Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 2026

Effects of mobile application dexteria fine motor skills on hand dexterity and grip strength in chronic stroke patients

Protocol summary

Study aim
To determine the effects of mobile application, dexteria fine motor skills on hand dexterity and grip strength in chronic stroke patients.

Design
Randomized controlled trial

Settings and conduct
• Jinnah Hospital Lahore(JHL) • Ittefaq trust hospital Lahore

Participants/Inclusion and exclusion criteria
Inclusion criteria Age: 40 to 60 years both male and female • Six months to 2 years post stroke • Participants must be able to open and close their fingers (even only 2 cm of movement) • Before stroke there must be fully functional hand • Normal or intact vision where as exclusion criteria is • Neurological disorders other than stroke for example multiple sclerosis or Parkinson disease. • Upper extremities acute orthopedic conditions. • Any cardiopulmonary complications • Medically unstable patients.

Intervention groups
Conventional hand therapy group: The control group received conventional hand function rehabilitation therapy including, strengthening exercises which consist of palm down wrist flexion exercise, dexterity(shifting exercise) and fine motor skills(nine peg hole exercise) this protocol is given for 30-60 minutes session with 10 minutes of rest duration, 3 times per week for one month. Dexteria App therapy Group: The experimental group received an additional mobile application therapy including , dexterity fine motor skills, bowling game, scribble game and peglight game in addition to the conventional therapy for hand function. This protocol is given for 30-60 minutes session with 10 minutes of rest duration, 3 times per week for one month.

Main outcome variables
• The Nine Hole Peg Test (NHPT) • Fugl-Meyer Motor assessment (FMA) • The Box & Block Test (BBT) • hand dynamometer

General information

Reason for update

Acronym

IRCT registration information
IRCT registration number: **IRCT20221104056391N1**
Registration date: **2022-11-29, 1401/09/08**
Registration timing: **registered_while_recruiting**

Last update: **2022-11-29, 1401/09/08**
Update count: **0**

Registration date
2022-11-29, 1401/09/08

Registrant information

Name
Maida Mushtaq
Name of organization / entity
University of management and technology Lahore Pakistan
Country
Pakistan
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+92 306 4738063
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Recruitment status
Recruitment complete

Funding source

Expected recruitment start date
2021-12-02, 1400/09/11

Expected recruitment end date
2022-06-06, 1401/03/16

Actual recruitment start date
2022-08-02, 1401/05/11

Actual recruitment end date
2023-01-02, 1401/10/12

Trial completion date
2023-01-02, 1401/10/12

Scientific title
Effects of mobile application dexteria fine motor skills on hand dexterity and grip strength in chronic stroke patients

Public title
Effects of mobile application dexteria fine motor skills on hand dexterity and grip strength in chronic stroke patients

Purpose
Treatment

Inclusion/Exclusion criteria

Inclusion criteria:
Age: 40 to 60 years both male and female Six months to 2 years post stroke Participants must be able to open and close their fingers (even only 2 cm of movement) Before stroke there must be fully functional hand Normal or intact vision

Exclusion criteria:
Neurological disorders other than stroke for example multiple sclerosis or Parkinson disease. Upper extremities acute orthopedic conditions Any cardiopulmonary complications Medically unstable patients

Age
From **40 years** old to **60 years** old

Gender
Both

Phase
N/A

Groups that have been masked

- Participant

Sample size
Target sample size: **22**
Actual sample size reached: **22**

Randomization (investigator's opinion)
Randomized

Randomization description
Allocation of patients in both groups will be done through simple random sampling and via lottery method

Blinding (investigator's opinion)
Single blinded

Blinding description
This study is single blinded and participants will not be aware of the group allocation.

Placebo
Not used

Assignment
Other

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee
Research and ethics committee

Street address
Raiwind road lahore

City
Lahore

Postal code
55150

Approval date
2021-12-29, 1400/10/08

Ethics committee reference number
REC/RCR&AHS/21/0255

Health conditions studied

1

Description of health condition studied
STROKE PATIENTS WITH UPPER LIMB IMPAIRMENT OF FINE MOTOR SKILLS AND DEXTERITY

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description
FINE MOTOR SKILLS AND DEXTERITY

Timepoint
4 WEEKS AFTER INTERVENTION

Method of measurement
FUGL MEYER ASSESMENT SCALE, BOX AND BLOCK TEST, NINE PEGHOLE TEST

Secondary outcomes

empty

Intervention groups

1

Description
Intervention group: This group received an additional mobile application therapy including , dexterity fine motor skills, bowling game, scribble game and peglight game in addition to the conventional therapy for hand function. This protocol is given for 30-60 minutes session with 10 minutes of rest duration, 3 times per week for one month. All the activities were performed in sitting position After four weeks outcome is documented via specified tools including FMA, NHPT, BBT, and grip strength (through dynamometer)

Category
Rehabilitation

2

Description
Control group: The control group received conventional hand function rehabilitation therapy including, strengthening exercises which consist of palm down

wrist flexion exercise, dexterity(shifting exercise) and fine motor skills(nine peg hole exercise) this protocol is given for 30-60 minutes session with 10 minutes of rest duration, 3 times per week for one month. All the activities were performed in sitting position After four weeks outcome was documented via specified tools including FMA, NHPT, BBT, and grip strength (through dynamometer)

Category
Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center
JINNAH HOSPITAL LAHORE

Full name of responsible person
MAIDA MUSHTAQ

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raiwind road lahore

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity
University of management and technology lahore

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?
No

Title of funding source
Abc

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
Academic

Person responsible for general inquiries

Contact

Name of organization / entity
University of management and technology lahore

Full name of responsible person
Maida Mushtaq

Position
Demonstrator

Latest degree
Master

Other areas of specialty/work
Rehabilitation management

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Person responsible for scientific inquiries

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Position
Demonstrator

Latest degree
Master

Other areas of specialty/work
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Person responsible for updating data

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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
due to confidentiality

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
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
effects of mobile application dexteria fine motor skills on hand dexterity and grip strength in chronic stroke patients

When the data will become available and for how long
1/1/2023

To whom data/document is available
only academics

Under which criteria data/document could be used
only academics

From where data/document is obtainable
maida.mushtaq@umt.edu.pk

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

Comments