

Clinical Trial Protocol

Iranian Registry of Clinical Trials

11 Sep 2026

Compare the effectiveness of Mulligan (Natural Apophyseal Glides & Natural Sustained Apophyseal Glides) and McKenzie (self-stretching) on improving the pain and functional ability in patients with Chronic Neck pain.

Protocol summary

Study aim

To determine the Comparison of the effectiveness of Mulligan (NAGs & SNAGs) and McKenzie (self-stretching) on improving pain and functional ability in patients with Chronic Neck pain.

Design

A concealed, experimental, blinded, randomized clinical trial with a control group design of 26 patients enrolled between September 2022 and October 2022 and followed for 2 months

Settings and conduct

This trial will be conducted at the Physical Therapy & Rehabilitation Ward of Chaudhary Akram Teaching Hospital. This Trial is assessor blind trial in which the outcome assessor was unaware of the treatment protocol

Participants/Inclusion and exclusion criteria

The ages of patients were around 20-55 years old. The entire patient has mechanical neck pain and pain due to postural abnormality. All the patients that were Included in the study should be based on Biondi questionnaire. All the patients should have a greater than 20% neck disability index score and the score of Numeric pain rating will be more than 2-3 points. All participants were excluded from this study if they had any hearing problems, vision disorders, smell issues, or any kind of taste-related problem. All participants were having systematic problems, like tension headaches, Rheumatic arthritis.

Intervention groups

Group A: In group A we applied the mulligan technique of manual therapy treatment that included the Natural Apophyseal Glides & Natural Sustained Apophyseal Glides in sitting Group B: The second group of 13 patients with chronic neck pain was given the following treatment strategies in which we applied the Mackenzie

exercises in seven motions 4 movements of neck extension, 2 movements in lateral flexion and rotation, and one movement in flexion direction.

Main outcome variables

Pain will be measured by a Numeric pain rating scale and the Functional ability of the neck will be measured by the Neck disability scale

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20220414054537N4**

Registration date: **2022-10-16, 1401/07/24**

Registration timing: **retrospective**

Last update: **2022-10-16, 1401/07/24**

Update count: **0**

Registration date

2022-10-16, 1401/07/24

Registrant information

Name

Faisal Ghafoor

Name of organization / entity

The Superior University

Country

Pakistan

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Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2022-09-01, 1401/06/10

Expected recruitment end date

2022-09-05, 1401/06/14

Actual recruitment start date

2022-09-02, 1401/06/11

Actual recruitment end date

2022-09-07, 1401/06/16

Trial completion date

2022-10-30, 1401/08/08

Scientific title

Compare the effectiveness of Mulligan (Natural Apophyseal Glides & Natural Sustained Apophyseal Glides) and McKenzie (self-stretching) on improving the pain and functional ability in patients with Chronic Neck pain.

Public title

Effect of mulligan (Natural Apophyseal Glides & Natural Sustained Apophyseal Glides) and Mckenzie (self Stretching) on improving the pain and functional ability in patients with chronic neck pain

Purpose

Treatment

Inclusion/Exclusion criteria**Inclusion criteria:**

. The ages of the patients were around 20-55 years old
The entire patient having the mechanical neck pain and pain due abnormal posture of neck like forward head posture were included in this study All the patients that were Included for the study should based on Biondi questionnaire All the patients should have greater than 20% neck disability index score and the score of Numeric pain rating will be more than 2-3 points

Exclusion criteria:

All participants were excluded from this study if they had any hearing problem, vision disorder, smell issues or any kind of taste related problem All participant those were having any systematic problems, like tension headache, Rheumatic arthritis, several viral and bacterial infection, Inflammatory disease, migraine, any neurological problem and fracture in neck region were excluded from this study

Age

From **20 years** old to **55 years** old

Gender

Both

Phase

1

Groups that have been masked

- Outcome assessor

Sample size

Target sample size: **26**

Actual sample size reached: **26**

Randomization (investigator's opinion)

Randomized

Randomization description

Participants who fulfilled the inclusion criteria were selected convenient sampling technique and were then allocated randomly to Group A and Group B using the

lottery method. In this method the selected total population, the divided into two groups. each member of the population has an equal chance to be get selected for any group A or B. that was selected for This distribution process is hidden between participants and researchers. This was done by a research assistant who did not participate in any further research

Blinding (investigator's opinion)

Single blinded

Blinding description

This study was double-blinded. The outcome assessor who was blinded to the therapy group was recruited to take readings at pre-treatment and post-treatment values. And the patients were also blinded as they didn't know they all have the same disorder and different techniques had been given to these patients.

