

Clinical Trial Protocol

Iranian Registry of Clinical Trials

20 Jun 2026

Comparing the effectiveness of computer-assisted cognitive rehabilitation and game-based neuropsychological rehabilitation for students with specific learning disabilities

Protocol summary

Study aim

A comparative study of the effectiveness of computer-based cognitive rehabilitation and game-based neuropsychological rehabilitation on the improvement of specific learning disorder

Design

Randomized control trial

Settings and conduct

Pre-test and post-test in Tehran, Iran

Participants/Inclusion and exclusion criteria

1. Receive a diagnosis of a specific learning disorder
2. Informed consent of parents to participate in the research
3. Being in the age range of 6 to 12 years

Intervention groups

Computer-based cognitive rehabilitation group: This group will undergo a computerized intervention using the Captain Log program in 25 sessions. Game-based neuropsychological rehabilitation group: This group will undergo a neuropsychological rehabilitation program using physical games in 25 sessions. Control group: This group will not receive any intervention.

Main outcome variables

cognitive and psychological

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20230416057922N1**

Registration date: **2023-10-18, 1402/07/26**

Registration timing: **prospective**

Last update: **2023-10-18, 1402/07/26**

Update count: **0**

Registration date

2023-10-18, 1402/07/26

Registrant information

Name

Asgar Alimohmadi

Name of organization / entity

Allameh Tabataba'i University

Country

Iran (Islamic Republic of)

Phone

+98 21 4839 3194

Email address

alimohamadi@atu.ac.ir

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2023-11-06, 1402/08/15

Expected recruitment end date

2023-11-22, 1402/09/01

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Comparing the effectiveness of computer-assisted cognitive rehabilitation and game-based neuropsychological rehabilitation for students with specific learning disabilities

Public title

computer-assisted cognitive rehabilitation and game-based neuropsychological rehabilitation for students with specific learning disabilities

Purpose

Education/Guidance

Inclusion/Exclusion criteria

Inclusion criteria:

The revised main criteria for entering the study are as follows

1. Being between the ages of 6 and 12 years old
2. Meeting the criteria for a specific learning disorder as diagnosed by a specialist
3. Obtaining informed consent from parents to participate in the study

Exclusion criteria:

comorbid disorders such as ADHD and drug use
existence of severe language and non-verbal problems as diagnosed by the psychologist

Age

From **6 years** old to **12 years** old

Gender

Both

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **153**

Randomization (investigator's opinion)

Randomized

Randomization description

The participants will be divided into two intervention groups and one control group using a randomization sequence that will be created beforehand. This sequence will be completely random and unpredictable. To allocate the participants, a block randomization method will be employed, involving 9 blocks. By utilizing random number generation software with the block method, the randomization sequence will be generated based on the required sample size for the two groups. The process of assigning participants to groups will be facilitated by a software called Sealed Envelope. Additional Information: In order to generate the list, we take into account 9 different block sizes and a total list length of 153. Within the treatment groups, we have three specific groups: Group A, Group B, and Group C. Using the software, we create 10 blocks, each containing 9 options. Out of the total 153 codes, 51 will be assigned to Group A, 51 to Group B, and 51 to Group C. This software ensures that concealment is maintained during the allocation process. Concealment refers to the unpredictability of assigning individuals to specific groups. It means that the researcher will not be able to predict which group the next person will be assigned to. This helps to minimize any potential bias or influence in the allocation process, ensuring a fair and unbiased distribution of participants across the interventions and control groups.

Blinding (investigator's opinion)

Not blinded

Blinding description**Placebo**

Not used

Assignment

Parallel

Other design features**Secondary Ids**

empty

Ethics committees**1****Ethics committee****Name of ethics committee**

The committee of ethics in research of Allameh Tabatabai University

Street address

Iran. Tehran, Dehkadeh olampic

City

tehran

Province

Tehran

Postal code

۱۴۸۹۶۸۴۵۱۱

Approval date

2023-07-09, 1402/04/18

Ethics committee reference number

IR.ATU.REC.1402.026

Health conditions studied**1****Description of health condition studied**

specific learning disorder

ICD-10 code**ICD-10 code description****Primary outcomes****1****Description**

executive function

Timepoint

pre test-post test

Method of measurement

In this research, executive function tools including the Continuous Attention Test, BRIEF2 Test, Working Memory Test, and Motor Skills Test will be used.

Secondary outcomes**1****Description**

none

Timepoint

none

Method of measurement

none

Intervention groups**1****Description**

Intervention group: The group received computer-based cognitive rehabilitation with a designed package for two

months. This intervention is done in 25 sessions. These interventions are received by a computer called Captain Log. Games and activities that require a computer and the program is installed on it. Usually, each activity lasts between 20 and 45 minutes. Captain Log contains motivational and entertaining videos. By activating the brain reward cycle, the exercises and training patterns of the software lead to encouraging people to improve and improve their performance. Visual recognition, auditory recognition, number perception, sequential conceptual patterns and types of memory (visual memory), (auditory memory), (active memory), (memory sequence).- Captain's Log cognitive software first conducts a 9-step test for the person according to the specified age of the client, The report of the person's acceptance in each of the nine stages of the test and the report of the average response time to the test questions (Reaction Time) and a complete comparison chart are provided to the examiner. In the next step, the examiner can use the treatment program recommended by the software. The application will have, according to the test performed a customized plan chosen by the therapist from among about 50 types of exercises in 3 different levels (about 150 exercises).

Category

Rehabilitation

2

Description

Intervention group: The game-based neuropsychological rehabilitation group receives the designed package during two months, which is 25 sessions of 45 groups and is held 4 times a week. This program tries to improve children's cognitive and psychological functions through games and exercises. Hasanalizadeh et al. (2017) have used this program in 16 sessions to improve the psychological functions of children with developmental delay.

Category

Rehabilitation

3

Description

Control group: routin education

Category

N/A

Recruitment centers

1

Recruitment center

Name of recruitment center
Exceptional Education Organization
Full name of responsible person
Asgar Alimohamadi
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Sponsors / Funding sources

1

Sponsor

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Grant name

Office of reserch of Allameh Tabataba'i University

Grant code / Reference number

ندارد

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

Yes

Title of funding source

Allameh Tabataba'i University

Proportion provided by this source

1

Public or private sector

Public

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

Allameh Tabataba'i University

Full name of responsible person

Asgar Alimohamadi

Position

faculty member

Latest degree

Ph.D.

Other areas of specialty/work

Psychology

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Latest degree

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Other areas of specialty/work

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Sharing plan**Deidentified Individual Participant Data Set (IPD)**

Yes - There is a plan to make this available

Study Protocol

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

Statistical Analysis Plan

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

Informed Consent Form

No - There is not a plan to make this available

Clinical Study Report

Not applicable

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

Quantitative Data

When the data will become available and for how long

After publishing

To whom data/document is available

will be accessible based on email request

Under which criteria data/document could be used

analyzing

From where data/document is obtainable

corresponding author

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

mail

Comments