Clinical Trial Protocol
Iranian Registry of Clinical Trials

08 Nov 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 earobic 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
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Position
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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