

Clinical Trial Protocol

Iranian Registry of Clinical Trials

10 Jun 2026

Comparative Effects of Muscle energy technique and Bowen technique on hamstring muscle tightness in Chronic Low Back Pain patients

Protocol summary

Study aim

To compare the effects of Muscle energy technique and Bowen technique on hamstring tightness in chronic low back pain patients

Design

Pragmatic, community based, parallel group, double blind, randomized controlled trial

Settings and conduct

MADINA TEACHING HOSPITAL FAISALABAD

Participants/Inclusion and exclusion criteria

Inclusion Criteria • LBP symptoms from more than 3 months • Both males and females • Patients complaining of pain of ≥ 5 on NPRS • Age between 25 to 50 years • A 20° to 50° loss of active knee extension with hip flexion at 90° • Study participants who are willing to take part • A full passive range of knee extension
Exclusion Criteria • Patients, who have undergone back, pelvis, hip, or knee surgery within the preceding three months, as well as those with any history of lower limb fractures. • Any radiating pain or prolapsed intervertebral disc-related neurological symptoms • Patients with co-morbidities other than Chronic Low Back Pain and Hamstrings tightness
Pregnancy.

Intervention groups

Total 62 participants having chronic low back pain due to hamstring tightness between 25-50 years will be recruited into the study by convenient sampling. After getting ethical approval from the University of Faisalabad, all the participants will sign consent form and will be added into 2 groups by lottery method. The baseline treatment along with group specific treatment will be given to subjects. The numerical pain rating scale for pain, Active knee extension test for hamstring flexibility and Oswestry low back disability index questionnaire for disability. The treatment will be given for three times per week for four weeks and 12 sessions will be given.

Main outcome variables

ACTIVE KNEE EXTENSION TEST ,NPRS ,OSWESTRY LOW

BACK DISABILITY QUESTIONNAIRE

General information

Reason for update

Acronym

METS ,CLBP,NPRS AKET,ODI

IRCT registration information

IRCT registration number: **IRCT20230426057994N1**

Registration date: **2023-08-07, 1402/05/16**

Registration timing: **registered_while_recruiting**

Last update: **2023-08-07, 1402/05/16**

Update count: **0**

Registration date

2023-08-07, 1402/05/16

Registrant information

Name

Kishwar Batool

Name of organization / entity

Country

Pakistan

Phone

+92 41 5380452

Email address

kishwarbatool1@gmail.com

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2023-03-02, 1401/12/11

Expected recruitment end date

2023-07-18, 1402/04/27

Actual recruitment start date

2023-08-05, 1402/05/14

Actual recruitment end date

2023-12-01, 1402/09/10

Trial completion date

2023-12-18, 1402/09/27

Scientific title

Comparative Effects of Muscle energy technique and Bowen technique on hamstring muscle tightness in Chronic Low Back Pain patients

Public title

METS vs Bowen technique in hamstring muscle tightness

Purpose

Education/Guidance

Inclusion/Exclusion criteria

Inclusion criteria:

Low back pain more than 12 weeks 20-50 degree Active knee loss Patients willing to participate Full passive range of motion of knee extension Patient complaining of pain >5 on NPRS Both male and females

Exclusion criteria:

Patients with any history of lower limb injury in past three months Neurological symptoms involving prolapsed intervertebral disc or radiating pain Any recent abdominal surgery Pregnancy

Age

From **25 years** old to **50 years** old

Gender

Both

Phase

N/A

Groups that have been masked

- Participant
- Data analyser

Sample size

Target sample size: **31**

More than 1 sample in each individual

Number of samples in each individual: **3**
baseline sample, 2nd week and 4th week

Actual sample size reached: **31**

More than 1 sample in each individual

Actual sample size in each individual: **3**
baseline, 2nd week and 4th week

Randomization (investigator's opinion)

Randomized

Randomization description

Randomization through sealed envelope

Blinding (investigator's opinion)

Double blinded

Blinding description

Participants and data analyzer

Placebo

Not used

Assignment

Parallel

Other design features

purposive sampling technique

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

ETHICS COMMITTEE OF THE UNIVERSITY OF FAISALABAD

Street address

NO.P-11,ZEENAT BLOCK;MUSLIM TOWN 1;FAISALABAD ,PAKISTAN

City

Faisalabad

Postal code

14496-14535

Approval date

2023-02-03, 1401/11/14

Ethics committee reference number

TUF/Addl Reg/SB/358

Health conditions studied

1

Description of health condition studied

Chronic low back pain with hamstring tightness and comparative effects of Muscle energy technique and Bowen technique

