



THE UNIVERSITY *of* EDINBURGH

Edinburgh Research Explorer

Multiple needs and multiple treatments. What's a clinician to do? Update on the psychosocial treatment of disruptive behaviours in childhood

Citation for published version:

Andrade, BF, Aitken, M, Brodtkin, S & Sawrikar, V 2022, 'Multiple needs and multiple treatments. What's a clinician to do? Update on the psychosocial treatment of disruptive behaviours in childhood', *Current Opinion in Psychiatry*, vol. 35, no. 6, pp. 409-416. <https://doi.org/10.1097/YCO.0000000000000823>

Digital Object Identifier (DOI):

[10.1097/YCO.0000000000000823](https://doi.org/10.1097/YCO.0000000000000823)

Link:

[Link to publication record in Edinburgh Research Explorer](#)

Document Version:

Publisher's PDF, also known as Version of record

Published In:

Current Opinion in Psychiatry

General rights

Copyright for the publications made accessible via the Edinburgh Research Explorer is retained by the author(s) and / or other copyright owners and it is a condition of accessing these publications that users recognise and abide by the legal requirements associated with these rights.

Take down policy

The University of Edinburgh has made every reasonable effort to ensure that Edinburgh Research Explorer content complies with UK legislation. If you believe that the public display of this file breaches copyright please contact openaccess@ed.ac.uk providing details, and we will remove access to the work immediately and investigate your claim.





Multiple needs and multiple treatments. What's a clinician to do? Update on the psychosocial treatment of disruptive behaviours in childhood

Brendan F. Andrade^{a,b,d,e}, Madison Aitken^{a,b,d}, Sabrina Brodtkin^{a,e}
and Vilas Sawrikar^c

Purpose of review

There are a wide range of psychosocial treatment options, delivered in different modalities, for children with disruptive behaviour. However, clinicians face many challenges in ensuring the empirically supported treatments (ESTs) they select will be effective for their patient. This has prompted studies to generate knowledge on how to improve treatment outcomes for children with disruptive behaviour. This review identifies the major challenges in treatment selection as well as emerging research seeking to improve outcomes.

Recent findings

This review emphasizes the salience of the research-practice gap associated with establishing ESTs using narrow definitions of clinical problems. Recent research is reviewed considering the complex determinants of disruptive behaviours, including parent and family factors that influence outcomes. The review subsequently outlines recent advances in research and clinical practice guidelines aiming to surmount these challenges. Key advances discussed include examining the most impactful components of ESTs, personalizing interventions by targeting core dysfunction underlying behaviour, and addressing parent factors including mental health and cultural relevance to improve outcomes.

Summary

Thorough assessment of patients' needs, combined with knowledge of treatment response predictors, are recommended to determine the most suitable treatment plan. Recent advances have focused on developing and designing interventions that meet needs in a way that is flexible and tailored.

Keywords

disruptive behaviour, psychosocial treatment, treatment selection

INTRODUCTION

Children with disruptive behaviour represent about 6% of the general population and experience tremendous, short-term and long-term social, academic and family morbidity [1,2]. Although impairments because of disruptive behaviour exist in the absence of a diagnostic label, many of these children are diagnosed with Oppositional Defiant Disorder (ODD) or Conduct Disorder and frequently have co-occurring neurodevelopmental disorders, such as Attention-Deficit Hyperactivity Disorder (ADHD) and Learning Disorders [3]. Moreover, the presence of developmentally inappropriate disruptive behaviour in childhood increases the odds of adolescent and adult severe mental illness compared with nonaffected peers [4^a,5^a,6,7]. This review presents recent research findings relevant to

^aMargaret and Wallace McCain Centre for Child Youth and Family Mental Health, Centre for Addiction and Mental Health, ^bDepartment of Psychiatry, University of Toronto, Toronto, Canada, ^cSchool of Health in Social Science, University of Edinburgh, UK, ^dCundill Centre for Child and Youth Depression, Centre for Addiction and Mental Health and ^eOntario Institute for Studies in Education, University of Toronto, Toronto Canada

Correspondence to Dr Vilas Sawrikar, PhD (ClinPsych), School of Health in Social Science, Edinburgh, United Kingdom, Old Medical Building, Teviot Place, Edinburgh, United Kingdom, EH8 9AG. Tel: +44 0131 651 3919; e-mail: vilas.sawrikar@ed.ac.uk

Curr Opin Psychiatry 2022, 35:409–416

DOI:10.1097/YCO.0000000000000823

This is an open access article distributed under the Creative Commons Attribution License 4.0 (CCBY), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

KEY POINTS

- Multiple ESTs for children with disruptive behaviour have been developed. The most widely used include parent management training, child psychotherapy and modular treatments.
- Promising treatments that have been developed to address the limitations of ESTs include communication-based treatments and those that target core dysfunctions.
- Recent efforts to enhance the effectiveness of treatments include better addressing comorbidities and the needs of parents and families, developing approaches to limit barriers to treatment, and adapting treatments based on culture.
- Online and alternate formats for treatment provide an avenue for further innovation and reach.

improving the effectiveness of psychosocial intervention to prevent these tremendous impairments.

