

Clinical Trial Protocol

Iranian Registry of Clinical Trials

19 Jun 2026

Effect of 12 weeks of stretch and strength exercise on shoulder function, sport performance and level of daily living activities in basketball wheelchair players with shoulder pain

Protocol summary

Study aim

Effect of 12 weeks of strength and stretching exercises on shoulder function, athletic performance and daily activities of wheelchair basketball players with shoulder pain

Design

This is a 12 week, prospective, parallel group, randomized controlled trial with 1: 1 allocation ratio in control and exercise groups..

Settings and conduct

The present study will be carried out at the University of Guilan. Because of nature of the study, the participants are not blind to the division into groups, but statisticians and evaluators split participants into groups.

Participants/Inclusion and exclusion criteria

Inclusion Criteria: Use manual wheelchair as a means of displacement (at least 50% of time), unilateral or bilateral shoulder pain that affected at least one function (eg, physical activity, and wheelchair use), Confirmation of one of the Neer and Hawkins-Kennedy tests, or pain with arm elevation. Exclusion criteria; Hospitalization due to acute injury, fracture, or shoulder surgery during the past year, injection of cortisone into shoulder over the past 4 months and participation in physiotherapy or shoulder exercise during the past year.

Intervention groups

The exercise intervention was based on interventions for shoulder pain in previous studies that included stretching (4 exercises) and strengthening (4 exercises) exercise. Strengthening exercise targeted serratus anterior muscle, scapular retractor and deurator muscles, and glenohumeral external rotator muscles and the stretching exercise aimed to increase flexibility of upper trapezius muscle, pectoralis major and minor muscles, and posterior glenohumeral capsule and underlying soft tissues.

Main outcome variables

Shoulder pain intensity, activities of daily living and sport skill and performance were assessed using the wheelchair user's shoulder pain index (WUSPI), Barthel Index and wheelchairs basketball field tests, respectively.

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20170114031942N9**

Registration date: **2018-08-15, 1397/05/24**

Registration timing: **prospective**

Last update: **2018-08-15, 1397/05/24**

Update count: **0**

Registration date

2018-08-15, 1397/05/24

Registrant information

Name

Aynollah Naderi

Name of organization / entity

Shahrood University of Technology

Country

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Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2018-08-23, 1397/06/01

Expected recruitment end date

2018-09-23, 1397/07/01
Actual recruitment start date
empty
Actual recruitment end date
empty
Trial completion date
empty

Scientific title
Effect of 12 weeks of stretch and strength exercise on shoulder function, sport performance and level of daily living activities in basketball wheelchair players with shoulder pain

Public title
Effect of stretch and strength exercise on performance of basketball wheelchair players with shoulder pain

Purpose
Treatment

Inclusion/Exclusion criteria

Inclusion criteria:

The presence of one-sided or bilateral shoulder pain that affects at least one function (for example, sport activity, wheelchair use). Confirmation of one of the Neer and Hawkins-Kennedy tests, or pain with the arm elevation

Exclusion criteria:

Hospitalization due to acute injury, fracture, or shoulder surgery during the past year. Injection of cortisone into shoulder over the past 4 months. Participation in the physiotherapy duration or shoulder exercise therapy during the past year.

Age
From **25 years** old to **40 years** old

Gender
Male

Phase
3

Groups that have been masked
No information

Sample size
Target sample size: **30**

Randomization (investigator's opinion)
Randomized

Randomization description
Blocks randomization with blocks 2 and 4 is used to allocate the participants in the research groups. Participants allocation is carried out by one of the research team members who are not associated with the 1: 1 allocation ratio within the exercise and control groups. Allocation sequences are hidden by the envelopes encoded in the order numbered, and the letter envelopes are opened only after all the initial and initial evaluations of the participants have been made. A computerized list of random numbers for random allocation of subjects in blocks 2 and 4 is created by statistical consultant using SPSS software. Because of the nature of the study, evaluators and participants are not blinded from the groups allocation, but statistician is blinded.

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

University of Guilan

Street address

Qazvin Road, Persian Gulf Highway, Rasht

City

Rasht

Province

Guilan

Postal code

4199613776

Approval date

2018-07-09, 1397/04/18

Ethics committee reference number

IR.GUMS.REC.1397.184

Health conditions studied

1

Description of health condition studied

Shoulder pain

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description

Shoulder pain intensity

Timepoint

Measure shoulder pain intensity at the beginning of the study (before the intervention) and 12 weeks after the intervention .

Method of measurement

wheelchair user's shoulder pain index

2

Description

Activities of daily living

Timepoint

Measure daily activities at the beginning of the study (before the intervention) and 12 weeks after the intervention .

Method of measurement

Barthel Index

3

Description

Sport skill and performance

Timepoint

Measure sport skill and performance at the beginning of the study (before the intervention) and 12 weeks after the intervention .

Method of measurement

wheelchairs basketball field tests

Secondary outcomes

empty

Intervention groups

1

Description

Intervention group:. The exercise intervention was based on interventions for shoulder pain in previous studies that included stretching (4 exercises) and strengthening (4 exercises) exercise. Strengthening exercise targeted serratus anterior muscle, scapular retractor and depurator muscles, and glenohumeral external rotator muscles and the stretching exercise aimed to increase flexibility of upper trapezius muscle, pectoralis major and minor muscles, and posterior glenohumeral capsule and underlying soft tissues.

Category

Rehabilitation

2

Description

Control group: Continue daily activities.

Category

N/A

Recruitment centers

1

Recruitment center

Name of recruitment center

University of Guilan

Full name of responsible person

Danyal Moslehpoor

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Qazvin roads, Persian Gulf highways, Rasht, Guilan province

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

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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

University of Guilan

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

University of Guilan

Full name of responsible person

Danyal Moslehpoor

Position

M.A student

Latest degree

Bachelor

Other areas of specialty/work

Sport science

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Person responsible for scientific inquiries

Contact

Name of organization / entity

Shahrood University of Technology

Full name of responsible person

Aynollah Naderi

Position

Assistant Professor

Latest degree

Ph.D.

Other areas of specialty/work

Physical Education and Sports Science

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Full name of responsible person

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Position

Assistant Professor

Latest degree

Ph.D.

Other areas of specialty/work

Physical Education and Sports Science

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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 more 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