Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 2026

Effects of Sling Exercise Training on improve the Strength of Muscles , Range of Motion, and Functional Outcomes following Total knee Arthroplasty

Protocol summary

Study aim

The present study aims are intervention of a new active sling exercise therapy on enhancement of strength of muscles, and knee range of motion, and functional outcomes following total knee arthroplasty patients.

Design

Randomized, non-blinded clinical trial on 60 female knee arthroplasty patients with the age range of 50 to 70 years who are eligible to enter the study will be selected in two intervention and one control groups.

Settings and conduct

60 female patients undergoing total knee arthroplasty under the supervision of the same specialist doctor referring to Arian Physiotherapy Center located in Isfahan, will be selected and will be placed in one of the two intervention groups or the control group. At the beginning of the research, the WOMAC quality of life questionnaire, the strength of the examined muscles (Quadriceps and Hamstrings) and the range of motion of the knee joint will be measured. Then, the training protocols will be applied for eight weeks and after completion, the initial measurements will be made again.

Participants/Inclusion and exclusion criteria

entry conditions: Having a female gender with an age range of 50-70 years, performing a total knee arthroplasty in the last 2 months by specific doctor; Conditions of non-entry: suffering from acute cardiovascular problems or a specific disease that prevents sports activities.

Intervention groups

The first intervention group performed 3 sessions per week for 8 weeks, performed sling exercises therapy after the physiotherapy, the second intervention group performed the rehabilitation exercise protocol for total knee arthroplasty after the physiotherapy, and the control group without exercise intervention after the physiotherapy .

Main outcome variables

Strength of Quadriceps, Hamstrings muscles, Knee Range of motion(Flexion and Extension), Functional outcomes.

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20221226056934N1**
Registration date: **2023-02-25, 1401/12/06**
Registration timing: **registered_while_recruiting**

Last update: **2023-02-25, 1401/12/06**
Update count: **0**

Registration date

2023-02-25, 1401/12/06

Registrant information

Name

Nooshin Rajaeian

Name of organization / entity

Country

Iran (Islamic Republic of)

Phone

+98 31 4532 2194

Email address

noushin.rajaeian@gmail.com

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2023-02-24, 1401/12/05

Expected recruitment end date

2023-04-04, 1402/01/15

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Effects of Sling Exercise Training on improve the Strength of Muscles , Range of Motion, and Functional Outcomes following Total knee Arthroplasty

Public title

Effects of Sling Exercise Training on improve the Strength of Muscles , Range of Motion, and Functional Outcomes following Total knee Arthroplasty

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria:

Total Knee Arthroplasty since 2 months

Exclusion criteria:

Age

From **50 years** old to **70 years** old

Gender

Female

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **60**

Randomization (investigator's opinion)

Randomized

Randomization description

Simple Random Sampling: The people of the society will be numbered first and after the lottery will be randomly placed in three groups (two intervention and one control).

Blinding (investigator's opinion)

Not blinded

Blinding description

Placebo

Not used

Assignment

Factorial

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Ethics committee of Sport Science Research Institute Of Iran

Street address

No.3, 5th St., Mir Emad St., Motahari Ave

City

Tehran

Province

Tehran

Postal code

1587958711

Approval date

2023-02-19, 1401/11/30

Ethics committee reference number

IR.SSRC.REC.1401.110

Health conditions studied

1

Description of health condition studied

Rehabilitation of Total Knee Arthroplasty

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description

Strength of Quadriceps and Hamstring muscles

Timepoint

At the beginning of the study before the intervention and after 8 weeks

Method of measurement

J-Tech American dynamometer

2

Description

Knee joint flexion and extension range of motion

Timepoint

At the beginning of the study before the intervention and after 8 weeks

Method of measurement

Goniometer

3

Description

Knee Functionals Outcomes

Timepoint

At the beginning of the study before the intervention and after 8 weeks

Method of measurement

WOMAC quality of life questionnaire

Secondary outcomes

empty

Intervention groups

1

Description

Intervention group 1: Three sessions a week for 8 weeks of Sling exercises

Category
Rehabilitation

2

Description
Intervention group 2: Rehabilitation protocol after Total knee Arthroplasty
Category
Rehabilitation

Recruitment centers

1

Recruitment center
Name of recruitment center
Arian Physiotherapy and Rehabilitation Clinic
Full name of responsible person
Mojtaba Ghazi Isfahani
Street address
No. 35., 1st West St., Parvin Etesami Blvd
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Sponsors / Funding sources

1

Sponsor
Name of organization / entity
Islamic Azad University
Full name of responsible person
Majid Toghiani
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University Blvd., Arghwanieh St., Jey Ave.
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Phone
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Email
info@khuisf.ac.ir
Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
Yes
Title of funding source
Islamic Azad University
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
Other

Person responsible for general inquiries

Contact
Name of organization / entity
Islamic Azad University
Full name of responsible person
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Sharing plan

Deidentified Individual Participant Data Set (IPD)
Yes - There is a plan to make this available
Study Protocol
Yes - There is a plan to make this available
Statistical Analysis Plan
Yes - There is a plan to make this available
Informed Consent Form
Yes - There is a plan to make this available
Clinical Study Report
Yes - There is a plan to make this available
Analytic Code
Not applicable
Data Dictionary
Not applicable
Title and more details about the data/document
All potential data are released after de-identification of individuals in the form of information on main outcomes.
When the data will become available and for how long
The access period starts 6 months after the results are published.
To whom data/document is available
All researchers, lecturers and students of medical sciences can receive the printed article from the relevant journal
Under which criteria data/document could be used
Non-identifiable data will be made available to health science researchers for study.
From where data/document is obtainable
Send email to Noushin Rajaeian .
noushin.rajaeian@gmail.com
What processes are involved for a request to access data/document
After sending the documents by the applicant researcher via email; Data will be sent around two weeks later.
Comments