

Enhancing the Individualized Education Programs of Children with ADHD Using a Daily Report Card Procedure

Gregory A. Fabiano, William E. Pelham, Jr., Daniel A. Waschbusch, Greta M. Massetti, Meaghan Summerlee, Justin Naylor, Rebecca Vujnovic, Melissa L. Robins, Tarah B. Carnexif, Martin Volker, Christopher Lopata, Jenna Rennemann, & Jihneeh Yu, State University of New York (SUNY) at Buffalo



INTRODUCTION

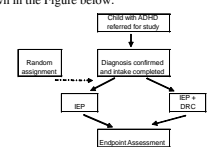
- Approximately one in twenty elementary school-aged children are diagnosed with attention-deficit/hyperactivity disorder (ADHD; APA, 2000).
- Children with ADHD exhibit developmentally inappropriate levels of attention, impulse control, and activity modulation, and these behaviors result in significant academic and social impairments in school settings, including poor academic productivity and achievement, disruption of classroom functioning, and negative social interactions with teachers, other school staff, and peers.
- Because of the substantial costs of ADHD for the school system, effective interventions aimed at improving academic performance, achievement, and social behavior are needed.
- Due to these issues and needs, many children with ADHD receive school-based services under the Individuals with Disabilities Education Act (IDEA).
- These special education services might include behavioral and learning interventions to assist with academic progress. Schools must create, implement, and evaluate individualized education plans (IEP) for the student, which may include contingency management strategies, parent training, academic interventions, or some combination of both (U.S. Department of Education, 2000).
- It is estimated that the costs associated with educating students with ADHD in special education placements number in the billions of dollars per year (Chambers, Shkolnik, & Perez, 2003; Forness & Kavale, 2002; Pelham, Foster & Robb, 2007).
- Notably, these costs are likely an underestimate of the costs of ADHD in special education settings, as they do not reflect hidden costs (e.g., time spent disciplining students, overseeing in-school suspensions or office-based time outs, contacting parents; Pelham et al., 2007).

PARTICIPANTS

- The study included 63 children diagnosed with ADHD who currently had IEPs in school. Children were between 6-12, in grades 1-6, and had an IQ ≥ 80 .
- Recruited via radio and newspaper advertisements, mailings, and notices distributed in schools.

PROCEDURES

- Participants were randomly assigned to: (1) IEP as usual; or (2) IEP + Behavioral Consultation as shown in the Figure below:



- Baseline measures were collected at the beginning of the school year (approximately October) and endpoint measures were collected at the end of the school year (approximately May).

STUDY TREATMENT CHARACTERISTICS

- IEP alone group:** Consultants conducted an initial meeting with each teacher of children in the IEP alone group. During this meeting, consultants and teachers used the IEP and any other related information to construct an Individualized Target Behavior Evaluation (ITBE; Pelham, Fabiano, & Massetti, 2005). The ITBE was completed by the teacher each day and used as a measure of weekly functioning. The ITBE was not sent home to the child's parents. Teachers in the IEP alone group were instructed to work with the child the same way they would with any other child who has an IEP.
- IEP + DRC group:** Students assigned to the IEP + DRC group had a consultant assigned to the student for the duration of the school year. The consultant:
- Constructed a DRC that targets IEP goals and objectives. This DRC was sent home each day to the child's parent(s).
 - The consultant worked with the parent(s) to construct a home-based reward system that contingently reinforced positive DRC outcomes on a daily basis.
 - The consultant met with the parent(s) to review strategies to assist with timely and accurate homework completion (Anesko & O'Leary, 1982; Power, Karstis, & Haboushe, 2001).
 - After the initial meetings with the child's teacher, consultants met monthly with the teacher (and parent if available) to provide feedback on the child's behavior during the month using a graphical representation of the child's DRC performance. This information was used for data-driven decision making.

MEASURES

The table below summarizes the IEP and measures used for the current research.

Domain	Source	Measure
Academic	Child	Individual Academic Achievement Tests
Behavioral Domain	Blind Observer	Classroom observational coding
	Blind Observer	Classroom observational coding
Parent	DWA Conners	IRB
	IRB	SSRS
Teacher	DWA Conners	IRB
	IRB	SSRS
Unpublished behavioral measures	Unpublished behavior	Parent/consultant work
	Parent/consultant work	

- IRS=Impairment Rating Scale. SSRS= Social Skills Rating Scale. Other measures include the Student-Teacher Relationship Scale (Birch & Ladd, 1998; Pianta, 1997), an end of year rating of progress on IEP goals and objectives, and parent and teacher satisfaction.

This project was funded by a grant from:
Department of Education, Institute of Education Sciences (R324J060024).

