Clinical Trial Protocol
Iranian Registry of Clinical Trials

08 Nov 2026

The effect of core stability exercises combined with the Alexander technique on balance, psychological indicators, and pain in women with chronic nonspecific low back pain.

Protocol summary

Study aim
The effect of core stability exercises combined with the Alexander technique on balance, psychological indicators, and pain in women with chronic nonspecific low back pain.

Design
Clinical trial with two control and exercise groups, with parallel groups, single-blind, randomized on 30 patients and randomization method by lottery.

Settings and conduct
This study will be conducted in the Sports Rehabilitation Laboratory of Be'ali Sina University. Subjects in two groups will complete questionnaires at two time points: pre-test and post-test: pain, quality of life, disability index, fear of movement, and a foot pressure device will be used to assess static and dynamic balance. The analysts will be blinded to the grouping.

Participants/Inclusion and exclusion criteria
The inclusion criteria for the study included 1. Pain in the spine for more than 12 weeks 2. No history of spine surgery 3. Age range 30 to 50 years. Exclusion criteria included 1. Abnormal body mass index 2. Severe deformity of the lower and upper limbs 3. History of surgery 4. Neuromuscular and neurological disorders

Intervention groups
Comprehensive core stability exercises combined with Alexander exercises.

Main outcome variables
Pain, functional disability, quality of life, fear of movement, static and dynamic balance

General information

Reason for update

Acronym

IRCT registration information
IRCT registration number: **IRCT20260512069366N1**
Registration date: **2026-06-03, 1405/03/13**
Registration timing: **registered_while_recruiting**

Last update: **2026-06-03, 1405/03/13**
Update count: **0**

Registration date
2026-06-03, 1405/03/13

Registrant information
Name
Fatemeh Ghasemali
Name of organization / entity
Bu Ali Sina University, Hamadan
Country
Iran (Islamic Republic of)
Phone
+98 81 3622 2715
Email address
f0373712@gmail.com

Recruitment status
Recruitment complete

Funding source

Expected recruitment start date
2026-05-31, 1405/03/10

Expected recruitment end date
2026-06-10, 1405/03/20

Actual recruitment start date
empty

Actual recruitment end date
empty

Trial completion date
empty

Scientific title
The effect of core stability exercises combined with the Alexander technique on balance, psychological indicators, and pain in women with chronic nonspecific

low back pain.

Public title
The effect of core stability exercises combined with the Alexander technique on balance, psychological indicators, and pain in women with chronic nonspecific low back pain.
Purpose
Treatment
Inclusion/Exclusion criteria
Inclusion criteria:
Pain in the spine for more than 12 weeks No history of spinal surgery Age range 30 to 50 years
Exclusion criteria:
Abnormal body mass index Severe deformity of the lower and upper limbs History of surgery Neuromuscular and neurological disorders
Age
From **30 years** old to **50 years** old
Gender
Female

Phase
N/A
Groups that have been masked

- Data analyser

Sample size
Target sample size: **30**
Randomization (investigator's opinion)
Randomized
Randomization description
Randomization was by drawing lots. We wrote the titles of control and experimental on pieces of paper and asked the subjects to each pick one of them.
Blinding (investigator's opinion)
Single blinded
Blinding description
The data analysts will not be aware of the group allocation (group information will be provided to the analysts in the form of groups 1 and 2 for each participant with a code).
Placebo
Not used
Assignment
Parallel
Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee
Name of ethics committee
Research Ethics Committee, Bu-Ali Sina University, Hamadan
Street address
Hamedan, Shahid Mustafa Ahmadi Roshan Street
City
hamedan
Province
Hamadan
Postal code
38695-65178
Approval date
2025-10-05, 1404/07/13
Ethics committee reference number
IR.BASU.REC.1404.034

Health conditions studied

1

Description of health condition studied
Chronic nonspecific low back pain
ICD-10 code
M54.5
ICD-10 code description
Low back pain

Primary outcomes

1

Description
people's pain
Timepoint
Pre-test and post-test mean before the start of the first training session and one day after the end of the last training session.
Method of measurement
Visual Analogue scale questionnaire

Secondary outcomes

1

Description
Psychological indicators (quality of life, functional disability, fear of movement), static and dynamic balance.
Timepoint
Pre-test and post-test
Method of measurement
The following questionnaires will be used to assess psychological indicators: 1_ To measure quality of life, the questionnaire (SF-36). 2_ To measure functional disability, the questionnaire (oswestry). 3_ To measure fear of people, the questionnaire (tempa) will be used. Also, to assess static and dynamic balance, the pressure foot device (foot pressure scanner) will be used, which is an electronic system for recording and analyzing the distribution of foot pressure while standing and walking. This device identifies high pressure points on the foot while standing or walking.

