

Clinical Trial Protocol

Iranian Registry of Clinical Trials

20 Aug 2026

Comparison of effect of selected exercise program and earobic training on motor proficiency, executive function and serum brain-derived neurotrophic factor of children with Attention Deficit Hyperactivity Disorder (ADHD)

Protocol summary

Summary

Objective: Comparison of effect of selected exercise program and earobic training on motor proficiency, executive function and serum brain-derived neurotrophic factor of children with Attention Deficit Hyperactivity Disorder (ADHD). Study Design: Subjects were divided randomly into three groups (control, selected exercise program and earobic training) and was designed as a double blind study. Inclusion criteria: Boys 7 to 12 years old with Attention Deficit / Hyperactivity of District 6 of the city of Mashhad. Exclusion criteria: IQ score below 70, children with Autism and other mental disorders and physical problems. Sample size: 60 children with ADHD. (B) Intervention study: Interventions were included of comparing the two types of exercise program (selected exercise program and earobic training program): 1- The selected exercise program is a set of physical exercises to improve motor skills (such as mobility, balance, coordination, speed and agility) and executive functions (inhibition, attention and concentration, planning and organizing, memory) in the form of the game individual and group with moderate to severe intensity were designed. 2-The aerobic training: Aerobic training program is contains a set of aerobic and physical exercises that are aimed at improving motor skills (such as mobility, balance, coordination, speed and agility) and executive functions (reaction time, inhibition control, attention, planning and organization , memory) with moderate to severe intensity were designed. (G) Intervention time: Interventions time were January and February 2016. The interventions were performed three days a week, 24 sessions in 8 weeks, with a time of 90 minutes. (D) The outcome of the study: A structured physical activity program may be used as a method to improve cognitive function and treat children with ADHD.

General information

Acronym

ADHD

IRCT registration information

IRCT registration number: **IRCT2016031627075N1**

Registration date: **2016-04-11, 1395/01/23**

Registration timing: **retrospective**

Last update:

Update count: **0**

Registration date

2016-04-11, 1395/01/23

Registrant information

Name

Mozhgan Memarmoghaddam

Name of organization / entity

Ferdowsi University Of Mashhad

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Recruitment status

Recruitment complete

Funding source

Mashhad Ferdowsi University

Expected recruitment start date

2015-12-22, 1394/10/01

Expected recruitment end date

2016-02-19, 1394/11/30

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date
empty

Scientific title
Comparison of effect of selected exercise program and aerobic training on motor proficiency, executive function and serum brain-derived neurotrophic factor of children with Attention Deficit Hyperactivity Disorder (ADHD)

Public title
The effect of exercise training program on children with Attention Deficit / Hyperactivity

Purpose
Treatment

Inclusion/Exclusion criteria
Inclusion criteria: boys 7 to 12 years old with Attention Deficit / Hyperactivity of District 6 of the city of Mashhad.
Exclusion criteria: IQ score below 70, children with Autism and other mental disorders and physical problems.

Age
From **7 years** old to **12 years** old

Gender
Male

Phase
N/A

Groups that have been masked
No information

Sample size
Target sample size: **60**

Randomization (investigator's opinion)
Randomized

Randomization description

Blinding (investigator's opinion)
Double blinded

Blinding description

Placebo
Not used

Assignment
Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee
Mashhad Ferdowsi University

Street address
Paradise Daneshgah, Azadi Square, Mashhad

City
Mashhad

Postal code
9177948979

Approval date
2014-08-12, 1393/05/21

Ethics committee reference number
3/30101

Health conditions studied

1

Description of health condition studied
Attention deficit / hyperactivity Disorder

ICD-10 code
F90.0

ICD-10 code description
Disturbance of activity and attention

Primary outcomes

1

Description
Serum Brain-Derived Neurotrophic Factor

Timepoint
Before and two months after intervention

Method of measurement
ELISA

2

Description
Executive Functions

Timepoint
Before and two months after intervention

Method of measurement
Continuous Performance, Stroop, Go no go, the Tower of London, Digit Span from the Wechsler and Corsi block tapping tests

3

Description
Motor Proficiency

Timepoint
Before and two months after intervention

Method of measurement
Oseretsky Brvnynkz test

Secondary outcomes

1

Description
Sustained Attention

Timepoint
Before and two months after intervention

Method of measurement
Continuous Performance test

2

Description
Response Inhibition

Timepoint
Before and two months after intervention

Method of measurement

Stroop test

3

Description

Behavior Inhibition

Timepoint

Before and two months after intervention

Method of measurement

Go no go test

4

Description

Planning and Organizing

Timepoint

Before and two months after intervention

Method of measurement

Tower of London test

5

Description

Verbal Memory

Timepoint

Before and two months after intervention

Method of measurement

Digit Span from the Wechsler test

6

Description

Visual-spatial Memory

Timepoint

Before and two months after intervention

Method of measurement

Corsi Block Tapping test

Intervention groups

1

Description

The first intervention group: the selected exercise program that including perceptual - motor trainings and aerobic trainings. The intervention was conducted during 2 months, 24 sessions, three times per week and each session 90 minutes.

Category

Other

2

Description

The second intervention group: intervention aerobic training that includes training of running, aerobic games and running on a treadmill. Intervention during 2 months, 24 sessions, three times per week and each session was conducted 90 minutes.

Category

Other

Recruitment centers

1

Recruitment center

Name of recruitment center

Area 6 of Education of Mashhad

Full name of responsible person

Mozhgan Memarmoghaddam

Street address

Faculty of Physical Education & Sport science,Paradise Daneshgah,Azadi Square,Mashhad

City

Mashhad

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Mashhad Ferdowsi University

Full name of responsible person

Hamidreza Taheri

Street address

Paradise Daneshgah,Azadi Square,Mashhad

City

Mashhad

Grant name

Grant code / Reference number

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

Yes

Title of funding source

Mashhad Ferdowsi University

Proportion provided by this source

100

Public or private sector

empty

Domestic or foreign origin

empty

Category of foreign source of funding

empty

Country of origin

Type of organization providing the funding

empty

Person responsible for general inquiries

Contact

Name of organization / entity

Mashhad Ferdowsi University

Full name of responsible person

Mozhgan Memarmoghaddam

Position

PhD student/ Masters

Other areas of specialty/work

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Sharing plan

Deidentified Individual Participant Data Set (IPD)
empty
Study Protocol
empty
Statistical Analysis Plan
empty
Informed Consent Form
empty
Clinical Study Report
empty
Analytic Code
empty
Data Dictionary
empty