Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 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 QUESTIONNARE

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 invertebral 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 envelop
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 FOE4 WEEKS
Method of measurement
GONIOMETER

Secondary outcomes

1

Description
OSWESTRY LOW BACK DISABILITY INDEX
Timepoint
3 TIMES IN AWEEK
Method of measurement
QUESTIONNARE

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

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092

Phone
+92 41 8869861

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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

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Province

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Person responsible for scientific inquiries

Contact
Name of organization / entity
The University of Faisalabad
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Mariam Mehmood
Position
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Other areas of specialty/work
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Person responsible for updating data

Contact
Name of organization / entity
Madina Teaching HospitaL
Full name of responsible person
Kishwar Batool
Position
Physiotherapist
Latest degree
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Other areas of specialty/work
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Faisalabad
Province
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Phone
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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