Psychosocial and Pharmacologic Interventions for Disruptive Behavior Disorders in Children and Adolescents: Current State of the Evidence

Focus of This Summary

This is a summary of a systematic review evaluating the evidence regarding the potential benefits and adverse effects of psychosocial and pharmacologic treatment approaches for children and adolescents with disruptive behavior disorders (DBDs). The systematic review included 84 unique studies published from 1994 to June 2014. The full report, describing the methodology used in the systematic review and listing all the identified studies, is available at *www.effectivehealthcare.ahrq.gov/disruptive-behavior-disorders*. This summary is provided to assist in informed clinical decisionmaking. However, reviews of evidence should not be construed to represent clinical recommendations or guidelines.

Background

Disruptive behavior disorders (DBDs) are a group of related psychiatric disorders of childhood and adolescence and include conduct disorder, intermittent explosive disorder, or oppositional defiant disorder. Children with DBDs may be aggressive and defiant and may struggle to get along with peers, family members, or authority figures. However, symptoms vary significantly between children and over time. Children with DBDs may be at greater risk for problems in adolescence and later in life, such as substance abuse, delinquency, or criminal behavior. DBDs are diagnosed in approximately 3 percent of children in the United States.

Conventional approaches to treating children with DBDs include psychosocial and pharmacologic interventions or their combination. Choosing the right treatment depends upon the child's symptoms, age, goals for treatment, availability of trained providers, and insurance status. Psychosocial interventions, including but not limited to psychotherapy, have been developed for some subgroups of patients with DBDs and their caregivers. Examples of these interventions include: the Positive Parenting Program® (Triple P)[1] for preschool children, The Incredible Years® (IY)[2] for preschool and school-age children, and multisystemic therapy (MST®)[3] for teenage children.

A wide range of psychotropic medications—including anticonvulsants, antipsychotics, mood stabilizers, and stimulants—have been used to treat children with disruptive behaviors. Use of the medications has increased substantially in recent years. Some medications used to treat DBDs have not been approved by the U.S. Food and Drug Administration (FDA) for these conditions.

The current systematic review aimed to assess psychosocial and pharmacologic treatment approaches for DBDs. The case definition for DBDs used in this review is outlined in the inset above.

1. www.triplep.net/glo-en/home/.
2. www.incredibleyears.com/programs/.
3. www.mstservices.com/.
4. American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders. 5th ed. Arlington, VA: American Psychiatric Association; 2013. dsm.psychiatryonline.org.

Case Definition for Disruptive Behavior Used in This Review

Behaviors that "violate the rights of others (e.g., aggression, destruction of property) and/or that bring the individual into significant conflict with societal norms or authority figures."[4]

The review included studies that assessed children exhibiting these behaviors who were diagnosed with a DSM-5 DBD (i.e., conduct disorder, oppositional defiant disorder, or intermittent explosive disorder). However, some studies included children who had not been diagnosed with one of these disorders but were being treated for disruptive behaviors such as early onset aggression. This review excluded studies in which disruptive behaviors were studied as symptoms or comorbidities (e.g., substance abuse, autism spectrum disorder, pervasive developmental disorder, developmental delay, intellectual disability, attention deficit hyperactivity disorder [ADHD]).

Conclusions

Psychosocial interventions can be effective in improving disruptive behaviors in children with DBDs. Programs that included a parent component, either alone or as part of a multicomponent program, were found to be more effective at reducing disruptive behaviors when compared with interventions that included only a child component or when compared with control conditions. The effectiveness of multicomponent programs that do not contain a parent component was not assessed in this review.

Evidence suggested that antipsychotics and nonstimulant medications may be effective for managing disruptive behaviors in children with DBDs. Low-level evidence suggested that stimulant medications may improve disruptive behaviors, whereas antiepileptics may improve aggressive behavior in children with DBDs. However, only a few studies evaluated the medications included in this review, and their results did not include long-term followup. Adverse effects of medications reported in included studies were mild or moderate, but the ability of the studies to detect harms was limited by their size and the length of followup.

Using the prespecified inclusion and exclusion criteria, no studies were identified that examined the effectiveness of concomitant use of psychosocial and pharmacologic interventions when compared with psychosocial or pharmacologic interventions alone in children with DBDs.

