

Clinical Trial Protocol

Iranian Registry of Clinical Trials

10 Jun 2026

Comparing The Effect of Pilates, Yoga and Taichi Exercises on Proprioception, Range of Motion, Kinesiophobia, Pain and Quality of Life in men Above 50 Years Old with Chronic Non-Specific Low Back Pain.

Protocol summary

Study aim

The main purpose of this study is to compare the effectiveness of Pilates, yoga, and tai chi exercises on proprioception and range of motion, Kinesiophobia, pain, and quality of life in men over 50 years old with chronic non-specific low back pain in Kerman.

Design

The clinical trial is in three groups, without a control group, with parallel groups, without blinding and without randomization, on 45 men over 50 years of age.

Settings and conduct

Pilates and yoga exercises will be performed by the researcher and Tai Chi exercises will be performed by the relevant coach in the Faculty of Sport Sciences, Shahid Bahonar University of Kerman.

Participants/Inclusion and exclusion criteria

Inclusion criteria: with chronic non-specific low back pain. Visual analog scale between 3 and 7. without spinal injury such as a fracture. Sufficient physical independence to participate in the physical activities required for the study. without participation in Tai Chi, Yoga, or Pilates in the past 3 months. Exclusion criteria: with Spondylolysis and spondylolisthesis. with rheumatoid arthritis or an infection. with History of psychiatric disorder and cerebrovascular disease. The individual's unwillingness to continue participating in the study.

Intervention groups

In this study, participants will be trained and evaluated in three groups of Pilates, yoga, and tai chi exercises.

Main outcome variables

Proprioception, Range of Motion, Kinesiophobia, Pain and Quality of Life

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20250818066900N1**

Registration date: **2025-09-25, 1404/07/03**

Registration timing: **prospective**

Last update: **2025-09-25, 1404/07/03**

Update count: **0**

Registration date

2025-09-25, 1404/07/03

Registrant information

Name

mohammad hasan abdorrahshidi

Name of organization / entity

Country

Iran (Islamic Republic of)

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+98 34 3375 2839

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Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2025-10-22, 1404/07/30

Expected recruitment end date

2025-12-21, 1404/09/30

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Comparing The Effect of Pilates, Yoga and Taichi

Exercises on Proprioception, Range of Motion, Kinesiophobia, Pain and Quality of Life in men Above 50 Years Old with Chronic Non-Specific Low Back Pain.

Public title

Comparing The Effect of Pilates, Yoga and Taichi Exercises on Proprioception, Range of Motion, Kinesiophobia, Pain and Quality of Life in men Above 50 Years Old with Chronic Non-Specific Low Back Pain.

Purpose

Supportive

Inclusion/Exclusion criteria

Inclusion criteria:

With chronic non-specific low back pain Visual analog scale between 3 and 7 without spinal injury such as a fracture Sufficient physical independence to participate in the physical activities required for the study No participation in Tai Chi, Yoga, or Pilates in the past 3 months

Exclusion criteria:

With Spondylolysis and spondylolisthesis. With rheumatoid arthritis or an infection. With History of psychiatric disorder and cerebrovascular disease. The individual's unwillingness to continue participating in the study.

Age

From **50 years** old

Gender

Male

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **45**

Randomization (investigator's opinion)

N/A

Randomization description

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

Research Ethics Committee of Kerman University of Medical Sciences

Street address

Shahid Bahonar University of Kerman, Imam Khomeini Highway, Pazhuhesh Square, Kerman

City

Kerman

Province

Kerman

Postal code

7616913439

Approval date

2025-08-12, 1404/05/21

Ethics committee reference number

IR.KMU.REC.1404.273

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

Primary outcomes

1

Description

Proprioception

Timepoint

Before and after the intervention

Method of measurement

Measuring angle reconstruction error by taking photographs and using kinovea software.

