

Clinical Trial Protocol

Iranian Registry of Clinical Trials

16 Sep 2026

Comparison of the effect of balance practice and stability exercises on kinetic factors of balance, pain intensity and disability in patients with non-specific chronic low back pain

Protocol summary

Study aim

Comparison of the effect of balance practice and stability exercises on kinetic factors of balance, pain intensity and disability in patients with non-specific chronic low back pain

Design

Clinical trial with 3 parallel groups, single-blind, randomized, phase 3 on 60 patients. use roll of die method for randomization.

Settings and conduct

People are randomly divided into 3 groups (1- stability exercises, 2- balance exercises, 3- control). At the beginning and end of the study We measure the following variables , to check the balance (displacement of the center of pressure and the time to reach stability by force plate - time in the Stork test - distance in Star test), to check pain (score of vas) to check disability (score of Oswestry), finally the comparison between groups and within groups .will be made. Studies are conducted at Semnan Neuromuscular Rehabilitation Research Center

Participants/Inclusion and exclusion criteria

inclusion criteria :Patients who have been diagnosed as non-specific back pain with or without referring pain to the leg that lasts at least three months. The pain intensity should be at least 3 according to the pain questionnaire, their age should be between 20 and 60 years. Exclusion criteria:- pregnancy-History of back surgery- Cancer- Vestibular problems- Neurological problems - pathology in the spin- Nerve root disorders- Vertebral fracture- ankle or knee Arthritis Congenital foot and ankle deformities - Ankle sprains, knee and leg ligament injuries

Intervention groups

Group 1: clinical exercises (6 weeks-3 times a week)
Group 2: stability exercises (6 weeks-3 times a week)
Group 3: no exercise

Main outcome variables

Fluctuations of the center of pressure - time to stability - time in the Stork test - distance in Star test - the score of VAS - the score of Oswestry

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20230612058468N1**

Registration date: **2023-08-19, 1402/05/28**

Registration timing: **registered_while_recruiting**

Last update: **2023-08-19, 1402/05/28**

Update count: **0**

Registration date

2023-08-19, 1402/05/28

Registrant information

Name

susan shahhosseini

Name of organization / entity

Country

Iran (Islamic Republic of)

Phone

+98 21 8839 2182

Email address

shahhosseinali@gmail.com

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2023-08-06, 1402/05/15

Expected recruitment end date

2023-09-17, 1402/06/26

Actual recruitment start date

empty

Actual recruitment end date
empty

Trial completion date
empty

Scientific title
Comparison of the effect of balance practice and stability exercises on kinetic factors of balance, pain intensity and disability in patients with non-specific chronic low back pain

Public title
Comparison of the effect of balance practice and stability exercises on kinetic factors of balance, pain intensity and disability in patients with non-specific chronic low back pain

Purpose
Treatment

Inclusion/Exclusion criteria
Inclusion criteria:
Patients who have been diagnosed as non-specific back pain with or without referring pain to the leg that lasts at least three months. . The pain intensity should be at least 3 according to the pain questionnaire their age should be between 20 and 60 years
Exclusion criteria:
People who are pregnant . People who have a history of back surgery. People who have cancer. People who have vestibular system problems. People who have neurological problems. People who have pathology in the spinal cord. People who have nerve root disorders . People who have fractured vertebra. People who have arthritis in the ankle or knee. People who have congenital deformities of the foot and wrist such as genovalgum genovarum genu recurvatum. People who have ankle sprains And those who have knee and leg ligament injuries.

Age
From **20 years** old to **60 years** old

Gender
Both

Phase
3

Groups that have been masked
• Participant

Sample size
Target sample size: **45**

Randomization (investigator's opinion)
Randomized

Randomization description
Simple randomization Individual randomization unit Dice randomization tool How to make a random sequence: In this study, there are three groups. Numbers 1-2 are used for the first group, numbers 3-4 are used for the second group, and numbers 5-6 are used for the third group. Concealment using non-transparent sealed envelopes: based on the sample size, a number of envelopes are prepared and each of the random sequences created is recorded on the card, and the card is placed inside the envelope and the lid of the envelopes is glued and It is

placed in the box, according to the order of arrival of the participants, one of the envelopes is opened and the participating group is revealed.

Blinding (investigator's opinion)
Single blinded

Blinding description
The patient does not know which of the research groups he/she is placed in, so our study is single blinded

Placebo
Not used

Assignment
Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

ethics committee of semnan university of medical sciences

Street address

No29, east 4th ave, seyed jamaledin asad abadi , tehran town

City

Tehran

Province

Tehran

Postal code

1431684316

Approval date

2023-06-25, 1402/04/04

Ethics committee reference number

IR.SEMUMS.REC.1402.039

Health conditions studied

1

Description of health condition studied

non-specific low back pain

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description

evaluation of static balance by measuring time during standing stork test - evaluation of static balance by measuring the speed of changes in the center of pressure -evaluation of static balance by measuring the displacement of changes in the center of pressure .

