

DOI: 10.21767/2471-805X.100016

# The Effects of Training: Teacher and Behavioural Intervention for ADHDH Delivered in School

**Gramond A, Crouzet L and Jourdain M**

Pediatric ward, CHU Caremeau, Nimes, France

**Corresponding author:** Anne Gramond, Psychiatrist of the Child and Adolescents Department, Pediatric ward, CHU Caremeau, Nimes, France, Tel: 06 66 10 47 09; E-mail: anne.gramond@chu-nimes.fr**Received date:** July 04, 2016; **Accept date:** August 20, 2016; **Published date:** August 30, 2016**Copyright:** © 2016 Gramond A, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.**Citation:** Gramond A, Crouzet L, Jourdain M. The Effects of Training: Teacher and Behavioural Intervention for ADHDH Delivered in School. J Pediatr Care. 2016, 2:16

## Abstract

**Background:** ADHD is frequently associated with an impact in the field of education since 30% of ADHD children are in school failure. Although the French recommendations and international recommended the establishment of educational development in class in the management of ADHD, this educational development are rarely used and few study measured the effects on the evolution of ADHD.

**Objective:** The main objective of this study is to measure the effectiveness of CBT tools and the impact of teacher-training has this tools on the severity of ADHD symptoms (ADHD-RS scale score). The secondary objectives are to reduce anxiety and depression symptoms of ADHD children, improve self-esteem of the children and improve the neurocognitive skills.

**Method:** 34 children included between 6 and 11 years present an ADD/ADHD and/or severe learning disabilities with educational impact (educational assessment and dropout questionnaire school). The experimental group is composed of 17 ADHD children, in a specialized school, where teachers have received training on tools TCC. The control group is composed of 17 children with ADHD, matched to the experimental group in terms of age, sex, severity of the disorder and its comorbidities. These ADHD children are educated in a mainstream school with the usual recommendations in terms of educational development (given by the HAS).

**Results:** Our results find a difference not significant on the score of ADHD-RS and on the score self-esteem Rosenberg scale but show a significant decrease of phobic anxiety and depressive symptoms and on the neurocognitive test among school children in the school whose teachers have benefited from the training.

**Discussion:** Our study highlights significant and positive effects of these methods on the comorbidities associated

with ADHD disorder (anxiodepressive disorder and self-esteem).

**Keywords:** Attention Deficit Hyperactivity Disorder (ADHD); Pediatrics; Rosenberg; Anxiety

## Introduction

ADHD is a neurological and developmental disorder [1] its frequency in the general population is about 5%, which is approximately one child by class [2]. This disorder is frequently associated with an impact in the field of education [3] since 30% of ADHD children are in school failure [4]. Moreover, this disorder affects the psychological functioning of the child, as 70% of children with ADHD have psychiatric comorbidities, such as anxiety and depressive disorders, oppositional defiant disorder, and conduct disorder. Although the French recommendations [5] and international recommended the establishment of educational development in class in the management of ADHD, this educational development are rarely used and few study measured the effects on the evolution of ADHD. A meta-analysis of George et al. [6] studies that. Indeed, they studied the effects of school-based interventions for ADHD students, in examining 60 studies. They concluded that the academic intervention (materials academic used), a contingency management intervention (reinforcement or the punishment of behaviour) and a cognitive-behavioural intervention (problem resolution and self-control) have positive effects on school performance and behaviour of ADHD students. And in each study have observed different design: between-subject group, within-subject group and single-subject design. They conclude than the result is positive and significant for within-subject. Another meta-analysis [7] highlights the importance of educational intervention size (daily report cards is more effective), the context in which the child and the establishment of psycho education, which is necessary before the implementation of school intervention.

## Objective

The main objective of this study is to measure the effectiveness of CBT tools and the impact of teacher-training has these tools on the severity of ADHD symptoms. For this they have used the ADHD-RS scale score, before, during and after the intervention.

The secondary objectives are to reduce anxiety and depression symptoms of ADHD children, this is measure by ECAP scale score (anxiety and phobic avoidance) and CDI scale (depressive) score before, during and after the intervention. Improve self-esteem of the children, is measured by the scale Rosenberg score and improve the neurocognitive skills of ADHD children, measured by the scores in pre and post-test evaluation of TEA-CH.

## Method

The hypothesis of this study is: CBT tools used in school by teachers for ADHD children, would impact the symptoms and comorbidity associated with them.

## Participants

The children included were between 6 and 11 years be enrolled in elementary (CP/CM2), present an ADD/ADHD (diagnostic criteria DSM V) and/or severe learning disabilities with educational impact (educational assessment and dropout questionnaire school) and have a total IQ between 85 and 115.

They may have a somatic pathology, follow a methylphenidate treatment and undergo psychotherapy (Pediatrics, EAPMC, CMPP, liberal).

Excluded children with ADHD associated with a severe behavioural disorder or mental deficiency (ITQ<75).

The experimental group is composed of 17 ADHD children, 5 girls and 12 boys enrolled in a specialized school, where teachers have received training on tools TCC.

The control group is composed of 17 children with ADHD, matched to the experimental group in terms of age, sex, severity of the disorder and its comorbidities. These ADHD children are educated in a mainstream school with the usual recommendations in terms of educational development (given by the HAS [5]).

