Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 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
InterventiIntervention group: control group, first group, second groupon 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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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
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+98 81 3254 8612
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h.ashoury@phe.basu.ac.ir
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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Phone
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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