

A Parent-Teen Collaborative Treatment Model for Academically Impaired High School Students With ADHD

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The current study pilots a low-intensity behavioral intervention for parents and high school students with ADHD that promotes parent-teen collaboration at home and in session (Supporting Teens' Academic Needs Daily-Group; STAND-G). Twenty-three high school students with ADHD and their parents were randomly assigned to receive an 8-week behavioral treatment beginning in October, January, or March. Weekly data were collected from students' online grade books for 37 weeks of the school year to monitor changes in academic functioning through baseline, posttreatment, and follow-up phases. Students who had not yet received the treatment served as a control group for students who completed treatment. Qualitative and quantitative ratings of satisfaction, improvement, and parent implementation of home-based behavioral strategies were collected. Results indicated parent and teen satisfaction with STAND-G, parent compliance with intervention strategies, and a range of parent-rated therapeutic benefits (i.e., organization and time-management skills, academic conscientiousness, parent-teen communication, adolescent autonomy). Findings for the objective grade book data were mixed, with Group 2 (January), but not Group 1 (October), displaying identifiable acute improvements relative to control students. However, both groups evaluated at follow-up displayed meaningful improvements in the percentage of work turned in up to 2 months out of treatment. With these results in mind, we discuss the importance of tailoring interventions to the lives of high school students with ADHD and the future of treatment development and delivery for this often underserved population.

LONGITUDINAL studies of adolescents with ADHD report very poor academic outcomes in high school (Barbarese, Katusic, Colligan, Weaver, & Jacobsen, 2007; Barkley, Fischer, Smallish, & Fletcher, 2006; Kent et al., 2011). For example, 42% of high school students with ADHD have been retained a grade, 60% suspended from school, and 44% receive special education services (Barkley et al., 2006). During high school, these students possess lower class placement than peers and display failing grades, poor work completion, and attendance problems (Kent et al.). Despite lower class placement, high school students with ADHD still earn lower GPAs than peers and up to a third of these students drop out before graduation (Barbarese et al., 2007; Barkley et al.). These academic problems are particularly concerning because they predict severe adjustment problems in adulthood (Masten et al., 2005; Rindfuss, Cooksey, & Sutterlin, 1999). Consequently, young adults with ADHD possess very poor postsecondary educational attainment and vocational outcomes (Kuriyan et al., 2013).

Despite these serious academic impairments, there are virtually no effective treatments for high school students with ADHD (Pelham, Molina, Meichenbaum, Gnagy, & Greenhouse, 2003). Stimulant medication is currently recommended as the first-line treatment for ADHD in adolescents (American Academy of Pediatrics [AAP], 2011). However, by high school, most adolescents resist and refuse to take stimulant medication (McCarthy et al., 2009). Behavioral treatments are also recommended (AAP, 2011). A few studies investigate the efficacy of psychosocial treatment programs for adolescents with ADHD, but most are intensive behavioral treatment programs (10 to 40 hours per week; Evans, Schultz, DeMars, & Davis, 2011; Sibley et al., 2011). These interventions show evidence of improving the academic functioning of adolescents with ADHD, but demand substantial staff and financial resources. Consequently, it is not cost-effective to deliver intensive programs to all high school students with ADHD.

Standard behavioral treatments are less intensive and are typically employed as a first-line treatment for children with ADHD. Yet, there are no validated standard behavioral intervention models for high school students with ADHD. In elementary school, these interventions are coordinated between parents and teachers (Pelham & Fabiano, 2008). There is some evidence that these treatments can be effective in the secondary school setting (Langberg,

Keywords: ADHD; high school; behavioral interventions; parenting

1077-7229/12/32-42\$1.00/0

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Epstein, & Becker, 2012). However, many high school teachers expect students to function independently and refuse to implement indicated behavioral treatments (DuPaul & Weyandt, 2006). Teacher nonparticipation is a repeatedly cited implementation barrier in secondary schools. For example, using a consultation model, Evans, Serpell, Schultz, and Pastor (2007) found that less than half of participating secondary school teachers appropriately implemented behavioral interventions for ADHD students in their classrooms. Using national survey data, Fabiano and colleagues (2002) reported that secondary school teachers were unlikely to use behavioral interventions in their classrooms (30.9% did so). These data suggest that even when given regular consultation and intervention support (e.g., Evans et al., 2007), secondary school teachers do not reliably deliver behavioral interventions. As a result, an alternative treatment model is needed to deliver standard behavioral treatments to high school students with ADHD.