CURRENT RECOMMENDED TREATMENTS FOR CHILDREN WITH DISRUPTIVE BEHAVIOUR

A recent systematic review of clinical practice guidelines for the assessment, prevention and treatment of disruptive behaviour identified the National Institute for Health and Care Excellence (NICE) guideline for ‘Antisocial behaviour and conduct disorders in children and young people’ as having a high-quality rating, meaning it was rigorously developed and has the potential to facilitate clinically significant improvements [8,9]. Accordingly, we recommend that clinicians refer to this guideline when developing a plan for assessment and treatment of children with disruptive behaviour. Empirically supported psychosocial treatments (ESTs) identified in the NICE guideline include group and individual parent-training programs, parent and child-training programs, and child-focused programs. [10].

One of the most established ESTs for childhood disruptive behaviour is Parent Management Training (PMT), also known as Behavioural Parent Training (BPT), parent skills training, and other similar labels [11,12]. It is considered a front-line treatment for children from early-to-middle childhood [13]. PMT involves psychoeducation and parent coaching to further develop effective parenting skills based on behavioural principles [14]. There are a number of well evaluated PMTs to choose from based on specific need. Some are delivered in groups such as Triple P – Positive Parenting Program [15,16]

and Incredible Years [17], whereas others are held individually like Helping the Noncompliant Child (HNC [18]). Other popular PMTs include Parent Management Training Oregon Model (PMTO [19]) and Parent–Child Interaction Therapy (PCIT [20,21]).

ESTs that focus on the child are grounded in cognitive behavioural therapy (CBT) and help children better understand and challenge social–cognitive biases, develop problem-solving skills and strengthen emotional and behavioural regulation skills. These treatments are most effective when combined with parenting treatment [22,23]. Additionally, these treatments have shown most promise with older children, and the NICE guidelines recommend starting child treatments at age 9 years. Some of the most widely used programs include Problem-Solving Skills Training (PSST [24]), Coping Power (CP [25,26]), Incredible Years-Dina Dinosaur [17], and Stop Now and Plan (SNAP [27]).

In addition to widely used ESTs, there are a number of promising intervention approaches to treat childhood disruptive behaviour. These treatments have undergone less rigorous research to support their efficacy or effectiveness; however, they are considered promising, given the studies that have been completed (see [1] for a more detailed review). Some of these programs emphasize an emotionally supportive approach to positive parenting to help children develop emotional and behavioural regulation skills. Examples of emotion focused, or emotion-enhanced intervention include Tuning In To Kids [28], Emotion Enhanced Triple-P [29] and PCIT Emotion Development [30]. Other promising programs involve strengthening parent–child communication. For example, the Collaborative and Proactive Solution (CPS) intervention helps parents identify situations that leads to challenging behaviour, determine if it is the result of a lagging skill in the child, and help parents and children work to actively solve the problem. Finally, the common element approach represents a promising treatment that may be especially useful for addressing comorbidity in children with disruptive behaviour. It is based on the concept that ESTs can be broken into components that target a specific need. A treatment plan can be created that includes components from different ESTs and selected based on the unique needs of a specific child. One example is the Modular Approach to Therapy for Children with Anxiety, Depression, Trauma or Conduct Problems (MATCH-ADTC [31,32]).

MAJOR CHALLENGES

Clinicians who work with children with disruptive behaviour are faced with a number of clinical

challenges. Indeed, research evidence indicates that ESTs for disruptive behaviour are not sufficiently effective for up to 50% of children, highlighting the burden on clinicians to deliver treatments that are not only empirically supported but also suitable for their patient's needs [33]. To that end, a major criticism of the research conducted to determine the status of ESTs and promising new treatments is that they reflect outcomes under controlled research conditions that may not reflect real-world clinical populations and settings, emphasizing the gap between research and practice [34]. This has prompted studies to generate knowledge to bridge the research–practice gap.

