Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 2026

Comparative effects of Baduanjin exercises and Burn 2 Learn program on Physical and Mental performance among Teenagers.

Protocol summary

Study aim
To compare the effectiveness of Baduanjin exercises and Burn 2 Learn program on physical and mental performance among teenagers

Design
single blinded, parallel group, randomized clinical trial using convenience sampling,

Settings and conduct
The study will be conducted in Divisional public school and its branches in Faisalabad, Pakistan and the study duration will be 12 months.

Participants/Inclusion and exclusion criteria
Inclusion criteria Participants of age 13-16 years Students of grade 8-10 Healthy individuals (BMI 18.5-24.9) Students of both gender Freshman, not participated in Baduanjin or Burn 2 Learn program Exclusion criteria Participants with severe exercise contraindications, Cardiovascular diseases and Musculoskeletal disorders Sports injuries Connective tissue disorders Mentally retarded students Any injury in the upper or lower limb region in the past two years Neurological and musculoskeletal disorders that limit movement, and pain in the lower limb prior to and after the tests

Intervention groups
Participants will be split into two groups upon consent: For the period of 12 weeks, three days a week, and one hour each session, Group A will adhere to the Baduanjin exercise regimen (10 minutes for warm-up, 40 minutes for Qigong Baduanjin, and 10 minutes for cool-down). For the period of 12 weeks, Group B will participate in three sessions a week of the Burn 2 Learn program, completing 15–20 minutes of HIIT each session, which will include a warm-up and cool-down. The HIIT blends strength training (lunges, squat leaps, and push-ups) with cardio (dance, boxing, jumping jacks, and shuttle sprints).

Main outcome variables
Tools 20-meter multistage shuttle test for aerobic fitness Standing long jump test for lower body strength and power Degree Push-Up for Upper body strength and power Warwick-Edinburgh Mental Well-Being Scale For mental performance

General information

Reason for update

Acronym

IRCT registration information
IRCT registration number: **IRCT20250429065528N1**
Registration date: **2025-05-29, 1404/03/08**
Registration timing: **registered_while_recruiting**

Last update: **2025-05-29, 1404/03/08**
Update count: **0**

Registration date
2025-05-29, 1404/03/08

Registrant information

Name
Zaimal Ilyas
Name of organization / entity
Riphah international university, Lahore
Country
Pakistan
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Recruitment status
Recruitment complete

Funding source

Expected recruitment start date
2024-07-07, 1403/04/17

Expected recruitment end date
2025-07-07, 1404/04/16

Actual recruitment start date

2025-01-15, 1403/10/26

Actual recruitment end date

2025-08-25, 1404/06/03

Trial completion date

2025-08-28, 1404/06/06

Scientific title

Comparative effects of Baduanjin exercises and Burn 2 Learn program on Physical and Mental performance among Teenagers.

Public title

Comparative effects of Baduanjin exercises and Burn 2 Learn program on Physical and Mental performance among Teenagers.

Purpose

Health service research

Inclusion/Exclusion criteria

Inclusion criteria:

Participants of age 13-16 years. Students of grade 8-10. Healthy individuals (BMI 18.5-24.9). Students of both gender. Freshman, not participated in Baduanjin or Burn 2 Learn program.

Exclusion criteria:

Participants with severe exercise contraindications, Cardiovascular diseases and Musculoskeletal disorders Sports injuries Connective tissue disorders Mentally retarded students Any injury in the upper or lower limb region in the past two years Neurological and musculoskeletal disorders that limit movement, and pain in the lower limb prior to and after the tests

Age

From **13 years** old to **16 years** old

Gender

Both

Phase

N/A

Groups that have been masked

- Participant

Sample size

Target sample size: **70**

Actual sample size reached: **70**

Randomization (investigator's opinion)

Randomized

Randomization description

Basic randomization will be done using a table of random numbers. The randomization unit will be the individual. There will be no usage of stratification. The random sequence will be manually created from the database, and the allocation will be concealed in opaque, sealed envelopes with sequential numbers.

Blinding (investigator's opinion)

Single blinded

Blinding description

Participants will be the only ones unaware of the group assignment. They won't be informed of their intervention group assignment, and all settings and instructions will be standardized to prevent disclosure.