2

Description

Range of Motion

Timepoint

Before and after the intervention

Method of measurement

Modified Modified Schober's test

3

Description

Kinesiophobia

Timepoint

Before and after the intervention

Method of measurement

11-question questionnaire Tampa Kinesiophobia Scale

4

Description

Pain

Timepoint

Before and after the intervention

Method of measurement

Visual Analogue Scale

5

Description

Quality of Life

Timepoint

Before and after the intervention

Method of measurement

The Short Form Health Survey (SF-36)

Secondary outcomes

empty

Intervention groups

1

Description

First intervention group: Pilates exercises including 14 movements, with gradual overload of two sets with 15 repetitions in the first and second week, two sets with 20 repetitions in the third and fourth week, three sets with 15 repetitions in the fifth and sixth week, and three sets with 20 repetitions in the seventh and eighth week. The exercises will be practiced three sessions per week for 1 hour

Category

Rehabilitation

2

Description

Second intervention group: Yoga exercises for six weeks, in the first and second weeks: Mountain (tadasana), warrior-II (virabhadrasana), staff (dandasana), twisted pose (vakrasana) in the third and fourth weeks: Twisted (vakrasana), cobra (bhujangasana), boat (naukasana), half-waist-wheel pose (ardha kati chakrasana), and in the fifth and sixth weeks: Tree (vrksasana), extended-side-angle (utthita parsvakonasana), hand-under-foot (padahasthasana), half-waistwheel (ardha kati chakrasana), standing-backward-bend (ardha chakrasana), Three sessions per week for 1 hour will be practiced.

Category

Rehabilitation

3

Description

Third intervention group: Tai Chi Chen style 16-form will be practiced for 12 weeks, three sessions per week in 1-hour sessions. The first four weeks will be separate movement training, the second four weeks will be movement connection, and the third four weeks will be full form execution. (Commencing Form, Buddha's Warrior Attendant Pounds Mortar, Tuck in Robes, Single Whip, Wave Hands Like Clouds, Double Push Palms, Step Back and Whirl Arms on Both Sides, White Crane Spreads Wings, Diagonal line spread step, Deflect through The Back, the Chopping Hand, Hide Hand and Strike Fist, Six Seals and Four Closings, Single Whip (same as (4)) and Body Defending Punches), Buddha's Warrior Attendant

Pounds Mortar, Closing Form.)

Category

Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center

Shahid Bahonar University of Kerman

Full name of responsible person

Mohammad Hasan Abdorrashidi

Street address

Shahid Bahonar University of Kerman, Imam Khomeini Highway, Pazhuhesh Square, Kerman

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Kerman

Province

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7616913439

Phone

+98 903 890 4488

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abdh5084@gmail.com

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Shahid Bahonar University of Kerman

Full name of responsible person

Alireza Saeedi

Street address

Shahid Bahonar University of Kerman, Imam Khomeini Highway, Pazhuhesh Square, Kerman

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Email

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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

Shahid Bahonar University of Kerman

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**

Shahid Bahonar University of Kerman

Full name of responsible person

Mohammad Hasan Abdorrashidi

Position

Student

Latest degree

Bachelor

Other areas of specialty/work

Sport Injury and Corrective Exercises

Street address

Shahid Bahonar University of Kerman, Imam Khomeini Highway, Pazhuhesh Square, Kerman

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Person responsible for scientific inquiries**Contact****Name of organization / entity**

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Position

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Latest degree

Bachelor

Other areas of specialty/work

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Person responsible for updating data**Contact****Name of organization / entity**

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Full name of responsible person

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Position

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Latest degree

Bachelor

Other areas of specialty/work

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Sharing plan**Deidentified Individual Participant Data Set (IPD)**

No - There is not a plan to make this available

Justification/reason for indecision/not sharing IPD

"There is no further information"

Study Protocol

Yes - There is a plan to make this available

Statistical Analysis Plan

No - There is not a plan to make this available

Informed Consent Form

Yes - There is a plan to make this available

Clinical Study Report

Not applicable

Analytic Code

Not applicable

Data Dictionary

Not applicable

Title and more details about the data/document

The protocols implemented in the study will be available after publication of the article, by contacting the corresponding author.

When the data will become available and for how long

-

To whom data/document is available

Researchers and students

Under which criteria data/document could be used

-

From where data/document is obtainable

To receive the implemented protocols, contact Mr. Mohammad Hasan Abdorrashidi via email. Email address: abdh5084@gmail.com Address: Shahid Bahonar University of Kerman, Imam Khomeini Highway, Pazhuhesh Square, Kerman

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

Send an email to the corresponding author and explain

why you need complete protocol information.
Comments