Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 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

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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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Sponsors / Funding sources

1

Sponsor

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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
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Aylin mansury
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Latest degree
Bachelor
Other areas of specialty/work
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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