

Clinical Trial Protocol

Iranian Registry of Clinical Trials

17 Sep 2026

The Effectiveness of Cognitive Rehabilitation by working memory training software on Improvement of Visual Motor Perception and Executive Functions in Children with Dyslexia

Protocol summary

Study aim

The aim of this study was to improve the patient's cognitive impairments and performance such as memory, executive function, social perception, concentration, and attention. Reading is of particular importance so that students with appropriate intelligence do not lag behind other students due to poor reading, and also use the results of this research in schools for learning disabilities, counseling centers of education departments as well as specialists in centers. Advice for children and adolescents with special needs.

Design

The study groups include a total of 30 students between 7 and 13 years old who are in the two groups of 15 people including the control and experimental groups.

Settings and conduct

After performing entrance tests and selecting individuals, the desired activities, including enhancing auditory, visual and perceptual memory, were performed on the students of the experimental group during 11 sessions. The behavioral ranking questionnaire of executive actions was used effectively.

Participants/Inclusion and exclusion criteria

Written consent of parents and students with dyslexia, obtaining the necessary cut score in the visual-motor perception test of Bandar-Gestalt and questionnaire (list) Behavioral ranking of executive actions for both experimental and control groups, IQ (85 to 115), Degree (elementary). Students whose IQ is less than 85 or who have not obtained the required cut-off score in the Gestalt Port Perceptual Movement Perception Test and the Behavioral Ranking Questionnaire (List) do not have the criteria to enter the research.

Intervention groups

The first experimental group was presented once a week (for 11 weeks) for 11 sessions of 60 minutes. Cognitive rehabilitation was performed by working memory

training software.

Main outcome variables

, Visual and Auditory memory , general Perception , Help reading , Community Verified icon

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20210609051522N1**

Registration date: **2021-08-05, 1400/05/14**

Registration timing: **prospective**

Last update: **2021-08-05, 1400/05/14**

Update count: **0**

Registration date

2021-08-05, 1400/05/14

Registrant information

Name

Reza Yosefi

Name of organization / entity

Islamic Azad University, Lahijan branch

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Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2021-08-13, 1400/05/22

Expected recruitment end date

2021-08-19, 1400/05/28

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

The Effectiveness of Cognitive Rehabilitation by working memory training software on Improvement of Visual Motor Perception and Executive Functions in Children with Dyslexia

Public title

Evaluation of the effectiveness of cognitive rehabilitation on motor visual perception in dyslexic students

Purpose

Treatment

Inclusion/Exclusion criteria**Inclusion criteria:**

Written consent of parents and students with dyslexia, trade required cut-off score in the Visual-Motor perception Bender Gestalt Test and questionnaire (list) Behavioral ranking of actions performed for both experimental and control groups IQ (85 to 115), educational level (elementary).

Exclusion criteria:

Student IQ is less than 85 Student does not get the required cut score in the Gestalt Port Motor Visual Perception Test The student should not obtain the required cut-off score in the behavioral ranking questionnaire of executive actions.

AgeFrom **7 years** old to **13 years** old**Gender**

Both

Phase

N/A

Groups that have been masked*No information***Sample size**Target sample size: **30****Randomization (investigator's opinion)**

Randomized

Randomization description

Available selection and simple random assignment, the lottery method is used, for which the names and surnames of 93 students in the dynamic centers are written in small sheets and then these small cards were placed in a bag and Between the cards in the bag, a C card containing a first and last name is randomly selected. «نماد «مورد تأیید انجمن»

Blinding (investigator's opinion)

Not blinded

Blinding description**Placebo**

Not used

Assignment

Other

Other design features**Secondary Ids**

empty

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

Research Ethics Committee of Islamic Azad University, Lahijan Branch

Street address

Fuman, Shohada St., Shahid Eftekhari Alley, Golestan Building 2, Unit 3

City

Fuman

Province

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Postal code

4351739388

Approval date

2021-05-26, 1400/03/05

Ethics committee reference number

IR.IAU.LIAU.REC.1400.018

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

dyslexic

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

Students' visual-visual perception score

Timepoint

Before the start of cognitive rehabilitation sessions and 11 weeks after the end of the cognitive rehabilitation sessions

Method of measurement

Visual-motor perception: In the present study, visual-motor perception refers to the score that the subjects obtain from the list of visual-motor perceptions of Bender-Gestalt (1938). This list measures four types of distortion error, incorrect composition, rotation, and continuity.

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

Students' executive actions score

Timepoint

Before cognitive rehabilitation sessions and 11 weeks after cognitive rehabilitation sessions

Method of measurement

Executive Actions: In the present study, executive actions are the score that the subjects of the Behavioral Ranking Questionnaire of Executive Actions (short form) acquire. This questionnaire has eight components: inhibition, attention transfer, emotional control, planning, material organization, monitoring, working memory, initiation.

Intervention groups

1

Description

Intervention group: Cognitive rehabilitation will be provided to the first experimental group in 11 sessions of 60 minutes once a week (for 11 weeks) by working memory training software. In order to teach the working memory of this software in 2010 under the supervision of psychology professors of Ferdowsi University of Mashhad and in collaboration with Sina Behavioral-Cognitive Sciences Research Institute and based on existing theories, by modeling Robommo software (Klingberg et al. , 2005) and its adaptation to Iranian culture has been prepared and its content validity has been confirmed. This software provides the user with exercises in three parts of auditory, visual, and spatial memory (stabilization) separately using numbers, letters, and shapes (Hamzeh Lou, Mashhadi and Salehifadri, 2014). This software affects the student's working memory ability by using positive reinforcement method as well as repetition, practice and sensory stimulation of vision and hearing. The student will gradually learn how to use his own senses and mental space to store more numbers and letters in his mind.

Category

Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center

Fooman County Education Department

Full name of responsible person

Reza Khani

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

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Full name of responsible person

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Grant name

Grant code / Reference number

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

Yes

Title of funding source

Fooman County Education Department

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

Persons

Person responsible for general inquiries

Contact

Name of organization / entity

Islamic Azad University

Full name of responsible person

reza yosefi

Position

Consultant

Latest degree

Bachelor

Other areas of specialty/work

Medical Education

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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

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

Participants' data file, study protocol, and clinical study report in the form of report and article will be submitted to the General Directorate of Educational Departments of Guilan Province and after approval by the Education and Research Center of the General Directorate will be published in growth magazines related to teachers. Will be presented in the form of brochures to dynamic centers.

When the data will become available and for how long

The start of the access period is in 1400 and 3 months after printing

To whom data/document is available

کلیه افرادی که در زمینه دانشگاهی در حیطه روانشناسی فعالیت دارند و آموزگاران و فعالین در مراکز پویا می توانند به این داده ها دسترسی داشته باشند.

Under which criteria data/document could be used

According to the study of the effectiveness of all people who somehow deal with special learning difficulties can use the relevant reports.

From where data/document is obtainable

To the General Directorate of Educational Departments of Guilan Province

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

After referring to the General Department of Educational Departments and a written request, the cases will be sent after two working days.

Comments