Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 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 rendomization 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, 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. 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 od Medical and Allied Science, Multan

Full name of responsible person

Babar Ali

Street address

HBL Street near Sabzazar Metro Station Bosan Road Multan

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Email

Babaralipt.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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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 Multan

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Person responsible for scientific inquiries

Contact

Name of organization / entity
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Full name of responsible person
Dr. Farah Zahid

Position
lecturer

Latest degree
Master

Other areas of specialty/work
Rehabilitation management

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Person responsible for updating data

Contact

Name of organization / entity
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Full name of responsible person
Babar Ali

Position
Student

Latest degree
Bachelor

Other areas of specialty/work
Rehabilitation management

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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
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