It may be the case that parents can supervise academic intervention delivery in high school (Steinberg & Duncan, 2002) to relieve the burden of standard intervention delivery from secondary school staff. This approach was applied to home behavior problems in older adolescents with ADHD (Barkley et al., 1992; Barkley et al., 2001) and academics with middle school students with ADHD (Meyer & Kelley, 2007; Sibley et al., *in press*) with initially promising results. Parental involvement in schooling can boost academic motivation and achievement (Dearing, Kreider, Simpkins, & Weiss, 2006; DeBaryshe, Patterson, & Capaldi, 1993; Hill & Tyson, 2009) and enhance behavioral treatment (Stormshak, Dishion, Light, & Yasui, 2005). In secondary schools, parent-based intervention models are less common because limited communication from teachers prevents parents from effectively monitoring academics (Fabiano et al., 2002). However, the advent and increasingly widespread use of web-based tools, such as electronic grade books (Lacina, 2006), increases a parent's ability to monitor school performance from home without the need for direct teacher communication. Thus, a parent-based approach to academic intervention delivery for high school students with ADHD now may be timely.

In developing such a model, modifications must be made to existing parent-delivered interventions to create a treatment strategy that is developmentally appropriate for high school. Specifically, all adolescent treatment studies to date exclusively or largely possess middle-school-aged participants (e.g., Barkley et al., 2001; Evans et al., 2011; Langberg et al., 2011; Sibley et al., 2011); thus, the literature contains no archetype for a behavioral treatment that is specifically designed for high school students with ADHD. Compared to middle school, high school is more rigorous academically and demands greater independence from parents and teachers as students prepare for adulthood (Kennelly & Monrad, 2007). Therefore, compared to

middle school interventions, treatments for high school students must increasingly promote autonomy (Steinberg & Morris, 2001). This may involve carving a more active role for the adolescent in his/her own treatment. However, interventions for high school students still require adult involvement (Steinberg & Morris). Thus, parent-teen *collaboration* is the posited model for standard intervention delivery in high school; this approach introduces direct skills to adolescents and reinforces use of these skills by coaching parents to monitor academics and implement an academic contract. By promoting autonomy in treatment, this approach also prepares adolescents with ADHD for an adult care model (Weiss et al., 2008). Further refining this model, we believe that offering group treatment capitalizes on the saliency of peer influences in high school (Allen & Antonishak, 2008) and the importance of social support in behavioral parent training programs (Chronis, Chacko, Fabiano, Wymbs, & Pelham, 2004).

With these considerations in mind, we developed a standard behavioral intervention for high school students with ADHD that promotes parent-teen collaboration (Supporting Teens' Academic Needs Daily-Group; Sibley & Pelham, 2012). The current pilot study evaluates the acceptability and preliminary efficacy of this treatment (STAND-G). First, we investigated participant satisfaction and parent perceptions of improvement following the intervention. We hypothesized that a majority of families would report improvement and rate STAND-G as logical, helpful, and well-tailored to their adolescents' needs. Second, we examined the extent to which parents implemented home-based intervention components after STAND-G concluded. We hypothesized that following STAND-G, a majority of parents would implement components of a comprehensive academic contract. Next, we investigated parents' and teens' perceived benefits of STAND-G by analyzing qualitative data. We hypothesized that parents and teens would cite improved parent-teen relationship quality and academic functioning as the primary benefits of STAND-G. Finally, we evaluated academic outcomes using weekly online grade book data. We hypothesized that compared to their corresponding control groups, students completing STAND-G would display clear improvements in the percentage of work turned in, test performance, and assignment quality.

Method

Participants

Participants were 23 high school students with ADHD who attended public school in urban South Florida. Students attended 18 different high schools within the fourth largest school district in the United States. Initially, 28 participants were recruited, but three did not attend treatment. Two participants provided insufficient data for inclusion in analyses, yielding a final sample of 23 students. Participants

were required to: (a) meet DSM-IV-TR (American Psychiatric Association, 2000) diagnostic criteria for ADHD; (b) be in the 9th, 10th, 11th, or 12th grade, (c) have an estimated IQ of 80 or higher; and (d) have no history of an autism spectrum or psychotic disorder according to parent report or documented medical history (when available). Demographic and diagnostic characteristics of the sample are listed in Table 1.

Procedure

Participants were recruited from the mailing list of a large university research center. For all potential participants, the parent who primarily is involved with academics was administered a brief phone screen containing the DSM-IV-TR ADHD symptoms and questions about academic functioning. Families were invited to an intake assessment to determine eligibility if the parent endorsed on the phone screen: (a) four or more symptoms of either inattention or hyperactivity/impulsivity and (b) clinically significant academic problems (at least a 3 on a 0-to-6 impairment scale).

