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Behavioral parent training effect on disruptive behavior disorders in children and adolescents

Abstract

Current treatment of Attention Deficit/Hyperactivity Disorder (ADHD) and other disorders affecting central nervous system functioning leading to disruptive behaviors in children and adolescents seldom include an adjunctive psychosocial intervention.

Objective: The purpose of this quality improvement study was to implement Behavioral Parent Training (BPT) in an outpatient private practice setting to improve outcomes in home, school, and social settings for children and adolescents.

Method: Parent(s)/guardian(s) of ten (n=10) children ages seven through 12. The study utilized the Vanderbilt ADHD Diagnostic Parent Rating Scale, Home Situations Questionnaire, and Disruptive Behavior Disorder Rating Scale – Parent Form as well as Teacher Rating Scale and School Questionnaires for measurement of behaviours prior to BPT. The standardized ADHD parent and teacher rating scales along with the questionnaires for both were again completed at the conclusion of the BPT sessions for comparison.

Results: Findings indicated significant improvements in disruptive behaviour.

Conclusion: Psychosocial interventions such as BPT can be a powerful adjunct to pharmacotherapy in ADHD and behavior disorders for this population. Providing such intervention in a routine practice setting offers the potential for improved outcomes in the child/adolescent's home, school, and social setting.

Keywords: behavioural parent training, disruptive behaviours, psychosocial treatment adhd/odd

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Abbreviations: ADHD, attention-deficit/hyperactivity disorder; ODD, oppositional defiant disorder; BPT, behavioral parent training; VADPRS, vanderbilt adhd diagnostic parent rating scale; VADTRS, vanderbilt adhd diagnostic teacher rating scale

Developmental rational for selection of participants

Attention-Deficit/Hyperactivity Disorder (ADHD) is the most common psychiatric disorder among children and adolescents.[1] It affects approximately 7.8% of school aged children in the United States and stems from abnormalities in central nervous system functioning.[2] ADHD is characterized by problems maintaining attention, controlling and containing impulses, and tempering activity level.[3] Characteristic symptoms include inattention, defiant behaviors, impulsivity, and/or hyperactivity. These core symptoms are the target of intervention to improve the patient's functioning at home, socially, and academically.[2] Outcome goals utilizing psychosocial interventions along with pharmacological treatment for this population aim to achieve a reduction in disruptive behaviors such as aggression, defiance, and opposition. Other key goals for treatment are to decrease functional impairment at home, school, and in social settings as well as improving parent-child relationships.

ADHD along with other disruptive behavior disorders such as Oppositional Defiant Disorder (ODD) has been shown to cause functional impairments in home, social, and academic domains for this population with symptoms many times persisting over a lifespan.[4] Treatment for disruptive disorders in this population most frequently occurs in community outpatient settings wherein use of the gold standard treatment with psycho stimulants treats core ADHD symptoms. However, parental safety concerns, high discontinuation rates, medication side effects, poor tolerability, and medication non-compliance can present barriers to improving outcomes. Up to 40% of patients discontinue medications due to adverse effects.[3] Psychosocial approach options are becoming necessary to offer patients/parents alternatives and/or enhancement to pharmacological interventions.[5] Improving overall quality of life for this population can be accomplished through decreasing symptomology.

Children and adolescents with ADHD and other disruptive behavior disorders can be significantly academically and socially impaired.[4] Although school environments include some teacher preparation for dealing with children/adolescents with ADHD and/or disruptive behaviors, challenges do occur. Teachers and school staff expend large amounts of energy dealing with students who can be talkative, highly visible, and demanding. School staff also face the difficulties of instructing children who need reminders, sometimes frequent, of rules, have poor fine motor control affecting handwriting, and a decreased ability to follow the steps required for math and memorization.[6] School environments can foster improving outcomes and benefit from children/adolescents achieving increasing social and emotional competence with peers in the classroom, increased problem solving, a reduction in disruptive behaviors, increased academic readiness, affect, social competence, and compliance.

Impacting the child/adolescent's home and educational environment and improving their social integration with peers can be seized by involving parent(s)/guardian(s), teachers, and school officials in the process of individualized evaluation and monitoring of disruptive behaviors. Feedback regarding behavior can indicate progress that the child/adolescent is making in improving emotional and social proficiency with peers, increasing compliance, affect, and readiness in academics, and improving problem solving capabilities.[7]

Behavioral Parent Training (BPT) is a psychosocial evidence-based intervention that has been proven effective in treating ADHD and disruptive behavior disorders in this population.[8] This adjunctive intervention utilizes observations by parents/guardians and school staff to determine baseline behavior and BPT's effects in various settings. A clinically significant improvement of 79% in disruptive behaviors in children/adolescents after parent(s)/guardian(s) completed BPT has been proven with significant improvement at a rate of 66% in the same patients in a one year follow-up.[9] These findings clearly indicate the value of BPT in improving outcomes in this population.

