Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 2026

Effectiveness of motor imagery on hemiplegic gait and walking energy cost in sub-acute stroke patients

Protocol summary

Study aim
This study aims to find the effectiveness of motor imagery techniques in reducing the walking energy cost of stroke patients.

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

Settings and conduct
data will be collected from Rehman Medical institute Peshawar Pakistan. from 31st March 2022. the total duration of the trial will be 6 weeks. patients will be randomly allocated to the experimental and control groups. The experimental group will receive motor imagery techniques along with conventional Physical therapy however the control group will receive only conventional physical therapy. Both groups will receive 3 sessions per week for a total of six weeks. at the end of the study, a blinded assessor will assess the outcomes of walking energy costs from all the recruited patients.

Participants/Inclusion and exclusion criteria
Mini-mental state examination score equals or greater than 24. Modified Ashworth scale score less than or equal to +1. Manual muscle testing equals or greater than 3. Other neurological disorders excluded Unilateral neglect Unstable cardiovascular patient Acute stroke patient with evidence of flaccidity

Intervention groups
the intervention group will be provided with a motor imagery session for 15 minutes followed by 30 minutes of conventional therapy a total of 45 minutes sessions 3 times per week will be given. in the control group, only conventional physical therapy and gait training exercises will be given to the patients the total duration of the session will be 45 minutes 3 times per week for a total of 6 weeks.

Main outcome variables
the main outcomes will be gait improvement which will be checked using the Gait Assessment and intervention tool. and energy expenditure will be checked using Physiological cost index

General information

Reason for update

Acronym

IRCT registration information
IRCT registration number: **IRCT20211011052727N3**
Registration date: **2023-04-10, 1402/01/21**
Registration timing: **prospective**

Last update: **2023-04-10, 1402/01/21**
Update count: **0**

Registration date
2023-04-10, 1402/01/21

Registrant information

Name
Salman farooqi

Name of organization / entity
Khyber Medical University Peshawar Pakistan

Country
Pakistan

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+92 91 5823496

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Recruitment status
Recruitment complete

Funding source

Expected recruitment start date
2023-04-15, 1402/01/26

Expected recruitment end date
2023-05-30, 1402/03/09

Actual recruitment start date
empty

Actual recruitment end date
empty

Trial completion date
empty

Scientific title
Effectiveness of motor imagery on hemiplegic gait and walking energy cost in sub-acute stroke patients

Public title
Effectiveness of motor imagery on hemiplegic gait and walking energy cost in sub-acute stroke patients

Purpose
Treatment

Inclusion/Exclusion criteria

Inclusion criteria:
Mini mental state examination score>24 Modified ashworth scale score>3 Manual muscle testing >3 Age between 40 - 75

Exclusion criteria:
Other neurological disorder excluded unstable acute stroke patient Unilateral neglect Cardiovascular patient Cardiovascular patient With evidence of flaccidity

Age
From **40 years** old to **75 years** old

Gender
Both

Phase
N/A

Groups that have been masked

- Outcome assessor

Sample size
Target sample size: **32**

Randomization (investigator's opinion)
Randomized

Randomization description
After meeting the inclusion criteria and giving a written informed consent, a total of 44 patients will be enrol in this study. These participants will be randomly allocated into two groups namely; the Experimental group (motor imagery along with conventional therapy) and the Control group (conventional therapy only). The random allocation will be performed by using sealed envelope (opaque). Total 44 envelopes will be made, 22 will be having a paper with group A (control group) written on it and 22 will have group B (experimental group). This will be for equal distribution of subjects in the two groups. Each participant will be asked to pick an envelope and will handed over to the researcher. Participants will not be blinded about their allocation. All the participants will be inform about the goals and intervention of the study by providing details.

Blinding (investigator's opinion)
Single blinded

Blinding description
The outcome assessor who will be recording the outcome scores will be blinded he will not be aware weather the participant was in control group or experimental one.

Placebo
Not used

Assignment
Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee
Institutionl ethical review committee. Institute of Physical Medicien and rehabilitation Khyber Medi

Street address
Hayatabad phase 5

City
Peshawar

Postal code
25001

Approval date
2022-06-20, 1401/03/30

Ethics committee reference number
KMU/IPMR/IERC/22-06-09

Health conditions studied

1

Description of health condition studied
Stroke rehabilitation

ICD-10 code
G81

ICD-10 code description
Hemiplegia and hemiparesis

Primary outcomes

1

Description
Physiological cost index

Timepoint
the outcome will be checked pre intervention then on 2nd and 4th week after intervention and finally on 6th week post intervention

Method of measurement
the formula to calculate the physiological cost index is exercising heart rate minus resting heart rate divided by walking velocity. (heart rate will be recorded using a pulse oximeter and walking velocity will be measured using 6-meter walk test)

Secondary outcomes

empty

Intervention groups

1

Description
"Intervention group:" All the recruited patients in the interventional group will start each session with a mental

rehearsal of the motor imagery technique for 15 minutes followed by 30 minutes of conventional physical therapy techniques including gait training exercises and Neuro-developmental techniques each session will last for 45 minutes. The patients will attend 3 sessions per week for a total of 6 weeks. The patient's baseline assessment includes walking speed, resting heart rate, oxygen saturation, and walking energy cost will be calculated using the physiological cost index.

Category

Rehabilitation

2

Description

Control group: Patients in the control group will attend 45 minutes of conventional physical therapy techniques including gait training exercises and Neuro-developmental techniques each session will last for 45 minutes. The patients will attend 3 sessions per week for a total of 6 weeks. At the end of 6 weeks patient walking energy cost will be calculated by a blinded assessor.

Category

Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center
Rehman Medical Institute

Full name of responsible person
Dr Shakir Ullah

Street address
Hayatabad peshawar

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Peshawar

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25001

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity
Khyber Medical University

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
Khyber Medical University

Proportion provided by this source
100

Public or private sector
Public

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
Khyber Medical University

Full name of responsible person
Salman Farooqi

Position
Lecturer

Latest degree
Ph.D.

Other areas of specialty/work
Physiotherapy

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Person responsible for scientific inquiries

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Position
Lecturer

Latest degree
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Other areas of specialty/work
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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
as this is the first trail on this case the initial plan is not to disclose it in the beginning.
Study Protocol
Undecided - It is not yet known if there will be a plan to make this available
Statistical Analysis Plan
Not applicable
Informed Consent Form
Undecided - It is not yet known if there will be a plan to make this available
Clinical Study Report
Not applicable
Analytic Code
Not applicable
Data Dictionary
Not applicable