Clinical Trial Protocol
Iranian Registry of Clinical Trials

08 Nov 2026

Comparison of clinical and functional effects of static stretching and functional stretching exercises in lower limb muscles of patients with Multiple Sclerosis

Protocol summary

Study aim
Comparison of clinical and functional effects of static stretching and functional stretching exercises in lower limb muscles of patients with Multiple Sclerosis

Design
Randomized,single blinded trial with parallel group design of 22 patients with Multiple sclerosis allocated randomly into two static stretching and functional stretching exercises group

Settings and conduct
Pre and post assessments in each group are as follows: ROM assessment, pain intensity, spasticity and functional tests (TUG, T25FWT). For patients in static stretching group; hamistring, quadrceps, hip adductors and plantar flexors muscles will be stretched statically by therapist. For patients in functional stretching group; hamistring, quadrceps, hip adductors and plantar flexors will be stretched by patients actively with guidance of therapist. In both group each stretch will be kept for 30 sec and repeated 3 times with 15 sec rests. In both group after stretching ,active or active assisted movements in the same direction of stretching will be done with 5 repetition.

Participants/Inclusion and exclusion criteria
Inclusion criteras: to have multiple sclerosis disease confirmed by specialist; to have spasticity with limb stiffness or contractures of muscles or soft tissue in lower extremity; being able to walk min 25 foot with/without assistive devices. Exclusion criterias: to use wheelchair; to use anti spasticity drugs.

Intervention groups
Intervention group 1:Static stretching exercises
Intervention group 2:Functional stretching exercises

Main outcome variables
pain, range of motion, spasticity, functional tests

General information

Reason for update
end of study

Acronym

IRCT registration information
IRCT registration number: **IRCT20190702044079N1**
Registration date: **2019-08-29, 1398/06/07**
Registration timing: **prospective**

Last update: **2020-01-19, 1398/10/29**
Update count: **1**

Registration date
2019-08-29, 1398/06/07

Registrant information

Name
Merziye ergul

Name of organization / entity

Country
Iran (Islamic Republic of)

Phone
+98 21 4424 1362

Email address
merziyeergul@gmail.com

Recruitment status
Recruitment complete

Funding source

Expected recruitment start date
2019-09-01, 1398/06/10

Expected recruitment end date
2019-12-29, 1398/10/08

Actual recruitment start date
2019-09-01, 1398/06/10

Actual recruitment end date
2019-12-01, 1398/09/10

Trial completion date

2019-12-01, 1398/09/10

Scientific title
Comparison of clinical and functional effects of static stretching and functional stretching exercises in lower limb muscles of patients with Multiple Sclerosis

Public title
Effects of stretching exercises in patients with Multiple Sclerosis

Purpose
Treatment

Inclusion/Exclusion criteria
Inclusion criteria:
Multiple sclerosis confirmed by specialist to have spasticity with limb stiffness or contractures of muscles or soft tissue in lower extremity being able to walk min 25 foot with/without assistive devices
Exclusion criteria:
to use wheelchair to use anti spasticity drugs

Age
From **18 years** old to **65 years** old

Gender
Both

Phase
N/A

Groups that have been masked

- Participant

Sample size
Target sample size: **22**
Actual sample size reached: **24**

Randomization (investigator's opinion)
Randomized

Randomization description
Randomization by random allocation rule through lottery:for this study,for a total study size of 22;11 paper for static stretching group and 11 paper for functional stretching group will be put in a lottery pocket.Then for each patient one paper will be drawn randomly from pocket and patients will be randomly allocated into static and functional stretching groups.

Blinding (investigator's opinion)
Single blinded

Blinding description
Each individual will be involved in a trial separately,will be assessed separately and will be treated separately.

Placebo
Not used

Assignment
Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee
Ethics Committee of University of Social Welfare and Rehabilitation Sciences

Street address
Kodekeyar dead end, Daneshjo Blvd, Evin

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Tehran

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Postal code
۱۹۸۵۷۱۳۸۳۴

Approval date
2019-06-26, 1398/04/05

Ethics committee reference number
IR.USWR.REC.1398.051

Health conditions studied

1

Description of health condition studied
multiple sclerosis

ICD-10 code
G35

ICD-10 code description
Multiple sclerosis

Primary outcomes

1

Description
spasticity

Timepoint
in the begining and end of the study

Method of measurement
modified modified ashworth scale

2

Description
function

Timepoint
in the begining and end of the study

Method of measurement
Timed Up and Go test and Timed 25 Foot Walk test

3

Description
active range of motion

Timepoint
in the begining and end of the study

Method of measurement
with goniometer

4

Description
pain

Timepoint
in the begining and end of the study

Method of measurement
Visual analog scale

Secondary outcomes

empty

Intervention groups

1

Description
Intervention group:static stretching exercises will be applied 3 times in a week totally for 4 weeks.Hamistring,quadriceps,adductors and plantar flexors will be streched by researcher bilaterally.Each stretch will be kept for 30 seconds and repeated for 3 times.
Category
Rehabilitation

2

Description
Intervention group:functional stretching exercises will be done 3 times in a week totally for 4 weeks.Hamistring,quadriceps,adductors and plantar flexors will be streched by patient with guidance of reseacher.Each stretch will be kept for 30 seconds and repeated for 3 times.
Category
Rehabilitation

Recruitment centers

1

Recruitment center
Name of recruitment center
Iran MS society
Full name of responsible person
Abolghasem najafi
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Sponsors / Funding sources

1

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Full name of responsible person
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http://en.uswr.ac.ir/index.jsp?fkeyid=&siteid=2&fkeyid=&siteid=56&pageid=13761
Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
No
Title of funding source
vice chancellery for research and technology of USWR
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
University of social welfare and rehabilitation sciences
Full name of responsible person
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Position
Master student
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
There is no additional information.

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