Intervention groups

1

Description

Intervention group: Intervention group: Comprehensive core stability training protocol with Alexander technique, which in the present study was performed three sessions per week for eight weeks, each session lasting 60 minutes. Core stability exercises included the cat camel movement, hip bridge on the sole of the foot, Russian rotation of the foot on the floor, half-abdominal crunch, dead insect, bent-knee abdominal plank, and side-knee plank on the floor. The Alexander technique training protocol also included training in body awareness, natural breathing and muscle release, sitting and standing without additional pressure, conscious standing in position, slow walking, balance on one leg with feedback, weight transfer movements in a standing position, and coordination of trunk and upper limb movements, walking to the sides with sudden stops, combined exercises, and simulation of real situations.

Category

Treatment - Other

2

Description

Control group: At the beginning of the study, all tests were taken from the control group, and these people did not participate in any of the rehabilitation interventions, and they were also busy living their normal and routine lives while performing their daily activities during these 8 weeks. And after 8 weeks, a post-test was taken from them.

Category

Treatment - Other

Recruitment centers

1

Recruitment center

Name of recruitment center
Abu Ali Sina University

Full name of responsible person
Ali Yalfani

Street address
Hamedan, Shahid Mustafa Ahmadi Roshan Street

City
hamedan

Province
Hamadan

Postal code
38695-65178

Phone
+98 81 3140 2863

Fax
+98 81 3622 2715

Email
yalfani@basu.ac.ir

Web page address
https://www.basu.ac.ir

Sponsors / Funding sources

1

Sponsor

Name of organization / entity
Vice President for Research, Bu-Ali Sina University, Hamadan

Full name of responsible person
Gholamhossein Majzoobi

Street address
Shahid Mustafa Ahmadi Roshan Garden, Bu Ali Sina University, Vice President for Research Affairs.

City
hamedan

Province
Hamadan

Postal code
38695-65178

Phone
+98 81 3140 2863

Fax
+98 81 3622 2715

Email
sakhai@basu.ac.ir

Web page address
https://www.basu.ac.ir

Grant name

Grant code / Reference number

Is the source of funding the same sponsor organization/entity?
Yes

Title of funding source
Vice President for Research, Bu-Ali Sina University, Hamadan

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
Abu Ali Sina University

Full name of responsible person
Ali yalfani

Position
teacher

Latest degree
Ph.D.

Other areas of specialty/work
Rehabilitation management

Street address
Shahid Mustafa Ahmadi Roshan Street, Bu Ali Sina

University
City
hamedan
Province
Hamadan
Postal code
38695-65178
Phone
+98 81 3140 2863
Fax
+98 81 3622 2715
Email
yalfani@basu.ac.ir
Web page address
https://www.basu.ac.ir

Person responsible for scientific inquiries

Contact
Name of organization / entity
Abu Ali Sina University
Full name of responsible person
Ali yalfani
Position
teacher
Latest degree
Ph.D.
Other areas of specialty/work
Rehabilitation management
Street address
Shahid Mustafa Ahmadi Roshan Street, Bu Ali Sina University
City
hamedan
Province
Hamadan
Postal code
38695-65178
Phone
+98 81 3140 2863
Fax
+98 81 3622 2715
Email
yalfani@basu.ac.ir
Web page address
https://www.basu.ac.ir

Person responsible for updating data

Contact
Name of organization / entity
Bu Ali Sina University
Full name of responsible person
Ali yalfani
Position
teacher
Latest degree
Ph.D.
Other areas of specialty/work
Rehabilitation management
Street address
Shahid Mustafa Ahmadi Roshan Street, Bu Ali Sina University
City
hamedan
Province
Hamadan
Postal code
38695-65178
Phone
+98 81 3140 6328
Fax
+98 81 3622 2715
Email
yalfani@basu.ac.ir
Web page address
https://www.basu.ac.ir

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
Not applicable
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
Not applicable
Title and more details about the data/document
The measured data files will be shared by the testers after the study is completed, if needed.
When the data will become available and for how long
The period begins one year after the publication of results and articles.
To whom data/document is available
Researchers and researchers whose field of work is similar to the present research and who are employed in universities.
Under which criteria data/document could be used
The data from the present study will only be made available to other researchers for comparison with future studies, and the use and analysis of the data is prohibited.
From where data/document is obtainable
Email address f.ghasemali@phe.basu.ac.ir
What processes are involved for a request to access data/document
A complete explanation of the research should be provided and the details of the use of the data should also be fully explained.
Comments