Placebo

Not used

Assignment

Parallel

Other design features**Secondary Ids**

empty

Ethics committees**1****Ethics committee****Name of ethics committee**

Committe Azra Naheed Centre for Research & Development the Superior University ,Lahore

Street address

Main riwind road 17 km ,Lahore

City

Lahore

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54000

Approval date

2022-08-28, 1401/06/06

Ethics committee reference number

ref/cma/id456/8/28/22

Health conditions studied**1****Description of health condition studied**

Chronic neck pain

ICD-10 code

M54. 2

ICD-10 code description

Neck Pain

Primary outcomes**1****Description**

Neck Pain

Timepoint

Before Intervention and after 8 weeks

Method of measurement

Numeric Pain Rating Scale

2**Description**

Functional Ability

Timepoint

Before and after 8 weeks

Method of measurement

Neck Disability Scale

Secondary outcomes

empty

Intervention groups**1****Description**

Intervention group: We applied the mulligan technique of manual therapy treatment that included the Natural apophyseal glides, Sustained natural apophyseal glides in the sitting position of the patient. Natural apophyseal glide movements are the oscillatory Movement and these mobilizations tend to be provided in the anterior-cranially direction of the selected cervical joint. The movement of the force is in a parallel direction toward the restricted cervical facet joints. We applied 3 sets of 6 repetitions each and the intensity of dosage was maintained in 2-3 hertz. The procedure of the movement as per the following instruction of the mulligan in which we applied the sustained glide and asked the patient to move their neck in several directions like Flexion, Extension, Side flexion, and rotation and this movement was maintained in pain-free direction and range

Category

Rehabilitation

2**Description**

Intervention group: The second group of 13 patients with chronic neck pain was given the following treatment strategies which we applied the Mackenzie exercises in seven motions 4 movements of neck extension, 2 movements in lateral flexion and rotation, and one movement in flexion direction. The pre and post value was monitored by performing the Mackenzie technique in the patient and its effect on the body was also monitored as well, especially in the soft tissue area of the neck body. Both sides of the body were measured and compared with each other. The time to take the new reading is 10 seconds. the Body skin of the neck area was pushed by 0.18 N force and after the pre-load, a force of 0.58N was applied to the neck skin at the interval of 15 ms. Thereafter, the vibration on the skin surface was triggered by Myoton PRO (Myoton AS, Estonia), a muscle tone measurer, which was used to examine the biomechanic indices

Category

Rehabilitation

Recruitment centers**1****Recruitment center****Name of recruitment center**

Chaudhary Akram Teaching Hospital

Full name of responsible person

Gulnaz Yamin

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Sponsors / Funding sources**1****Sponsor****Name of organization / entity**

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Grant name**Grant code / Reference number****Is the source of funding the same sponsor organization/entity?**

No

Title of funding source

Chaudhary Akram Teaching Hospital

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**

Person responsible for general inquiries

Contact

Name of organization / entity

Committee Azra Naheed Centre for Research & Development the Superior University ,Lahore

Full name of responsible person

Dr Zohaib Shahid

Position

Assistant Professor

Latest degree

Ph.D.

Other areas of specialty/work

Rehabilitation management

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Person responsible for updating data

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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

Yes - There is a plan to make this available

Statistical Analysis Plan

Yes - There is 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

Yes - There is a plan to make this available

Data Dictionary

Yes - There is a plan to make this available

Title and more details about the data/document

Compare the effectiveness of Mulligan Natural Apophyseal Glides & Sustained Natural apophyseal Glides and McKenzie (self-stretching) on improving pain and functional ability in patients with Chronic Neck pain. The data document related to the research will be available after the completion of the trial. These document will be available like , Patient performa, Data analysis , spss file , result for the further studies and better patient care

When the data will become available and for how long

When the trial has been completed after the end october 2022.The data will be available for the future use and after the completion of the trial when it get published approximately after the 3 weeks in the end of the november 2022.The summary will be available after the article get published

To whom data/document is available

It will be available to all teaching institute and hospital for the better cure of the patient and more over it will be available for the researcher as well

Under which criteria data/document could be used

Only for the research and for the benefits of the public

From where data/document is obtainable

The Documents will be available on the following details
email.: rehanfaisal68@gmail.com Contact no:
+923334816348 Postal address: Department of Physical
Therapy Chaudary Akram Teaching Hospital,The Superior
Univeristy Lahore

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

Application will sent to the email on request
rehanfaisal68@gmail.com

Comments