Clinical Trial Protocol
Iranian Registry of Clinical Trials

17 Sep 2026

Effect of proprioceptive neuromuscular facilitation training on physical and psycho-social characteristics of military personnel with sedentary lifestyle with chronic non-specific low back pain; Clinical Trial.

Protocol summary

Study aim

The effect of proprioceptive neuromuscular facilitation exercises on the physical and psychosocial characteristics of military personnel with a sedentary lifestyle suffering from non-specific chronic back pain; Clinical trial.

Design

Clinical trial, with control group, parallel group, single-blinded, randomized, on 38 chronic low back pain patients, random numbers from the website www.calculatorsoup.com were used for randomization.

Settings and conduct

Baqiyatallah Hospital, Tehran, Iran. First, about 15 minutes of common motor control exercises will be given to both groups, after the motor control exercises, only group A will be given PNF exercise instructions. Each exercise consists of a starting position and an ending position, which will be done as a back and forth movement and lasts about 15 to 20 minutes. In general, each session will be about 45 minutes, total sessions will include 16 sessions. Assessor will be blinded.

Participants/Inclusion and exclusion criteria

Inclusion criteria: Non-specific chronic back pain; Maximum pain intensity 30 to 60 in the last 24 hours based on the numerical pain scoring scale; Age between 18 and 50 years; Participant's ability to learn and perform exercises; Reading and writing literacy to complete the questionnaires; Sensory and motor health of upper and lower limbs. Exclusion criteria: Prohibition of performing therapeutic exercises for the patient (such as advanced heart and respiratory diseases); The existence of clear deformity in the spine, pelvis and lower limbs; existence of autoimmune diseases.

Intervention groups

The control group includes common motor control exercises that are used for low back pain patients. In addition to performing motor control exercises, the intervention group will also perform diagonal PNF exercises.

Main outcome variables

Pain; disability; pain catastrophizing; stress; anxiety; depression

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20200418047120N2**
Registration date: **2023-09-07, 1402/06/16**
Registration timing: **prospective**

Last update: **2023-09-07, 1402/06/16**
Update count: **0**

Registration date

2023-09-07, 1402/06/16

Registrant information

Name

Hamid Zamani

Name of organization / entity

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Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2023-09-22, 1402/06/31

Expected recruitment end date

2024-01-19, 1402/10/29

Actual recruitment start date
empty
Actual recruitment end date
empty
Trial completion date
empty

Scientific title
Effect of proprioceptive neuromuscular facilitation training on physical and psycho-social characteristics of military personnel with sedentary lifestyle with chronic non-specific low back pain; Clinical Trial.

Public title
Effect of proprioceptive neuromuscular facilitation training on chronic non-specific low back pain.
Purpose
Treatment
Inclusion/Exclusion criteria
Inclusion criteria:
Non-specific chronic low back pain. Maximum pain intensity between 30 to 60 in last 24 hours according to Numerical Pain Rating Scale. Participants ability to learning and doing the exercises. Reading and writing literacy to complete the questionnaires. Sensory and motor health of upper and lower limbs.
Exclusion criteria:
prohibition of performing therapeutic exercises for the patient (such as advanced heart and respiratory diseases); existence of clear deformity in the spine, pelvis and lower limbs; existence of autoimmune diseases (such as rheumatic diseases).
Age
From **18 years** old to **50 years** old
Gender
Both