## Procedure

The "teacher training" (for the whole school staff): This program is conducted in 15 sessions of 1 hour: 3 sessions of psycho education of ADHD and its comorbidities and 12 education sessions behavioural technical. Partnership and collaboration was made with the school to create educational material and work on problems situations. A qualitative and objective evaluation from teachers (student tracking sheet, teacher evaluations and studies of school records, Conners teachers) and parents (conners, ADHD-RS, qualitative assessment, Beck scale (anxiety and depression (BAI/BDI),

parenting stress index) were conducted to determine the environment in which grows participants and how the entourage accepts interventions. Evaluations of ADHD children have been made blind by another team, in three stages: 1/ before teacher training, 2/for the establishment of facilities, 3/ after the establishment of facilities.

## CBT tools

According to the classification mentioned in the meta-analysis to Dupaul et al. [6] The following academic interventions were put in place: Emergency school management: reinforcing appropriate behaviour and punishment of the inappropriate and a rocket behaviour scale (arrived at the top of the rocket the child out of the classroom to a breath or "time out").

The cognitive and behavioural techniques: for self-control used a bell and pictogram. For problem solving a noise table, class rules, and the expression of emotions. A system of rewards and positive feedback are also used: reward table, winning a sticker at the end of day and increased valorisation and down criticism.

## Results

For the main objective (lower scores on the ADHD-RS) The intergroup comparison made with a T-test highlights a difference not significant:  $t = 0.153$ ,  $df = 16$ ,  $p = 0.88$ . However, it put forward a slightly larger decrease in severity of ADHD in the experimental group than in the control group. For secondary objectives:

### Lower scores on tests ECAP (anxiety) and CDI (depression)

Our results show a significant decrease of phobic anxiety among school children in the school whose teachers have benefited from the training. The between group difference was significant for the development of tools:  $t = 3.197$ ,  $df = 11$ ,  $p = 0.009$ ; and after the introduction:  $t = 2.25$ ,  $df = 11$ ,  $p = 0.046$ . A significant decrease in depressive symptoms was also highlighted during the implementation tools:  $t = 2.199$ ,  $df = 10$ ,  $p = 0.052$ .

### Higher test scores of self-esteem (Rosenberg scale)

At the T-test, the between groups difference was not significant:  $t = 1164$ ,  $df = 11$ ,  $p = 0.269$ . However, there is a positive trend since the scores of the experimental group increased slightly while those in the control group decreased slightly.

### Increase in the mean TEA-CH test (within group)

This neurocognitive test was divided into four items: selective and focused attention ( $t = 2611$ ,  $df = 16$ ,  $p = 0.019$ ),

sustained attention ( $t = -0.739$ ,  $df = 16$ ,  $p = 0.471$ ), attentional control and flexibility ( $t = -5.908$ ,  $df = 16$ ,  $p = 0.000$ ) and divided attention ( $t = -0.1018$ ,  $df = 16$ ,  $p = 0.048$ ). A significant difference is put forward for 3 items and a positive trend for one item. This therefore highlights the impact of the tools put in place on the cognitive functions of children with AD/HD.

## Discussion

The results are alike with the literature review, meta-analysis by J. Dupaul, L. Eckert and B. Vilardo from 1996-2010 to put forward a positive impact of academic intervention and management of emergency and cognitive-behavioural intervention in school performance and behavior of children with ADHD. Our study also highlights significant and positive effects of these methods on the comorbidities associated with ADHD disorder (anxiodepressive disorder and self-esteem).

## Limitations

The duration of the study, it was conducted over eight months which is a period that is not long enough to get meaningful results, even for the small size (34 subjects). Moreover, the involvement of teachers in the study is not controlled.

## Conclusion

Educational facilities (CBT tools) have their place in the treatment of ADHD and are part of a global care. This pilot study demonstrates the feasibility of CBT tools in schools, since

significant results and positive trends were obtained and highlighted the effectiveness of its tools on AD/HD.

## References

1. Lecendreux M, Konofal E, Faraone SV (2011) Prevalence of Attention Deficit Hyperactivity Disorder (ADHD) and associated features among children in France, *Journal of Attention Disorders* 15: 516-524.
2. Polanczyk G, De Lima MS, Horta BL, Biederman J, Rohde LA (2007) The worldwide prevalence of ADHD: a systematic review and meta-regression analysis. *American Journal of Psychiatry*.
3. Hodgson K, Hutchinson A, Denson L (2014) Non-pharmacological treatments for ADHD: A meta-analytic review. *Journal of Attention Disorders* 18: 275-282
4. Barkley RA, Fischer M, Smallish L, Fletcher K (2006). Young adult outcome of hyperactive children: adaptive functioning in major life activities. *Journal of the American Academy of Child and Adolescent Psychiatry*, p: 192-202.
5. Philip C (2014) Analyse des recommandations de la HAS pour le TDA/H, dont les stratégies en milieu scolaire. *La nouvelle revue de l'adaptation et de la scolarisation*, 4: 33-43.
6. DuPaul GJ, Eckert TL, Vilardo B (2012) The effects of school-based interventions for attention deficit hyperactivity disorder: a meta-analysis from 1996-2010. *School Psychology Review* 41: 387.
7. Richardson M (2015) Non-pharmacological interventions for Attention-Deficit/Hyperactivity Disorder (ADHD) delivered in school settings: Systematic reviews of quantitative and qualitative research, *Health Technology Assessment*.