Clinical Trial Protocol
Iranian Registry of Clinical Trials

08 Nov 2026

The Effect of Strengthening hip Abductors on the Asymmetry of Lower Limb Strength and Balance in People with Multiple Sclerosis

Protocol summary

Study aim

Investigating the effect of strengthening the thigh abductors on the asymmetry of lower limb muscle strength and balance in people with MS will be studied.

Design

A supportive trial with a control group, parallel, non-blinded, randomized groups, without drug intervention, and the randomization will use the rand function of Excel software.

Settings and conduct

In this research, two groups will be examined in terms of the control group. These exercises will be performed in Urmia city by presenting an 8-week schedule in the corrective exercise gym and under the supervision of a trainer and physician, they will perform corrective exercises (leg raising, shellfish exercise , etc.) in 3 sessions of 45 minutes. Before and after entering the exercise, the muscle parameters of the people will be measured with a dynamometer device. Blinding is not considered in this research.

Participants/Inclusion and exclusion criteria

Inclusion criteria in the present study include gender (female patients in this study), residence in Urmia city, not to be pregnant, age range between 20 and 50 years, EDSS disability scale score less than 4, the type of MS disease is relapsing-recovery and at least 2 years have passed since the onset of the disease. In the same way, the non-entry criteria include pregnancy, failure to complete the consent form, deterioration of the patient's condition, the possibility of physical or mental injuries to the patient, doctor's diagnosis for not participating in the study.

Intervention groups

- Group "A" will be the control group. - Group "B" will perform exercises related to strengthening thigh abductors.

Main outcome variables

The dependent variables of the research include static, dynamic balance and isometric strength of thigh abductor muscles, knee extensors and flexors and ankle plantar flexors and ankle dorsiflexors in the pre-test stage.

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20230801059000N1**
Registration date: **2023-08-11, 1402/05/20**
Registration timing: **prospective**

Last update: **2023-08-11, 1402/05/20**
Update count: **0**

Registration date

2023-08-11, 1402/05/20

Registrant information

Name

Sana Rostami Anhar

Name of organization / entity

Urmia University

Country

Iran (Islamic Republic of)

Phone

+98 44 3337 2139

Email address

sana.rostamiiiii@gmail.com

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2023-08-14, 1402/05/23

Expected recruitment end date

2023-09-14, 1402/06/23

Actual recruitment start date

empty

Actual recruitment end date
empty
Trial completion date
empty

Scientific title
The Effect of Strengthening hip Abductors on the Asymmetry of Lower Limb Strength and Balance in People with Multiple Sclerosis

Public title
The Effect of Strengthening hip Abductors in People with Multiple Sclerosis
Purpose
Supportive
Inclusion/Exclusion criteria
Inclusion criteria:
Gender (in this study, female patients) Living in Urmia city Not to be pregnant Age range between 20 and 50 years EDSS disability scale score less than 4 (which will be determined by the neurologist according to the patient's medical record) The type of MS is relapsing-remitting and at least 2 years have passed since the onset of the disease The study case do not participated in resistance rehabilitation training programs before in order to reduce muscle asymmetry (to prevent the effect of previous training) Not prohibiting by the doctor from participating in the strength measurement tests Complying with professional ethics protocols, including completing the informed consent form to participate in the study The patient did not suffer from deformities and injuries affecting the study process (such as: braced and crossed knees or flat and severely hollow soles and no ankle, knee and thigh sprains and fractures in the past 6 months).
Exclusion criteria:
Pregnancy Failure to complete the consent form or accept the training conditions The possibility of physical or mental injuries to the patient EDSS disability scale score more than 4 (which will be determined by the neurologist according to the patient's medical record) Prohibiting by the supervisor doctor Impossibility of mobility or exercise The patient participated in resistance rehabilitation exercise programs before the study
Age
From **20 years** old to **50 years** old
Gender
Female

Phase
N/A
Groups that have been masked
No information
Sample size
Target sample size: **40**
Randomization (investigator's opinion)
Not randomized
Randomization description
Blinding (investigator's opinion)
Not blinded
Blinding description
Placebo
Not used
Assignment
Parallel
Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee
Name of ethics committee
Ethics committee of Urmia University
Street address
No. 16, Farhang Ave., Valfajr Blvd., Urmia Town
City
Urmia
Province
West Azarbaijan
Postal code
5719764476
Approval date
2023-08-01, 1402/05/10
Ethics committee reference number
IR.URMIA.REC.1402.011

Health conditions studied

1

Description of health condition studied
Multiple Sclerosis (M.S.)
ICD-10 code
G35
ICD-10 code description
Multiple sclerosis

Primary outcomes

1

Description
Static balance
Timepoint
At the beginning of the study and 8 weeks later and after the end of the exercises
Method of measurement
Timer

2

Description
Dynamic balance
Timepoint
At the beginning of the study and 8 weeks later and after the end of the exercises
Method of measurement
Timer

3

Description
Isometric strength competition of thigh abductor machine, knee extensors and flexors and plantarflexors and ankle dorsiflexors.
Timepoint
At the beginning of the study and 8 weeks later and after the end of the exercises
Method of measurement
Manual dynamometer

Secondary outcomes

empty

Intervention groups

1

Description
Intervention group: Exercises in this group will be done for 8 weeks, 3 sessions per week and each session will last about 45 minutes (10 minutes of warming up, 30 minutes of strengthening the abductor muscles, 5 minutes of cooling down).
Category
Rehabilitation

2

Description
Control group: The research variables will be measured on this group.
Category
N/A

Recruitment centers

1

Recruitment center
Name of recruitment center
Dr. Sahar Mohammadi Falah's Office
Full name of responsible person
Dr. Sahar Mohammadi Falah
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No. 4, Hasani Ave., Hashemi Building, Urmia Town
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Sponsors / Funding sources

1

Sponsor
Name of organization / entity
Urmia University
Full name of responsible person
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Serow Pardis, Urmia University, Urmia
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Web page address
Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
No
Title of funding source
Urmia 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
Urmia University
Full name of responsible person
Sana Rostami Anhar
Position
Student
Latest degree
Bachelor
Other areas of specialty/work
Corrective exercises
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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
There is no additional info.
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
No - There is not a plan to make this available
Clinical Study Report
No - There is not 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