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Overview of Clinical Research Evidence

Table 1: Summary of Evidence on the Effectiveness of Psychosocial Interventions in Treating DBDs

Age Category	Intervention Category	Outcome	N Studies	N Subjects	Finding	SOE
Preschool	Parent-only interventions	Parent-rated child disruptive behaviors	14 (13 RCTs; 1 cohort)	1610	■ Consistently improved in the intervention arms versus wait-list or treatment-as-usual controls. ■ Differences between modified versions of the same intervention were typically not significant.	●●○
	Multicomponent interventions*	Parent-rated child disruptive behaviors	9 (9 RCTs)	401	■ Consistently improved in the intervention arms versus wait-list or treatment-as-usual controls. ■ Differences between modified versions of the same intervention were typically not significant.	●●○
School Age	Parent-only interventions	Parent-rated child disruptive behaviors	11 (8 RCTs; 3 cohorts)	1329	■ Consistently improved in the intervention groups versus controls. ■ Differences between modified versions of the same intervention were not significant.	●●○
	Multicomponent interventions*	Parent-rated child disruptive behaviors	17 (15 RCTs; 2 cohorts)	2159	■ Improved from baseline in most intervention arms. ■ Between-group changes were not consistently significantly different.	●○○
Teenage	Multicomponent interventions*	Parent-rated child disruptive behaviors	13 (12 RCTs; 1 cohort)	1486	■ Improved in the intervention groups versus treatment-as-usual controls in most studies. ■ Differences between modified versions of the same intervention were typically not significant.	●●○

N = number; RCT = randomized controlled trial; SOE = strength of evidence

* Multicomponent interventions were defined as those that included two or more of a child component, parent component, or other component (e.g., teacher component, family together component). All interventions categorized as multicomponent included a parent component.

Table 2: Summary of Evidence on the Effectiveness of Pharmacologic Interventions in Treating DBDs

Drug Category	Outcome	N Studies	N Subjects	Finding	SOE
Antipsychotics (risperidone, quetiapine)	Disruptive behaviors	3 (3 RCTs)	374	■ Significantly improved in the intervention groups versus a control group over the short term (1–6 months).	●●○
Stimulants** (methylphenidate, amphetamine)	Disruptive behaviors	2 (2 RCTs)	392	■ Significantly improved in the intervention arms versus placebo.	●○○
Nonstimulants** (atomoxetine, guanfacine)	Disruptive behaviors	3 (3 RCTs)	537	■ Significant change in disruptive behavior scores (effect size: 0.59 to 0.69).	●●○
Antiepileptic (divalproex)	Aggression	3 (3 RCTs)	121	■ Improvement in aggression was more than three times as likely in treated versus untreated participants.	●○○

N = number; RCT = randomized controlled trial; SOE = strength of evidence

** Some of the children in these studies had attention deficit hyperactivity disorder (ADHD) but were being treated for non-ADHD-related disruptive behaviors. Studies in children who were being treated for ADHD-related disruptive behaviors were not included in this review.

Strength of Evidence Scale†

- High: ●●● High confidence that the evidence reflects the true effect. Further research is very unlikely to change our confidence in the estimate of effect.
- Moderate: ●●○ Moderate confidence that the evidence reflects the true effect. Further research may change our confidence in the estimate of effect and may change the estimate.
- Low: ●○○ Low confidence that the evidence reflects the true effect. Further research is likely to change our confidence in the estimate of effect and is likely to change the estimate.
- Insufficient: ○○○ Evidence either is unavailable or does not permit a conclusion.

† The overall evidence grade was assessed based on the ratings for the following domains: study limitations, directness, consistency, precision, and reporting bias. Other domains were considered, as appropriate: dose-response association, plausible confounding, and strength of association (i.e., magnitude of effect). For additional details on the methodology used to assess strength of evidence, please refer to: Owens DK, Lohr KN, Atkins D, et al. AHRQ series paper 5: grading the strength of a body of evidence when comparing medical interventions—Agency for Healthcare Research and Quality and the Effective Health-Care Program. J Clin Epidemiol. 2010 May;63(5):513-23. PMID: 19595577.