Table 1
Demographic and Diagnostic Characteristics of the Sample

Age <i>M</i> (<i>SD</i>)	15.00 (.95)
Gender (%)	
Male	69.6
Female	30.4
Ethnicity (%)	
Hispanic	82.6
Non-Hispanic	17.4
Race (%)	
White	87.0
Black	4.3
Mixed	8.7
Parent Education Level	
Some college or less	21.7
Bachelor's degree	52.2
Master's degree or higher	26.1
Single Parent Household (%)	56.5
Estimated Full Scale IQ <i>M</i> (<i>SD</i>)	108.87 (13.26)
ADHD Diagnosis (%)	
ADHD-PI	39.1
ADHD-C	60.9
ODD (%)	34.8
CD (%)	8.7
LD (%)	14.3
Current Stimulant Medication (%)	60.9
Current Psychosocial Treatment (%)	13.0
Number of Academic Classes Taken	4.00 (.74)
Educational Placement (%)	
Some regular, some remedial	30.4
Regular	47.9
Advanced	21.7

At an intake assessment conducted in August, informed parental consent and youth assent were obtained. During the assessment, the parent was administered a semistructured diagnostic interview (DBD; Pelham, Gnagy, Green-slade, & Milich, 1992) with supplemental probes for symptom severity and situational variability. Symptom and impairment ratings scales were collected from a core academic teacher and combined with information collected during the parent interview. As is the standard and recommended practice in the field (Pelham, Fabiano, & Massetti, 2005), two Ph.D.-level psychologists reviewed information provided by parents and teachers and determined diagnosis. There was no disagreement between clinicians. Additionally, a clinician administered a brief intelligence test (WASI; Wechsler 1999) to the adolescent and collected demographic information and online grade book log-in information from the parent.

If a teen was accepted to the research study, his/her family was randomly assigned to attend an 8-week treatment group that began in October (Group 1), January (Group 2), or March (Group 3). There were two sets of siblings who were assigned in pairs. Initially, 10 students were assigned to October, 9 were assigned to January, and 9 were assigned to March. Accounting for nonparticipation and missing data, 10 students were included in the October group, 8 in the January, and 5 in the March. All teens were monitored for the entire school year (37 weeks) through the school district's standardized online grade book (Lacina, 2006). Baseline consisted of data collected in the 4 weeks preceding treatment. Posttreatment consisted of data collected in the 4 weeks immediately after STAND-G. Follow-up grade book data was also collected for Groups 1 and 2 in the subsequent 4 weeks (Weeks 5–8 posttreatment). Control data for Group 1 consisted of data from students in Group 2 and Group 3 who had not yet received the intervention. Control group data for Group 2 consisted of data from Group 3. After the STAND-G intervention, posttreatment satisfaction, improvement, and parent compliance ratings were also collected.

Treatment Description

Supporting Teen's Academic Needs Daily-Group (STAND-G; Sibley & Pelham, 2012) consists of 8 weekly 90-minute treatment sessions delivered in a group format. The first 10 minutes of every group consists of a homework review held in a mixed group composed of parents and teens. For the next hour, parents attend a parenting skills group while teens attend an academic, organizational, and communication skills group. For the final 20 minutes of the session, parents and teens rejoin the mixed group and complete a collaborative activity. The content of each session is depicted in Figure 1.

Two clinical psychology doctoral students led the parent group. STAND-G employs the community-based parent-training model (Cunningham, 2006), which

	Parent Topic	Teen Topic	Collaborative In-Session Activity	Collaborative Homework
Session 1	Introduction to ADHD	What is ADHD?	Discuss how ADHD symptoms impact school work.	Track time spent, quality, and completion rate for school homework for one week.
Session 2	Basics of Behavior Management	Problem-Solving Training	Teen teaches parent problem solving steps.	Complete problem-solving worksheet together when argument occurs at home.
Session 3	Identifying Target Problems	Setting Academic Goals	Create list of agreed-upon problem areas and discuss parent and teen goals for school year.	Home discussion on goals for after high school (worksheet).
Session 4	Organization Skills	Organization Skills	Devise a monitoring plan for planner use and bookbag organization.	Practice implementing planner use and bookbag organization plan.
Session 5	Homework Contract	Homework and Studying	Teen teaches parent how to use homework to-do list and active studying techniques.	Negotiate and implement Homework Contract.
Session 6	Setting a Daily Routine	Setting a Daily Routine	Parent and teen compare daily routine tasks and create a list of tasks to track for one week.	Parent and teen separately track completion of all tasks on list for one week.
Session 7	Developing a Home Privilege Program	Communication and Negotiation Training	Active Listening and Honest Expression role play exercise	Negotiate home privilege contract.
Session 8	Interfacing with Schools	Note-taking Training	Discuss level of communication that is needed between parent, teen, and teacher.	Identify point person at school to facilitate communication.

Figure 1. Content of STAND-G.

alternates between small (e.g., four to six parents) and full group discussions. Parents are taught to monitor academics, build a daily academic routine, apply behavioral principles to homework time, and create a behavioral contract with the teen that makes home privileges contingent upon academic performance (see [Figure 1](#)). All parent sessions were audiotaped and 33.3% were randomly selected for fidelity coding using dichotomously coded (Y/N) STAND fidelity checklists that probe whether or not group leaders accurately delivered the components of each session ([Sibley et al., in press](#)). Treatment fidelity for the parent group was 96.3%.

