

Clinical Trial Protocol

Iranian Registry of Clinical Trials

10 Jun 2026

The effect of eight weeks of corrective exercises in water on balance, pain, muscular endurance, upper limb motion range, men with upper crossed syndrome

Protocol summary

Study aim

The main purpose of this study was The effect of 8 week corrective exercises in water on balance, pain, muscle endurance, upper limb range of motion in male with upper crossed syndrome

Design

In this study, 34 students with upper crossed syndrome participated. The participants were randomly divided into intervention and control groups.

Settings and conduct

Rehabilitation in water at certain times were performed three times a week for eight weeks at the pool of the University of Bu Ali Sina in Hamedan. One day after the end of the training period, the assessment and post-test measurements were performed for both experimental and control groups in a pre-test in Rehabilitation Laboratory, University of Bo Ali Sina, Hamedan.

Participants/Inclusion and exclusion criteria

Participants in this study should have a forward head larger than 46 degrees and a round shoulder larger than 52 degrees, kyphosis greater than 42 degrees, and pain in the neck region. Participants in this study should not have a history of sports athletics, professional sports club membership, fracture history, surgery or joint diseases, water allergies, respiratory problems, or cardiovascular disease, and history of migraine headaches.

Intervention groups

The control group does not do any exercises. The intervention group performs three sessions per week of comprehensive corrective exercises.

Main outcome variables

Reduced head forwards, reduced round shoulder, decreased kyphosis, reduced pain, increased neck muscle endurance, increased the range of motion head and shoulders, increased the static and dynamic equilibrium

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20170615034554N2**

Registration date: **2018-05-07, 1397/02/17**

Registration timing: **retrospective**

Last update: **2018-05-07, 1397/02/17**

Update count: **0**

Registration date

2018-05-07, 1397/02/17

Registrant information

Name

Hossein Ahmadi

Name of organization / entity

The University of Tehran

Country

Iran (Islamic Republic of)

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Email address

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Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2017-01-18, 1395/10/29

Expected recruitment end date

2017-02-02, 1395/11/14

Actual recruitment start date

2017-01-18, 1395/10/29

Actual recruitment end date

2017-02-02, 1395/11/14

Trial completion date

empty

Scientific title

The effect of eight weeks of corrective exercises in water on balance, pain, muscular endurance, upper limb motion range, men with upper crossed syndrome

Public title

Hydrotherapy for the correction of upper crossed syndrome

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria:

Forward head larger than 46 degrees Round shoulder greater than 52 degrees Kyphosis greater than 42 degrees Pain

Exclusion criteria:

fracture history surgery or joint diseases visual disturbances With glasses water allergy respiratory problems cardiovascular disease history of migraine headaches

Age

From **18 years** old to **30 years** old

Gender

Male

Phase

2

Groups that have been masked

No information

Sample size

Target sample size: **34**

Actual sample size reached: **30**

Randomization (investigator's opinion)

Randomized

Randomization description

Using random number method: According to the list of people entering the lab, people from the top down were the first 17 people for the control group and the 17 others in the experimental group.

Blinding (investigator's opinion)

Not blinded

Blinding description

Placebo

Not used

Assignment

Parallel

Other design features

Release of trigger points in water

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Ethics committee of Hamedan University of Medical Sciences

Street address

Shahid Fahmidah, University of Medical Sciences and Health Services, Hamadan

City

Hamedan

Province

Hamadan

Postal code

65178-38695

Approval date

2017-01-14, 1395/10/25

Ethics committee reference number

IR.UMSHA.REC.1395.470

Health conditions studied

1

Description of health condition studied

Deforming dorsopathy, unspecified

ICD-10 code

M43.9

ICD-10 code description

Deforming dorsopathy, unspecified

Primary outcomes

1

Description

forward Head abnormalities greater than 46 degrees

Timepoint

Before the intervention and 8 weeks later

Method of measurement

Marketing and photography from the upper body of the subjects

2

Description

Round shoulder abnormalities larger than 52 degrees

Timepoint

Before the intervention and 8 weeks later

Method of measurement

Marketing and photography from the upper body of the subjects

3

Description

Kyphosis abnormalities greater than 42

Timepoint

Before the intervention and 8 weeks later

Method of measurement

Flexible Curve Ruler

4

Description

Balance

Timepoint

Before the intervention and 8 weeks later

Method of measurement

Biodex Balance System

5**Description**

Endurance

Timepoint

Before the intervention and 8 weeks later

Method of measurement

Deep Neck Flexor Endurance Test

6**Description**

pain

Timepoint

Before the intervention and 8 weeks later

Method of measurement

visual analog scale

7**Description**

Neck range of motion

Timepoint

Before the intervention and 8 weeks later

Method of measurement

Inclinometer

8**Description**

Shoulders range of motion

Timepoint

Before the intervention and 8 weeks later

Method of measurement

Inclinometer

Secondary outcomes

empty

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

Intervention group: Hydrotherapy 8 weeks, 3 times a week, 60-80-min sessions, in three steps: First stage: Normalization of peripheral structures inclusive (release of trigger points with massage in water and myofascial release muscles with foam roller). Second stage: Restore muscle balance inclusive (stretching and strengthening exercise). Third stage: Sensorimotor Training inclusive (Integrate exercise).

Category

Rehabilitation

2**Description**

Control group: The control group did not receive any

intervention.

Category

Rehabilitation

Recruitment centers**1****Recruitment center****Name of recruitment center**

University Of Bu Ali Sina Hamedan

Full name of responsible person

Hossein Ahmadi

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Chaharbagh Martyr Mostafa Ahmadi Roshan, Bu-Ali Sina University, Hamadan

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Sponsors / Funding sources**1****Sponsor****Name of organization / entity**

The University of Bu-Ali Sina

Full name of responsible person

Ali Yalfani

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Grant name**Grant code / Reference number****Is the source of funding the same sponsor organization/entity?**

Yes

Title of funding source

The University of Bu-Ali Sina

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

8174784986

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Fax**Email**

hossin198811@gmail.com

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

The University of Bu Ali Sina

Full name of responsible person

Hossein Ahmadi

Position

Masters Student

Latest degree

Bachelor

Other areas of specialty/work

Corrective Exercises

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Full name of responsible person

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Position

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Latest degree

Bachelor

Other areas of specialty/work

Corrective Exercises

Street address

No. 76., Deadend Ershad., Nastoh Street.

City

Esfahan

Province

Isfahan

Postal code**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

Not applicable