Effectiveness of working memory training, Barkley’s parent training program, and combination of these two interventions on improvement of working memory in children with ADHD

Protocol summary

Summary
Goals: The aim of the current study was to examine effectiveness of working memory training, Barkley’s parent training program, and combination of these two interventions on improvement of executive functions and decrease of clinical symptoms in children with ADHD.
Method: To do so, 36 participants with ADHD (aged between 6 to 12 years), from special clinic of Ebn e Sina hospital were selected by available sampling method. SNAP-IV, Child Behavior Checklist (CBCL), and clinical interview, were used for diagnosis of ADHD; then the participants were randomly assigned to the three interventions groups of working memory training, parent training program and combination of these two interventions. Functions of participants were assessed by SNAP-IV, CBCL, Continuous performance test, Tower of London, Color- word Stroop test, Benton revised visual retention test, Rey copy and reproduction complex figure test, Wechsler intelligence scale for children-fourth edition (WISC- IV), Go - no -go test, and Wechsler memory test. For working memory training WMT software, and for parent training program, Barkley’s model, were used. Findings: Results of MANCOVA tests and multiple comparison tests demonstrated that combination treatment (working memory training/parent training program) were more effective than each of them in improving executive functions and decrease of clinical symptoms in children with ADHD. Keyword: ADHD- working memory- planning- cognitive inhibition- behavioral inhibition- sustained attention- working memory training- parent training program- combination treatment

General information

Acronym
IRCT registration information
IRCT registration number: IRCT2013072414136N1
Registration date: 2013-09-01, 1392/06/10
Registration timing: retrospective
To do so, 36 participants with ADHD (aged between 6 to 12 years), from special clinic of Ebn e Sina hospital were selected by available sampling method

**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: 36

**Randomization (investigator's opinion)**
Randomized

**Randomization description**
Blinding (investigator's opinion)
Not blinded

**Blinding description**
Placebo
Not used

**Assignment**
Parallel

**Secondary Ids**
empty

**Ethics committees**

1

**Ethics committee**
Name of ethics committee
Ferdowsi University of Mashhad

Street address
Ferdowsi University of Mashhad

City
Mashhad

Postal code
Approval date
2011-07-15, 1390/04/24

Ethics committee reference number
1640

**Health conditions studied**

1

**Description of health condition studied**
Attention-deficit hyperactivity disorders

**ICD-10 code**
F90

**ICD-10 code description**
Attention-deficit hyperactivity disorders

**Primary outcomes**

1

**Description**
Working Memory

**Timepoint**
Pre and post

**Method of measurement**
CBCL- SNAP-Benton visual motor retention test(BVRT)- Rey complex figure test and recognition trial(RCFT)-Digit span subtest-

**Secondary outcomes**

1

**Description**
Inhibition- Organization

**Timepoint**
Before and after intervention

**Method of measurement**
STROOP test- TOWER of London test

**Intervention groups**

1

**Description**
45 min working memory training for 2 session per week

**Category**
Other

2

**Description**
The parent training program was carried out based on Barkley’s model one session in the per week and for 2 mounths

**Category**
Behavior

3

**Description**
8 individual sessions PT (for Parent) and 8 individual sessions WMT (for child) were conducted

**Category**
Other

**Recruitment centers**

1

**Recruitment center**
Name of recruitment center
Ebne sina hospital

Full name of responsible person
Dr Ali Mashhadi

Street address
Department of Psychology, Ferdowsi University of Mashhad

City
Mashhad
Sponsors / Funding sources

1

Sponsor

Name of organization / entity
Ferdowsi University of mashhad - Bakhtiar Shabani Varaki

Full name of responsible person
Bakhtiar Shabani Varaki

Street address
Bakhtiar Shabani Varaki vice president for research & technology- Ferdowsi University of mashhad-Mashhad

Title of funding source
Ferdowsi University of mashhad - Bakhtiar Shabani Varaki

Proportion provided by this source
100

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

Contact

Name of organization / entity
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Full name of responsible person
Ali Mashhadi

Position
PhD

Other areas of specialty/work

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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