

Clinical Trial Protocol

Iranian Registry of Clinical Trials

11 Sep 2026

Comparative Effects of Proprioceptive Neuromuscular Facilitation and Muscle Energy Technique of Iliopsoas Muscle on Non-Specific Low Back Pain

Protocol summary

Study aim

Objectives of current study are to compare effects by Muscle Energy Technique and Proprioceptive Neuromuscular Facilitation on Non-specific Low Back Pain to reduce pain, gain range and overcome disability in female with iliopsoas tightness.

Design

Randomised, Parallel, single blinded, Randomised Control Trial.

Settings and conduct

Out patient Department of Physical therapy unit in Allied Hospital Faisalabad. Patient was blinded of two different treatment protocols given in separate groups.

Participants/Inclusion and exclusion criteria

Female, Aged 20-50, having, Non-specific low back pain for past one month with Thomas test positive having Numeric Pain Rating Scale > 3, Hip Extension Range of Motion >10, Oswestry Disability Index Mild disability (5-34) will be included in study. Patients having carcinomas/tumors, spinal trauma history, anatomical deformities, Open wounds, Severe Osteoporosis, Numeric Pain Rating Scale > 8, Hip Extension Range of Motion > 40 (Hypermobility), Oswestry Disability Index score > 34, Past surgical history of thoracic or lower spine, Infections, Acute Inflammations, Unbearable sharp pain at joints, Wear and tear to soft tissues were excluded from the study

Intervention groups

two intervention groups, Muscle Energy Technique and Proprioceptive Neuromuscular Facilitation receiving a baseline treatment of Hot pack and Transcutaneous Electrical Nerve Stimulation to Low Back along with their assigned treatment protocol. Muscle Energy Technique group was treated with Post isometric Relaxation technique on iliopsoas muscle to treat tightness of this muscle, bilaterally. Proprioceptive Neuromuscular Facilitation group received Hold-Relax D1 Flexion-

Extension pattern on Iliopsoas muscle bilaterally.

Main outcome variables

Pain, Hip extension Range of Motion bilaterally and Oswestry Disability Index

General information

Reason for update

Acronym

PNF & MET

IRCT registration information

IRCT registration number: **IRCT20240504061646N1**

Registration date: **2024-06-11, 1403/03/22**

Registration timing: **retrospective**

Last update: **2024-06-11, 1403/03/22**

Update count: **0**

Registration date

2024-06-11, 1403/03/22

Registrant information

Name

Rozina Naz

Name of organization / entity

The University of Faisalabad

Country

Pakistan

Phone

+92 335 7599550

Email address

rozinanaz93@gmail.com

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2024-02-12, 1402/11/23

Expected recruitment end date

2024-04-15, 1403/01/27
Actual recruitment start date
2024-02-15, 1402/11/26
Actual recruitment end date
2024-04-06, 1403/01/18
Trial completion date
2024-04-08, 1403/01/20

Scientific title
Comparative Effects of Proprioceptive Neuromuscular Facilitation and Muscle Energy Technique of Iliopsoas Muscle on Non-Specific Low Back Pain

Public title
Comparing Two Physical Therapy Techniques to Relieve Lower Back Pain

Purpose
Treatment

Inclusion/Exclusion criteria
Inclusion criteria:
Non-specific low back pain Have pain for past one month
Thomas test positive Numeric Pain Rating Scale > 3 Hip Extension Range of Motion >10 Oswestry Disability Index Mild disability (5-24)
Exclusion criteria:
• Carcinomas or tumors anywhere • Anatomical or chest wall deformities • Pregnant female • Severe Osteoporosis • Numeric Pain Rating Scale > 8 • Hip Extension Range of Motion> 40 (Hypermobility) • Oswestry Disability Index score > 24 • Past surgical history of thoracic or lower spine • Infections, Acute Inflammations • Unbearable sharp pain at joints when performing movements • Wear and tear to soft tissues or hematoma