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description

NUMERICAL PAIN RATING SCALE

Timepoint

3 DAYS IN WEEK FOR 4 WEEKS

Method of measurement

1-10 POINTS ON PAPER

2

Description

ACTIVE KNEE EXTENSION TEST

Timepoint

3 DAYS IN WEEK FOR 4 WEEKS

Method of measurement

GONIOMETER

Secondary outcomes

1

Description

OSWESTRY LOW BACK DISABILITY INDEX

Timepoint

3 TIMES IN A WEEK

Method of measurement

QUESTIONNAIRE

Intervention groups

1

Description

Interventional Group A (Bowen Technique) 1- First of all, hot pack was applied at the Hamstring muscle and Tens (high frequency 100 Hz pulse duration 60s 10 minutes) was applied at lower back along both were considered as a routine physical therapy. 2-The initial step of the Bowen treatment involved placing the thumb on the surface of the specific muscle.3)The thumb was applied with gentle pressure along the muscle's lateral edge.4- As the thumb was gradually pressed inwards towards the center, the muscles exhibited various responses, such as being pulled, plopped, or demonstrating other observable reactions.5-Manipulate the skin and engage the muscle through controlled movements.6 -The sequence of treatment began with the thumbs and progressed to the fingers.7-Each session of treatment lasted for a duration of 30 minutes .

Category

Treatment - Other

2

Description

Intervention group B: (Muscle Energy Technique) 1-First of all, hot pack was applied at the Hamstring muscle and Tens (high frequency 100 Hz pulse duration 60s 10 minutes) was applied at lower back along with the routine physical therapy. 2-In this technique, the initial step involved extending the subject's knee until they reported experiencing discomfort in the hamstring.3- Following that, a five-second period of moderate isometric contraction of the hamstring muscle was applied. 4-A three-second grace time was allowed. 5-A total of four contractions were performed using this technique. 6-Each session of treatment lasted 30 minutes.

Category

Treatment - Other

Recruitment centers

1

Recruitment center

Name of recruitment center

MADINA TEACHING HOSPITAL FAISALABAD, PUNJAB, PAKISTAN

Full name of responsible person

DR MUNIR

Street address

Madina teaching hospital sargodha road faisalabad, punjab, pakistan

City

Faisalabad

Postal code

092

Phone

+92 41 8869861

Email

ms.mth@mth.org.pk

Web page address

https://mth.org.pk/

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

The UNIVERSITY OF FAISALABAD

Full name of responsible person

Kishwar Batool

Street address

Sargodha road, Faisalabad

City

Faisalabad

Postal code

38000

Phone

+92 333 6526682

Email

kishwarbatool1@gmail.com

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

100

Public or private sector

Private

Domestic or foreign origin

Foreign

Category of foreign source of funding

Sponsor: country of origin

Country of origin

PK

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

MARIAM MEHMOOD

Position

Senior Lecturer/ Clinical Coordinator

Latest degree

Master

Other areas of specialty/work

Physiotherapy

Street address

Madina teaching hospital sargodha road faisalabad

City

Faisalabad

Province

Punjab
Postal code
38000
Phone
+92 301 4223896
Email
mariam.mehmood@tuf.edu.pk

Person responsible for scientific inquiries

Contact

Name of organization / entity
The University of Faisalabad
Full name of responsible person
Mariam Mehmood
Position
Senior Lecturer
Latest degree
Master
Other areas of specialty/work
Physiotherapy
Street address
Madina teaching hospital Sargodha road Faisalabad
City
Faisalabad
Province
Punjab
Postal code
041
Phone
+92 301 4223896
Email
mariam.mehmood@tuf.edu.pk

Person responsible for updating data

Contact

Name of organization / entity
Madina Teaching Hospital
Full name of responsible person
Kishwar Batool
Position
Physiotherapist
Latest degree
Master
Other areas of specialty/work
Physiotherapy

Street address
Sargodha road
City
Faisalabad
Province
Punjab
Postal code
38000
Phone
+92 333 6526682
Email
kishwarbatool1@gmail.com

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

For concealing participants identity

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

No - There is not a plan to make this available

Clinical Study Report

Not applicable

Analytic Code

No - There is not a plan to make this available

Data Dictionary

Not applicable

Title and more details about the data/document

COMPARATIVE EFFECTS OF MUSCLE ENERGY TECHNIQUE AND BOWEN TECHNIQUE ON HAMSTRINGS MUSCLE TIGHTNESS IN CHRONIC LOW BACK PAIN PATIENTS

When the data will become available and for how long

starting from April 2023

To whom data/document is available

only available for people working in academic institutions

Under which criteria data/document could be used

Data will be available to researchers with valid affiliation to any institute.

From where data/document is obtainable

kishwarbatool1@gmail.com

What processes are involved for a request to access data/document

Inquirer must provide cover letter stating their reason to obtain data and a brief outlook of their research.

Comments