Other Findings of the Review

- Evidence related to the effectiveness of child-only psychosocial interventions was too limited to permit meaningful conclusions.
- There was limited evidence related to the impact of select factors on the effectiveness of interventions:
  - **Patient characteristics:** Results were inconsistent, although some evidence suggested that the child's sex, maternal characteristics such as problems with depression and anger, and other family-functioning variables are associated with the effectiveness of some psychosocial interventions.
  - **Characteristics of the disorder:** Results were inconsistent regarding the effects of baseline severity on treatment outcomes.
  - **Patient treatment history:** No studies examined whether the effectiveness of psychosocial interventions varied by patient treatment history.
  - **Treatment characteristics:** For psychosocial interventions that include a parent component, either alone or in combination with other components, there is some evidence suggesting that improved parenting practices partially mediate effectiveness.
- Given that studies of pharmacologic interventions were short term, harms reported in the studies were generally mild or moderate and fairly immediate in nature:
  - Adverse events frequently reported with risperidone included weight gain, sedation, and somnolence.
  - Adverse events associated with mixed amphetamine salts included sleep delay, insomnia, and anorexia.
  - Atomoxetine was associated with anorexia and headache.
  - Guanfacine was associated with somnolence and headache.

Note: Clinicians are advised to refer to harms data from other sources that might include more extensive and longer term data, including other systematic reviews and FDA drug labels.

Gaps in Knowledge and Limitations of the Evidence Base

Several gaps and limitations were identified in the evidence base reviewed for this report:

- Several studies included in this review were conducted in university research clinics. In the United States, disruptive behaviors are more prevalent among children receiving publicly funded care and who are, therefore, likely to receive treatment in clinical settings such as community mental health centers. The applicability of the findings of this review for patients in community settings is unclear.
- No head-to-head studies were identified that compared the effectiveness of combined psychosocial and pharmacologic interventions or that compared the effectiveness of psychosocial interventions with pharmacologic interventions.
- The review did not assess DBD interventions by etiology, although disruptive behaviors may stem from many causes (e.g., trauma) that inform decisions about treatment and therapy.
- The long-term effectiveness and potential long-term harms of psychosocial interventions are unclear.
- Although there was relatively strong evidence in favor of the effectiveness of MST for disruptive behaviors in teenagers, access to MST may be limited in real-world clinical settings. Additionally, access to behavioral interventions may also be limited in some communities.
- Studies of pharmacologic interventions were small with short-term followup. The long-term effectiveness of these interventions, particularly once the medications have been discontinued, is not known.
- The drugs assessed in the studies of pharmacologic interventions were frequently used without a research basis for their use in treating this particular set of disorders. Additionally, many of the studies included mixed populations and reported outcomes of overlapping symptoms (e.g., those of ADHD and DBD), making it difficult to interpret the results clearly.

What To Discuss With Parents and Caregivers of Children with DBDs

- What DBDs are
- The potential long-term risks of DBDs, including: substance abuse problems; school problems; and delinquent, violent, antisocial, or criminal behaviors in adolescence
- The treatment options for DBDs
- The role for psychosocial interventions in treating DBDs and the elements of successful interventions, particularly those that involve parents
- The availability and quality of psychosocial services
- Why a certain treatment approach might be suitable for a given patient
- The available evidence for the harms of various treatment options
- The importance of following up with the health care provider or therapist regularly and reporting changes in the health or behavior of the patient

Companion Resource for Parents and Caregivers

Treating Disruptive Behavior Disorders in Children and Teens: A Review of the Research for Parents and Caregivers is a free companion to this clinician research summary. It can help parents and caregivers of children or adolescents with DBDs talk with their health care professionals about the various treatment options that are available for managing these conditions.

Ordering Information

For electronic copies of this clinician research summary, the companion patient resource, and the full systematic review, visit *www.effectivehealthcare.ahrq.gov/disruptive-behavior-disorders*. To order free print copies of the patient resource, call the AHRQ Publications Clearinghouse at 800-358-9295.

Source

The information in this summary is based on *Psychosocial and Pharmacologic Interventions for Disruptive Behavior in Children and Adolescents*, Comparative Effectiveness Review No. 154, prepared by the Vanderbilt University Evidence-based Practice Center under Contract No. 290-2012-00009-I for the Agency for Healthcare Research and Quality, October 2015. Available at *www.effectivehealthcare.ahrq.gov/disruptive-behavior-disorders*. This summary was prepared by the John M. Eisenberg Center for Clinical Decisions and Communications Science at Baylor College of Medicine, Houston, TX.

AHRQ Pub. No. 15(16)-EHC019-3-EF
August 2016