

Clinical Trial Protocol

Iranian Registry of Clinical Trials

17 Sep 2026

Evaluation of the Effect of Motor Imagery Training on Perception Visual-Motor and Stereotypical Behaviors of Children with Autism Spectrum Disorder

Protocol summary

Study aim

Effect of motion visualization on visual-motor perception and stereotyped behaviors of children with autism spectrum disorders

Design

The phase 2, clinical trial study with a control group, with parallel, randomized design among 30 children in which randomization was done through drawing a number.

Settings and conduct

This study was conducted by a therapist (researcher) in the Occupational Therapy Rehabilitation Clinic of Sahib Kausar and Iranian Hospitals on children with autism spectrum disorder referred to the mentioned centers. Blinding was not done in this study.

Participants/Inclusion and exclusion criteria

Inclusion criteria: suffering from autism spectrum disorder; consent to participate in the study; age between 5-12 years. Non-inclusion criteria: presence of any concurrent disorder other than autism; Existence of physical diseases; receiving treatments affecting the therapeutic method of movement imaging; previous experience of receiving movement imaging exercises; having any structural or functional problems in the visual system.

Intervention groups

Intervention group: they received movement visualization exercises according to the program with 6 steps. Control group: they received ongoing and routine treatments.

Main outcome variables

Visual-motor perception; stereotyped behaviors

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20160726029086N7**

Registration date: **2023-07-21, 1402/04/30**

Registration timing: **retrospective**

Last update: **2023-07-21, 1402/04/30**

Update count: **0**

Registration date

2023-07-21, 1402/04/30

Registrant information

Name

Nasrin Elahi

Name of organization / entity

Ahvaz Jundishapur University Of Medical Sciences

Country

Iran (Islamic Republic of)

Phone

+98 61 3373 8071

Email address

elahi-n@ajums.ac.ir

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2023-03-14, 1401/12/23

Expected recruitment end date

2023-06-05, 1402/03/15

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Evaluation of the Effect of Motor Imagery Training on Perception Visual-Motor and Stereotypical Behaviors of

Children with Autism Spectrum Disorder

Public title
The effect of visualization exercises on visual motor perception and stereotyped behaviors in autism

Purpose
Treatment

Inclusion/Exclusion criteria
Inclusion criteria:
The main and dominant diagnosis of autism spectrum disorder, grade 1 and 2 Consent of children and parents to participate in therapy sessions Age range from 5 to 12 years
Exclusion criteria:
Any other concurrent disorder other than autism that can be considered as the main diagnosis. Existence of physical diseases Receiving effective treatments on motion imaging therapy in other centers Having any structural or functional problems in the vision system, approved by a specialist doctor Previous experience of receiving movement imaging exercises

Age
From **5 years** old to **12 years** old

Gender
Both

Phase
2-3

Groups that have been masked
No information

Sample size
Target sample size: **30**

Randomization (investigator's opinion)
Randomized

Randomization description
Subjects were randomly divided into two experimental and control groups (15 people in each group) through drawing a number.

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
Ethics committee of Tehran Islamic Azad University
Street address
No. 5, corner of Ram street, Nistan 9th, Pasdaran street, Tehran
City
Tehran

Province
Tehran
Postal code
۱۴۳۳۵۴۹۹
Approval date
2022-12-17, 1401/09/26
Ethics committee reference number
IR.IAU.SRB.REC.1401.374

Health conditions studied

1

Description of health condition studied
autism
ICD-10 code
F84.0
ICD-10 code description
Autistic disorder

Primary outcomes

1

Description
stereotyped behaviors
Timepoint
Before and after the intervention and one-month follow-up
Method of measurement
Giam-Garz autism rating scale

2

Description
Visual-motor perception
Timepoint
Before and after the intervention and one-month follow-up
Method of measurement
Frostic test

3

Description
power of Motion visualization
Timepoint
Before and after the intervention and one-month follow-up
Method of measurement
motor imagery questionnaire

