

# Clinical Trial Protocol

## Iranian Registry of Clinical Trials

09 Jun 2026

### Comparative effectiveness of Maitland versus Mulligan mobilization technique for post-surgical mobility complications of distal radius fracture

#### Protocol summary

##### Study aim

To compare the effects of Maitland and Mulligan mobilization for post-surgical mobility complications of distal radius fracture and change the quality of life of participants after the treatment and reduce pain and increase functional mobility

##### Design

A single blinded randomized controlled trial having lottery method and simple convenient sampling

##### Settings and conduct

Patients were taken from Madinah Teaching Hospital (MTH) Faisalabad, District Headquarter Hospital (DHQ) Faisalabad and Allied Hospital Faisalabad. Group A patients received Maitland mobilization technique and Group B patients received Mulligan (MWM) technique while moist heat was given to both of the groups as a baseline treatment.

##### Participants/Inclusion and exclusion criteria

Subjects having distal radius fracture and who are gone through the process of open reduction and internal fixation. Moreover, participants whose cast has been removed after two months following the surgery of distal radius fracture. Participants having functional limitation and pain and with an average of about 30 to 60 years are included in the study. Exclusion criteria includes: • Osteopinea, Malunion of the fracture, Pre-existing inflammatory condition of the joints, Prolong steroid usage, Bony block, Hypermobility, Joint effusion, Haemarthrosis, Sudeck's dystrophy, Complex regional pain syndrome, Infection, Impaired sensation or circulation, Fracture site other than distal radius

##### Intervention groups

Group A (Maitland mobilization group)=Hot pack 15 minutes (baseline treatment) Maitland grade 1 and 2 (first two weeks) Grade 3 and 4 (next two weeks) Group B (Mulligan mobilization group)=Hot pack 15 minutes (baseline treatment) Mulligan mobilization (medial,

lateral, anterior and posterior directions) (four weeks)

##### Main outcome variables

Pain, range of motion and functional limitation of wrist

#### General information

##### Reason for update

##### Acronym

##### IRCT registration information

IRCT registration number: **IRCT20220410054476N1**

Registration date: **2022-06-11, 1401/03/21**

Registration timing: **retrospective**

Last update: **2022-06-11, 1401/03/21**

Update count: **0**

##### Registration date

2022-06-11, 1401/03/21

##### Registrant information

##### Name

Neha Asad

##### Name of organization / entity

The University of Faisalabad

##### Country

Pakistan

##### Phone

+92 41 8544305

##### Email address

dpt-fa14-068@tuf.edu.pk

##### Recruitment status

**Recruitment complete**

##### Funding source

##### Expected recruitment start date

2022-04-29, 1401/02/09

##### Expected recruitment end date

2022-05-30, 1401/03/09

##### Actual recruitment start date

empty

**Actual recruitment end date**  
empty

**Trial completion date**  
empty

**Scientific title**  
Comparative effectiveness of Maitland versus Mulligan mobilization technique for post-surgical mobility complications of distal radius fracture

**Public title**  
Comparative effectiveness of Maitland versus Mulligan mobilization technique for post-surgical mobility complications of distal radius fracture

**Purpose**  
Treatment

**Inclusion/Exclusion criteria**  
**Inclusion criteria:**  
Participants having distal radius fracture Participants undergone through the process of open reduction and internal fixation Participants whose cast has been removed after two months following surgery Participants willing to take part in the research Participants whose wrist mobility is restricted Participants having pain from 3 to 7 on VAS Participants having age from 30 to 60 years

**Exclusion criteria:**  
Participants gone through the procedure of close reduction for fixing the fracture Osteopinea Malunion of the fracture Pre- existing inflammatory condition of the joints Prolong steroid usage Bony block Hypermobility Haemarthrosis Sudeck's dystrophy Complex regional pain syndrome Infection Impaired sensation or circulation Joint effusion

**Age**  
From **30 years** old to **60 years** old

**Gender**  
Both

**Phase**  
N/A

**Groups that have been masked**

- Participant

**Sample size**  
Target sample size: **32**

**Randomization (investigator's opinion)**  
Randomized

**Randomization description**  
The participants are allocated using simple randomization into two separate groups. The tools used in randomization are sealed envelopes, and allocation concealment was carried out. The randomization was done on an individual basis.

**Blinding (investigator's opinion)**  
Single blinded

**Blinding description**  
The participants will be unaware in which group they will be allocated after meeting the inclusion criteria an informed consent will be taken from them by the physiotherapist.

**Placebo**

Not used

**Assignment**  
Parallel

**Other design features**

**Secondary Ids**  
empty

**Ethics committees**

**1**

**Ethics committee**  
**Name of ethics committee**  
Ethics committee of The University of Faisalabad

**Street address**  
4-km, Sargodha Road, University  
Town,Faisalabad,Pakistan

**City**  
Faisalabad

**Postal code**  
38000

**Approval date**  
2022-04-07, 1401/01/18

**Ethics committee reference number**  
TUF/DR/MSPP/321

## Health conditions studied

### **1**

#### **Description of health condition studied**

In the forearm region of upper extremity radius is the bone which is located on the lateral side of the forearm alongside ulna. The distal part of the radius is that part which is connected to the wrist. If any break or discontinuity comes in this part of the radius then it is usually referred to as fracture of the distal radius, and this fracture usually takes place when a person falls on an outstretched hand leading to impact of the wrist to the floor and resulting in fracture. This fracture can also take place if a person falls while the wrist is in a flexed position. It is also very common among people of older age and athletes. Complications such as impaired circulation, malunion, infection and complex regional pain syndrome can also occur after this fracture.

