Research into the effects of memory training on behavior and cognitive performance of ADHD children.

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Studying and comparing the short and long-term effects of two different memory trainings on the behavior and cognitive performance of children with ADHD within a controled design. Training excersizes are dereived from a published training from...

Ethical review	Approved WMO
Status	Recruitment stopped
Health condition type	Cognitive and attention disorders and disturbances
Study type	Interventional

Summary

ID

NL-OMON35022

Source
ToetsingOnline

Brief title
Memory training in ADHD

Condition

- Cognitive and attention disorders and disturbances

Synonym
ADHD

Research involving
Human

Sponsors and support

Primary sponsor: Universiteit Maastricht
Source(s) of monetary or material Support: Ministerie van OC&W

Intervention

Keyword: ADHD, cognitive training, memory

Outcome measures

Primary outcome

The expectation is that both trainings will increase working memory capacity (in comparison to in the control group). Working memory capacity will be measured with different verbal and visuo-spatial working memory tasks before and at two times after the training. These tests are established tests for which norms are available (Kaufman & Kaufman, 1983).

Secondary outcome

secundary effects of the two trainings will be investigated on 1) ADHD-symptoms (questionnaire filled in by the parents;AVL; Scholte et al, 2001), 2) executive funtioning (questionnaire filled in by parents abnd teachers; BRIEF, Smidts & Huizinga, 2009), 3) academic performance (as judged by teacher) and 4) an attention test executed by the children themselves (D2-Brickenkamp). This is done by comparing pre-post test scores after training with those of the control training and between both trainings. The expectation is that these secundary effects will be largest in the training in which more complex memory strategies are learned.

Study description

Background summary

Attention-Deficit Hyperactivity Disorder (ADHD) is one of the most prevalent developmental disorders. The De DSM-IV discriminates three ADHD subtypes; the

inattentive subtype, the hyperactivy/impulsive subtype and the combined subtype with both attention and hyperactivity/impulsivity problems. Recently there is accumulating evidence for memory problems in children with ADHD, like low working memory capacity (for review see Martinussen et al, 2005; Diamond et al., 2005). Suficient working memory capacity is crucial for efficient performance in tasks that require both processing and stoarge of information for a short period of time. Examples of such activities are calulation and reading.
Recent studies ahve demonstrated that low working memory capacity is an imporatnt mediating factor in attention regulation and attent problems in adults as well as children. In light of these findings is is highly likely that low working memory capacity in ADHD children plays an imprtant role in the attention problems. One effective way to increase the capacity of working memory is through training of memory strategies to cause better storage and retrieval of information. Positieve effects of memory strategy training on working memory capacity have been established in studies including healthy adults. In a previous study by the applicant we have shown positive effects of memory strategy training in children with ADHD (Jonkman & Hurks, submitted). The present study is a follow-up of the previous study in which the long-term effects of the memory strategy training and the far transfer effects on ADHD- and executive daily behavior and academic performance are investigated. Also, effects of simple memory strategies like rehearsal and more complex encoding strategies like clustering on semantic category are compared, because differences in effectivity have been deminstated in adults depending on Working Memory capacity.

Study objective

Studying and comparing the short and long-term effects of two different memory trainings on the behavior and cognitive performance of children with ADHD within a controled design. Training excersizes are dereived from a published training from Timmerman & van de Schoot (2000) that is applied in clinical and school settings.

Study design

There is a double-blind- controlled between-subjects design. Children that fullfill the inclusion criteria are assigned to either the two training groups or a control group, matching as much as possible on factors like age, IQ and medication use. Effects of the trainings are measured by comparing questionnaire scores from parents and teachers and performance of the children on neuropsychological tests between a pre- and a post session. Tto measure long-term effects a follow-up session follows 2,5 months after the first post-session. In the control group, children only perform pre- and post sessions without training. This control group is necessary to control for practice effects on the tasks due to repeated performance. Children in the

control group will get the opportunity to follow the training after the last post-session.

Intervention

The memory trainings consist of 6 1-hour, weekly ,sessions and will be given to groups of 4 children. Memory training-1 is similar to the memory training used in an earlier study (Jonkman & Hurks, submitted;MEC 06-3-012.2) in which children learn to apply different strategies (naming, rehearsal, semantic grouping, mental imagery). In memory training-2 exactly the same excersizes and materials are used, but only the most simple rehearsal strategy is trained. All excersizes used in the trainings are derived from a published training by Timmerman & van der Schoot, (2000), that is applied at schools and clinical settings.

Study burden and risks

There are no risks attached to participation in the present study. The total burden posed on the participants is 12 hours spread out over circa 4 months; 6 weekly training sessons of 1 hour , and 1 pre-session and two post-sessions of 2 hours duration. Children in the control group participate for 6 hours (only pre and post-sessions). Parents and teachers will have to fill in questionnaires at three different times (duration per session 25 minutes).

Contacts

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Trial sites

Listed location countries

Netherlands

Eligibility criteria

Age
Children (2-11 years)

Inclusion criteria

-DSM-Iv diagnosis of ADHD (combined or inattentive type)
-IQ above 80
-age between 8-12 years
-no comorbidity (except ODD and CD that occur a lot)

Exclusion criteria

-medication use shorter than 7 weeks
-IQ below 80
-No diagnoses of ADHD
-comorbiditeit (ODD and CD is allowed)

Study design

Design

Study type:	Interventional
Intervention model:	Parallel
Allocation:	Randomized controlled trial
Masking:	Double blinded (masking used)
Control:	Active
Primary purpose:	Other

Recruitment

NL

Recruitment status:	Recruitment stopped
Start date (anticipated):	17-05-2010
Enrollment:	96
Type:	Actual

Ethics review

Approved WMO Date:	03-03-2010
Application type:	First submission
Review commission:	METC academisch ziekenhuis Maastricht/Universiteit Maastricht, METC azM/UM (Maastricht)

Study registrations

Followed up by the following (possibly more current) registration

No registrations found.

Other (possibly less up-to-date) registrations in this register

No registrations found.

In other registers

Register	ID
CCMO	NL31016.068.09