In line with this, recent research findings highlight that ESTs are typically tied to diagnostic subgroups of children that may not sufficiently capture the challenge of equifinality, or the idea that multiple causal pathways, or combinations of factors, can give rise to what is observed as disruptive behaviour [35]. Much research documents a range of factors related to disruptive behaviour, including deficits in emotion and behavioural self-regulation skills [36,37], mental abilities such as attention, impulsivity, working memory, planning, emotion regulation/reactivity processes [38–41], difficulties with social behaviour, biases in social information processing, and callous–unemotional traits [42,43]. As a practical example, while children A and B show disruptive behaviour, child A may have primary difficulties with regulating their emotion and reacting to mild provocation whereas child B misperceives others' social intentions, reacts with aggression, and shows elevated callous–unemotional traits. In this simplified example, the key factors that underlie disruptive behaviour and possible targets for treatment differ for these children.

Defining clinical presentations for ESTs based on diagnostic criteria also reduces their applicability for children with comorbid mental health problems. The significance of this challenge becomes apparent in real-world clinical settings where comorbidity is the rule rather than exception, with over half of children with one diagnosable disorder also having a second disorder [44,45]. However, the impact of comorbidity on treatment effectiveness is mixed and there is a growing body of research to show that commonly used treatments for disruptive behaviour are beneficial for children with comorbid conditions [46,47].

A final challenge of note is the appropriate consideration of parent and family factors when planning treatment for children with disruptive behaviour. Parents are important agents of change with regards to their children's treatment progress and most ESTs include a strong parent component.

As a result, it is important that treatments for child disruptive behaviour consider parent factors that may influence engagement and treatment outcome. For example, parents of children with disruptive behaviour show high rates of mental illness themselves and experience disproportionate stress and adversity [48], which may influence parent engagement in treatment [49–51]. Parents may also experience practical barriers to participating in ESTs, such as childcare needs or availability in their geographic region [52,53]. In addition, parents' perception of fit with their culture and beliefs may influence their engagement in ESTs for disruptive behaviour [54].

RECENT ADVANCES IN TREATMENTS FOR DISRUPTIVE BEHAVIOUR IN CHILDHOOD

To improve outcomes, researchers have partially turned their attention to answering the longstanding question of 'What treatment, for whom, is most effective, and under which set of circumstances?' In line with this, below we describe the key themes emerging from contemporary research to optimize EST outcomes by addressing current challenges in the treatment of disruptive behaviour.

IDENTIFYING KEY COMPONENTS OF INTERVENTION

Recent studies have begun to delineate the most impactful components of established treatment programs for disruptive behaviour [6,55,56^{***}]. For instance, two meta-analyses that systematically reviewed the components of parenting interventions indicated that techniques such as positive reinforcement, praise and natural and logical consequences were associated with stronger program effects, and behaviour management components had the highest likelihood of being effective in treatment settings [12,56^{***}]. Further, a recent micro-trial showed that both antecedent-based (e.g. setting clear rules) and consequence-based strategies (e.g. praise, ignoring unwanted behaviour) decrease disruptive behaviour in children [57^{*}].

TARGETING CORE DYSFUNCTIONS

Treatments are being developed to target the common and unique biobehavioural underpinnings of disruptive behaviour. These include transdiagnostic treatments that target underlying processes shared across diagnoses [45,46], as well as stratified interventions targeting underlying pathological and maintaining processes specific to subgroups with differential pathways to disruptive behaviour [34].

This is especially noteworthy for children with disruptive behaviour who often present with comorbid disorders and challenges, where targeting shared rather than specific causal processes may be critical to clinical success [58–61].

Research investigating the core dysfunction approach generally focuses on the putative utility of adapting ESTs according to individual differences in affective dimensions of problem behaviours. For example, new treatments are being developed to target irritability, anger, and deficits in emotion regulation underlying disruptive behaviour problems and comorbid emotional problems [23,62,63]. Recently developed treatments include the Unified Protocol for Transdiagnostic Treatment, CBT and integrated therapy with PMT [64–68]. Innovations in CBT targeting severe irritability, anger and aggression include behavioural exposure to frustrating nonrewarding and threatening stimuli [69]. Other treatments have expanded upon applications of emotion-coaching to improve child emotion regulation. For example, a recent school-based trial of Tuning Your Temper showed significant improvements in disruptive behaviour compared with a waitlist control condition [4^a,70]. Other recently developed interventions specifically target social–emotional deficits linked with callous–unemotional traits. For example, a randomized controlled trial showed that a modified PCIT program (PCIT Emotion Development) reduced callous unemotional traits along with oppositional defiant disorder and major depressive disorder symptoms [71]. Overall, the core dysfunction approach offers a useful way of personalizing intervention based on the interacting neurobiological and environmental factors contributing to children’s disruptive behaviour.