#### **ICD-10 code**

M84.333

#### **ICD-10 code description**

Stress fracture, right radius

## Primary outcomes

### **1**

#### **Description**

Pain in the distal part of radius as a result of fracture is the primary outcome

#### **Timepoint**

Pain will be measured at the start of the treatment sessions and then after four weeks when the treatment

sessions are finished

#### **Method of measurement**

Visual analogue scale will be used to measure pain

## **Secondary outcomes**

### **1**

#### **Description**

Range of motion and functional limitation of wrist

#### **Timepoint**

Range of motion and functional limitation of wrist will be measured before the treatment sessions and after four weeks when all the treatment sessions are given

#### **Method of measurement**

Goniometer and PRWE questionnaire will be used to measure the range of motion and functional limitation

## **Intervention groups**

### **1**

#### **Description**

Intervention group 1: Maitland mobilization (The participants present in this group first of all received heat using hot pack for a duration of about fifteen minutes as baseline treatment. After this making sure that the muscles were completely relaxed grade 1 and grade 2 of Maitland mobilization was applied to the wrist. These two grades were applied for first two weeks. After these two weeks the level of grade was increased to grade 3 and grade 4 and these two grades of Maitland mobilization were applied for the next two weeks).

#### **Category**

Rehabilitation

### **2**

#### **Description**

Intervention group 2: Mulligan mobilization (The participants present in this group also first of all received heat using hot pack for a duration of about fifteen minutes as baseline treatment. After this making sure that the muscles were relaxed mobilization with movement technique of Mulligan mobilization was applied to the participants in the antero-posterior direction, medial direction and lateral direction at the level of the distal radio-ulnar joint. These mobilization techniques were applied for a time duration of about four weeks).

#### **Category**

Rehabilitation

## **Recruitment centers**

### **1**

#### **Recruitment center**

**Name of recruitment center**

Madinah Teaching Hospital

**Full name of responsible person**

Medical superintendent MTH

#### **Street address**

Sargodha Road, University Town, Faisalabad, Pakistan

#### **City**

Faisalabad

#### **Postal code**

38000

#### **Phone**

+92 41 8869861

#### **Email**

info@mth.org.pk

### **2**

#### **Recruitment center**

##### **Name of recruitment center**

Allied Hospital Faisalabad

##### **Full name of responsible person**

Medical Superintendent Allied Hospital

##### **Street address**

Jail road adjacent Faisalabad Medical University, near Sargodha Road Faisalabad, Pakistan

##### **City**

Faisalabad

##### **Postal code**

38000

##### **Phone**

+92 41 9210082

##### **Email**

info@pmc.edu.pk

### **3**

#### **Recruitment center**

##### **Name of recruitment center**

DHQ Hospital Faisalabad

##### **Full name of responsible person**

Medical Superintendent DHQ Hospital

##### **Street address**

Near Railway station, Mall road, Faisalabad, Pakistan

##### **City**

Faisalabad

##### **Postal code**

38000

##### **Email**

info@dhq.org.pk

## **Sponsors / Funding sources**

### **1**

#### **Sponsor**

##### **Name of organization / entity**

The University of Faisalabad

##### **Full name of responsible person**

Dr. Sidra Majeed;PT

##### **Street address**

4 km, Sargodha Road, University Town, Faisalabad, Pakistan

##### **City**

Faisalabad

##### **Postal code**

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**Email**

sidra.majeed@tuf.edu.pk

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

No

**Title of funding source**

The University of Faisalabad

**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**

The University of Faisalabad

**Full name of responsible person**

Dr. Sidra Majeed;PT

**Position**

Associate Professor

**Latest degree**

Master

**Other areas of specialty/work**

Physiotherapy

**Street address**

4 km Sargodha road, University Town, Faisalabad, Pakistan

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**Province**

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**Postal code**

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**Phone**

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sidra.majeed@tuf.edu.pk

**Person responsible for scientific inquiries****Contact****Name of organization / entity**

The University of Faisalabad

**Full name of responsible person**

Syeda Neha Asad Rizvi

**Position**

Student

**Latest degree**

Master

**Other areas of specialty/work**

Physiotherapy

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**Person responsible for updating data****Contact****Name of organization / entity**

The University of Faisalabad

**Full name of responsible person**

Syeda Neha Asad Rizvi

**Position**

Student

**Latest degree**

Master

**Other areas of specialty/work**

Physiotherapy

**Street address**14.C People's Colony No.1 Khawaja Islam Road  
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**Province**

Punjab

**Postal code**

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**Phone**

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nehaasad78@gmail.com

**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**

Undecided - It is not yet known if there will be 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**

All collected deidentified participant data set for the

outcome measures

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

4 months after publication

**To whom data/document is available**

People working in the academic institutions

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

IPD and any additional supporting documents will be provided for research on similar topic and can be obtained by asking through the contact person

mentioned below.

**From where data/document is obtainable**

Contact person: Syeda Neha Asad Rizvi Mobile number: +92 3247797647 E-mail address: nehaasad78@gmail.com

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

Data files will be provided after talking to the contact person mentioned above.

**Comments**