Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 2026

Comparing the Effects of Instrumental Assisted Soft Tissue Mobilization and Muscle Energy Technique on Improving Range of Motion and Reducing Pain in Patients with Gastrocnemius and Soleus Muscle Tightness A Randomized Clinical Trail

Protocol summary

Study aim
To check and compare the effects of Instrument-Assisted Soft Tissue Mobilization and METS(post isometric relaxation)on Gastrocnemius, soleus muscle tightness.

Design
It will be single blinded randomized clinical trail.A total of 20 participants will be recruited according to criteria. Teaching Experience more than 2 years.teachers who stand for prolonged period at least 3-5 hours per day. Lottery method will be used for recruitment of patients in 2 equal groups.

Settings and conduct
Study Setting:Progressive Science Girls High School, American Lyceum School and Islamic Science Foundation School. City:faisalabad, Pakistan;study population:patients will be school teachers. Experience more than 2 years who stand for 3-5 hours per day;blinding:it will be single blinded study and lottery method will be used for the recruitment of patients in two equal groups.

Participants/Inclusion and exclusion criteria
Inclusion criteria:Both genders male and female. Age range 25-40 year Teaching Experience more than 2 years. Teachers who stand for prolonged period at least 3-5 hours per day Positive Knee to wall test/ Silfverskiold Test. Pain mild to moderate If ankle dorsiflexion and plantarflexion ranges limited. Exclusion criteria:Patients with history of any recent traumatic lower limb injury History of Bursitis, fasciitis, ligamentous injury or tendinopathy Patients with symptoms of sensory loss in lower extremities History of diabetes Patients with visible foot deformities (Cavus, flat feet, hammer toe, hallux valgus) Patients with planter cones , foot warts , calluses Patient had history of surgery Not willing to participate in study

Intervention groups
Intervention Group A=baseline treatment and instrument-assisted soft-tissue mobilization, intervention group B=baseline treatment and post isometric relaxation of METS

Main outcome variables
Pain,Rom,functional status

General information

Reason for update

Acronym

IRCT registration information
IRCT registration number: **IRCT20250106064292N1**
Registration date: **2025-02-11, 1403/11/23**
Registration timing: **prospective**

Last update: **2025-02-11, 1403/11/23**
Update count: **0**

Registration date
2025-02-11, 1403/11/23

Registrant information

Name
Hania Mahmood
Name of organization / entity
The University of Faisalabad
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Pakistan
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Recruitment status
Recruitment complete

Funding source

Expected recruitment start date
2025-02-20, 1403/12/02
Expected recruitment end date
2025-06-20, 1404/03/30
Actual recruitment start date
empty
Actual recruitment end date
empty
Trial completion date
empty

Scientific title
Comparing the Effects of Instrumental Assisted Soft Tissue Mobilization and Muscle Energy Technique on Improving Range of Motion and Reducing Pain in Patients with Gastrocnemius and Soleus Muscle Tightness A Randomized Clinical Trail

Public title
Effects of Instrumental Assisted Soft Tissues Mobilization and MET(post isometric relaxation)on Gastrocnemius and Soleus muscle tightness
Purpose
Health service research
Inclusion/Exclusion criteria
Inclusion criteria:
Teaching Experience more than 2 years.Teachers who stand for prolonged period at least 3-5 hours per day .Positive Knee to wall test/ Silfverskiold Test.Pain mild to moderate.If ankle dorsiflexion and plantarflexion ranges limited. Both genders male and female.Age range 25-40 year. All participants must be currently employed as primary and secondary school teachers.
Exclusion criteria:
Patients with history of any recent traumatic lower limb injury.History of Bursitis, fasciitis, ligamentous injury or tendinopathy.Patients with symptoms of sensory loss in lower extremities .History of diabetes .Patients with visible foot deformities (Cavus, flat feet, hammer toe, hallux valgus) Patients with planter cones , foot warts , calluses.Patient had history of surgery.Not willing to participate in study
Age
From **25 years** old to **40 years** old
Gender
Both

Phase
N/A
Groups that have been masked

- Participant

Sample size
Target sample size: **24**
Randomization (investigator's opinion)
Randomized
Randomization description
Participants will be screened according to criteria and 24 Participants who met the inclusion criteria of study will be selected. Participants will be divided randomly into 2 treatment groups.12 each ,by using lottery method.each participants will be asked to choose between 2 pieces of paper,with group A and group B written on them participants will be allocated into treatment groups according to piece of paper they will choose.after completing 12 participants in one group,all other participants will be assigned to the other treatment group.so that both treatment groups have equal participants.
Blinding (investigator's opinion)
Single blinded
Blinding description
Each participants will be asked to choose between two pieces of paper,with group A and group B written on them participants will be allocated into treatment groups according to the piece of paper they choose.the patients will not know in which Group he/she is enrolled to avoid bias.
Placebo
Not used
Assignment
Other
Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee
Name of ethics committee
Ethics committee of The University of Faisalabad
Street address
West canal ,faisalabad
City
Faisalabad
Postal code
38000
Approval date
2025-01-06, 1403/10/17
Ethics committee reference number
TUF/Reg/SB/BASR/054

Health conditions studied

1

Description of health condition studied
Gastrocnemius and Soleus Muscles Tightness
ICD-10 code
M62.9
ICD-10 code description
Disorder of muscle, unspecified

Primary outcomes

1

Description
Gastrocnemius and Soleus Muscles pain
Timepoint
Gastrocnemius and soleus muscle tightness measured

three times.before the start of 1st session,after 3 weeks and third time after 6 weeks.

Method of measurement

Numeric Pain Rating Scale

2

Description

Gastrocnemius and soleus muscle range of motion

Timepoint

Gastrocnemius and soleus muscle tightness measured three times.before the start of 1st session,after 3 weeks and third time after 6 weeks.

Method of measurement

Universal goniometer

3

Description

Functional Scale

Timepoint

Gastrocnemius and soleus muscle tightness measured three times.before the start of 1st session,after 3 weeks and third time after 6 weeks.

Method of measurement

Lower Extremity Functional Scale

Secondary outcomes

empty

Intervention groups

1

Description

Intervention group: group A will receive instrument-assisted soft-tissue mobilization 2 sessions per week for 6 weeks.in one session 10 minutes apply Instrumental Assisted Soft Tissues Mobilization on Gastrocnemius and Soleus Muscles

Category

Treatment - Other

2

Description

Intervention group: group B will receive 2 sessions of post isometric relaxation techniques per week.this apply on Gastrocnemius and Soleus Muscles .in one session 3 repetitions will be performed

Category

Treatment - Other

Recruitment centers

1

Recruitment center

Name of recruitment center

Progressive Science Girls High School

Full name of responsible person

Dr.Hania Mahmood

Street address

225 Rb malkanwala faisalabad, satiyana road faisalabad.

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Recruitment center

Name of recruitment center

Islamic science foundation school

Full name of responsible person

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Recruitment center

Name of recruitment center

American Lyceum School

Full name of responsible person

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

The University Of faisalabad

Full name of responsible person

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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
All financial expenses are bear by myself

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
The University Of faisalabad

Full name of responsible person
Dr.Hania Mahmood

Position
Physiotherapist

Latest degree
Master

Other areas of specialty/work
Physiotherapy

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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
No - There is not 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