Phase
N/A
Groups that have been masked

- Outcome assessor

Sample size
Target sample size: **38**
Randomization (investigator's opinion)
Randomized
Randomization description
The randomization of the samples will be done using the variable block method. In this way, the letter A was determined for the intervention group (including motor control exercises + PNF diagonal exercises) and the letter B was determined for the control group (including motor control exercises). Then 4 non-repeating sequences of letters A and B were determined as follows: 1. AABB 2. BBAA 3. ABAB 4. BABA 5. ABBA 6. BAAB After determining the variable 4-letter blocks, considering that 38 people will be needed, 10 random numbers were extracted from the website (https://www.calculatorsoup.com/) (1 5 6 3 2 3 6 4 2 3). In this way, the placement of the participants in the desired groups was determined.
Blinding (investigator's opinion)
Single blinded
Blinding description
In this study, the evaluation including scoring and data extraction of the questionnaires will be done by someone other than the main researcher of the study who will provide the interventions to the patients.
Placebo
Not used
Assignment
Parallel
Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee
Name of ethics committee
Research Ethics Committees of Baqiyatallah Hospital
Street address
Sports Physiology Research Institute, Baqiyatullah University of Medical Sciences, South Sheikh Bahai St., Molla Sadra St.,
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Tehran
Province
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Postal code
1435916471
Approval date
2023-08-13, 1402/05/22
Ethics committee reference number
IR.BMSU.BAQ.REC.1402.055

Health conditions studied

1

Description of health condition studied
Non-specific chronic low back pain
ICD-10 code
M54.5
ICD-10 code description
Low back pain

Primary outcomes

1

Description
Pain intensity
Timepoint
At the baseline and after the end of the interventions
Method of measurement
Numerical Pain Rating Scale

Secondary outcomes

1

Description
Disability
Timepoint
At the baseline and after the last intervention session
Method of measurement
Roland-Morris Disability Questionnaire

2

Description
Pain Catastrophizing
Timepoint
At the baseline and after the last intervention session
Method of measurement
Pain Catastrophizing Scale

3

Description
Depression
Timepoint
At the baseline and after the last intervention session
Method of measurement
Depression-Anxiety and Stress Scale

4

Description
Anxiety
Timepoint
At the baseline and after the last intervention session
Method of measurement
Depression-Anxiety and Stress Scale

5

Description
Stress
Timepoint
At the baseline and after the last intervention session
Method of measurement
Depression-Anxiety and Stress Scale

Intervention groups

1

Description
Intervention group: 16 sessions of Diagonal exercises of proprioceptive neuromuscular facilitation training (PNF) for trunk, 3 weekly sessions, each session 15 to 20 minutes.
Category
Rehabilitation

2

Description
Control group: 16 sessions of common motor control exercises of low back pain, 3 weekly sessions, each session 15 to 20 minutes.
Category
Rehabilitation

Recruitment centers

1

Recruitment center
Name of recruitment center
Baqiyatullah University of Medical Sciences
Full name of responsible person
Alireza Shamsoddini
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Baqiyatullah University of Medical Sciences, South Sheikh Bahai St., Molla Sadra St., Vanek Square, Tehran
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Sponsors / Funding sources

1

Sponsor
Name of organization / entity
Bagheiat-allah University of Medical Sciences
Full name of responsible person
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Web page address
https://www.bmsu.ac.ir/portal/home/
Grant name
Grant code / Reference number

Is the source of funding the same sponsor organization/entity?
Yes
Title of funding source
Bagheiat-allah 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
Bagheiat-allah University of Medical Sciences
Full name of responsible person
Alireza Shamsoddini
Position
Assistant professor
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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
Undecided - It is not yet known if there will be a plan to make this available
Informed Consent Form
Undecided - It is not yet known if there will be a plan to make this available
Clinical Study Report
Yes - There is a plan to make this available
Analytic Code
Not applicable
Data Dictionary
Not applicable
Title and more details about the data/document
Results from the analysis of participant data, both

primary and secondary outcomes, will be published.

When the data will become available and for how long

Access to the data will be possible after the publication of the article.

To whom data/document is available

Researchers of academic and scientific centers could access the data.

Under which criteria data/document could be used

Analyzes that do not overlap with the objectives of the present study will be allowed.

From where data/document is obtainable

Dr. Alireza Shamsoddini Email: shamseddin23@gmail.com

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

The requester could access the data by providing the research area as well as the purpose of accessing the data.

Comments