ADDRESSING PARENT FACTORS AND REDUCING BARRIERS TO TREATMENT TO IMPROVE OUTCOMES

The integral role of parents in the treatment of childhood disruptive behaviour has led to increased research focus on ways to address parent factors that may limit treatment engagement and benefit. Among the key parent-related barriers, studies have focused on parents’ own mental health, parental beliefs about factors contributing to the child’s disruptive behaviour and treatment, ease of accessing ESTs and cultural adaptations.

Addressing parent mental health

Some recent trials have targeted parent mental health directly. For example, a recent trial showed

that an integrated intervention including BPT and CBT targeting mothers’ own depression symptoms [72^a] led to greater increases in positive parenting behaviour than standard BPT alone, mediated through increases in adaptive attributions for children’s behaviour [72^a]. Other studies have focused on the effects of ESTs for disruptive behaviour on parents’ own mental health. For example, PCIT results in significant improvements in parent stress and depressive symptoms [73]. In addition, a recent meta-analysis of BPT showed that programs that included more content related to modifying antecedents of problem behaviour were associated with greater improvement in parents’ own mental health [74^a]. These recent trials suggest the possibility of addressing parent mental health as part of treatment of child disruptive behaviour.

Parental beliefs about child problems and treatment

Researchers and clinicians have long posited that parents’ interpretations of the cause of their child’s behaviour, or parental attributions, may affect how willing parents are to accept and engage in treatment [75]. For instance, if parents attribute the problem behaviour to the child, they may view a parent-directed treatment as less relevant compared with one that is child-directed. Likewise, parents who report low parental self-efficacy may feel less confident to implement the recommended positive parenting strategies prescribed by treatment. Thus, researchers have recently turned their attention to understanding the specific processes by which addressing parental attributions can lead to better child outcomes [76,77]. Findings suggest that parent-causal attributions may be particularly important in determining parent readiness for treatment, but that consideration of self-perceived positive parenting skills is key to understanding whether parent-causal attributions may be problematic for treatment readiness [78]. Once parents participate in treatment, child-responsible attributions that are resistant to change may negatively impact treatment outcomes through persistently negative parent–child communication [79]. These findings highlight the need for clinicians to assess, monitor and potentially address problematic parental attributions from the start and throughout treatment to ensure their potentially disruptive influence on treatment improvement is mitigated [80].

Decreasing barriers to treatment access

Despite the increasing need for treatment of childhood-disruptive behaviour, access to effective

mental health treatment remains persistently low. This has been attributed in part to a reliance on in-person models of treatment delivery that require significant parent time commitment. Two alternate intervention formats have been investigated with the aim of increasing access: online interventions; and brief interventions.

The coronavirus disease 2019 (COVID-19) pandemic, and requirements for social distancing, have accelerated online treatment delivery models. The majority of these programs focus on PMT and are made up of vignettes, role-plays, and didactic elements [5^{81–86}]. Some include a live component using video conferencing technology that can include parent–child coaching [81,85,87]. Research on the efficacy of these online options has largely found them to have similar results to in-person treatment, with some higher rates of drop out [5^{81,82,87,88}]. A recent trial of Triple P found that an online version of program, without clinician coaching, was not inferior to an in-person, clinician-delivered version [5⁸¹]; however, this trial was not conducted in a clinic-referred sample, and further research is needed to test the noninferiority of online-delivered interventions in clinical samples, which generally have more complex or severe needs.

In addition to comparisons with in-person treatment, it is important to consider for whom online interventions may be most appropriate. There is some evidence that the parents who have historically been least likely to engage in PMT, such as fathers and single parents, are more likely to participate in online interventions [81]. In contrast, parents who experience more adjustment difficulties themselves benefit less from online programs [81,82].

The use of brief intervention formats has been suggested as another way to decrease wait times and improve engagement in ESTs [89]. Although some studies have reported significant reductions in child disruptive behaviour following only two or three PMT sessions [57⁹⁰] others have found that brief interventions result in smaller effects on disruptive behaviour compared with standard-length ESTs [82]. As a result, the potential for smaller effects must be weighed along with the potential benefits of increased engagement when considering brief intervention approaches.

Increasing cultural relevance

There is increasing awareness of the importance of considering diversity in all of its forms to design and implement interventions that are equitable. Challenges with systemic bias, gender-bias and racism

have particularly limited the relevance and reach of effective intervention for persons identifying as black, indigenous or persons of colour [91,92]. Efforts to increase the cultural relevance of ESTs for disruptive behaviour in diverse populations have focused on parent interventions. At the broader intervention development level, recent efforts have focused on comprehensive modifications, guided by stakeholder consultation to improve outcomes [93]. For example, Triple P follows a process of partnering with community stakeholders to identify adaptations that meet the community's needs [16,94]. Adaptations include delivery in community centres, providing culturally relevant rationales for strategies, and the omission of topics deemed less culturally relevant (e.g. token economy [95]). In general, available research has found that culturally adapted and standard ESTs have similar effects [96] and many comprehensively adapted interventions are at the acceptability-testing stage [95,97].

