contact****Name of organization / entity**

Hamedan University of Medical Sciences

Full name of responsible person

Abbas Moradi

Position

Coach

Latest degree

Master

Other areas of specialty/work

Epidemiology

Street address

Hamedan shahid fahmideh street medicine school

City

Hamadan

Province

Hamadan

Postal code

6517838736

Phone

+98 81 3838 0097

Fax

+98 81 3838 0208

Email

a.moradi@umsha.ac.ir

Person responsible for updating data**Contact****Name of organization / entity**

Hamedan University of Medical Sciences

Full name of responsible person

Abbas Moradi

Position

MSc in epidemiology/ Community Medicine MS

Latest degree

Master

Other areas of specialty/work

Epidemiology

Street address

Hamadan, Shahid Fahmideh Avenue, Medical School,
Department of Social Medicine

City

Hamadan

Province

Hamadan

Postal code

6517838736

Phone

+98 81 3838 0557

Fax**Email**

a.moradi@umsha.ac.ir

Web page address**Person responsible for scientific inquiries****Contact****Name of organization / entity**

Hamedan University of Medical Sciences

Full name of responsible person

Loabat Majidi

Position

Assistant Professor

Latest degree

Specialist

Other areas of specialty/work

Physical Medicine

Street address

Besat Hospital, Shahid Beheshti Blv, Hamedan

City

Hamadan

Province

Hamadan

Postal code

6514845411

Phone

+98 81 3264 0030

Sharing plan**Deidentified Individual Participant Data Set (IPD)**

Undecided - It is not yet known if there will be 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

Undecided - It is not yet known if there will be a plan to make this available

Informed Consent Form

Undecided - It is not yet known if there will be a plan to make this available

Clinical Study Report

Undecided - It is not yet known if there will be a plan to make this available

Analytic Code

Undecided - It is not yet known if there will be a plan to make this available

Data Dictionary

Undecided - It is not yet known if there will be a plan to make this available