

Clinical Trial Protocol

Iranian Registry of Clinical Trials

11 Sep 2026

The Effect of Open and Closed Kinetic Chain in Water on Electromyography Activity Selected Muscles of the Lumbar Region, Lumbar-Pelvic Control, Balance and Psychological factors in Men with Non-Specific Chronic Back Pain.

Protocol summary

Study aim

The Effect of Open and Closed Kinetic Chain in Water on Electromyography Activity Selected Muscles of the Lumbar Region, Lumbar-Pelvic Control, Balance and Psychological factors in Men with Non-Specific Chronic Back Pain

Design

60 patients were considered for the sample size of the present study. The patients were randomized based on the Random Number Generator software, and then based on the concealment of allocation by the SNOSE method, they will be assigned to one of three groups: remobilization chain exercises in water, closed movement chain exercises in water, and the control group.

Settings and conduct

In this study, double blinding will be done.

Participants/Inclusion and exclusion criteria

The criteria for entering the research included men with non-specific chronic back pain. The presence of at least two movement control disorders in the Lumajoki movement control tests. The exclusion criteria from the research include participation in the program of rehabilitation exercises and movement control exercises in the past year. Having a history of injury in the past year in the trunk and lower limbs, having a history of surgery in the back and lower limbs

Intervention groups

Open and closed chain kinetic in water will be done in eight weeks, three sessions a week and each session will last about 50 minutes with the supervision of the researcher for both exercise groups in the same way. This section will include about 10 minutes of general warm-up, about 30 minutes of movement chain exercises in both environments, and 10 minutes of cooling exercises in the form of stretching exercises.

Main outcome variables

Closed and open chain exercises in water may be effective as a complementary treatment method in muscle activity, lumbopelvic control and psychological factors of chronic back pain patients.

General information

Reason for update

Acronym

OKC and CCK

IRCT registration information

IRCT registration number: **IRCT20190129042534N1**

Registration date: **2023-07-04, 1402/04/13**

Registration timing: **prospective**

Last update: **2023-07-04, 1402/04/13**

Update count: **0**

Registration date

2023-07-04, 1402/04/13

Registrant information

Name

Hossein Ashoury

Name of organization / entity

The University of payamnoor

Country

Iran (Islamic Republic of)

Phone

+98 81 3838 1422

Email address

hoosienashoury@yahoo.com

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2023-11-13, 1402/08/22

Expected recruitment end date

2024-01-01, 1402/10/11

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

The Effect of Open and Closed Kinetic Chain in Water on Electromyography Activity Selected Muscles of the Lumbar Region, Lumbar-Pelvic Control, Balance and Psychological factors in Men with Non-Specific Chronic Back Pain.

Public title

The Effect of Open and Closed Kinetic Chain in Water on Electromyography Activity Selected Muscles of the Lumbar Region

Purpose

Treatment

Inclusion/Exclusion criteria**Inclusion criteria:**

The criteria for entering the research include men with non-specific chronic back pain and back movement control disorders the presence of at least two movement control disorders in the Lumajoki movement control tests mited lateral flexion range of motion range of 40 to 60 years, with BMI in the normal range.

Exclusion criteria:

Exclusion criteria from the research include participation in the program of rehabilitation exercises and movement control exercises in the past year, , people with inflammatory diseases of the spine. , having a history of injury in the past year in the trunk and lower limbs, having a history of surgery in the back and lower limbs people with a history of spinal fracture, people with a history of tumors in the back, people with back pain of non-mechanical origin neurological, cardiovascular or psychiatric illness (eg, major psychosis and major depression).

Age

From **40 years** old to **60 years** old

Gender

Male

Phase

0

Groups that have been masked

- Participant
- Care provider
- Investigator
- Outcome assessor
- Data analyser

Sample size

Target sample size: **60**

Randomization (investigator's opinion)

Randomized

Randomization description

The patients were randomized based on the Random Number Generator software, and then based on the concealment of allocation by the SNOSE method, they will be assigned to one of three groups: remobilization chain exercises in water, closed movement chain exercises in water, and the control group.

Blinding (investigator's opinion)

Double blinded

Blinding description

The second researcher who was not involved in the data collection, opened the envelopes containing random codes and delivers to the subjects. The laboratory technicians were not aware of the purpose of the present study and the groups allocation.

Placebo

Not used

Assignment

Parallel

Other design features**Secondary Ids**

empty

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

National system of ethics in biomedical research

Street address

Bu Ali Sina University

City

hamedan

Province

Hamadan

Postal code

۳۸۶۹۵۶۵۱۷۸

Approval date

2023-04-24, 1402/02/04

Ethics committee reference number

.1402.011IR-BASU.REC

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

Patients with non-specific chronic back pain

ICD-10 code

M95-M99

ICD-10 code description

M95-M99 Other disorders of the musculoskeletal system and connective tissue

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

Electromyography activity of selected lumbar region

Timepoint

At the beginning of the electromyography activity research and after 8 weeks

Method of measurement

EMG. VAS. Biofeed back pressure

Secondary outcomes

empty

Intervention groups

1

Description

Intervention group: control group, first group, second group

Category

Rehabilitation

Recruitment centers

1

Recruitment center**Name of recruitment center**

Bu ali Sina University, Hamedan

Full name of responsible person

Dr. Ali Yalfani

Street address

Hamedan, Shahid Mostafa Ahmadi Roshan Blvd., Bu Ali Sina University, Faculty of Physical Education and Sports Sciences

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3914658335

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h.ashoury@phe.basu.ac.ir

Sponsors / Funding sources

1

Sponsor**Name of organization / entity**

Bu ali Sina University, Hamedan

Full name of responsible person

Dr. Ali Yalfani

Street address

Hamedan - Farhangian settlement, Phase 1 - 17 alley (second part), No. 21

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Grant name

no

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

No

Title of funding source

There is no source of financial support

Proportion provided by this source

1

Public or private sector

Private

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**

Bu ali Sina University, Hamedan

Full name of responsible person

Dr. Ali Yalfani

Position

Professor

Latest degree

Ph.D.

Other areas of specialty/work

Sport Medicine

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

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Full name of responsible person

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

Yes - There is a plan to make this available

Study Protocol

Yes - There is a plan to make this available

Statistical Analysis Plan

Yes - There is a plan to make this available

Informed Consent Form

Yes - There is a plan to make this available

Clinical Study Report

Yes - There is a plan to make this available

Analytic Code

Yes - There is a plan to make this available

Data Dictionary

Yes - There is a plan to make this available

Title and more details about the data/document

All data and documents can be shared, but with the non-identification of people and the preservation of private information of subjects

When the data will become available and for how long

The Results of This Study Will Be Available In Journals 3 Months After Publication

To whom data/document is available

The Results of The Studies Will Be Accessible to All Individuals in The Community Without Any Restrictions

Under which criteria data/document could be used

The presented documentation can be used for the treatment of low back pain pain. These interventions are applicable if they are prescribed and supervised by a physiotherapist.

From where data/document is obtainable

E-mail hoosienashoury@yahoo.com

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

When the applicant provides documents for her field of work related to the subject of the thesis and in case of a reasonable request and a commitment not to misuse the data of this research, the data will be sent to her for 1 working week.

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

Bu ali Sina University, Hamedan

Full name of responsible person

hossien ashoury

Position

Professor

Latest degree

Ph.D.

Other areas of specialty/work

Sport Medicine

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