Secondary outcomes

empty

Intervention groups

1

Description
Intervention group: After the careful selection and

grouping of subjects, movement imaging exercises according to the standard and valid protocol of Wilson et al. are presented for the 6-step intervention group. 1: Visualization according to the timing; in this step, the task of tracking a disc in different colors and speeds is presented so that the child can follow the discs with his eyes based on the timing. (10 minutes). 2: relaxation and mental preparation; at this stage, the child is talked to and by playing some cooperative games, he is mentally ready to start the main effort of mental exercises. (5 minutes). Third: Modeling of basic movement skills; pattern of skillful implementation of basic movement skills of walking, running, jumping in pairs, rolling, trotting, running hiccups, throwing and receiving, dodging, placing parts on the screen, which are edited as 3D videos and in order to accurately control the presentation of the exercises, are provided to each participant individually by means of a high quality Polaroid glasses. (10 minutes). Fourth: mental practice of skills from an external perspective; The execution of the skill of an identical child (third person) is shown in the form of a video, and then he is asked to visualize the skill and review it mentally. (10 minutes). Fifth: mental practice of the skill from an internal point of view; performing the skill in such a way that the person himself is performing the movement (first person) is shown in the form of a video, and then he is asked to visualize the skill and review it mentally. (10 minutes). Sixth: real performance of the skill along with mental practice; A real performance of each skill is performed by the child, and after each performance, he is asked to visualize the skill and perform it again so that the skill is mentally reviewed and accurately visualized. (5 minutes). The total of all steps is 60 minutes (1 hour). Also, in the implementation of perceptual interventions, each intervention is measured in a dark room where the only light in the environment is the light of the monitor. Each participant sits on a chair with a distance of 60 cm from the monitor screen. in such a way that he is completely leaning on the seat support and can easily see the monitor screen in front of him. Children were asked to keep their head still while responding to the attempts of two perceptual interventions. But there is no specific restriction on head movement. At the end of recording the interventions, the children's cooperation is appreciated in some way.

Category

Rehabilitation

2

Description

For the control group, ongoing and routine treatments (usual rehabilitation programs that include occupational therapy, speech therapy, and behavioral therapy) are performed. For both groups, exercises are done three times a week.

Category

Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center

Sahib Kausar Hospital

Full name of responsible person

Maryam Alsadat Kardaani

Street address

Sahib Kausar Hospital; Tehransar

City

Tehran

Province

Tehran

Postal code

1465494741

Phone

+98 21 4437 8406

Email

kardaani.maryam@gmail.com

2

Recruitment center

Name of recruitment center

Iran Rehabilitation Clinic

Full name of responsible person

Mohammad Khani

Street address

No 189; Jalale Ale Ahmad street; Marzadaran

City

Tehran

Province

Tehran

Postal code

1453424567

Phone

+98 21 8824 2410

Email

khani_m@yahoo.com

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Islamic Azad University

Full name of responsible person

Alireza Khoshdel

Street address

No. 19, Mahestan St., Bustan St., Khordin Blvd., Sanat Square, Shahrek Gharb, Tehran

City

Tehran

Province

Tehran

Postal code

۱۴۳۳۵۴۹۹

Phone

+98 21 4286 3000

Email
khoshdel-a@yahoo.com
Web page address
https://ec.iau.ir
Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
No
Title of funding source
Islamic Azad University (no financial support)
Proportion provided by this source
100
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
Islamic Azad University
Full name of responsible person
Maryam Alsadat Kardani
Position
Masters student
Latest degree
Bachelor
Other areas of specialty/work
Occupational Therapy
Street address
No.2; Marzdaran; Jalal Al-e-Ahmad street; 3rd street
City
Tehran
Province
Tehran
Postal code
1463445799
Phone
+98 21 4437 8406
Email
kardaani.maryam@gmail.com

Person responsible for scientific inquiries

Contact
Name of organization / entity
Islamic Azad University
Full name of responsible person
Maryam Alsadat Kardani
Position
Masters student
Latest degree
Bachelor
Other areas of specialty/work

Occupational Therapy
Street address
No.2; Marzdaran; Jalal Al-e-Ahmad street; 3rd street
City
Tehran
Province
Tehran
Postal code
1462345465
Phone
+98 21 4437 8406
Email
kardaani.maryam@gmail.com

Person responsible for updating data

Contact
Name of organization / entity
Islamic Azad University
Full name of responsible person
Maryam ALSadat Kardani
Position
Master student
Latest degree
Bachelor
Other areas of specialty/work
Occupational Therapy
Street address
No.2; Marzdaran; Jalal Al-e-Ahmad street; 3rd street
City
Tehran
Province
Tehran
Postal code
146 345 3756
Phone
+98 012 44378406
Email
kardaani.maryam@gmail.com

Sharing plan

Deidentified Individual Participant Data Set (IPD)
Undecided - It is not yet known if there will be 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
Undecided - It is not yet known if there will be a plan to make this available
Clinical Study Report
Undecided - It is not yet known if there will be 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
Undecided - It is not yet known if there will be a plan to

make this available