At the individual patient level, culturally informed assessment and personalized formulation approaches have been used to increase the cultural responsiveness of interventions. These approaches involve discussions with caregivers about their understanding of the reasons for their child's difficulties, and inquiries about cultural and identity factors that must be incorporated to ensure the treatment meets the family's needs [98,99¹⁰⁰]. The use of these individual, formulation-based approaches has shown promise in improving engagement of culturally diverse families in PMT. A benefit of these individual-level approaches is their flexibility and ease of deployment [99¹⁰⁰]; however, their flexibility also makes it challenging to operationalize and systematically test the effectiveness of intervention components. Given that many culturally adapted parenting programs have not undergone rigorous evaluation [100¹⁰¹], additional research to determine their efficacy is needed.

CONCLUSION

There are a wide range of treatment options, delivered in different modalities, for children with disruptive behaviour, many of which are empirically supported. The majority of these interventions are built with behavioural underpinning and target parents, children or systemic risk factors [22,23]. Although ESTs have been effective, there are challenges when children present with comorbid diagnoses or a complex set of symptoms, and when parents experience barriers to engaging in ESTs. These challenges have led to the development of some alternative treatment models that can address the diversity of needs [101]. As per NICE guidelines,

clinicians should conduct a thorough assessment of their patients' needs and combine that information with knowledge of treatment response predictors to determine the best treatment plan [10,102]. Recent advances have focused on developing and designing intervention that meets needs in a way that is flexible and tailored.

Acknowledgements

None.

Financial support and sponsorship

None.

Conflicts of interest

There are no conflicts of interest.

REFERENCES AND RECOMMENDED READING

Papers of particular interest, published within the annual period of review, have been highlighted as:

- of special interest
- of outstanding interest

1. Andrade BF, Sawrikar V, Aitken M, Henry S. 5.04 - outcome findings and issues in psychotherapy with children and adolescents: externalizing disorders. In: Asmundson GJG, editor. *Comprehensive clinical psychology*. Oxford: Elsevier; 2022. pp. 48–66.
2. Mahendran N, Aitken M, Andrade BF. Comorbid internalizing symptoms in children with disruptive behavior disorders: buffering effects or multiple problem effects? *J Child Fam Studies* 2021; 30:474–482.
3. Lin YJ, Tseng WL, Gau SSF. Psychiatric comorbidity and social adjustment difficulties in children with disruptive mood dysregulation disorder: a national epidemiological study. *J Affect Disord* 2021; 281:485–492.
4. Njardvik U, Smaradottir H, Öst L-G. The effects of emotion regulation
 - treatment on disruptive behavior problems in children: a randomized controlled trial. *Springer Science and Business Media LLC*; 2022 (*Research on Child and Adolescent Psychopathology*; Vol. 50).

School-based cognitive-behavioural intervention targeting emotion regulation decreased teacher-rated behaviour problems compared with waitlist.

5. Prinz RJ, Metzler CW, Sanders MR, *et al.* Online-delivered parenting intervention for young children with disruptive behavior problems: a noninferiority trial focused on child and parent outcomes. *J Child Psychol Psychiatry* 2022; 63:199–209.

Online-delivered PMT was not inferior to in-person, clinician-delivered PMT in terms of child-disruptive behaviour.

6. Baumel A, Mathur N, Pawar A, Muench F. Psychosocial interventions for children with externalized behavior problems: an updated meta-analysis of moderator effects. *J Child Fam Stud* 2021; 30:65–86; Available from: <https://link.springer.com/article/10.1007/s10826-020-01863-6>.
7. Hawes MT, Carlson GA, Finsaas MC, *et al.* Dimensions of irritability in adolescents: longitudinal associations with psychopathology in adulthood. *Psychol Med* 2020; 50:2759–2767.
8. Andrade BF, Courtney D, Duda S, *et al.* A systematic review and evaluation of clinical practice guidelines for children and youth with disruptive behavior: rigor of development and recommendations for use. *Clin Child Fam Psychol Rev* 2019; 22:527–548.
9. Pliszka SR, Pereira-Sanchez V, Robles-Ramamurthy B. A review of clinical practice guidelines in the diagnosis and treatment of attention-deficit/hyperactivity disorder. *Child Adolesc Psychiatr Clin* 2022; 31:569–581.
10. Antisocial behaviour and conduct disorders in children and young people: recognition and management NICE guideline [Internet]. 2017. Available at: www.nice.org.uk. [Accessed June 2022].
11. Mingebach T, Kamp-Becker I, Christiansen H, Weber L. Meta-meta-analysis on the effectiveness of parent-based interventions for the treatment of child externalizing behavior problems. *PLoS One* 2018; 13:e0202855.
12. Leijten P, Gardner F, Melendez-Torres GJ, *et al.* Meta-analyses: key parenting program components for disruptive child behavior. *J Am Acad Child Adolesc Psychiatry* 2019; 58:180–190.
13. Comer JS, Chow C, Chan PT, Cooper-Vince C, Wilson LAS. Psychosocial treatment efficacy for disruptive behavior problems in very young children: a meta-analytic examination. 2003. Available at: www.jaacap.org