A clinical psychology doctoral student and a counseling master's student led the teen group. One undergraduate assistant provided support during the teen group (i.e., passing out materials, handing out tickets). Students participated in group activities that alternated didactic instruction (e.g., introduction of a study skill), hands-on activities (e.g., organizing one's backpack with a peer), and discussion exercises (e.g., listing the pros and cons of writing in a daily planner). To manage behavior and promote participation, a raffle system was used. For each 15-minute interval of good participation and respectful behavior, teens were issued a raffle ticket. At the end of the 8-week program, staff held a raffle for developmentally appropriate prizes (e.g., music downloads, coffee gift

cards, gift certificates to popular restaurants). All teen sessions were audiotaped and 33.3% were randomly selected for fidelity coding using dichotomously coded STAND fidelity checklists ([Sibley et al., in press](#)). Treatment fidelity for the teen group was 96.0%.

Parent-Teen Contract

Following the conclusion of the 8-week STAND-G treatment, contact with clinicians ceased. Parents were instructed to independently monitor and reward teen adherence to the parent-teen academic contract that was constructed over the course of STAND-G. This period represented a parent-managed implementation period and data was collected on the parents' use of practices taught during STAND and the teens' academic performance.

Online Grade Book

At the end of each week of the school year, research staff accessed participants' online grade books and entered the current grade for each academic class (defined as Math, Science, History, English, and Academic Electives) into a secure electronic database. In addition, each week, missing assignments, assignment grades, and test/quiz grades were entered into the database and organized by due date. Adhering to district protocol, teachers assigned a full letter grade to each assignment (i.e., A, B, C, D, or F), coded missing assignments as "Z," and coded assignments that did

not apply to the student as “X.” For the purpose of data entry, letter grades were converted to the following numerical values: A = 4.0, B = 3.0, C = 2.0, D = 1.0, F = 0.0. The school district did not assign half grades (i.e., + or -) to students. If a student earned a “Z,” this was counted as a missing assignment. An “X” was considered to be an assignment that did not apply to the student. This procedure was repeated for 37 weeks of the school year. At the end of each academic quarter, all finalized online grade books were printed and compared to weekly data. This procedure provided that research staff (a) did not miss assignments that were posted late and (b) could verify all data collected weekly against the quarter’s final grade book.

Measures

Satisfaction

Parent and teen satisfaction questionnaire items were taken from the Client Credibility Questionnaire (Borkovec & Nau, 1972) and a standard satisfaction questionnaire developed for behavioral treatments (MTA Cooperative Group, 1999) and adapted for adolescents (Sibley et al., in press). Respondents in both groups indicated their degree of satisfaction for various aspects of treatment using a 7-point Likert Scale (1 = *strongly disagree* to 7 = *strongly agree*). Each item was analyzed separately.

Improvement

An adolescent adaptation of the Improvement Rating Scale (Pelham et al., 2000; Sibley et al., 2011) was used to measure improvement. For the purpose of this study, only 12 items that relate to academic and family functioning were retained on the scale. Parents were asked to indicate the target adolescent’s degree of improvement on each item using a 7-point Likert Scale (1 = *very much worse* to 7 = *very much improved*). For each item, parents could also select 0 = *no problem* if the item was not applicable because the adolescent possessed no impairment in that area. Items were analyzed separately.

Attendance

Attendance for each session was measured from sign-in sheets completed by research assistants at group meetings.

Parent Compliance

The Parent Academic Management Scale (PAMS) is a 16-item checklist that measures the frequency with which parents implement 16 different academic support strategies. Parents indicated the number of days during the past school week (0 to 5) that they performed each activity (e.g., checked teen’s daily planner, helped teen plan out homework time). The PAMS contains 11 items that measure strategies that were promoted to parents during STAND-G and 1 item that measures a strategy discouraged to parents (doing the teen’s homework for him/her). The other 4 items were omitted from analyses because they were

unrelated to the STAND-G curriculum. Each item was analyzed separately.

Qualitative Feedback

Parents and teens provided open-ended answers to four questions about STAND-G:

What were the most useful things you learned from the group?

In what ways did you change your academic (or parenting) practices because of this group?

In what ways did your parent (or teen) start acting differently because of this group?

How could we improve this group to make it more helpful?

Parents and teens were permitted to list as many responses to each question as they desired. Responses were coded according to the procedures outlined in Merriam (1998). Research staff segmented responses into distinct units of data that represented the smallest possible pieces of information that were relevant to the question. For each question, two independent coders reviewed all units and grouped them by commonality. Coders were instructed to create categories that were relevant, exhaustive (place all data into a category), and mutually exclusive. Coders gave each category a name that matched its content. Following independent category construction, coders compared the list of categories for each question. The independent coders collaborated to create a final list of categories and to place each response in the appropriate category. Finally, a third coder was asked to independently place each response into the appropriate category. Reliability between the original coding dyad and the third coder was 90.4%. Discrepancies were discussed among all coders and a final response was agreed upon unanimously.

