

# Clinical Trial Protocol

## Iranian Registry of Clinical Trials

10 Jun 2026

### Comparison of Mulligan Bent Leg Raise Technique versus Static Stretching to Increase the Flexibility of Hamstring

#### Protocol summary

2020-12-07, 1399/09/17

#### Study aim

To compare the effectiveness static stretch technique and bent leg raise technique to increase the flexibility of hamstrings.

#### Design

It was an experimental Randomized Clinical Trial, pretest/post-test study.

#### Settings and conduct

study was conducted at Syed Medical Complex, Sialkot Pakistan.

#### Participants/Inclusion and exclusion criteria

Inclusion criteria were 20 to 45 years of age, both males and females, failing to fully extend knee by 25 degree or more and having pain during walk was included. Exclusion criteria were subjects having hamstring tightness but with recent trauma, surgery or any signs of PIVD.

#### Intervention groups

Subjects were distributed to two groups with use of Coin Toss Method of randomization. Group classification were such as Group 1, Bent Leg Raise Groups, Group 2, and Static Stretch Group.

#### Main outcome variables

Back-Saver Sit and Reach Test

#### General information

##### Reason for update

##### Acronym

Mulligan BLR

##### IRCT registration information

IRCT registration number: **IRCT20201031049207N1**

Registration date: **2020-12-07, 1399/09/17**

Registration timing: **retrospective**

Last update: **2020-12-07, 1399/09/17**

Update count: **0**

##### Registration date

#### Registrant information

##### Name

Wajida Perveen

##### Name of organization / entity

Sialkot college of Physical Therapy, Amin Welfare &Teaching Hospital, defence Road, Sialkot Pakistan

##### Country

Pakistan

##### Phone

+92 52 3250520

##### Email address

drwajidaperveenpt@scptamc.com

#### Recruitment status

##### Recruitment complete

#### Funding source

#### Expected recruitment start date

2017-04-01, 1396/01/12

#### Expected recruitment end date

2017-09-30, 1396/07/08

#### Actual recruitment start date

2017-04-01, 1396/01/12

#### Actual recruitment end date

2017-09-30, 1396/07/08

#### Trial completion date

2017-09-30, 1396/07/08

#### Scientific title

Comparison of Mulligan Bent Leg Raise Technique versus Static Stretching to Increase the Flexibility of Hamstring

#### Public title

Mulligan BLRT versus Static Stretching for Hamstring

#### Purpose

Treatment

#### Inclusion/Exclusion criteria

##### Inclusion criteria:

Unable to fully extend the knee joint Difficulty in raising the foot dorsally Pain in Walking patients with age 20-45

years

**Exclusion criteria:**

History of trauma Presence of red Flag signs Any surgery Prolapsed Intervertebral Disc patients below 20 years and above 45 years of age any neurological deficits.

**Age**

From **20 years** old to **45 years** old

**Gender**

Both

**Phase**

N/A

**Groups that have been masked**

- Participant

**Sample size**

Target sample size: **75**

Actual sample size reached: **75**

**Randomization (investigator's opinion)**

Randomized

**Randomization description**

Subjects were distributed to two groups with use of Coin Toss Method of randomization. Group classification were such as Group 1, Bent Leg Raise Groups, Group 2, and Static Stretch Group.

**Blinding (investigator's opinion)**

Single blinded

**Blinding description**

Allocation of groups was concealed by having the procedure done by a person not linked with any of the apparatus of study, patients.

**Placebo**

Not used

**Assignment**

Parallel

**Other design features**

Subjects in two groups were blinded from other group options, however, were instructed to report any adverse effects during trial.

**Secondary Ids**

empty

**Ethics committees**

1

**Ethics committee**

**Name of ethics committee**

SCPT-IRB

**Street address**

Umer Street

**City**

Sialkot

**Postal code**

51310

**Approval date**

2017-03-27, 1396/01/07

**Ethics committee reference number**

IRB-SCPT-DPT-107-2017

**Health conditions studied**

1

**Description of health condition studied**

Today's life style involving increased and prolonged use of computers/ office work have lead the population to decreased flexibility in terms of muscle and joint stiffness. Among these problems of musculoskeletal system, decreased flexibility of hamstrings is significant; which can result in many problems.

