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

Last update:
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**
- Not blinded

**Blinding (investigator’s opinion)**
- Not blinded

**Blinding description**
- Not used

**Placebo**
- Not used

**Assignment**
- Parallel

**Other design features**
- 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 months

**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
City
Mashhad
Grant name

Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
Yes
Title of funding source
Ferdowsi University of mashhad - Bakhtiar Shabani Varaki
Proportion provided by this source
100
Public or private sector
empty
Domestic or foreign origin
empty
Category of foreign source of funding
empty
Country of origin
Type of organization providing the funding
empty

Person responsible for general inquiries

Contact
Name of organization / entity
Ferdowsi University of Mashhad
Full name of responsible person
Ali Mashhadi
Position
PhD
Other areas of specialty/work
Study Protocol
empty
Statistical Analysis Plan
empty
Informed Consent Form
empty
Clinical Study Report
empty
Analytic Code
empty
Data Dictionary
empty

Person responsible for scientific inquiries

Contact
Name of organization / entity
Ferdowsi University of Mashhad
Full name of responsible person
Ali Mashhadi
Position
PhD
Other areas of specialty/work
Street address
Ferdowsi University of Mashhad
City
Department Of Psychology- Ferdowsi University of Mashhad
Postal code
Phone
+98 51 1880 5873
Fax
Email
mashhadi@um.ac.ir
Web page address

Person responsible for updating data

Contact
Name of organization / entity
Ferdowsi University of Mashhad
Full name of responsible person
Ali Mashhadi
Position
PhD of Psychology
Other areas of specialty/work
Street address
Ferdowsi University of Mashhad
City
Mashhad
Postal code
Phone
+98 51 1880 5873
Fax
Email
mashhadi@um.ac.ir
Web page address

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