

Clinical Trial Protocol

Iranian Registry of Clinical Trials

10 Jun 2026

Comparison of the effect of a course of comprehensive corrective exercises with and without muscle energy technique on shoulder strength and proprioception, balance, respiratory function and posture of girls with upper cross syndrome with respiratory pattern disorder.

Protocol summary

Study aim

Comparison of the effect of a course of comprehensive corrective exercises with and without muscle energy technique on shoulder strength and proprioception, balance, respiratory function and posture of girls with upper cross syndrome with respiratory pattern disorder.

Design

A controlled clinical trial with factorial groups, single-blind, randomized, supportive, on 36 subjects. Simple randomization was used for randomization.

Settings and conduct

This research will be conducted within Kharazmi University, and the exercises will be conducted at the same university, and will be conducted in a pre-test-post-test format.

Participants/Inclusion and exclusion criteria

1- Girls aged 18 to 25 years 2- Having 3 simultaneous symptoms of kyphosis (angle of 42 degrees and more), forward head (angle of 44 degrees and more), and rounded shoulders (49 degrees and more)[40] 3- Having a respiratory pattern disorder 4- Not having any injury or abnormality affecting the research process with the exception of respiratory pattern disorder and upper crossed syndrome 5- Absence of any pathological pain in the neck and upper limbs 6- Absence of a history of fracture and surgery or joint diseases, especially in the spine, shoulder girdle, and pelvic areas

Intervention groups

Intervention group 1: Receive comprehensive corrective exercises for 8 weeks. Intervention group 2: Receive comprehensive corrective exercises along with manual muscle energy technique for 8 weeks. Control group: These people do not receive any intervention during these 8 weeks.

Main outcome variables

shoulder strength and proprioception, balance,

respiratory function and posture

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20251120068054N1**

Registration date: **2025-12-02, 1404/09/11**

Registration timing: **prospective**

Last update: **2025-12-02, 1404/09/11**

Update count: **0**

Registration date

2025-12-02, 1404/09/11

Registrant information

Name

Aylin Mansury

Name of organization / entity

The University of Kharazmi

Country

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Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2025-12-15, 1404/09/24

Expected recruitment end date

2025-12-20, 1404/09/29

Actual recruitment start date

empty
Actual recruitment end date
empty
Trial completion date
empty
Scientific title
Comparison of the effect of a course of comprehensive corrective exercises with and without muscle energy technique on shoulder strength and proprioception, balance, respiratory function and posture of girls with upper cross syndrome with respiratory pattern disorder.

Public title
Comparison of the effect of a course of comprehensive corrective exercises with and without muscle energy technique on shoulder strength and proprioception, balance, respiratory function and posture of girls with upper cross syndrome with respiratory pattern disorder.

Purpose
Supportive

Inclusion/Exclusion criteria

Inclusion criteria:

Girls aged 18 to 25 years Having 3 simultaneous symptoms of kyphosis (angle of 42 degrees and more), forward head (angle of 44 degrees and more), and rounded shoulders (49 degrees and more) Having a respiratory pattern disorder Confirmation from a specialist physician

Exclusion criteria:

The individual's unwillingness or unwillingness to participate in or continue to participate in the research. Any injury or abnormality affecting the research process, with the exception of respiratory pattern disorder and upper cross syndrome.

Age
From **18 years** old to **25 years** old

Gender
Female

Phase
N/A

Groups that have been masked

- Data analyser

Sample size
Target sample size: **36**

Randomization (investigator's opinion)
Randomized

Randomization description
This study has been randomized through simple randomization statistical method using block design. This study will be allocated to 2 intervention groups and 1 control group with the help of a web-based program (randomizer.org). A member of the research team who will not be involved in this part will be asked to perform the random allocation sequence of the samples using a computer program. Sealed envelopes with the random sequence will be used to conceal the allocation.

Blinding (investigator's opinion)
Single blinded

Blinding description
In this study, the person responsible for analyzing the

data is unaware of the individuals and groupings and only analyzes the results and statistical data in the two tests taken.

Placebo
Not used
Assignment
Factorial
Other design features

Secondary Ids
empty

Ethics committees

1
Ethics committee
Name of ethics committee
Kharazmi University
Street address
Simaye iran
City
Tehran
Province
Tehran
Postal code
1571914911

Approval date
2025-10-21, 1404/07/29
Ethics committee reference number
IR.KHU.REC.1404.117

Health conditions studied

1
Description of health condition studied
Upper Crossed Syndrome with Respiratory Pattern Disorder
ICD-10 code
R29.3
ICD-10 code description
Abnormal posture

Primary outcomes

1
Description
Shoulder internal and external rotator strength
Timepoint
Pre-test and post-test
Method of measurement
Isokinetic device

2
Description
Proprioception of the internal and external rotator muscles of the shoulder
Timepoint

Pre-test and post-test

Method of measurement

Isokinetic device

3

Description

Static and dynamic balance

Timepoint

Pre-test and post-test

Method of measurement

Biodex balance device

4

Description

Posture

Timepoint

Pre-test and post-test

Method of measurement

Flexible ruler, digital camera, and Kinovea software

5

Description

Respiratory function

Timepoint

Pre-test and post-test

Method of measurement

spirometer

Secondary outcomes

empty

Intervention groups

1

Description

Intervention group: This group will perform comprehensive corrective exercises for 8 weeks, 3 sessions per week, each session lasting 50 minutes, focusing on the muscles that are restricted and tight in upper crossed syndrome. The exercises consist of 3 phases: 1- Initial phase 2- Improvement phase 3- Maintenance phase. Foam rolls, Therabands, exercise balls, dumbbells, and balance boards will be used in these exercises.

Category

Rehabilitation

2

Description

Intervention group: This group will perform comprehensive corrective exercises along with muscle energy techniques for 8 weeks, 3 sessions per week, each session lasting 60 minutes.

Category

Rehabilitation

3

Description

Control group:

Category

Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center

Kharazmi University

Full name of responsible person

Aylin Mansury

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Shahid Beheshti Street

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

The University of kharazmi

Full name of responsible person

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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 kharazmi

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

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

The University of Kharazmi

Full name of responsible person

Aylin mansury

Position

Master's student

Latest degree

Bachelor

Other areas of specialty/work

Rehabilitation management

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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

Yes - There is a plan to make this available

Statistical Analysis Plan

Not applicable

Informed Consent Form

Yes - There is a plan to make this available

Clinical Study Report

Not applicable

Analytic Code

Not applicable

Data Dictionary

Not applicable

Title and more details about the data/document

Individuals' data is a personal matter and, if possible, it will be published, and if individuals do not consent to the publication of this data, it will remain confidential.

When the data will become available and for how long

Access begins 6 months after results are published.

To whom data/document is available

Academic researchers and those engaged in research and investigation in this field.

Under which criteria data/document could be used

The data from this study will be made available to researchers for all review and meta-analysis studies.

From where data/document is obtainable

Please contact aylinmansury21@gmail.com.

What processes are involved for a request to access data/document

The applicant will receive the data within 10 to 15 days

after sending an email to the specified address.

Comments