Participants

Participants for this project were drawn from a convenience sample identified by mental health providers in an outpatient mental health clinic. The mental health providers consisted of two Family Psychiatric Mental Health Nurse Practitioners and one Adult and Child Psychiatrist. The parents of patients were referred for BPT if their child/adolescent was being pharmacologically treated for ADHD, ODD, or other disruptive behavior disorders yet still continued to have behavioral problems at home or school. Each parent/guardian was given an information sheet outlining the study purpose, intervention, selection process, procedure, and benefits. There were no incentives/rewards offered to participate in the study and participants were informed of their right to refuse or withdraw from the study at any time without affecting ongoing treatment with their mental health provider. All ten participants consented to participation in the project.

Inclusion criteria included parents of children and adolescents aged six to 17 whom were either male or female, enrolled in school, spoke English as their primary language, and met the criteria for ADHD, Inattentive type, hyperactive type, or combined type. Other criteria accepted were parents of children whom met criteria for ODD and/or other disruptive behavior disorders. Exclusion criteria were parents of children/adolescents who were males or females less than six years old and those 18years or older. Other exclusions included parents of children/adolescents with comorbid pervasive developmental disorders,[10] mental retardation, or psychotic disorders. Although the study sample was small at 10 participants, child sex and ethnicity were evenly distributed and diverse.

Methods

Project methodology for this project included participants, the clinical setting, reliable evaluation tools, and the operational plan (process, intervention, data collection). Participants were recommended for the project upon their child/adolescent meeting inclusion criteria above. Upon consent, parent(s)/guardian(s) attended sessions of BPT and completed a Vanderbilt ADHD Diagnostic Parent Rating Scale, Home Situations Questionnaire, and the Disruptive Behavior Disorders Rating Scale – Parent Form at the beginning of BPT sessions and then again at the conclusion of BPT (Figure 1). Teacher Rating Scales and School Questionnaires were completed at the beginning of BPT as well.

Procedures

Assessment tools and questionnaires utilized included the Vanderbilt ADHD Diagnostic Parent Rating Scale (VADPRS), the Vanderbilt ADHD Diagnostic Teacher Rating Scale (VADTRS), and questionnaires (Home Situations Questionnaire, School Situations Questionnaire, and Disruptive Behavior Disorders Rating Scale). The VADPRS and the VADTRS are instruments used to ask respondents, parent or teacher respectively, to rate the child in observable behaviors and performance (academically and behaviorally) in the classroom. These scales were designed for use in children ages six to 12. They have an internal consistency in both the parent and teacher version. The VADPRS and the VADTRS have a high concurrent validity at .79.[11] The remaining questionnaires (Home Situations, School Situations, and Disruptive Behavior Disorders Rating Scale) are used to determine the pervasiveness and severity of disruptive behaviors across the various domains of home, school, and social settings.[12,13]

Data was collected from the standardized ADHD parent and teacher rating scales, Home Situations Questionnaire, School Situations Questionnaire, and Disruptive Behavior Disorders rating scales for parents and teachers at the beginning of BPT. Demographic data included gender, age, and ethnicity. Ten sessions which included ten different steps in parent training were attended by each parent/guardian. Each session was repeated several times during the course of a week to allow for flexibility in scheduling/attendance. The sessions were held in the mental health practice office during afterhours and weekends to allow for group confidentiality, open discussion, and peer support.

Session one included a discussion of why children misbehave that included psycho education of ADHD and ODD, discussion of parental views of misbehavior, and presented a model for understanding disruptive behaviors. Included in this initial session was a discussion of the goals of BPT which was to achieve an understanding of behaviors, mechanisms that effect such behaviors (environment, family characteristics, and situational consequences), and ways to remodel them.[13] Instructions for completion of the assessment tools, the VADPRS, the VADTRS, and questionnaires were given to participants with instructions to return them the following week. These results were used as a baseline measurement of disruptive behaviors.

Session two included information on Paying Attention[13] designed to educate parents/guardians on how the effect of their interactions with their children result in an overall motivation or lack thereof to comply with requests. Use of "effective attending" and giving effective commands was the topic of the third session. Session four focused on the establishment of a formal child privileges system utilizing a home token system to reinforce child compliance and increase parental attention to appropriate social conduct.

Sessions five and six were aimed at "time out" and the utilization of the home token system as punishment for unacceptable behaviors and non-compliance. Anticipating problems in public places was the topic of session seven. Improving behaviors in school through the use of a daily behavior report card was the focus of session eight. Sessions nine and ten outlined handling future behavior problems and an overall review of all steps was provided[13] Study tools and questionnaires were again distributed for completion by participant and teacher.

