Clinical Trial Protocol
Iranian Registry of Clinical Trials

17 Sep 2026

Comparison of the immediate effect of abdominal muscle massage with lumbar muscle massage in non-acute back pain patients

Protocol summary

Study aim
This study compares the immediate effect of abdominal and lumbar muscle massage on pain outcomes and range of motion in non-acute back pain patients.

Design
After finding the conditions to enter the study, this clinical trial of patients was done using the block randomization method. It was assigned to two parallel control and intervention groups with the closed envelope method. TA sample size of 37 people will be provided in each group. Phase three, during which the effectiveness of the intervention is evaluated.

Settings and conduct
This study was conducted at Mashhad University of Medical Sciences. The intervention consisted of a session of abdominal muscle massage for 15 to 30 minutes in an intervention group and a lumbar muscle massage in the control group with the same duration and number of sessions. The analyst was unaware of the intervention and control groups. The examiner was unaware of grouping before and after the treatment, and the participants were

Participants/Inclusion and exclusion criteria
Patients with non-acute mechanical back pain

Intervention groups
The intervention group received abdominal muscle massage, and the control group received lumbar muscle massage.

Main outcome variables
Pain and range of motion

General information

Reason for update

Acronym

IRCT registration information
IRCT registration number: **IRCT20230212057390N1**
Registration date: **2023-05-13, 1402/02/23**
Registration timing: **retrospective**
Last update: **2023-05-13, 1402/02/23**
Update count: **0**

Registration date
2023-05-13, 1402/02/23

Registrant information

Name
Majid Shahbazi

Name of organization / entity

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Iran (Islamic Republic of)

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Recruitment status
Recruitment complete

Funding source

Expected recruitment start date
2022-09-10, 1401/06/19

Expected recruitment end date
2022-12-21, 1401/09/30

Actual recruitment start date
2022-09-10, 1401/06/19

Actual recruitment end date
2022-12-21, 1401/09/30

Trial completion date
2022-12-21, 1401/09/30

Scientific title
Comparison of the immediate effect of abdominal muscle massage with lumbar muscle massage in non-acute back pain patients

Public title
Investigation of the immediate effect of abdominal muscle massage in non-acute back pain patients

Purpose
Treatment

Inclusion/Exclusion criteria

Inclusion criteria:
Patients with non-acute mechanical back pain Disability level greater than 15% based on Oswestry modified questionnaire Presence of pain during at least one physiological movement of the back
Exclusion criteria:
RED flag patients, including malignancy, infection, fracture Patients who need surgery Pregnant patients Skin problems in patients5. Patients who are prohibited from massaging the abdominal area for any reason, such as patients with a recent history of abdominal obstruction, radiotherapy, and recent abdominal surgery, inflammatory bowel disease, or irritable bowel syndrome. Patients with acute back pain they cannot stand and perform tests.

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

Gender
Both

Phase
N/A

Groups that have been masked
No information

Sample size
Target sample size: **74**
Actual sample size reached: **74**

Randomization (investigator's opinion)
Randomized

Randomization description
This study will use the block randomization method to generate a sequence of random numbers. In this method, 15 blocks of size 4 and 7 blocks of size two will be randomly selected from the combination of letters A and B with the table of random numbers. The list of blocks with size two are 1:AB, 2:BA and the list of blocks with size four are 1:AABB, 2:ABBA, 3:BBAA, 4:BAAB, 5:BABA, 6:ABAB To select blocks of size 2, 7 numbers randomly from the table of random numbers are selected; if this number is from 0 to 4, the first block, and if the number is from 5 to 9, the second block will be selected. To select blocks of size 4, randomly 15 numbers between 1 to 6 will be selected from the table of random numbers; then, if this number is one, the first block of size four, and if the selected number is 2, the second block of size four and ..., will form our random sequence. After determining the random sequence, each person's type of treatment is placed in sealed envelopes, and referring patients, if they meet the criteria for entering the study, will receive their type of treatment based on the sequence obtained.

Blinding (investigator's opinion)
Not blinded

Blinding description

Placebo
Not used

Assignment
Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee
کمیته اخلاق دانشگاه علوم پزشکی مشهد

Street address
Department of Physical Therapy-School of Paramedical and Rehabilitation Sciences-University campus-Azadi square-Mashhad-Iran

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Razavi Khorasan

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Approval date
2022-05-29, 1401/03/08

