Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 2026

Comparison of Mulligan Bent Leg Raise versus Mulligan Traction Straight Leg Raise on pain intensity and hamstring flexibility in patients with non-specific chronic low back pain

Protocol summary

Study aim
To compare Mulligan Bent Leg Raise versus Mulligan Traction Straight Leg Raise on pain intensity and hamstring flexibility in patients with non-specific chronic low back pain

Design
Two-arm, parallel-group, randomized trial with blinded postoperative care and outcome assessment

Settings and conduct
The study was conducted at Health Care Physiotherapy, Sports, Spine& Rehabilitation Center, Faisalabad, 116 Patients were randomly allocated into groups, Group A received Mulligan Traction Straight Leg Raise (TSLR) while Group B patients received Mulligan Bent Leg Raised Technique (BLR).

Participants/Inclusion and exclusion criteria
Inclusion criteria: Age between 30-50 years, Both gender (male & f0emale, Visual Analog Scale Pain Score 0-7 (Mild Pain 0-4, Moderate Pain 5-7), Non-specific chronic low back pain involving segmental hypomobility and gross limitation of lumber mobility and restriction of SLR, due to discomfort & pain, 15˚ more as compared to the non-involved side. Exclusion criteria:Visual Analog Scale Pain Score 8-10 (Unbearable Pain), Patient already taking treatment for last 6 months, any neurological disease, any physical disability, Pregnancy, history of any surgical procedure involving back or lower extremity.

Intervention groups
Intervention group A: Traction Straight Leg Raise (TSLR) The Mulligan traction straight leg raise technique was used therapeutically to decrease pain and range of straight leg raise when it was limited due to tightness in hamstrings or dysfunction in the lower back. Group B: Bent Leg Raised Technique (BLR) The Mulligan bent leg raise method was used for improving the range of straight leg raise in subjects with nonspecific chronic low backache in order to improve hamstring flexibility in individuals with hamstrings tightness.

Main outcome variables
Pain; range of motion

General information

Reason for update

Acronym

IRCT registration information
IRCT registration number: **IRCT20200221046567N4**
Registration date: **2021-05-17, 1400/02/27**
Registration timing: **retrospective**

Last update: **2021-05-17, 1400/02/27**
Update count: **0**

Registration date
2021-05-17, 1400/02/27

Registrant information

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Muhammad Kashif

Name of organization / entity
Riphah International University

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Pakistan

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Recruitment status
Recruitment complete

Funding source

Expected recruitment start date
2019-03-01, 1397/12/10

Expected recruitment end date
2019-10-01, 1398/07/09

Actual recruitment start date

2019-03-01, 1397/12/10

Actual recruitment end date

2019-10-01, 1398/07/09

Trial completion date

2019-10-01, 1398/07/09

Scientific title

Comparison of Mulligan Bent Leg Raise versus Mulligan Traction Straight Leg Raise on pain intensity and hamstring flexibility in patients with non-specific chronic low back pain

Public title

Comparison of Mulligan Bent Leg Raise versus Mulligan Traction Straight Leg Raise on pain intensity and hamstring flexibility in patients with non-specific chronic low back pain

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria:

Age between 30-50 Years Both Gender Male & Female Visual Analog Scale Pain Score 0-7 (Mild Pain 0-4, Moderate Pain 5-7) Non-specific chronic low backache involving segmental hypomobility and gross limitation of lumber mobility Restriction of SLR, due to discomfort & pain, 15˚ more as compared to the non-involved side.

Exclusion criteria:

Visual Analog Scale Pain Score 8-10 (Unbearable Pain) The patient already taking treatment for the last 6 months. any neurological disease Pregnancy History of any surgical procedure involving back or lower extremity

Age

From **30 years** old to **50 years** old

Gender

Both

Phase

N/A

Groups that have been masked

- Outcome assessor

Sample size

Target sample size: **116**

Actual sample size reached: **116**

Randomization (investigator's opinion)

Randomized

Randomization description

The randomization was done bases on the following steps Step-1: First the population of the study was exactly defined though inclusion criteria, complete list of people included in the population were made. The population of the study was 1,000 each person was labeled from one to one thousand. Step-2: The sample size of the study was 116 people calculated based on previous study. Sample of 116 people were selected using excel function RAND. The formula for this was "=RAND ()*1000" 116 random numbers were generated. Step-3: In this study researcher framed two groups, one was experimental group and other was control group, in each group 58 people were decided to include. To select 58 people for each group excel function RAND was used. First 116 people were labeled from one to one hundred and sixteen.

Blinding (investigator's opinion)

Single blinded

Blinding description

The assessor was kept blind about either the patient belonged to the treatment group or the control group. A second physical therapist assessed pain and hamstring flexibility.

Placebo

Not used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Institutional Review Board of University Institute of Physical Therapy, The University of Lahore

Street address

Defense Road

City

Lahore

Postal code

4200

Approval date

2019-02-20, 1397/12/01

Ethics committee reference number

IRB-UOL-FAHS/437/2019

Health conditions studied

1

Description of health condition studied

Low back pain

ICD-10 code

M54.56

ICD-10 code description

Low back pain, lumbar region

Primary outcomes

1

Description

Pain

Timepoint

before intervention and 2, 4 , 6 weeks after intervention

Method of measurement

Visual Analogue Scale

2

Description

Range of Motion

Timepoint

before intervention and 2, 4 , 6 weeks after intervention

Method of measurement

Universal Goniometer

Secondary outcomes

empty

Intervention groups

1

Description

Intervention group 1: The Mulligan traction straight leg raise technique is used therapeutically to decrease pain and range of straight leg raise when it is limited due to tightness in hamstrings or dysfunction in lower back. Moist heating pads were applied on lower back & hamstrings muscles for 10 minutes before each treatment session. Bridging and flexion or extension biased exercises were also performed as baseline treatment.All patients received 06 treatment sessions in total over a three-week period.

Category

Treatment - Other

2

Description

Intervention group 2: The Mulligan traction straight leg raise technique is used therapeutically to decrease pain and range of straight leg raise when it is limited due to tightness in hamstrings or dysfunction in lower back. Moist heating pads were applied on lower back & hamstrings muscles for 10 minutes before each treatment session. Bridging and flexion or extension biased exercises were also performed as baseline treatment. All patients received 06 treatment sessions in total over a three-week period.

Category

Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center

Health Care Physiotherapy, Sports, Spine & Rehabilitation Center, Faisalabad, Punjab, Pakistan.

Full name of responsible person

Hafiz Muhammad Junaid Hassan

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

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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?

Yes

Title of funding source

University of Lahore

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

Academic

Person responsible for general inquiries

Contact

Name of organization / entity

University of Lahore

Full name of responsible person

HAFIZ MUHAMMAD JUNAID HASSAN

Position

Postgraduate

Latest degree

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Sharing plan

Deidentified Individual Participant Data Set (IPD)
Yes - There is a plan to make this available
Study Protocol
Yes - There is 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
Yes - There is a plan to make this available
Clinical Study Report
Yes - There is 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
Title and more details about the data/document
IPD collected for the primary outcome measure only
When the data will become available and for how long
After the publication of the study.
To whom data/document is available
academic institutions and researchers
Under which criteria data/document could be used
academic institutions and researchers
From where data/document is obtainable
via email or telephonic contact with investigators
What processes are involved for a request to access data/document
on email request, data will be provided within 15 days.
Comments