Average Assignment Grade

The average grade on each completed assignment was calculated for each week. Assignments included any mandatory academic work turned in by the student except for tests, quizzes, and exams (i.e., homework, classwork, projects, presentations). Extra credit assignments and class participation were not counted towards this average. Missing assignments were also not weighted in the average. Baseline average assignment grades were averaged across the 4 weeks prior to treatment. Posttreatment average assignment grades were averaged across the 4 weeks immediately after treatment. Follow-up average assignment grades were averaged across 5 to 8 weeks immediately posttreatment.

Average Test/Quiz Grade

The average grade on each test, quiz, or exam was calculated for each week. Baseline test/quiz grades were

averaged across the 4 weeks prior to treatment. Posttreatment test/quiz grades were averaged across the 4 weeks immediately after treatment. Follow-up average test/quiz grades were averaged across 5 to 8 weeks immediately posttreatment.

Assignments Turned In (%)

The percentage of assignments turned in each week was calculated by dividing weekly turned-in assignment count by the total number of assignments due each week. Baseline assignments turned in were averaged across the 4 weeks prior to treatment. Posttreatment assignments turned in were averaged across the 4 weeks immediately after treatment. Follow-up assignments turned in were averaged across 5 to 8 weeks immediately posttreatment.

Results

Satisfaction and improvement data are presented in Table 2. All parents indicated that they liked the content of the group, enjoyed interacting with other parents, and were

satisfied with the intervention they received. Most parents indicated that STAND-G was logical (81.6%) and fit the teen’s needs (86.3%). With the exception of the long-term planning domain, parents indicated domain-specific improvement in a majority of adolescents with baseline impairment. The largest gains were reported for following through with responsibilities and morning routine. Almost all teens reported that STAND-G was logical (95.6%). Satisfaction data were variable, however, a majority of teens reported that the intervention fit their needs (54.6%) and were satisfied with their experience (63.6%). Teen-reported satisfaction was highly correlated with baseline ODD severity ($r = -.69; p < .001$).

Average attendance for the group was 82.1% per family. Parents demonstrated strong use of STAND-G parent strategies after the group terminated (see Table 3). The most commonly employed weekly strategies were checking the online grade book (92.9%), monitoring homework time (81.8%), and using a contract to reinforce academics (73.9%).

Table 2
Satisfaction and Parent Ratings of Improvement after STAND-G

	Disagree	Neutral	Agree	Strongly Agree	
<i>Satisfaction</i>					
Treatment is logical for helping teen.					
Parent	0.0%	17.4%	30.4%	51.2%	
Teen	4.4%	0.0%	47.8%	47.8%	
I liked the content of this group.					
Parent	0.0%	0.0%	30.4%	69.6%	
Teen	----	----	----	----	
I liked spending time with other parents.					
Parent	0.0%	0.0%	39.1%	60.9%	
Teen	----	----	----	----	
Interventions fit teen’s needs.					
Parent	4.6%	9.1%	9.1%	77.2%	
Teen	18.2%	27.2%	18.2%	36.4%	
Satisfied with the intervention we received.					
Parent	0.0%	0.0%	33.3%	66.7%	
Teen	13.6%	22.7%	4.5%	59.1%	
<i>Parent Ratings of Improvement</i>					
	No Problem ^a	Got Worse	No Change	Improved	Much Improved
Following through on responsibilities	0.0%	8.7%	8.7%	34.8%	47.8%
Problem-solving skills	4.3%	0.0%	21.7%	52.2%	21.7%
Arguing with adults	8.7%	17.3%	13.0%	26.1%	34.8%
Accepting limits	8.7%	8.7%	17.4%	30.4%	34.8%
Morning routine	4.3%	4.3%	17.4%	30.4%	43.4%
Evening routine	4.3%	4.3%	26.1%	30.4%	34.8%
Homework completion	8.7%	4.3%	13.0%	39.1%	34.8%
Note-taking	4.3%	0.0%	47.8%	26.1%	21.7%
Tests/quizzes	4.3%	4.3%	30.4%	39.1%	21.7%
Work quality	4.3%	0.0%	17.4%	47.8%	30.4%
Planning ahead	0.0%	0.0%	52.2%	26.1%	21.7%
Time management	8.7%	0.0%	21.7%	47.8%	21.7%

Note. Data from 23 families who completed STAND-G. ^aNo problem at referral to STAND-G.

Parents and teens provided a range of responses to open-ended program evaluation questions (see Table 4). Parents most frequently cited learning behavioral strategies (51.9%) as the most useful part of STAND-G, while teens cited learning organization and time management skills (40.9%). Parents reported that the most common change they made after STAND-G was improving communication skills with the teen (36.4%), but teens reported that parents' most frequent change was promoting more autonomy in the teen (31.8%). Regarding changes made by the teen, both parents (51.9%) and teens (40.9%) most frequently reported improvements in academic conscientiousness. Finally, although parents (31.8%) and teens (40.9%) were most likely to say that the group did not need to change, the most frequently offered suggestion was to increase the dose of treatment (27.3% of parents, 13.6% of teens).

