Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 2026

Fish Oil Supplementation vs Knee Strengthening Exercises: A Comparative Study in Knee Osteoarthritis Management

Protocol summary

Study aim
The aim of this study is to evaluate and compare the effects of fish oil supplementation and strengthening exercises on pain relief, joint function, inflammation, and overall quality of life in individuals with osteoarthritis.

Design
Pragmatic, community based, parallel group, double blinded, randomized controlled trial. Total 95 patients will be enrolled. Patients who met our inclusion criteria will be randomized into three groups.

Settings and conduct
Muhammad physical therapy clinic and rehabilitation center, Multan.

Participants/Inclusion and exclusion criteria
Inclusion Criteria: Clinically diagnosed knee OA (Grade II–III, based on the Kellgren-Lawrence scale),moderate pain severity (VAS score 4–6 at baseline),able to perform exercises and follow instructions. Exclusion criteria: Severe OA requiring surgery, allergies to fish oil or vegetarian individuals unwilling to consume fish products, current use of omega-3 supplements or structured physical therapy for OA,significant comorbid conditions (e.g., rheumatoid arthritis, uncontrolled diabetes, cardiovascular diseases).

Intervention groups
Group 1: Fish oil supplementation (1,000 mg fish oil capsule taken twice daily for 12 weeks.) Group 2:Strengthening exercises (Isometric Contractions: Static quadriceps contraction held for 5–10 seconds, repeated 10–15 times per session. Isotonic Strengthening exercise: Partial squats and leg raises with incremental resistance over time) Group 3:Combined intervention (Fish oil + Strengthening exercises)

Main outcome variables
Knee X rays; Western Ontario and McMaster Universities Osteoarthritis Index scale; Numeric Pain Rating Scale; Pain Catastrophizing Scale; Knee Range of Motion (goniometry); Knee injury outcome (KOOS); Muscle strength (dynamometer); Quality of life (SF-36); C-reactive protein; Interleukin-6

General information

Reason for update

Acronym

IRCT registration information
IRCT registration number: **IRCT20230202057310N10**
Registration date: **2024-12-21, 1403/10/01**
Registration timing: **retrospective**

Last update: **2024-12-21, 1403/10/01**
Update count: **0**

Registration date
2024-12-21, 1403/10/01

Registrant information

Name
Imran Ahmad Khan

Name of organization / entity
Muhammad Nawaz Shareef University of Agriculture, Multan

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Pakistan

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Recruitment status
Recruitment complete

Funding source

Expected recruitment start date
2024-01-07, 1402/10/17

Expected recruitment end date
2024-04-07, 1403/01/19

Actual recruitment start date
empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Fish Oil Supplementation vs Knee Strengthening Exercises: A Comparative Study in Knee Osteoarthritis Management

Public title

Fish Oil Supplementation vs Knee Strengthening Exercises: Knee Osteoarthritis Management

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria:

Clinically diagnosed knee OA (Grade II–III, based on the Kellgren-Lawrence scale). - - Moderate pain severity Able to perform exercises and follow instructions

Exclusion criteria:

Severe OA requiring surgery Allergies to fish oil or vegetarian individuals unwilling to consume fish products. Current use of omega-3 supplements or structured physical therapy for OA Significant comorbid conditions (e.g., rheumatoid arthritis, uncontrolled diabetes, cardiovascular diseases).

Age

From **40 years** old to **60 years** old

Gender

Both

Phase

1

Groups that have been masked

- Outcome assessor
- Data analyser

Sample size

Target sample size: **95**

Randomization (investigator's opinion)

Randomized

Randomization description

This randomization will be done by computer-generated numbers to ensure fairness. Medications will be given in numbered white boxes, each with a unique medication number. The treatment codes will be kept by the principal investigator.

Blinding (investigator's opinion)

Double blinded

Blinding description

Statistical analyser and outcome assessor will be kept blind so that the result obtained will be without biasness.

Placebo

Not used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

The Institutional Ethical Committee of Muhammad Institute of Medical and Allied Sciences

Street address

Bosan Road

City

Multan

Postal code

66000

Approval date

2024-12-03, 1403/09/13

Ethics committee reference number

MIMAS/67/26/IAK

Health conditions studied

1

Description of health condition studied

Knee osteroarthritis

ICD-10 code

M19.0

ICD-10 code description

Primary osteoarthritis of other joints

Primary outcomes

1

Description

Osteophytes

Timepoint

12 weeks

Method of measurement

Knee Xray

2

Description

Pain, stiffness and ADLs

Timepoint

12 weeks

Method of measurement

NPRS and WOMAC Scale

3

Description

Knee ROM

Timepoint

12 Weeks

Method of measurement

Goniometry

Secondary outcomes

1

Description
Knee injury outcome
Timepoint
12 weeks
Method of measurement
Knee injury outcome score (KOOS)

2

Description
Quality of life
Timepoint
12 weeks
Method of measurement
SF-36

Intervention groups

1

Description
Group A: Fish Oil Supplementation, Dosage: 1,000 mg fish oil capsule taken twice daily for 12 weeks.
Category
Treatment - Drugs

2

Description
Group B: Strengthening Exercises, Supervised physiotherapy sessions three times a week for the first four weeks., Home-based exercises with detailed written and visual instructions for the remaining eight weeks. - Exercise program:Isometric Contractions:Static quadriceps contraction held for 5–10 seconds, repeated 10–15 times per session. Isotonic Strengthening:** Partial squats and leg raises with incremental resistance over time.
Category
Rehabilitation

3

Description
Group C: Combined Intervention, Participants will receive both fish oil supplementation and strengthening exercises as per the respective protocols.
Category
Treatment - Other

Recruitment centers

1

Recruitment center
Name of recruitment center
Muhammad Rehabilitation Centre, Multan
Full name of responsible person
Komal Ammar Bukhari
Street address
Bosan Road
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Sponsors / Funding sources

1

Sponsor
Name of organization / entity
Muhammad Institute of Medical and Allied Sciences, Multan, Pakistan
Full name of responsible person
Qurat-Ul-Ain
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Grant name
Student Fund
Grant code / Reference number
MIMAS/09/10/Amna
Is the source of funding the same sponsor organization/entity?
Yes
Title of funding source
Muhammad Institute of Medical and Allied Sciences, Multan, Pakistan
Proportion provided by this source
70
Public or private sector
Private
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
Muhammad Institute of Medical and Allied Sciences, Multan, Pakistan.
Full name of responsible person
Maliha Khalid Khan
Position
med_doctor
Latest degree

Medical doctor

Other areas of specialty/work
Physiotherapy

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Person responsible for scientific inquiries

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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
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
Undecided - It is not yet known if there will be a plan to make this available

Analytic Code
Undecided - It is not yet known if there will be a plan to make this available

Data Dictionary
Undecided - It is not yet known if there will be a plan to make this available