14. Evans SW, Owens JS, Bunford N. Evidence-based psychosocial treatments for children and adolescents with attention-deficit/hyperactivity disorder. *J Clin Child Adolesc Psychol* 2014; 43:527–551.
15. Sanders MR. Development, evaluation, and multinational dissemination of the Triple P-Positive Parenting Program. *Ann Rev Clin Psychol* 2012; 8:345–379.
16. Li N, Peng J, Li Y. Effects and moderators of Triple P on the social, emotional, and behavioral problems of children: systematic review and meta-analysis. *Front Psychol* 2021; 12:709851.
17. Webster-Stratton C, Reid JM. The incredible years parents, teachers, and children training series a multifaceted treatment approach for young children with conduct problems. In: Kazdin AE, Weisz JR, editors. *Evidence-based psychotherapies for children and adolescents*. New York: Guilford Press; 2003. pp. 224–240.
18. McMahon RJ, Forehand RL. *Helping the noncompliant child second edition family-based treatment for oppositional behavior*. New York, NY: Guilford; 2003.
19. Forgatch MS, Patterson GR. *Parent management training—Oregon Model: an intervention for antisocial behavior in children and adolescents*. New York, NY, USA: The Guilford Press; 2010; 159–177.
20. Brinkmeyer MY, Eyberg SM. Parent-child interaction therapy for oppositional children. *J Consult Clin Psychol* 2003; 71:251–260.
21. McNeil CBodiford. *Hembree-Kigin TL. Parent-child interaction therapy*. 2nd ed New York, NY: Springer; 2010.
22. Kaminski JW, Claussen AH. Evidence base update for psychosocial treatments for disruptive behaviors in children. *J Clin Child Adolesc Psychol* 2017; 46:477–499.
23. McCart MR, Sheidow AJ. Evidence-based psychosocial treatments for adolescents with disruptive behavior. *J Clin Child Adolesc Psychol* 2016; 45:529–563.
24. Kazdin AE. *Problem-solving skills training and parent management training for conduct disorder*. New York, NY, USA: The Guilford Press; 2003 241–262.
25. Lochman JE, Boxmeyer CL, Powell NP. Cognitive-behavioral intervention for anger and aggression: the coping power program. In: *Handbook of School Violence and School Safety*. 2nd ed. UK: Routledge; 2011.
26. Boxmeyer CL, Miller S, Romero DE, *et al.* Mindful coping power: comparative effects on children's reactive aggression and self-regulation. *Brain Sci* 2021; 11:1119.
27. Augimeri LK, Farrington DP, Koegl CJ, Day DM. The SNAP™ under 12 outreach project: effects of a community based program for children with conduct problems. *J Child Fam Studies* 2007; 16:799–807.
28. Mastromanno BK, Kehoe CE, Wood CE, Havighurst SS. Tuning in to kids: clinical case studies from one-to-one delivery. *Clin Case Studies* 2021; 20:267–282.
29. Salmon K, Dittman C, Sanders M, *et al.* Does adding an emotion component enhance the Triple P—Positive Parenting Program. *J Fam Psychol* 2014; 28:244–252.
30. Luby J, Lenze S, Tillman R. A novel early intervention for preschool depression: findings from a pilot randomized controlled trial. *J Child Psychol Psychiatry* 2012; 53:313–322.
31. Chorpita BF, Weisz JR. MATCH-ADTC: modular approach to therapy for children with anxiety, depression, trauma, or conduct problems. *Satellite Beach, FL: PracticeWise, LLC*; 2009.
32. Evans SC, Weisz JR, Carvalho AC, *et al.* Effects of standard and modular
 - psychotherapies in the treatment of youth with severe irritability. *J Consult Clin Psychol* 2020; 88:255–268.

A modular, transdiagnostic intervention was more effective for children with severe irritability and mood dysregulation than standard manualized treatment.