Timepoint

Before the intervention and 1 week after the end of the intervention

Method of measurement

Static balance checking tool: Force .plate. Static balance checking tool: standing Stork test.

2**Description**

evaluation of dynamic balance by measuring the covered distance during Star excursion balance test - evaluation of dynamic balance by measuring time to stability .

Timepoint

Before the intervention and 1 week after the end of the intervention

Method of measurement

Dynamic balance checking tool: Force plate. Dynamic balance checking tool: Star excursion balance Test.

3**Description**

Examining the level of pain through the visual analogue scale's scores.

Timepoint

Before the intervention and 1 week after the end of the intervention

Method of measurement

Pain assessment tool: Visual analogue Scale.

4**Description**

- Examining the level of disability through the oswestry disability questionnaire's scores.

Timepoint

Before the intervention and 1 week after the end of the intervention

Method of measurement

- Disability assessment tool: oswestry Questionnaire.

Secondary outcomes

empty

Intervention groups**1****Description**

Intervention group: Intervention group 1 is a group that receives balance exercises that include eleven exercises for 60 minutes (15 minutes of warming up - 15 minutes of cooling down - 30 minutes of main exercise), .three times a week for 6 weeks .

Category

Rehabilitation

2**Description**

Control group: They do not receive any treatment, only the studied variables are measured for them once at the beginning of the study and once at the end of the study and compared with the other groups.

Category

N/A

3**Description**

Intervention group: is a group that receives stability exercises that include eight exercises for 60 minutes (15 minutes of warm-up - 15 minutes of cooling down - 30 minutes of main exercise), three times a week for 6 weeks.

Category

Rehabilitation

Recruitment centers**1****Recruitment center****Name of recruitment center**

Neuromuscular Rehabilitation Research Center of Semnan

Full name of responsible person

Banafsheh Mansori

Street address

Neuromuscular Rehabilitation Research Center of Semnan,Tabatabayi Clinic,next to Nemat Ice Cream ,Ghods Blvd,Semnan Town

City

Semnan

Province

Semnan

Postal code

9837535196

Phone

+98 23 3332 8502

Fax

+98 23 3365 4180

Email

nmrrc@semums.ac.ir

Sponsors / Funding sources**1****Sponsor****Name of organization / entity**

Semnan University of Medical Sciences

Full name of responsible person

kamran Qods

Street address

Headquarter of Semnan University of Medical Sciences and Health Services, Bassij Blvd, Semnan, Iran.

City

Semnan

Province

Semnan

Postal code

35147-99442

Phone

+98 23 3345 2199

Fax
+98 23 3344 8999

Email
info@semums.ac.ir

Grant name

Grant code / Reference number

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

Title of funding source
Semnan University of Medical Sciences

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
Semnan University of Medical Sciences

Full name of responsible person
Susan Shahhosseini

Position
Student-master degree

Latest degree
Bachelor

Other areas of specialty/work
Physiotherapy

Street address
No.29 4th street chehelsotoon ave . jahad square .teheran town

City
Teheran

Province
Tehran

Postal code
1431684316

Phone
+98 21 8839 2182

Fax

Email
shahhosseiniali@ymail.com

Person responsible for scientific inquiries

Contact

Name of organization / entity
Semnan University of Medical Sciences

Full name of responsible person
رزیتا هدایتی

Position
Associate Professor of Physiotherapy

Latest degree

Ph.D.

Other areas of specialty/work
Physiotherapy

Street address
Headquarter of Semnan University of Medical Sciences and Health Services, Bassij Blvd, Semnan, Iran.

City
Semnan

Province
Semnan

Postal code
1431684316

Phone
+98 23 3332 8502

Fax

Email
hedayati@semums.ac.ircom

Person responsible for updating data

Contact

Name of organization / entity
Semnan University of Medical Sciences

Full name of responsible person
Susan Shahhosseini

Position
Student-master degree

Latest degree
Bachelor

Other areas of specialty/work
Physiotherapy

Street address
No.29 4th street chehelsotoon ave . jahad square .teheran town

City
Teheran

Province
Tehran

Postal code
1431684316

Phone
+98 21 8839 2182

Fax

Email
shahhosseiniali@ymail.com

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

Not applicable

Data Dictionary

Yes - There is a plan to make this available

Title and more details about the data/document

All data can potentially be shared after de-identifying individuals, including: background information. The amount of changes in the center of pressure - the amount of changes in the time to reach stability - the amount of changes in the distance traveled in the Star test - the amount of changes in the time in the Stork test - the amount of changes in the score of the visual scale analogue - the amount of changes in the score of the Oswestry questionnaire

When the data will become available and for how long

One month after publication

To whom data/document is available

The data will be available to researchers working in academic and scientific institutions, and people working in industry can apply to receive them

Under which criteria data/document could be used

Students who are doing a research and people working in the field of treatment

From where data/document is obtainable

Sosan Shah Hosseini- Phone: 09121243936 Email: shahhosseinisousan@gmail.com

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

The request and its reason should be registered via e-mail and the data will be sent within five working days

Comments