Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 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

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Name of organization / entity
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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 (padahastasana), 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
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Shahid Bahonar University of Kerman, Imam Khomeini Highway, Pazhuhesh Square, Kerman
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Sponsors / Funding sources

1

Sponsor
Name of organization / entity
Shahid Bahonar University of Kerman
Full name of responsible person
Alireza Saeedi
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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
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Sport Injury and Corrective Exercises
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Person responsible for updating data

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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