Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 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

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+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

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Gujranwala

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52250

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity
Riphah International University

Full name of responsible person
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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
Physiotherapy

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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