PARTICIPANT CHARACTERISTICS

	Behavioral Consultation	Monitoring
N	33	30
Age	8.06 (SD=1.79)	8.27 (SD=1.60)
Gender		
Male	91%	80%
Female	9%	20%
Race		
Caucasian	81.81%	73.33%
African American	15.15%	10.00%
Asian	0.00%	0.00%
Native American	0.00%	0.00%
Mixed race	3.03%	13.30%
Other	0.00%	3.33%
Ethnicity		
Hispanic/Latino	3.03%	3.33%
Not Hispanic/Latino	96.96%	96.67%
ADHD diagnosis		
Inattentive	15.15%	6.67%
Hyperactive/Impulsive	0.00%	3.33%
Combined	84.84%	90.00%
Comorbid Oppositional Defiant Disorder/Conduct Disorder	84.84%	90.00%
Disability Category		
OHI	57.57%	50.00%
LD	18.18%	20.00%
EBD	6.06%	16.67%
SLI	15.15%	0.00%
MD	3.03%	0.00%
IQ	100.21 (SD=12.99)	97.37 (SD=15.02)
Single Parent Household	24.24%	46.67%
Parent Highest Education (In Years)		
Male Guardian	14.81	14.57
Female Guardian	13.36	14.22

Notes. ADHD=Attention-deficit/hyperactivity disorder; OHI=Other Health Impaired; LD=Learning Disabled; EBD=Emotionally and Behaviorally Disturbed; SLI=Speech/language Impairment; MD=Multiple Disabilities. Groups were not significantly different from one another on any demographic category listed above (p>.05).

- Three children randomly assigned to the monitoring group dropped out after randomization. One dropped out immediately due to dissatisfaction with group assignment. The other two dropped out after conferring with the child's teacher and deciding study participation was not needed.

- It is also important to note that the majority of the sample evinced considerable impairment in the area of academic achievement. The Woodcock-Johnson-III was administered to all children in the sample, and the following results were obtained:

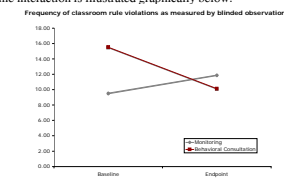
- Percent of sample with at least 1 of the 3 fluency test scores (Reading, Math, Writing) ≥ 85 is 76.3%
- Percent of sample with at least 1 WJ III Ach test (no composites) ≥ 85 is 86.4%
- Percent of sample with at least 1 WJ III Ach score (composite or test) ≥ 85 is 88.1%
- Percent of sample with at least 1 WJ III composite or fluency test score ≥ 85 is 85.5%

STUDY OUTCOMES

- Sixty-three children were randomized into the study, and 60 participated, yielding a participation rate of 95%.
- 98% of initial teacher visits to establish the ITBE or DRC were completed.
- 100% of parents in the IEP+DRC group attended three parent sessions to establish home rewards for the DRC and discuss and implement parenting strategies for homework time.
- Teachers completed the ITBE each day and sent a copy for each day to the researcher each week. In the DRC group, teachers sent the DRC home to provide the parent feedback, and the parent wrote in the reward provided and checked it each evening. The DRC was then sent back to the teacher, and a copy sent to the researcher each day. The DRC itself, and the parent-provided reward listed will be used as a manipulation check for the DRC group.
- Classroom observations were also conducted monthly across groups and they collected information on child behavior (i.e., on-task and disruptive) as well as teacher behavior (i.e., child-directed feedback/consequences, number of praise statements issued to the child).

Results

- For each child, three observations were conducted by observers blind to study hypotheses and child group assignment in October and May of the school year.
- Observers recorded the total number of rule violations that occurred during each 30-minute observation period.
- There was a significant difference in the frequency of rule violations at baseline, $t(58) = -2.76, p = .007$, with the behavioral consultation group having a greater average rate of rule violations compared to the monitoring group.
- Observational data was analyzed using a repeated measures MANOVA, with group (Monitoring, Behavioral Consultation) as the between group variable and time (Baseline, Endpoint) as the within subject variable.
- Results yielded a significant group x time interaction, $F(1, 58) = 6.45, p = .014$. The group x time interaction is illustrated graphically below.