Placebo

Not used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Ethics committee of Riphah College of Rehabilitation and Allied Health Sciences

Street address

26-M Gulberg 3 Campus Lahore

City

Lahore

Postal code

05450

Approval date

2024-07-30, 1403/05/09

Ethics committee reference number

REC/RCR & AHS/24/0462

Health conditions studied

1

Description of health condition studied

Physical and Mental Performance

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description

Aerobic fitness, Lower body strength and power, Upper body strength and Power, Mental performance

Timepoint

Interventions will continue for 12 weeks.

Method of measurement

20-meter multistage shuttle, Standing long jump test, Degree Push-Up, Warwick-Edinburgh Mental Well-Being

Secondary outcomes

empty

Intervention groups

1

Description

Intervention group: The Burn 2 Learn intervention will consist of the following components and execution methodologies. An authorized professional learning program for teachers will be held for one day (3 to 4 hours). This session seeks to provide intervention group

teachers with a thorough grasp of the intervention's rationale, including current data supporting the benefits of vigorous physical activity for cognitive and mental health. The study team will offer a brief 20-minute introduction presentation to principals and instructors. These courses will focus on the most recent research into the relationship between physical exercise, fitness, and academic accomplishment. Video clips with expert testimony on the relationship between physical exercise and cognition will be included in the seminars. Trained instructors will hold lessons at schools at lunchtime, recess, or free periods, utilizing a flexible delivery mode specified by each school. Schools are recommended to plan three sessions each week for 12 weeks. Students will engage in High-Intensity Interval Training (HIIT) for 15-20 minutes every session, including warm-up and cool-down. The HIIT program combines cardiovascular activities like shuttle sprints, jumping jacks, boxing, and dancing with muscle-building workouts like push-ups, squat jumps, and walking lunges. The intervals, which range from 8 to 16, follow a 30 second work, 30 second rest pattern, resulting in a 1:1 work-to-rest ratio. To increase motivation, HIIT classes will include a range of exercises and options throughout each session. Students will be able to pick between pre-planned High-Intensity Interval Training (HIIT) routines that include boxing, dancing, jogging, resistance training, and sport-specific HIIT (e.g., soccer, touch football, and basketball).

Category

Treatment - Other

2

Description

Intervention group: Exercises program will be provided using Telerehabilitation to the instructors. The instructors will hold lessons at schools during lunchtime, free periods or recess time depending upon the availability of time. Participants will follow Baduanjin course for 12 weeks, 3 days a week, and 1 hour a day. Each lesson includes 10 minutes of warm-up, 40 minutes of Qigong Baduanjin exercises and 10 minutes of cool down.

Category

Treatment - Other

Recruitment centers

1

Recruitment center

Name of recruitment center

Divisional Public school Faisalabad, Pakistan

Full name of responsible person

Mrs. Aliya Ayub Chattha

Street address

Race course Road, Civil Lines.

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Faisalabad

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38001

Phone

+92 41 9201431

Fax

+92 41 2409282

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principal@dpsfsd.edu.pk

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Riphah International University Lahore

Full name of responsible person

Dr. Danish

Street address

25 Raza Saeed RD, Bhabra Block M Gulberg III Lahore, Punjab.

City

Lahore

Postal code

54660

Phone

+92 345 7946009

Email

54192@students.riphah.edu.pk

Grant name

Grant code / Reference number

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

Yes

Title of funding source

Riphah International University Lahore

Proportion provided by this source

40

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

Riphah International University, Lahore

Full name of responsible person

Dr. Zaimal

Position

Student

Latest degree

Bachelor

Other areas of specialty/work

Physiotherapy

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Person responsible for scientific inquiries

Contact

Name of organization / entity
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Full name of responsible person
Dr. Zaimal

Position
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Latest degree
Bachelor

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)
Yes - There is a plan to make this available

Study Protocol
Yes - There is a plan to make this available

Statistical Analysis Plan
Yes - There is a plan to make this available

Informed Consent Form
Yes - There is a plan to make this available

Clinical Study Report
Yes - There is a plan to make this available

Analytic Code
Undecided - It is not yet known if there will be a plan to make this available

Data Dictionary
Yes - There is a plan to make this available

Title and more details about the data/document
Yet to be decided, study will complete in next 3 months.

When the data will become available and for how long
Yet to be decided, study will complete in next 3 months.

To whom data/document is available
To all the researcher community and clinicians.

Under which criteria data/document could be used
For research purpose and evidence based practice

From where data/document is obtainable
google scholar and PubMed

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

Comments