Clinical Trial Protocol
Iranian Registry of Clinical Trials

05 Nov 2026

The Comparison of the effect of sensory motor rhythm and beta and theta wave training neurofeedback on postural control and attention in youth

Protocol summary

Study aim
The Comparison of the effect of sensory motor rhythm and beta and theta wave training neurofeedback on postural control and attention in youth

Design
In this study, 24 students of rehabilitation fields in rehabilitation faculty of Shahid Beheshti University of Medical Sciences according to study criteria are selected by simple sampling method. They are then randomly assigned to either SMR or beta-theta neurofeedback group, each with a code is assigned.

Settings and conduct
Neurofeedback training sessions will be held in a special room, which is a quiet and non-stimulating environment, and will be conducted at the Faculty of Rehabilitation, Shahid Beheshti University of Medical Sciences, between 9am and 12pm. People will not know which protocol they will receive and all tests will be performed by an experienced trained examiner who is blind to the study and the groups.

Participants/Inclusion and exclusion criteria
Inclusion criteria: aged 18 to 30 years; being healthy and without any complications that impair the balance. Exclusion criteria: not having a history of using neurofeedback and taking confusion drugs.

Intervention groups
In this study, for a group, the SMR amplification neurofeedback protocol (12-15 Hz) is used, and for the other group the Hammond defined protocol called the equilibrium protocol is used with the reduction of the frequency of 4-7 Hz (theta) and the amplification of the frequency of 18-15 Hz

Main outcome variables
postural control, risk of falling and attention

General information

Reason for update

Acronym

IRCT registration information
IRCT registration number: **IRCT20171128037665N1**
Registration date: **2018-01-29, 1396/11/09**
Registration timing: **retrospective**

Last update: **2018-01-29, 1396/11/09**
Update count: **0**

Registration date
2018-01-29, 1396/11/09

Registrant information

Name
Fariba Keshavarzi

Name of organization / entity

Country
Iran (Islamic Republic of)

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+98 71 5807 2238

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Recruitment status
Recruitment complete

Funding source

Expected recruitment start date
2017-12-11, 1396/09/20

Expected recruitment end date
2018-01-20, 1396/10/30

Actual recruitment start date
empty

Actual recruitment end date
empty

Trial completion date
empty

Scientific title
The Comparison of the effect of sensory motor rhythm and beta and theta wave training neurofeedback on postural control and attention in youth

Public title
effect of neurofeedback training on postural control and attention
Purpose
Treatment
Inclusion/Exclusion criteria
Inclusion criteria:
Students of Rehabilitation School of Shahid Beheshti University of Medical Sciences
Exclusion criteria:
Having cognitive, vision and hearing problems Having history of any neuromuscular and systemic disease (diabetes and rheumatism), limb length discrepancy (more than 1 cm), spastic cerebral palsy, Drug addiction or alcohol, and any complications that impair balance. Having history of using neurofeedback before this study or using confusing drugs Taking medications that make you confused
Age
From **18 years** old to **30 years** old
Gender
Both

Phase
N/A
Groups that have been masked

- Participant
- Investigator

Sample size
Target sample size: **24**
Randomization (investigator's opinion)
Randomized
Randomization description
Simple randomization
Blinding (investigator's opinion)
Double blinded
Blinding description
Participants will not be informed which interventions they receive. All tests will perform by an experienced trained examiner who is blind to the study and the groups.
Placebo
Not used
Assignment
Parallel
Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee
Name of ethics committee
Ethics committee of Shahid Beheshti University of Medical Science
Street address
Yaman st, Shahid Chamran Highway
City
Tehran
Province
Tehran
Postal code
1985717443
Approval date
2018-01-02, 1396/10/12
Ethics committee reference number
IR.SBMU.RETECH.REC.1396.787

Health conditions studied

1

Description of health condition studied
Balance and attention performance
ICD-10 code
ICD-10 code description

Primary outcomes

1

Description
The percentage of overall balance index in the Biodex balance meter
Timepoint
Immediately before and after intervention
Method of measurement
Biodex balance meter

2

Description
Percentage of correct responses in the Vinenna test
Timepoint
Immediately before and after intervention
Method of measurement
Vienna test

Secondary outcomes

empty

Intervention groups

1

Description
intervention group: Beta and theta wave neurofeedback training. In this group, the protocol defined by Hammond is referred to as the equilibrium protocol, the reduction of the frequency of 7-4 Hz (theta) and the amplification of the 18-15 Hz frequency (beta wave) is used. Neurofeedback exercises will be performed three days a week for 10 sessions of 30 minutes.
Category
Rehabilitation

2

Description

Control group: Sensory motor neurofeedback training. In this group, the sensory motor amplification protocol (12-15 Hz) is used, which is an active electrode for recording brain waves on a CZ point. Neurofeedback exercises will be performed through 10 30-minute sessions three days a week

Category
Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center
Occupational Therapy Clinic, the Faculty of Rehabilitation, Shahid Beheshti University of Medical Sc

Full name of responsible person
Fariba Keshavarzi

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity
Shahid Beheshti University of Medical Sciences

Full name of responsible person
Alireza Akbarzadeh Baghban

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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
Shahid beheshti University of Medical Sciences

Proportion provided by this source
100

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
Shahid Beheshti University of Medical Sciences

Full name of responsible person
Fariba Keshavarzi

Position
Student

Latest degree
Bachelor

Other areas of specialty/work
Occupational Therapy

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Person responsible for scientific inquiries

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Position
Student

Latest degree
Bachelor

Other areas of specialty/work
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Person responsible for updating data

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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