

Clinical Trial Protocol

Iranian Registry of Clinical Trials

21 Jul 2026

EFFECTS OF RESISTANCE EXERCISES WITH AND WITHOUT PLYOMETRIC TRAINING ON ARM AND LEG DYNAMIC STRENGTH OF AMATEUR BODYBUILDERS.

Protocol summary

Study aim

This study will be a Randomized Controlled Trial and will be conducted in Citi Fitness Center Gujranwala. Time Duration for completion of this study will be ten months after approval of the synopsis. Random Sampling technique will be used to collect the data. Sample size of 34 athletes will be taken and athletes will be randomly divided into two groups, Experimental Group and Control Group. Experimental group will perform Plyometric Training for upper and lower limb in addition to Resistance Exercises for upper and Lower limbs and Control group will perform only Resistance Exercise program for upper and lower limbs. Data Collection tools for upper limb will be Pull ups, 90 ° Push and Bench Press of 1 Repetition Maximum and for lower limbs will be Vertical Jump Test, Dead Squat of 1 Repetition Maximum and leg Press of 1 Repetition Maximum. Data will be analyzed on SPSS 25.

Design

Randomized Clinical Trial, parallel group, double blind.

Settings and conduct

Citi Fitness Center, Gujranwala Pakistan.

Participants/Inclusion and exclusion criteria

INCLUSION CRITERIA 1. Age 20-40 years Male. 2. Participants involved in Resistance Training Program for at least 6 months 3. Resistance training athletes volunteer to participate in the study. 4. No use of medication which would help improves the performance of the athlete. EXCLUSION CRITERIA 1. Any physical injury, pathology during last 6 months 2. Any surgical history during last 6 months 3. Involved in other sports activity that could affect the performance of the athlete.

Intervention groups

Group A: Experimental Group will receive Plyometric Training with Resistance Training. Group B: Control Group will receive only Resistance Training.

Main outcome variables

Dynamic Strength of Arms and Legs.

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20220216054033N1**

Registration date: **2022-02-18, 1400/11/29**

Registration timing: **prospective**

Last update: **2022-02-18, 1400/11/29**

Update count: **0**

Registration date

2022-02-18, 1400/11/29

Registrant information

Name

Sufian Ahmed

Name of organization / entity

Riphah International University Islamabad Pakistan

Country

Pakistan

Phone

+92 334 4272734

Email address

sufianahmedghuman@gmail.com

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2022-03-15, 1400/12/24

Expected recruitment end date

2023-01-15, 1401/10/25

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date
empty

Scientific title
EFFECTS OF RESISTANCE EXERCISES WITH AND WITHOUT PLYOMETRIC TRAINING ON ARM AND LEG DYNAMIC STRENGTH OF AMATEUR BODYBUILDERS.

Public title
EFFECTS OF RESISTANCE EXERCISES WITH AND WITHOUT PLYOMETRIC TRAINING ON ARM AND LEG DYNAMIC STRENGTH OF AMATEUR BODYBUILDERS.

Purpose
Health service research

Inclusion/Exclusion criteria
Inclusion criteria:
Age 20-40 years Male. Participants involved in Resistance Training Program for at least 6 months. Resistance training athletes volunteer to participate in the study. No use of medication which would help improves the performance of the athlete.
Exclusion criteria:
Any physical injury, pathology during last 6 months. Any surgical history during last 6 months. Involved in other sports activity that could affect the performance of the athlete.

Age
From **20 years** old to **40 years** old

Gender
Male

Phase
N/A

Groups that have been masked

- Participant
- Data analyser

Sample size
Target sample size: **34**

Randomization (investigator's opinion)
Randomized

Randomization description
After selecting the subjects using Purposive sampling the included cases will randomly allocated into two groups by simple random sampling using Gold Fish bowl method. Participants will be informed about their registration Number. The participants group will be masked as A & B by the Trainer/Assessor. Pre and post Data will be collected and analyzed by the data analyst. After analysis the Groups will be unmasked.

Blinding (investigator's opinion)
Double blinded

Blinding description
34 Participants will be involved in my study using Purposive Sampling Technique. 2 groups of 17 participants each will be made and will be randomized using systematic sampling. Participants will be blinded by not knowing the outcome of the exercises and about participants of control and experimental group. Care Giver Fitness coach will be blinded by the not knowing on the initial performance of participants and outcome of the exercises.

Placebo
Not used

Assignment
Parallel

Other design features

Secondary Ids
empty

Ethics committees

1

Ethics committee
Name of ethics committee
Riphah International University
Street address
Quaid e Azam Industrial Estate Lahore.
City
Lahore
Postal code
40050
Approval date
2022-12-27, 1401/10/06
Ethics committee reference number
029270

Health conditions studied

1

Description of health condition studied
Arm and Leg Dynamic Strength

ICD-10 code
ICD-10 code description

Primary outcomes

1

Description
Dynamic Strength

Timepoint
Before Intervention And 6 weeks After Intervention

Method of measurement
Pull Ups, Push Ups, Vertical Jump Test, 1 RM Bench Press and Leg Press

Secondary outcomes

empty

Intervention groups

1

Description
Intervention group: Interventional Group will receive Plyometric Training along with Resistance training for upper and lower limbs. Plyometric training for Arms and Legs involve Bounds, Side to Side Ankle Hops, Lateral

Cone Hops, Medicine Ball Chest Pass, Push-ups with one Clap. The resistance training program included seven to 10 exercises that activated all of the main muscle groups. Every training session included two exercises for the leg extensors (leg press and knee extension), one exercise for knee flexors (leg curl) and one to two other exercises for the lower extremities (seated calf raise, hip abduction or adduction). For the upper body, each session included three to four exercises (bench press, biceps curl, triceps pushdown, lateral pull-down), and one to two exercises for the trunk (abdominal crunch, seated back extension). The overall intensity and amount of training increased progressively throughout the 6-week training period.

Category

Rehabilitation

2

Description

Control group: Control Group will only receive Resistance Training for upper and lower limbs. The resistance training program included seven to 10 exercises that activated all of the main muscle groups. Every training session included two exercises for the leg extensors (leg press and knee extension), one exercise for knee flexors (leg curl) and one to two other exercises for the lower extremities (seated calf raise, hip abduction or adduction). For the upper body, each session included three to four exercises (bench press, biceps curl, triceps pushdown, lateral pull-down), and one to two exercises for the trunk (abdominal crunch, seated back extension).

Category

Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center

Citi Fitness Center

Full name of responsible person

Hafiz Usman

Street address

Citi Housing Scheme

City

Gujranwala

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52250

Phone

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Email

chughtai.arslan@gmail.com

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Riphah International University

Full name of responsible person

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Phone

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muhammad.hashim@riphah.edu.pk

Grant name

Grant code / Reference number

Is the source of funding the same sponsor organization/entity?

No

Title of funding source

Riphah International University

Proportion provided by this source

1

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

Shalamar Medical and Dental College

Full name of responsible person

Sufian Ahmed

Position

Senior Lecturer

Latest degree

Master

Other areas of specialty/work

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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 further 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