Results

As mentioned previously, ten participants (parent(s)/guardians(s) of qualifying children ages six to 17) entered the study, all qualifying for the child group (ages six to 12). Actual participants were the parent(s)/guardian(s) of children ranging in ages from seven to twelve years old. The mean age of their children were 9.8 years old and included five males and five females. Of the five male children, two were African American and three were Caucasian. Of the five female children, three were African American and two were Caucasian (Table 1). The socioeconomic status of participants ranged from lower middle income families to middle class families.

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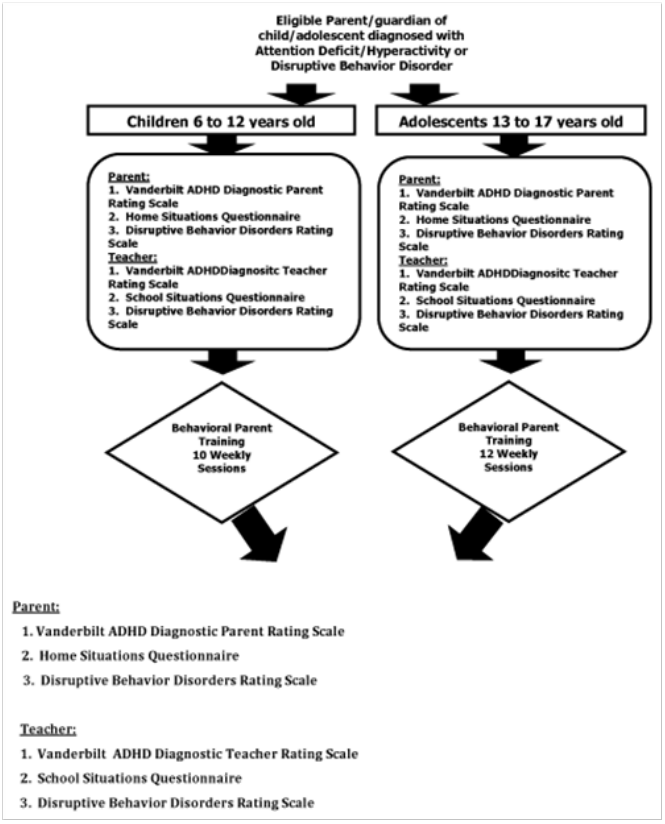

Figure 1 Study/Project Flow Chart. ADHD = Attention Deficit/Hyperactivity Disorder.

Table 1 Study Population Characteristics

Study Population Characteristics	
Child Age in years (M, SD)	9.8, 1.8738
Child Sex	50% male
Child Race=Ethnicity	50% Caucasian, 50% African American
Child ADHD, ODD	100% ADHD, 50% ODD

All variables collected at the onset of BPT have been compared to scoring at the conclusion of BPT to identify change/improvement in behaviors. Included in statistical analysis is an overall global score of all study tools (VADPRS and VADTRS) and questionnaires (Home Situations, School Situations, and Disruptive Behaviors parent and teacher version; individual analysis of each tool and questionnaire, effect size, and reliable change index. Results of study tools and questionnaires include 100% data collection (n=10) and utilized a two-tailed t-test that resulted in p-values for all variables that, by conventional criteria indicate extremely statistically significant findings (Table 2). Data was analyzed using XLSTAT statistical software. Each test resulted in a 95% confidence interval with all p-values less than 0.0205.

Data showed an astounding maximum improvement rate of up to 83%, with a minimum improvement of 14%. Average improvement across all behaviors was 48%. Improvement in scoring for the VADPRS averaged 44%, with a maximum improvement of 86% and a minimum improvement of 4% in disruptive behaviors at home. The VADTRS averaged an improvement in disruptive behaviors at 47%, maximum improvement at 80% and minimum improvement at 15% in the school setting. The Home Situations Questionnaire results included an average rate of improvement of 66%, a maximum score of 100% improvement and a minimum improvement of 15%.

The School Situations Questionnaire results showed an average improvement in disruptive behaviors by 63%, a maximum improvement of 93% and minimum improvement of 11%. Disruptive Behaviors Parent Questionnaire findings revealed an average improvement in behavior of 45%, with a maximum improvement of 84% and a minimum improvement of 16%. Disruptive Behaviors Teacher Questionnaire outcomes were an average improvement of 35%, yielding a maximum improvement in disruptive behaviors of 81% and a minimum improvement of 4%. Improvements in child behaviors after BPT sessions occurred across the settings of home, school, and social/peer interactions and can be seen graphically depicted in (Figure 2).

