Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 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
Fasilabad
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
Faisalabad
Province
Punjab
Postal code

38000

Phone
+92 335 7599550

Email
rozinanaz93@gmail.com

Person responsible for scientific 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
Faisalabad

Province
Punjab

Postal code
38000

Phone
+92 335 7599550

Email
rozinanaz93@gmail.com

Person responsible for updating data

Contact

Name of organization / entity
The University of Faisalabad

Full name of responsible person
Rozina Naz

Position
Post Graduate Resident

Latest degree
Master

Other areas of specialty/work
Physiotherapy

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

City
Faisalabad

Province
Punjab

Postal code
38000

Phone
+92 335 7599550

Email
rozinanaz93@gmail.com

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