

Clinical Trial Protocol

Iranian Registry of Clinical Trials

11 Sep 2026

EFFECTS OF KNEE STRENGTHENING EXERCISES WITH AND WITHOUT HIP STRENGTHENING EXERCISES IN WOMEN WITH KNEE OSTEOARTHRITIS: RANDOMIZED CONTROLLED TRAIL

Protocol summary

Study aim

The aim of study was to determine combine effects of hip strengthening exercises with knee strengthening exercises on knee pain, function and activities of daily livings and quality of life in women with knee osteoarthritis

Design

A single-blind, randomized controlled trial

Settings and conduct

Physical therapy department of WAPDA Teaching Hospital Complex Lahore, Lahore

Participants/Inclusion and exclusion criteria

The inclusion criteria; Age 40-70 year, Female only, Unilateral knee OA, Diagnosed patients of knee OA by orthopedic, Grade II to III by Kellgren- Lawrence scale and No pervious surgical/ steroid injection history with in last 6month. The following were the exclusion criteria; Bony abnormalities that affected knee, Plan of surgical procedure with in the time frame of study, Have history of injury that may cause OA, Systemic inflammatory and medical disease that have prevent physical activity

Intervention groups

A resistance exercises program included Hip exercise with Hnee exercise (Hip flexors, Hip extensor, Hip abductor/adductor, Hip external and Internal rotators) and Knee strengthening (Knee flexors, Knee extensor). The subjects in CG were underwent a resistance exercises program included only Knee exercises (Knee flexors, Knee extensor, Leg press, Heel press and Calf hold

Main outcome variables

Pain, Function and Quality of life

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20230124057196N1**

Registration date: **2023-05-23, 1402/03/02**

Registration timing: **retrospective**

Last update: **2023-05-23, 1402/03/02**

Update count: **0**

Registration date

2023-05-23, 1402/03/02

Registrant information

Name

mariam umer hayat

Name of organization / entity

The University of Lahore

Country

Pakistan

Phone

+92 321 4437350

Email address

mariamumerhayat@gmail.com

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2023-01-25, 1401/11/05

Expected recruitment end date

2023-02-02, 1401/11/13

Actual recruitment start date

2023-01-25, 1401/11/05

Actual recruitment end date

2023-01-25, 1401/11/05

Trial completion date

empty

Scientific title

EFFECTS OF KNEE STRENGTHENING EXERCISES WITH

AND WITHOUT HIP STRENGTHENING EXERCISES IN WOMEN WITH KNEE OSTEOARTHRITIS: RANDOMIZED CONTROLLED TRAIL		L 103 DHA rahber Phase 2 Lahore Pakistan	
Public title EFFECTS OF KNEE STRENGTHENING EXERCISES WITH AND WITHOUT HIP STRENGTHENING EXERCISES IN WOMEN WITH KNEE OSTEOARTHRITIS: RANDOMIZED CONTROLLED TRAIL	City Lahore		
	Postal code 54000		
	Approval date 2021-04-05, 1400/01/16		
	Ethics committee reference number IRB-UOL-FAHS/831-VII/2021		
	Health conditions studied		
Purpose Treatment	1		
	Description of health condition studied KNEE OSTEOARTHRITIS		
	ICD-10 code M19.91		
	ICD-10 code description Primary osteoarthritis, unspecified site		
	Primary outcomes		
Inclusion/Exclusion criteria Inclusion criteria: Age 40-70 year, , and Female only, Unilateral knee OA, Diagnosed patients of knee OA by orthopedic Drade II to III by Kellgren- Lawrence scale No pervious surgical/ steroid injection history with in last 6month. Exclusion criteria: Bony abnormalities that affected knee, , , Plan of surgical procedure with in the time frame of study Have history of injury that may cause OA Systemic inflammatory and medical disease that have prevent physical activity	1		
	Description Pain		
	Timepoint 6th Week		
	Method of measurement Pain by Visual Analog scale(VAS)		
	2		
Age From 40 years old to 70 years old	Description Function		
	Timepoint 6th Week		
	Method of measurement Function by subscale of Knee Injury and Osteoarthritis Outcome Score(KOOS)		
	3		
	Description Quality of life		
Gender Female	Timepoint 6th Week		
	Method of measurement Quality of life by subscale of Knee Injury and Osteoarthritis Outcome Score(KOOS)		
	Secondary outcomes		
	empty		
	Intervention groups		
Phase N/A	1		
	Description Intervention group: Experimental group received		
	2		
	3		
	4		
Groups that have been masked - Participant - Data analyser	Ethics committees		
	1		
	Ethics committee Name of ethics committee Institutional Review Board the University of Lahore		
	Street address		
	Sample size Target sample size: 70 Actual sample size reached: 61		
Randomization (investigator's opinion) Randomized		Secondary outcomes	
Randomization description Randomization was done as Lottery Method		empty	
Blinding (investigator's opinion) Single blinded		Intervention groups	
Blinding description Participants and Data analyzer was blind did not know belong to which group		1	
Placebo Not used		Description Intervention group: Experimental group received	
Assignment Parallel		2	
Other design features		3	
Secondary Ids		4	
empty		Ethics committees	
Ethics committees		1	
Ethics committee Name of ethics committee Institutional Review Board the University of Lahore		Description Intervention group: Experimental group received	
Street address		2	

progressive hip and knee strengthening exercises for 6th week, 4 session per week on alternative days, frequency of exercise was 3 set with 10 repetition in each set, session completed in 40 min, 2 rest, Thera-Band with medium resistance to heavy resistance was used .

Category

Rehabilitation

2

Description

Control group: received knee strengthening exercises for 6th week, 4 session per week on alternative days, frequency of exercise was 3 set with 10 repetition in each set, session completed in 40 min, 2 rest, Thera-Band with medium resistance to heavy resistance was used .

Category

Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center

WAPDA TEACHING HOSPITAL COMPLEX LAHORE

Full name of responsible person

Abid Javaid

Street address

210-Ferozpur Road Lahore

City

Lahore

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54000

Phone

+92 42 37564705

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+92 42 35232285

Email

abidminhas.pt@gmail.com

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

University of Lahore

Full name of responsible person

Mariam Umer Hayat

Street address

No 103 L DHA Raber Lahore Pakistan

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Lahore

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+92 321 4437350

Email

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Grant name

Grant code / Reference number

Is the source of funding the same sponsor organization/entity?

No

Title of funding source

self

Proportion provided by this source

100

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

Persons

Person responsible for general inquiries

Contact

Name of organization / entity

The University of Lahore

Full name of responsible person

Mariam Umer Hayat

Position

Mphill student

Latest degree

Master

Other areas of specialty/work

Physiotherapy

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Person responsible for updating data

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Position
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Latest degree
Master
Other areas of specialty/work
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Street address
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City
Lahore
Province

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

No - There is not a plan to make this available

Statistical Analysis Plan

No - There is not a plan to make this available

Informed Consent Form

No - There is not a plan to make this available

Clinical Study Report

No - There is not a plan to make this available

Analytic Code

No - There is not a plan to make this available

Data Dictionary

No - There is not a plan to make this available