Examination of grade portal data (see Tables 5–7) revealed that with the exception of test and quiz scores earned by Group 2 (January–February), there were no clinically meaningful acute improvements in objective grades, relative to control students. However, both groups evaluated at follow-up displayed meaningful improvements in percentage assignments turned in, relative to their control groups. In most cases, there was a tendency

Table 3
Parent Implementation of Behavioral Strategies After Termination of STAND-G

	Not at all	At least once a week
Used a contract to reinforce academics	26.1%	73.9%
Communicated with teachers	47.6%	52.4%
Helped teen organize school materials	31.8%	68.2%
Checked teen's daily planner	39.1%	60.9%
Checked online grade book	18.2%	81.8%
Helped teen plan out homework time	27.3%	72.7%
Helped teen study for a test	59.1%	40.9%
Checked to see if teen took class notes	47.8%	52.2%
Monitored homework time	7.1%	92.9%
Used a calendar to plan for a project	42.9%	57.1%
Checked homework for errors	57.1%	42.9%
Made a to-do list with teen	59.1%	40.9%
Offered privileges for a good day or week	28.6%	71.4%
Restricted privileges for a bad day or week	30.4%	69.6%
Did teen's homework for him/her ^a	95.5%	4.5%

Note. Parents were asked to rate how frequently they used techniques during the past week. Surveys were completed 1 to 3 weeks after the termination of STAND-G. ^aParents were encouraged to let teens do their own homework.

Table 4
Open-Ended, Qualitative Evaluation of STAND-G

	Parents	Teens
What were the most useful things about the parent group?		----
Learned behavioral strategies	59.1%	
Improved parent-teen communication	31.8%	
Social support	31.8%	
Understand teen better	13.6%	
Taught patience	9.1%	
What were the most useful things about the teen group?		----
Organization/time management skills	40.9%	
Academic skills (study skills and note-taking)	22.7%	
Taught self-awareness	22.7%	
Taught how to improve motivation/focus	13.6%	
Improved relationship with parents	13.6%	
Social support	4.5%	
Nothing was useful	13.6%	
In what ways did the parent change as a result of this group?		
Improved communication skills	36.4%	13.6%
Promoted teen autonomy	27.3%	31.8%
Implemented new behavioral techniques	22.7%	9.1%
Became more patient	18.1%	9.1%
Increased consistency when implementing consequences	18.1%	9.1%
Felt more supported by other parents	9.1%	0.0%
Parent became better organized	9.1%	4.5%
Understood teen better	4.5%	0.0%
Did not change	9.1%	27.3%
In what ways did the teen change as a result of this group?		
Became more conscientious with academics	59.1%	40.9%
Improved motivation/focus	36.4%	27.3%
Grades improved	9.1%	4.5%
Became more self-aware	4.5%	0.0%
Improved attitude	4.5%	9.1%
Did not change	13.6%	31.8%
How could we improve this program?		
Increase dose of treatment	27.3%	13.6%
Add additional session content	27.3%	0.0%
Change format of treatment	22.7%	13.6%
More social interaction	4.5%	9.1%
Spend more time in combined parent/teen group	0.0%	13.6%
Individualize treatment more	0.0%	9.1%
No change is needed	31.8%	40.9%

for academic indices to deteriorate across the months of the school year.

Discussion

This pilot study supports the promise of a group-based parent-teen collaborative intervention, such as STAND-G,

Table 5
Changes in Assignment Grades From Pretreatment to Follow-up

	Pre	Post	Follow-up	<i>Pre to Post d</i>	<i>Post to Follow-up d</i>
<i>October-November</i>					
Group 1 (<i>N</i> = 10)	2.89(.82)	2.60(.73)	2.45(.58)	-.35	-.21
Control (<i>N</i> = 13)	2.38(.67)	2.41(.69)	2.40(.60)	.05	.00
<i>January-February</i>					
Group 2 (<i>N</i> = 8)	2.27(.52)	2.45(.62)	2.42(.68)	.36	-.06
Control (<i>N</i> = 5)	2.50(.80)	2.63(.53)	2.56(.63)	.18	-.15
<i>March-April</i>					
Group 3 (<i>N</i> = 5)	2.39(.84)	2.45(.98)	----	.07	----

as a model for standard behavioral intervention delivery in high school students. Specific findings were as follows: (a) a majority of parents and teens expressed high satisfaction with STAND-G, and when prompted open-endedly, cited a range of therapeutic benefits; (b) most parents implemented STAND-G strategies after the group concluded; and (c) adolescents appeared to display improvements across a range of domains according to self and parent ratings of improvement, but objective gradebook data revealed marginal impact on academic indices. We discuss each finding below.