DISCUSSION

- This study is one of the first to investigate the development of an intervention specifically for children with ADHD in special education placements. The study is currently investigating the efficacy of an enhancement to special education services for children with ADHD based on evidence-based interventions for the disorder.
- Data collection from the second cohort is currently being finalized.
- One of the primary outcome measures, blinded classroom observations of child behavior, suggested considerable improvement over the course of the school year (35% reduction in the average rate of rule violations) for the Behavioral Consultation group relative to the Monitoring group (19% increase in the average rate of rule violations).
- Additional analyses will be conducted to investigate the effect of the intervention on measures of academic achievement, parent and teacher ratings, and outcomes such as number of teacher-rated IEP goals obtained, student-teacher relationship, consumer satisfaction, and indicators of improvement.
- These preliminary results add to the evidence base supporting behavior modification interventions for children with ADHD in schools (DuPaul & Eckert, 1997; Pelham & Fabiano, 2008).

REFERENCES

American Psychiatric Association. (2000). *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision*. Washington, D.C.: American Psychiatric Association.

Anesko, R.M., & O'Leary, S.G. (1982). The effectiveness of brief parent training for the management of children's homework problems. *Child and Family Behavior Therapy*, 4, 113-126.

Chambers, J.G., Skolnik, J., & Perez, M. (2003). *Special Education Expenditure Report: Total expenditures for students with disabilities, 1999-2000*. Spending variation by disability. Falls, VA: U.S. American Institutes for Research.

DuPaul, G.J., & Eckert, T.L. (1997). The effects of school-based interventions for attention deficit/hyperactivity disorder: A meta-analysis. *School Psychology Review*, 26, 2-27.

DuPaul, G.J., & Stoner, G. (2004). *ADHD in the Schools: Assessment and Intervention Strategies*. New York: The Guilford Press.

Dussault, W.E. (1996). Avoiding the process hearing: Developing an open relationship between parents and school districts. In L.K. Koegel, R.L. Koegel, & G. Dunlap (Eds.), *Positive Behavioral Support: Including People with Difficult Behavior in the Community* (pp. 265-278). Baltimore, MD: Paul H. Brookes, Publishing.

Fabiano, G.A., Pelham, W.E., Coles, E.K., Gnagy, E.M., Chronis, A.M., & O'Connor, B.C. (under review). *A meta-analysis of behavioral treatments for ADHD*.

Forness, S.R., & Kavale, K.A. (2002). Impact of ADHD on School Systems. In P.S. Jensen & J.R. Cooper (Eds.), *Attention Deficit Hyperactivity Disorder: State of the Science, Best Practices* (pp. 241-242). Kingston, NJ: Civic Research Institute.

Hops, H., & Walker, H.M. (1988). *CLASS: CLASS: Consequences for Learning and Academic and Social Skills*. Seattle, WA: Educational Achievement Systems.

Kelley, M.L. (1990). *School Home Notes: Promoting Children's Classroom Success*. New York: The Guilford Press.

Koegel, L.K., & Koegel, R.L. (1996). Discussion: Education Issues. In L.K. Koegel, R.L. Koegel, & G. Dunlap (Eds.), *Positive Behavioral Support: Including People with Difficult Behavior in the Community* (pp. 265-278). Baltimore, MD: Paul H. Brookes, Publishing.

O'Leary, S.G., & Pelham, W.E. (1978). Behavior therapy and withdrawal of stimulant medication in hyperactive children. *Psychiatry*, 41, 211-217.

O'Leary, K.D., Pelham, W.E., Rosebaum, A., & Price, G.H. (1976). Behavioral treatment of hyperactive children. *Child Psychology*, 15, 510-515.

Pelham, W.E., & Fabiano, G.A. (2008). *Evidence-based psychosocial treatment for ADHD: An update*. *Journal of Clinical Child and Adolescent Psychology*, 37, 184-214.

Pelham, W.E., Fabiano, G.A., & Massetti, G.M. (2005). Evidence-based assessment for attention-deficit/hyperactivity disorder in children and adolescents. *Journal of Clinical Child and Adolescent Psychology*, 34, 449-476.

Pelham, W.E., Foster, E.M., & Robb, J.A. (2007). The economic impact of attention deficit hyperactivity disorder in children and adolescents. *Individualized Public Policy, Supplement 1*, 7, 121-131.

Pelham, W.E., Wheeler, T., & Chronis, A. (1998). Empirically supported psychosocial treatments for attention deficit hyperactivity disorder. *Journal of Clinical Child Psychology*, 27, 190-205.

Shann, R. C. (1997). Adult-child relationship processes and early schooling. *Early Education and Development*, 8, 11-26.

Power, J.J., Karstis, J.L., & Haboushe, D.F. (2001). *Homework Skills for Children with ADHD: A Family-School Intervention Program*. New York: The Guilford Press.

U.S. Department of Education, Office of Special Education and Rehabilitation Services, Office of Special Education Programs. (2004). *Teaching Children with Attention-Deficit/Hyperactivity Disorder: Instructional Strategies and Practices*. Washington, D.C.

<http://ccf.buffalo.edu>