**ICD-10 code**

**ICD-10 code description**

**Primary outcomes**

1

**Description**

Back-Saver Sit and Reach Test was used as outcome measure.

**Timepoint**

One Pre-Treatment and three Post Treatment scores were taken.

**Method of measurement**

for measurement Shoes should be removed first. patient Sits on the floor with one leg out straight and the other leg with the knee bent and its foot flat on the floor (see image). The outstretched foot is placed flush against the measurement box. With hands placed on top of each other and palms facing down, the subject reaches slowly forward along the measuring line as far as possible. After three practice reaches, the fourth reach is held for at least one second while the distance is recorded

**Secondary outcomes**

empty

**Intervention groups**

1

**Description**

Intervention group-A: Bent Leg Raise Mulligan Technique Group. The BLR technique consists of three repetitions of pain-free, 5 sec, isometric contraction of the hamstrings, performed in five progressively greater positions of hip flexion.

**Category**

Treatment - Other

2

**Description**

Intervention group -B: static stretching technique group. Static stretches is used as part of cool-down routine to help prevent injury. static stretching is also used as a maintenance stretching program to reduce your risk of injury.

**Category**

Treatment - Other

## Recruitment centers

### 1

#### Recruitment center

**Name of recruitment center**

Syed Medical Complex

**Full name of responsible person**

Riaz Hashmi

**Street address**

commissioner Road

**City**

Sialkot

**Postal code**

51310

**Phone**

+92 52 4598056

**Email**

riazhashmiphysio@gmail.com

## Sponsors / Funding sources

### 1

#### Sponsor

**Name of organization / entity**

Syed Medical Complex

**Full name of responsible person**

Riaz Hashmi

**Street address**

Commissioner Road

**City**

Sialkot

**Postal code**

51310

**Phone**

+92 52 4598056

**Email**

riazhashmiphysio@gmail.com

**Grant name**

Nil

**Grant code / Reference number**

Nil

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

No

**Title of funding source**

Nil

**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**

Other

## Person responsible for general inquiries

#### Contact

**Name of organization / entity**

Sialkot College of Physical Therapy

**Full name of responsible person**

Wajida Perveen

**Position**

Assistant Professor

**Latest degree**

Master

**Other areas of specialty/work**

Physiotherapy

**Street address**

Umer Town

**City**

Sialkot

**Province**

Punjab

**Postal code**

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**Email**

wjda\_noor@yahoo.com

## Person responsible for scientific inquiries

#### Contact

**Name of organization / entity**

Syed Medical Complex

**Full name of responsible person**

Riaz Hashmi

**Position**

In charge Physiptherapy Department

**Latest degree**

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**Other areas of specialty/work**

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## Person responsible for updating data

#### Contact

**Name of organization / entity**

Sialkot College of Physical Therapy

**Full name of responsible person**

Wajida Perveen

**Position**

Assistant Professor

**Latest degree**

Master

**Other areas of specialty/work**

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**Sharing plan****Deidentified Individual Participant Data Set (IPD)**

Yes - There is a plan to make this available

**Study Protocol**

No - There is not a plan to make this available

**Statistical Analysis Plan**

No - There is not 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**

No - There is not a plan to make this available

**Data Dictionary**

No - There is not a plan to make this available

**Title and more details about the data/document**

Comparison of Mulligan Bent Leg Raise Technique versus Static Stretching to Increase the Flexibility of Hamstring

**When the data will become available and for how long**

Data will be available for one year after Publication of this study

**To whom data/document is available**

Principal Investigator Riaz Hashmi

**Under which criteria data/document could be used**

only for citation purpose

**From where data/document is obtainable**

By sending a request to the Principal Investigator only.

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

formal email request.

**Comments**