Adolescents with ADHD are a notoriously treatment-resistant population (Barkley et al., 2001; McCarthy et al., 2009). Subsequently, parents' high satisfaction with STAND-G (see Table 2) is promising. On average, families attended all but one STAND-G session. Most parents rated STAND-G as logical and well-tailored to their adolescents' needs, and all parents liked the content of the group, enjoyed interacting with the other parents, and were satisfied with their overall experience. Of note is that a majority of adolescents also found treatment logical, although teen satisfaction was variable. Teens with comorbid oppositional-defiant disorder tended to provide a negative evaluation of STAND-G, despite parent-rated improvements in their functioning. These data highlight that adolescents with an oppositional and defiant demeanor may perceive fewer

benefits to treatment. Although our data suggest that adolescents are more likely to access and engage in a psychosocial treatment like STAND-G than in stimulant medication treatment (McCarthy et al.; Pelham et al., *in press*), further efforts must be made to engage particularly treatment-resistant teens.

A range of responses was elicited when parents and adolescents were prompted to list perceived benefits of STAND-G (see Table 4). Parents and teens reported that the most useful part of STAND-G was learning new skills such as behavioral strategies, organization and time management techniques, and academic skills. Secondary benefits included improvements in parent-teen communication, autonomy granted to the teen, and teen motivation/focus. Thus, although STAND-G was developed to improve academic functioning, the parent-teen collaborative approach also benefitted family functioning. When asked to suggest improvements to STAND-G, approximately one third of families indicated no need for modifications, one third responded that they desired a higher treatment dose (i.e., more frequent or longer sessions), and others suggested a variety of content and format changes. The request, by some, for a higher dose of treatment is not surprising given evidence that intensive therapies are needed to produce meaningful changes for adolescents with severe disruptive behavior disorders (Henggeler & Lee, 2003; Sibley et al.,

Table 6
Changes in Test/Quiz Grades From Pretreatment to Follow-up

	Pre	Post	Follow-up	<i>Pre to Post d</i>	<i>Post to Follow-up d</i>
<i>October-November</i>					
Group 1 (<i>N</i> = 10)	1.95(1.15)	1.73(.95)	1.64(.93)	-.19	-.10
Control (<i>N</i> = 13)	1.55(.88)	1.38(.75)	1.51(.78)	-.19	.17
<i>January-February</i>					
Group 2 (<i>N</i> = 8)	1.16(.80)	1.98(1.02)	1.94(.99)	1.02	.00
Control (<i>N</i> = 5)	1.03(.70)	1.11(.68)	1.13	.12	.02
<i>March-April</i>					
Group 3 (<i>N</i> = 5)	1.09(.81)	1.22(.42)	----	.15	----

Table 7
Changes in Assignments Turned-in (%) From Pretreatment to Follow-up

	Pre	Post	Follow-up	<i>Pre to Post d</i>	<i>Post to Follow-up d</i>
<i>October-November</i>					
Group 1 (<i>N</i> = 10)	.79(.14)	.71(.21)	.81(.15)	-.55	.50
Control (<i>N</i> = 13)	.82(.15)	.85(.14)	.83(.18)	.20	-.13
<i>January-February</i>					
Group 2 (<i>N</i> = 8)	.84(.16)	.79(.15)	.82(.15)	-.29	.15
Control (<i>N</i> = 5)	.85(.12)	.88(.14)	.84(.16)	.22	-.27
<i>March-April</i>					
Group 3 (<i>N</i> = 5)	.91(.13)	.85(.11)	----	-.50	----

2011). Thus, STAND-G may be substantially beneficial for adolescents with mild to moderate impairment, but insufficient for teens with severe ADHD.

A primary goal of STAND-G was to equip each family with a parent-teen negotiated contract to reinforce academic success. In the weeks following termination, the majority of parents (73.9%) reported implementing this contract on a weekly basis and regularly offering the appropriate reward (71.4%) or consequence (69.6%) for teens' academic performance. Most parents also reported active monitoring of homework completion through the online grade portal (81.8%), check-ins during homework time (92.9%), and preemptive homework time planning with the teen (72.7%). However, in line with STAND-G's philosophy to increase adolescent autonomy, fewer parents reported overinvolvement in teens' academics (e.g., checking homework for errors [42.5%] and doing teens' homework for them [4.5%]). These data suggest that, at least initially, parents independently implemented STAND-G components after weekly sessions terminated. Of note is their ability to effectively monitor academics from home, which is the historic barrier to parent-based academic interventions in secondary schools.

Immediately following STAND-G, parents reported improvements in organization and time-management skills, academic habits, and home behavior (see Table 2). However, in many cases, these gains did not translate to meaningful changes in GPA indices (see Table 5). Regarding acute treatment effects, Group 2 (January) displayed small to large improvements in assignment and test grades relative to its control group (see Tables 5 and 6). In the 4-week follow-up phase (Groups 1 and 2 only) both groups displayed small to medium improvements in the percentage of assignments turned in, relative to control students (see Table 7). It was interesting that, in some cases, improvements in the accuracy of completed work (assignment and test/quiz grades) occurred acutely, but the percentage of work turned in did not improve until follow-up. Perhaps acute gains were produced by direct academic skill instruction; however, contingency management (i.e., the parent-teen contract that

was implemented in the weeks following treatment) was necessary to improve work completion. These data emphasize the importance of involving adults who can supervise contingency management, such as parents, in the treatment of high school students with ADHD.

