

Clinical Trial Protocol

Iranian Registry of Clinical Trials

09 Jun 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

Country

Pakistan

Phone

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Email address

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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 osteoarthritis

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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komalbukhari608@gmail.com

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Muhammad Institute of Medical and Allied Sciences, Multan, Pakistan

Full name of responsible person

Qurat-UI-Ain

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Email

qain0635@gmail.com

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

Contact

Name of organization / entity

Muhammad Nawaz Sharif University of Agriculture
Multan

Full name of responsible person

Imran Ahmad Khan

Position

Coordinator Department of Pharmacy

Latest degree

Ph.D.

Other areas of specialty/work

Medical Pharmacy

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Person responsible for updating data

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Student

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Bachelor

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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