33. Overbeek G, Van Aar J, De Castro B.O, Matthys W, Weeland J, Chhangur RR, *et al.* *Longer-Term Outcomes of the Incredible Years Parenting Intervention*. Springer Science and Business Media LLC; 2020. p. 419. (*Prevention Science*; vol. 22).
34. Weisz JR. Bridging the research-practice divide in youth psychotherapy: the deployment-focused model and transdiagnostic treatment. *Verhaltenstherapie* 2015; 25:129–132.
35. Yu RA, Goulter N, McMahon RJ. Longitudinal associations between parental warmth, harsh discipline, child emotion regulation, and ODD dimensions. *Child Psychiatry Hum Dev* 2021. [Epub ahead of print]
36. Barkley RA. Behavioral inhibition, sustained attention, and executive functions: constructing a unifying theory of ADHD. *Psychol Bull* 1997; 121:65–94.
37. Nigg JT. *What causes ADHD?: understanding what goes wrong and why*. New York: Guilford Press; 2006.
38. Smith AB, Taylor E, Brammer M, *et al.* Article task-specific hypoactivation in prefrontal and temporoparietal brain regions during motor inhibition and task switching in medication-naïve children and adolescents with attention deficit hyperactivity disorder. *Am J Psychiatry* 2006; 163:1044–1051.
39. Sterzer P, Stadler C, Krebs A, *et al.* Abnormal neural responses to emotional visual stimuli in adolescents with conduct disorder. *Biol Psychiatry* 2005; 57:7–15.
40. Rizeq J, Toplak ME, Ledochowski J, *et al.* Callous-unemotional traits and executive functions are unique correlates of disruptive behavior in children. *Dev Neuropsychol* 2020; 45:154–166.