Statistic	Before BPT	After BPT
No. of observations	10	10
Minimum	110.000	20.000
Maximum	415.000	265.000
1st Quartile	251.500	113.250
Median	290.500	148.500
3rd Quartile	344.750	187.750
Mean	283.600	145.800
Variance (n-1)	7871.600	5319.067
Standard deviation (n)	84.169	69.189
Standard deviation (n-1)	88.722	72.932

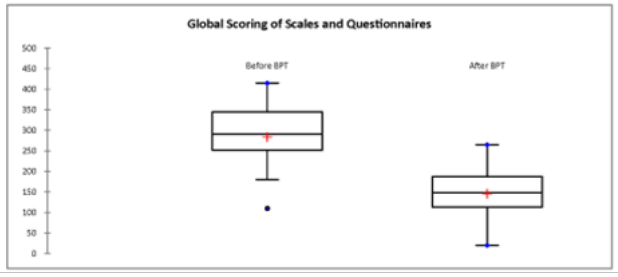

Figure 2 Statistical Results. BPT = Behavioral Parent Training.

Discussion

Psychosocial interventions for children and adolescents with ADHD and other disruptive behavior disorders are becoming an integral and necessary part of comprehensive treatment to improve the overall success for this population in home, academic, and social settings. The purpose of this quality improvement project was to develop an integrated BPT program to meet this need in a community mental health office. Limitations were that the project included only parents of children ages 6 through 12 and the project group was small. Future projects should include other age groups.

Although there were limitations, significant improvement in behavior after BPT was achieved. The clinical significance of these results is conclusive evidence that BPT can impact not only the disruptive behaviors in the home, but in school and social settings. Global improvements in disruptive behaviors ranging from as low as 14% to a potential improvement of 86% offer clinicians a preview of how implementing BPT can affect patient outcomes when used as an adjunct to current pharmacotherapy treatment of these disorders. Better outcomes for these patients can lead to better interpersonal relationships, improved compliance in the school environment, and ultimately a better quality of life.

Implications for research, policy, and practice

BPT can offer clinicians the opportunity to help parents/guardians

positively impact the child/adolescent's home, school, and social environment. Strategies for implementing this proven psychosocial intervention into current clinical practice should be considered and refined to offer a multimodal approach for treatment of disruptive behavior disorders that medication alone cannot treat. Future research might include determining causes of parent/guardian resistance to BPT and mechanisms to mitigate these factors (especially for the adolescent population), ways to incorporate BPT in routine follow-up of pharmacological management of these disorders, and improving medication efficacy through newer technologies such as pharmacogenetics.

Table 2 Means and Standard Deviations for pre and post Score on study tools and Questionnaires

		Mean	Standard Deviation	p-value	Effect Size
Global scores of all tools and questionnaires	After	283.6	88.72		
	Before	145.8	72.93	0.0009	0.647
Vanderbilt ADHD Rating Scale - Parent	After	60.5	21.42		
	Before	36.9	19.3	0.0162	0.5009
Vanderbilt ADHD Rating Scale - Teacher	After	50.9	12.85		
	Before	28.3	14.01	0.0007	0.649
Home Situations Questionnaire	After	33.4	25.29		
	Before	9.4	5.6	0.0089	0.548
School Situations Questionnaire	After	23.7	20.61		
	Before	5.5	3.03	0.0204	0.526
Disruptive Behaviors– Parent	After	58.7	16.23		
	Before	32.8	17.81	0.0005	0.605
Disruptive Behaviors– Teacher	After	50.4	16.61		
	Before	32.8	16.67	0.0181	0.467

Note: All p- values reflect change in behaviors that are extremely statistically significant. Results reflect a 95% confidence interval for each paired t-test performed; n=10

The most significant component of success of BPT for disruptive behavior disorders in any setting is the parent/guardian acknowledging that conditions exist which cause functional impairment in the home, school, and social environments. This being a reality, numerous factors can affect the outcomes or ability of parents/guardians participating fully with BPT. These can be parental interpersonal and/or personal problems, a decreased ability to monitor the child/adolescent, stressors (e.g. financial, negative events), and possible developmental disorders (e.g. language, cognitive).[7] Thus, the clinician or researcher's ability to be flexible and creative at being proactive in providing more than medication management for these patients can result in the child/adolescent's having greater success in the areas of home, school, and peer settings.

In 2013, The American Academy of Child and Adolescent Psychiatry[14] recommended that a comprehensive evaluation is necessary to establish an appropriate diagnosis, baseline questionnaires/scales should be completed to determine the level of functional impairment, and progress tracking should be implemented to determine effectiveness. Recommendations support that psychosocial interventions, such as BPT, can be effective treatment modalities and enhancers to pharmacological management of disruptive behavior disorders and should be considered in the outpatient mental health practices along with medication management. BPT can offer clinicians, patients, parents/guardians, and teachers a reduction of disruptive behaviors such as aggression, defiance, and opposition; a decrease in functional impairment at home, school, and in social settings; and improvements in parent-child relationships.

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Conflicts of interest

Author declares there are no conflicts of interest.

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