Group 2 was the only group whose grades showed a clear response to treatment. Examining post-hoc group differences in demographic and clinical severity variables, we found that Group 2 was significantly older (*M*age = 15.75) than participants in Group 1 and Group 3 (*M*age = 14.73). Thus, perhaps the STAND-G model is most effective for older high school students with ADHD. For some adolescents, particularly younger ones, it may be the case that STAND-G was insufficiently intensive or individualized to yield GPA changes. For example, some parents and teens requested additional sessions or more personalized treatment (see Table 4). This hypothesis is consistent with previous work documenting significant improvements in GPA for younger adolescents with ADHD who participate in individualized, rather than group, STAND (STAND-I Sibley et al., in press) and intensive adolescent-directed interventions (Molina et al., 2008). It is also possible that January was an opportune time to deliver behavioral interventions to teens with ADHD. Mounting impairments in the fall produced clear goals for treatment; however, academic problems had not yet fully escalated (see Tables 5–7). In support of this hypothesis, our data suggest an overall decline in assignment and test grades over the course of the school year (see Tables 5–7), which is also previously documented in this population (Schultz, Evans, & Serpell, 2009).

The parent-adolescent collaborative approach sometimes undergoes criticism. As noted, there is some concern by teachers that adult involvement in high school intervention delivery promotes teen dependence on adults (DuPaul & Weyandt, 2006). However, despite increasing parent involvement, STAND-G also helped parents grant more autonomy to teens (see Table 3). Namely, behavioral treatment for teens with ADHD advocates consistent accountability for academic performance and rewards success by increasing

freedoms and decreasing parent monitoring. Therefore, many teens are given a fresh opportunity to prove readiness for independence through improved academic conscientiousness. Some also note that parent-directed treatments for teens with ADHD are challenging to implement due to strained parent-teen relationships. However, our data suggest that improved parent-teen relationships were a benefit of STAND-G (see Tables 2 and 3). Most behavioral parenting programs for teens with ADHD adopt family therapy models (e.g., Barkley et al., 2001; Sibley et al., in press). However, it may be the case that the group-based model better mitigates family conflict during session by: (a) limiting direct parent and teen interactions (only 30 minutes spent in mixed group), (b) providing built-in consequences for escalating arguments (i.e., social judgment of other families), and (c) allowing families with stronger communication skills to model appropriate parent-teen interactions. As such, we believe that this group model may be particularly well-tailored to the therapeutic needs of adolescents with ADHD in the presence of high parent-teen conflict. However, further work is needed to evaluate the relative efficacy of group versus individualized approaches to behavioral treatment in ADHD teens.

There are important limitations to this study. First, we did not measure parents' implementation of STAND-G strategies at baseline, so it is possible that some parents regularly used these techniques prior to treatment. Second, some program evaluation ratings were self-report measures, which may be influenced by perceptual biases. Additionally, our sample was predominantly middle class and Hispanic with average IQs, so our findings may not generalize to all populations. Finally, limited by the length of the school year, we were unable to compare the objective grade performance of Group 3 to a control group, or to examine a follow-up phase for Group 3. It is possible that the marginal gains displayed by Group 3 during the intervention period were large relative to untreated peers with ADHD, whose grades are shown to decrease dramatically in the final months of school (Schultz et al., 2009). If follow-up data were collected for Group 3, it is possible that, like Groups 1 and 2, these students also may have displayed latent improvements in work completion.

In sum, a group-based intervention that promotes parent-teen collaboration is a promising standard behavioral treatment model for ADHD in high school students. This treatment may be an appropriate first-line approach to treating older adolescents with ADHD because it is more feasible and acceptable than oft-refused stimulant medication (McCarthy et al., 2009), teacher-rejected school-based interventions (DuPaul & Weyandt, 2006), and expensive intensive treatment programs that should be reserved for seriously impaired youth (Evans et al., 2011; Sibley et al., 2011). Larger investigations of parent-teen collaborative

programs, like STAND-G, are needed to substantiate the efficacy of this approach. However, these data suggest that if appropriately packaged, a low-intensity (12 hour) psychosocial intervention for parents and high school students with ADHD can produce changes in teen academic, organizational, and behavioral habits. In turn, these improvements may lead to increases in test scores, homework completion, and assignment quality.

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This project was supported in part by grants from the National Institute of Mental Health (R34 MH092466), the Institute for Education Sciences (R324A120169), and the National Institute of Drug Abuse (DA12414).

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Received: February 7, 2013

Accepted: June 9, 2013

Available online 9 July 2013