Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 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 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.

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

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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
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Person responsible for scientific inquiries

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Assistant Professor

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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