Clinical Trial Protocol
Iranian Registry of Clinical Trials

13 Jun 2026

The effect of Egoscue and NASM exercises with abdominal draw-in maneuver on pain and lumbar lordotic angle in women with chronic back pain

Protocol summary

Study aim

The aim is to determine the effectiveness of Egoscue and NASM exercises with abdominal draw-in maneuvers and compare the efficacy of these methods with each other in women with chronic back pain.

Design

A single-blind, randomized, controlled clinical trial, phase II. 75 women with lordosis angle greater than 35 degrees and suffering from chronic back pain will participate in this study.

Settings and conduct

This study will be conducted in the sports rehabilitation laboratory of Arak University. The participants in this study will have a lumbar lordosis angle higher than 35 degrees and also suffer from chronic back pain. Egoscue and NASM exercises will be performed along with abdominal draw-in maneuver for eight weeks.

Participants/Inclusion and exclusion criteria

Age 18 to 35 years, lordosis angle more than 35 degrees, not having any history of fracture and surgery in the spine, not having a pathological history of spine disease, orthopedic injuries and joint diseases in the spine, back pain greater than 3 according to the visual pain scale, history Back pain for at least three months

Intervention groups

The first intervention group performs the Egoscue exercises along with abdominal draw-in maneuvers for eight weeks. The second intervention group performs NASM exercises along with abdominal draw-in maneuvers for eight weeks. The control group will have their usual routine during this time.

Main outcome variables

Back pain; Lumbar lordosis angle; Disability; Quality of life; Pain self-efficacy; Kinesiophobia; Body awareness; Muscle endurance; Balance, Postural sway; Gait.

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20200204046368N11**
Registration date: **2023-06-03, 1402/03/13**
Registration timing: **prospective**

Last update: **2023-06-03, 1402/03/13**
Update count: **0**

Registration date

2023-06-03, 1402/03/13

Registrant information

Name

Zahra Raeisi

Name of organization / entity

Arak University

Country

Iran (Islamic Republic of)

Phone

+98 86 3417 3492

Email address

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Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2023-06-20, 1402/03/30

Expected recruitment end date

2023-09-21, 1402/06/30

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title
The effect of Egoscue and NASM exercises with abdominal draw-in maneuver on pain and lumbar lordotic angle in women with chronic back pain

Public title
Exercise therapy and chronic back pain
Purpose
Supportive
Inclusion/Exclusion criteria
Inclusion criteria:
Age 18 to 35 years Lordosis angle upper 35 degree Not having any history of fracture and surgery in the spine Not having a history of pathology, orthopedic injuries and joint diseases in the spine Back pain level greater than 3 according to the visual analogue scale
Exclusion criteria:
Reluctance to participate in exercises Suffering from other spinal deformities Severe visual impairment or vestibular problems
Age
From **18 years** old to **35 years** old
Gender
Female

Phase
N/A
Groups that have been masked

- Outcome assessor
- Data analyser

Sample size
Target sample size: **75**
Randomization (investigator's opinion)
Randomized
Randomization description
10 cards, marked "A" for Egoscue, 10 cards marked "B" for NASM, and another 10 cards, marked "C" for the control group, will be placed in an opaque envelope. Each participant draws a card that represents the group for that person. A researcher who is not involved in the interventions will divide the participants into random groups.
Blinding (investigator's opinion)
Single blinded
Blinding description
The researcher that does laboratory tests was not aware of the allocation of study groups. The data analyzer will not be aware of the group's classification. The information about the groups will be provided to the data analyzer in the form of numbers 1, 2, and 3 and 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 of Arak University
Street address
Arak University, Karbala Boulevard, Basij Square
City
Arak
Province
Markazi
Postal code
3848177584
Approval date
2023-04-19, 1402/01/30
Ethics committee reference number
IR.ARAKU.REC.1402.007

Health conditions studied

1

Description of health condition studied
Chronic Non-Specific Low Back Pain
ICD-10 code
M54.5
ICD-10 code description
Low back pain

2

Description of health condition studied
Lordosis
ICD-10 code
M40.46
ICD-10 code description
Postural lordosis, lumbar region

Primary outcomes

1

Description
Pain
Timepoint
First week, fourth week, eighth week
Method of measurement
Visual Analogue Scale and McGill questionnaire

2

Description
Lumbar lordosis angle
Timepoint
First week, fourth week, eighth week
Method of measurement
Spinal mouse

3

Description
Disability
Timepoint
First week, fourth week, eighth week
Method of measurement
Roland morris questionnaire

4

Description
Quality of life
Timepoint
First week, fourth week, eighth week
Method of measurement
SF-36 Questionnaire

5

Description
Muscular strength
Timepoint
First week, fourth week, eighth week
Method of measurement
The modified Biering-Sorensen test

Secondary outcomes

1

Description
Postural sway
Timepoint
First week, fourth week, eighth week
Method of measurement
Pedoscan

2

Description
Gait
Timepoint
First week, fourth week, eighth week
Method of measurement
Pedoscan

3

Description
Kinesiophobia
Timepoint
First week, fourth week, eighth week
Method of measurement
Tampa scale

4

Description
Body awareness
Timepoint
First week, fourth week, eighth week
Method of measurement
Body awareness questionnaire

5

Description
Spine range of motion
Timepoint
First week, fourth week, eighth week
Method of measurement
Spinal mouse

Intervention groups

1

Description
Intervention group: The Egoscue group will perform the Egoscue exercises along with the Abdominal Drawing-in Maneuver for eight weeks and three sessions per week. Egoscue exercises stretch and strengthen the muscles in order to correct the position of the spine and pelvis. These corrective exercises are designed with a focus on correcting the posture of the entire body. Abdominal Drawing-in Maneuver (ADIM) is a method that is often used to voluntarily activate the muscles of the abdominal area and eliminate the functional disorder of these muscles.
Category
Rehabilitation

2

Description
Intervention group: NASM exercises include 4 stages: Inhibitory technique, Muscle lengthening techniques, Activation technique, and Coherence techniques. This group will do exercises along with the Abdominal Drawing-in Maneuver for eight weeks and three sessions a week.
Category
Rehabilitation

3

Description
Control group: During the whole period of eight weeks, the control group will have their usual routine of life.
Category
Rehabilitation

Recruitment centers

1

Recruitment center
Name of recruitment center
Arak university
Full name of responsible person
Zahra Raeisi
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Sponsors / Funding sources

1

Sponsor
Name of organization / entity
Arak university
Full name of responsible person
Hamed Safikhani
Street address
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3848177584
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d-research@araku.ac.ir
Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
Yes
Title of funding source
Arak university
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
Arak University
Full name of responsible person
Zahra Raeisi
Position
Assistant professor
Latest degree
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Other areas of specialty/work
Sport Medicine
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Person responsible for updating data

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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
Undecided - It is not yet known if there will be a plan to make this available
Statistical Analysis Plan
Not applicable
Informed Consent Form
Undecided - It is not yet known if there will be a plan to make this available
Clinical Study Report
Undecided - It is not yet known if there will be a plan to make this available
Analytic Code
Not applicable
Data Dictionary
Not applicable