

Clinical Trial Protocol

Iranian Registry of Clinical Trials

11 Sep 2026

Effect of Plyometric Exercises on Improving Cardiorespiratory Endurance , Muscle Strength and Quality of life in Undergraduate Students

Protocol summary

Study aim

The purpose of this study is to determine the effect of Plyometric Exercises on Improving Cardiorespiratory Endurance , Muscle Strength and Quality of life in Undergraduate Students

Design

Quasi-Experimental Study

Settings and conduct

Setting: Data will be collected from the Muhammad Institute of Medical and Allied Sciences, Multan. Conduct: The eligible candidates for this study will be selected from Muhammad Institute of Medical and Allied Sciences in multan city and will be enrolled in the trail. There will be no randomization or blinding as it is a single group study.

Participants/Inclusion and exclusion criteria

Inclusion criteria: Adults 18-30 years of age, Gender (Male and Female), People with low or moderate physical activity (international Physical Activity Questionnaire), People having BMI ranging between 19-23 or over (South-Asian BMI Scale) Exclusion Criteria: any recent fractures, People with loss of hearing, sight and other senses, Hemodynamically unstable patients, People having undergone surgery within last 6 weeks, People with any physical disability

Intervention groups

Only one group is included in this study. The exercise regime was distributed over 6 weeks period (24 sessions) once a day and 4 times a week. The exercises used in this study are box jumps, reverse lounge knee-ups, pop squats, skater hops, pushups and sprints. Each exercise will be done for 5 minutes. We will be using Shuttle run test, manual muscle testing, murcury manometer, manual techniques for respiration rate measurement and pulse oximeter to measure muscle strength, Cardio-pulmonary fitness, blood pressure, pulse rate and Respiration rate.

Main outcome variables

Cardiorespiratory endurance, muscle strength,

cardiorespiratory parameters and quality of life

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20230122057183N1**

Registration date: **2023-08-12, 1402/05/21**

Registration timing: **retrospective**

Last update: **2023-08-12, 1402/05/21**

Update count: **0**

Registration date

2023-08-12, 1402/05/21

Registrant information

Name

Babar Ali

Name of organization / entity

Muhammd Institute of Medical and Allied Sciences, Multan

Country

Pakistan

Phone

+92 308 9188519

Email address

babaralipt.9@gmail.com

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2023-05-12, 1402/02/22

Expected recruitment end date

2023-06-25, 1402/04/04

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date
empty

Scientific title
Effect of Plyometric Exercises on Improving
Cardiorespiratory Endurance , Muscle Strength and
Quality of life in Undergraduate Students

Public title
Effect of Plyometric Exercises on Improving
Cardiorespiratory Endurance in Undergraduate Students

Purpose
Prevention

Inclusion/Exclusion criteria
Inclusion criteria:
Adults 18-30 years of age Gender (Male and Female)
People with low or moderate physical activity
(international Physical Activity Questionnaire) People
with no health problems like hypertension and bones or
muscles related problems (PARQ-Questionnaire) People
having BMI ranging between 19-23 or over (South-Asian
BMI scale)
Exclusion criteria:
Any recent fractures People with loss of hearing, sight
and other senses Hemodynamically unstable patients
People having undergone surgery within last 6 weeks
People with any physical disability Cognitive impairments
Refusal to give consent approval

Age
From **18 years** old to **30 years** old

Gender
Both

Phase
N/A

Groups that have been masked
No information

Sample size
Target sample size: **40**

Randomization (investigator's opinion)
N/A

Randomization description

Blinding (investigator's opinion)
Not blinded

Blinding description

Placebo
Not used

Assignment
Single

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Ethical Research Committee of Muhammad Institute

of Medical and Allied Sciences

Street address
HBL Street near Sabzazar Metro Station Bosan Road
Multan

City
Multan

Postal code
66000

Approval date
2023-03-05, 1401/12/14

Ethics committee reference number
MIMAS/05/03/2023/Farah

Health conditions studied

1

Description of health condition studied

sedentary young population

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description

Cardiorespiratory Endurance by Shuttle Run Test

Timepoint

Before Intervention, after 3rd week and 6th week of
intervention

Method of measurement

Cardiorespiratory Endurance will be checked by shuttle
run test

Secondary outcomes

1

Description

Muscle Strength

Timepoint

Before intervention, 3rd week and 6th week of
intervention

Method of measurement

Manual Muscle Testing

2

Description

Heart Rate

Timepoint

Before intervention, 3rd week and 6th week of
intervention

Method of measurement

Pulse Oximeter

3

Description

Blood Pressure

Timepoint

Before intervention, 3rd week and 6th week of intervention

Method of measurement
sphygmomanometer

4

Description
Respiratory Rate

Timepoint
Before intervention, 3rd week and 6th week of intervention

Method of measurement
Manually by placing fingers under nose

5

Description
Oxygen Saturation

Timepoint
Before intervention, 3rd week and 6th week of intervention

Method of measurement
Pulse Oximeter

6

Description
Quality of Life

Timepoint
Before intervention, 3rd week and 6th week of intervention

Method of measurement
SF-8 Questionnaire

Intervention groups

1

Description
This study includes only one Intervention group: This study will be using box jumping, Reverse Lounge knee-ups, pop squats, skater hops, push-ups and Sprints. We will be using Shuttle run test, manual muscle testing, mercury manometer, manual techniques for respiration rate measurement and pulse oximeter to measure muscle strength, Cardio-pulmonary fitness, blood pressure, pulse rate and Respiration rate. The duration for this training program will be 06 weeks. The frequency for training program is 04 days a week and each session will last 30 minutes.

Category
Prevention

Recruitment centers

1

Recruitment center
Name of recruitment center
Muhammad Institute of Medical and Allied Science, Multan

Full name of responsible person
Babar Ali

Street address
HBL Street near Sabzazar Metro Station Bosan Road Multan

City
Multan

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+92 308 9188519

Email
Babaralpt.9@gmail.com

Sponsors / Funding sources

1

Sponsor
Name of organization / entity
Muhammad Institute of Medical and Allied Sciences, Multan

Full name of responsible person
Dr. Imran Ahmad Khan Durrani

Street address
HBL Street near sabzazar Metro Station Bosan road Multan

City
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66000

Phone
+92 303 0503776

Email
mimas.edu@gmail.com

Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
Yes

Title of funding source
Muhammad Institute of Medical and Allied Sciences, Multan

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
Muhammad Institute of Medical and Allied Sciences, Multan

Full name of responsible person

Dr. Farah Zahid
Position
Lecturer
Latest degree
Master
Other areas of specialty/work
Rehabilitation management
Street address
HBL street near Sabzazar Metro Station Bosan Road
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Person responsible for scientific inquiries

Contact

Name of organization / entity
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Full name of responsible person
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Master
Other areas of specialty/work
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Person responsible for updating data

Contact

Name of organization / entity
Muhammd Institute of Medical and Allied Sciences
Multan

Full name of responsible person
Babar Ali
Position
Student
Latest degree
Bachelor
Other areas of specialty/work
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Babaralipt.9@gmail.com

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

Due to individual confidentiality and privacy

Study Protocol

Yes - There is 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

Yes - There is 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

Title and more details about the data/document

Primary and Secondary Outcomes

When the data will become available and for how long

After one year

To whom data/document is available

Data will be available for people working in clinical and academic institutions

Under which criteria data/document could be used

Request will be reviewed by the person who is responsible for Scientific Queries

From where data/document is obtainable

By the E-mail

What processes are involved for a request to access data/document

one year

Comments