Ethics committee reference number
IR.MUMS.FHMPM.REC.1401.032

Health conditions studied

1

Description of health condition studied
non acute mechanical low back pain

ICD-10 code
M51.2

ICD-10 code description
due to intervertebral disc displacement

Primary outcomes

1

Description
Pain with the visual analog scale during back movements

Timepoint
Immediately before and after the intervention

Method of measurement
Visual Analog Scale

Secondary outcomes

1

Description
range of motion lumbar

Timepoint
Immediately before and after the intervention

Method of measurement
With two bubble inclinometer

Intervention groups

1

Description
Intervention group: In this study, the abdominal muscles

include rectus abdominis, paramedialis, and oblique abdominal muscles. The mentioned techniques are performed in the posture of archer and palmer. The treated muscles for the lumbar region are Quaratus Lumbrum, Erector Spine, Multifidus, and Rotators. The patient sleeps in a supine position in the abdominal muscle massage group. He is lying on his back. The therapist stands next to the client in the hip area. Place one hand flat on the upper abdomen near the chest, pass the other hand over the first hand, and place it on the lower abdomen on the other side (fingers on the ASIS). Let the hands sink into the tissue until they are involved with the superficial fascia of the abdomen. Separate the hands without letting them slide over the skin. Hold for release. Repeat on the opposite side. 3 minutes 3) The patient is lying on his back. The therapist stands next to the client in the pelvic area. Fingertips were placed on one side of the rectus abdominis muscle just above the pubic bone. Pressing firmly into the tissue, pull the fingertips upwards along the muscle towards the rib attachment. Repeat the same procedure on the other side. 3) The client is lying on his back. The therapist stands next to the client in the pelvic area. Place the supported thumb on the lateral border of the rectus abdominis muscle. Above the genital area, by pressing firmly on the tissue, slide the thumb along the muscle towards the upper joints on the muscle. Repeat the same procedure on the other side. 5 minutes 4) The client is lying on his back. The therapist stands next to the chest. Place the supported thumb at the junction of the ventral line with the pubis on the side closest to the therapist. Press the muscle firmly against the bone and look for tender points. Hold for freedom. Move the hand towards the middle to the next point and repeat this until the hand reaches the line in the center. Repeat this procedure on the other side. 5) The client is lying on his back. The therapist stands next to the lumbar region. Place the thumb tip on the rectus abdominis in the midline (middle line) just above the pubic area. Pushing firmly into the tissue, slide the thumb tip laterally toward the fingertips and prick. Repeat this procedure, starting just above the previous point. Repeat the same procedure along the abdominal line until reaching the chest. Repeat this procedure on the other side. 6) The patient sleeps prone. We stand next to the patient's chest. We repeat this technique on the opposite side until it covers the entire surface of the abdomen.

Category

Rehabilitation

2

Description

Control group: In the posterior muscle massage, first, the patient lies on his back for three minutes, and 3 bilateral superficial strokes are performed in the warm-up phase. 2) The therapist stands next to the participant's chest. Place the lumbar region next to the vertebrae on the iliac crest next to the sacrum bone. Pass the other hand over or under the first hand, placing it flat on the chest area over the lower three or four ribs, letting the hands sink into the tissue until it felt contact with the superficial fascia. Press in the opposite direction, with enough downward pressure to stretch the superficial fascia. The therapist maintained the pressure until it felt the release of the fascia. Place both hands one hand's width apart for three minutes, and this technique 3) The patient sleeps prone, and the therapist stands next to the hip (to work in the upward direction). Place the heel of the hand on the erector spinae muscle bundle near the sacrum. By pressing firmly on the tissue, slide along the entire length of the muscle 3) The patient lies prone. The therapist stands next to the client's chest. We press the tips of the fingers or the supported thumb in the upper part of the sacrum and the lateral vertebrae firmly downward and outward inside the tissue and let it slide. Repeat this technique on the other side as well. For 5 minutes 4) The patient sleeps on his back. The therapist stands next to the client's back. Place the thumb or the tip of the finger (with or without support) on the space between the L5 vertebra and the sacrum. Apply lateral pressure (away from you); push the superficial muscles aside to reach the internal muscles. If the patient reports tenderness, hold the pressure to release. The therapist moved the hand and applied the technique between the upper two vertebrae. Repeat for three minutes until the 12th thoracic vertebra and the first lumbar vertebra. 5) Ischemic compression in painful points. Ischemic compression is applied in different ways to release trigger points and relax hypertonic areas. The thumb is used in the quadratus lumborum and around the sacroiliac joint. The quadratus lumborum is also pressed by the elbow.

Category

Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center

Comprehensive Rehabilitation Center

Full name of responsible person

Majid Shahbazi

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Sponsors / Funding sources

1

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Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
Yes
Title of funding source
Mashhad 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
Mashhad University of Medical Sciences
Full name of responsible person
Majid Shahbazi
Position
Associate professor
Latest degree
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Other areas of specialty/work
Physiotherapy
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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
Yes - There is a plan to make this available
Statistical Analysis Plan
Yes - There is 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
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 is potentially shareable after de-identifying individuals
When the data will become available and for how long
After the article is published
To whom data/document is available
Journal, related researchers
Under which criteria data/document could be used
For further studies
From where data/document is obtainable
Mashhad University of Medical Sciences - Department of Physiotherapy
What processes are involved for a request to access data/document
Apply in writing to Mashhad University of Medical Sciences. shahbazim2@mums.ac.ir Majid Shahbazi
Comments