Age
From **20 years** old to **50 years** old

Gender
Female

Phase
N/A

Groups that have been masked

- Participant

Sample size
Target sample size: **44**
Actual sample size reached: **40**

Randomization (investigator's opinion)
Randomized

Randomization description
Method: Consecutive Random Sampling Unit of Randomization: Individuals Randomization Strata: no stratification needed, population was homogenous, (only female patients, having non-specific Low Back Pain, in Physical Therapy Outpatient Department of Allied Hospital Faisalabad Further division in groups: Tool: online randomization Generator How the Random sequence was built: using Online randomization generator, a list was obtained with 44 sample size dividing equally into two groups, Muscle Energy Technique and Proprioceptive Neuromuscular Facilitation. according to list, very first patients received the assigned treatment (as written in the list) and so on.

Blinding (investigator's opinion)
Single blinded

Blinding description
Study was single blinded. participants did not know about two different treatments being given to two separate groups. it was quite easy to carry out and maintain single blindness, as no tool was used for different treatment groups. desired treatments were manual.

Placebo
Not used

Assignment
Parallel

Other design features

Secondary Ids
empty

Ethics committees
1
Ethics committee
Name of ethics committee
Ethical Committee of The University of Faisalabad
Street address
House no. 27E, madina street, near Heaven banglows, Muslim town 1, Faisalabad
City
Faisalabad
Postal code
38000
Approval date
2024-01-01, 1402/10/11
Ethics committee reference number
Ethical Committee of The University of Faisalabad

Health conditions studied
1
Description of health condition studied
Non-Specific Low Back Pain (having tightened Iliopsoas)
ICD-10 code
M.54.9
ICD-10 code description
Low Back Pain

Primary outcomes
1
Description
Primary Outcome Measure: Pain , Hip Extension Range.
Timepoint
At baseline (day 1st, Before treatment), Post- treatment day 1st, Post-treatment day 2nd, post-treatment day 3rd.
Method of measurement
Numeric Pain Rating Scale for pain level, a scale was used to measure pain. Goniometer to measure Range of motion of hip extension bilaterally.

2

Description

Level of Disability

Timepoint

pre-treatment day1st, Post-treatment day 3rd

Method of measurement

Oswestry Disability Index

Secondary outcomes

1

Description

Pain, Hip Extension Range

Timepoint

pre treatment day 1st, post treatment day 1st, post treatment day 2nd, post treatment day 3rd.

Method of measurement

Numeric Pain Rating Scale and Goniometer

Intervention groups

1

Description

Intervention group: Muscle Energy Technique (post-isometric Relaxation)

Category

Rehabilitation

2

Description

Intervention group: Proprioceptive Neuromuscular Facilitation (hold-relax D1 Flexion-Extension Pattern)

Category

Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center

Allied Hospital Faisalabad

Full name of responsible person

Dr. Sobia Nawaz

Street address

Dr. Tusi Road, Allied Hospital, Faisalabad,

City

Faisalabad

Postal code

38000

Phone

+92 321 7665101

Email

sobiaaliawan@gmail.com

Web page address

<https://ahfsd.pk/>

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

The University of Faisalabad

Full name of responsible person

Rozina Naz

Street address

House no. 27E, madina street, near Heaven banglows, Muslim town 1, Faisalabad

City

Faisalabad

Postal code

38000

Phone

+92 335 7599550

Email

rozinanaz93@gmail.com

Web page address

<https://tuf.edu.pk/>

Grant name

Grant code / Reference number

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

Yes

Title of funding source

The University of Faisalabad

Proportion provided by this source

1

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

The University of Faisalabad

Full name of responsible person

Rozina Naz

Position

Post Graduate Resident (PGR)

Latest degree

Master

Other areas of specialty/work

Physiotherapy

Street address

House no. 27E, madina street, near Heaven banglows, Muslim town 1, Faisalabad

City

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Province

Punjab

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Person responsible for scientific inquiries

Contact

Name of organization / entity

The University of Faisalabad

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Person responsible for updating data

Contact

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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

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

Not applicable

Analytic Code

Not applicable

Data Dictionary

Not applicable