41. Atherton OE, Lawson KM, Ferrer E, Robins RW. The role of effortful control in the development of ADHD, ODD, and CD symptoms. *J Pers Soc Psychol* 2020; 118:1226–1246.
42. de La Osa N, Penelo E, Navarro J, *et al.* Developmental trajectories of social cognition from preschool to adolescence. *Eur Child Adolesc Psychiatry* 2022; 31:819–828.
43. Kohlhoff J, Mahmood D, Kimonis E, *et al.* Callous-unemotional traits and disorganized attachment: links with disruptive behaviors in toddlers. *Child Psychiatry Hum Dev* 2020; 51:399–406.
44. Wichstrøm L, Berg-Nielsen TS, Angold A, *et al.* Prevalence of psychiatric disorders in preschoolers. *J Child Psychol Psychiatry* 2012; 53:695–705.
45. Uotila J, David G, Korhonen L, *et al.* Incidence and comorbidities of disruptive behavior disorders diagnosed in Finnish specialist psychiatric services. *Soc Psychiatry Psychiatr Epidemiol* 2015; 56:2063–2072.
46. Aitken M, Henry S, Andrade BF. Distilling heterogeneity among children with disruptive behavior: associations between symptom patterns and social functioning. *J Abnorm Child Psychol* 2018; 46:1241–1252.
47. Leijten P, Scott S, Landau S, Harris V, Mann J, Hutchings J, *et al.* Individual Participant Data Meta-analysis: Impact of Conduct Problem Severity, Comorbid Attention-Deficit/Hyperactivity Disorder and Emotional Problems, and Maternal Depression on Parenting Program Effects. *Journal of the American Academy of Child and Adolescent Psychiatry* 2020; 59:933–943.
48. Wesseldijk LW, Dieleman GC, van Steensel FJA, *et al.* Risk factors for parental psychopathology: a study in families with children or adolescents with psychopathology. *Europ Child Adolesc Psychiatry* 2018; 27:1575–1584.
49. Maliken AC, Katz LF. Exploring the impact of parental psychopathology and emotion regulation on evidence-based parenting interventions: a transdiagnostic approach to improving treatment effectiveness. *Clin Child Fam Psychol Rev* 2013; 16:173–186.
50. Nathanson EW, Rispoli KM, Piper R, Naguib S. Predictors of parent engagement in community-based parent-child interaction therapy: a brief report. 2021; Available at: <https://doi.org/10.1177/10538151211057553>. [Accessed June 2022].
51. Weeland J, Leijten P, Orobio De Castro B, Menting AA, Overbeek G, Raaijmakers M, *et al.* Exploring Parenting Profiles to Understand Who Benefits from the Incredible Years Parenting Program. *Springer Science and Business Media LLC*; 2022. (Prevention Science; vol. 1).
52. Shepard S, Armstrong LM, Silver RB, *et al.* Embedding the family check-up and evidence-based parenting programmes in head start to increase parent engagement and reduce conduct problems in young children. *Adv Sch Ment Health Promot* 2012; 5:194–207.
53. Tully LA, Piotrowska PJ, Collins DAJ, *et al.* Optimising child outcomes from parenting interventions: fathers' experiences, preferences and barriers to participation. *BMC Public Health* 2017; 17:550.
54. Weisenmuller C, Hilton D. Barriers to access, implementation, and utilization of parenting interventions: considerations for research and clinical applications. *Am Psychol* 2021; 76:104–115.
55. Dedousis-Wallace A, Drysdale SA, McAloon J, Ollendick TH. Parental and familial predictors and moderators of parent management treatment programs for conduct problems in youth. *Clin Child Fam Psychol Rev* 2021; 24:92–119.
56. Leijten P, Melendez-Torres GJ, Gardner F. Research review: the most effective parenting program content for disruptive child behavior - a network meta-analysis. *J Child Psychol Psychiatry* 2022; 63:132–142.
- Network meta-analysis of PMTs showed that those focused on behaviour management and parent self-management had the greatest chance of being effective.
57. Hornstra R, van der Oord S, Staff AI, *et al.* Which techniques work in behavioral parent training for children with ADHD? A randomized controlled microtrial. *J Clin Child Adolesc Psychol* 2021; 50:888–903.
- Microtrial showing that antecedent-based and consequence-based PMT strategies decrease child disruptive behaviour.
58. Marchette LK, Weisz JR. Practitioner review: empirical evolution of youth psychotherapy toward transdiagnostic approaches. *J Child Psychol Psychiatry* 2017; 58:970–984.
59. Chu BC, Temkin AB, Toffey K. Transdiagnostic mechanisms and treatment for children and adolescents. Oxford: Oxford University Press; 2016.
60. Chu BC. SPECIAL SERIES Translating transdiagnostic approaches to children and adolescents. 2011. Available at: www.elsevier.com/locate/cabp. [Accessed June 2022].
61. Rosa-Justicia M, Saam MC, Flamarique I, *et al.* Subgrouping children and adolescents with disruptive behaviors: symptom profiles and the role of callous-unemotional traits. *Eur Child Adolesc Psychiatry* 2022; 31:51–66.
62. Leibenluft E, Stoddard J. The developmental psychopathology of irritability. *Dev Psychopathol* 2013; 25:1473–1487.
63. Zisner A, Beauchaine TP. Neural substrates of trait impulsivity, anhedonia, and irritability: mechanisms of heterotypic comorbidity between externalizing disorders and unipolar depression. *Dev Psychopathol* 2016; 28:1177–1208.
64. Grossman RA, Ehrenreich-May J. Using the unified protocol for transdiagnostic treatment of emotional disorders with youth exhibiting anger and irritability. 2020. Available at: www.elsevier.com/locate/cabp. [Accessed June 2022]
65. Tudor ME, Ibrahim K, Bertschinger E, *et al.* Cognitive-behavioral therapy for a 9-year-old girl with disruptive mood dysregulation disorder. *Clinical Case Stud* 2016; 15:459–475.
66. Waxmonsky JG, Waschbusch DA, Belin P, *et al.* A randomized clinical trial of an integrative group therapy for children with severe mood dysregulation. *J Am Acad Child Adolesc Psychiatry* 2016; 55:196–207.
67. Hawks JL, Kennedy SM, Holzman JBW, Ehrenreich-May J. Development and application of an innovative transdiagnostic treatment approach for pediatric irritability. *Behav Ther* 2020; 51:334–349.
68. Helander M, Enebrink P, Hellner C, Ahlen J. Parent management training combined with group-CBT compared to parent management training only for oppositional defiant disorder symptoms: 2-year follow-up of a randomized controlled trial. *Child Psychiatry Hum Dev* 2022. [Epub ahead of print]
69. Naim R, Kircanski K, Gold A, *et al.* Across-subjects multiple baseline trial of exposure-based cognitive-behavioral therapy for severe irritability: a study protocol. *BMJ Open* 2021; 11:e039169.
70. Linke J, Kircanski K, Brooks J, *et al.* Exposure-based cognitive-behavioral therapy for disruptive mood dysregulation disorder: an evidence-based case study. *Behav Ther* 2020; 51:320–333.
71. Donohue MR, Hoyniak CP, Tillman R, *et al.* Callous-unemotional traits as an intervention target and moderator of parent-child interaction therapy—emotion development treatment for preschool depression and conduct problems. *J Am Acad Child Adolesc Psychiatry* 2021; 60:1394–1403.
72. Novick DR, Lorenzo NE, Danko CM, Tuscano A-C. Evaluation of an integrated parenting intervention targeting maternal depression: effects on parent attributions of child behaviors. *J Child Fam Stud* 2022.
- Integrating PMT with CBT for mothers' own depression symptoms resulted in greater decreases in negative parenting than PMT alone.
73. McCabe KM, Zerr A, Cook M, *et al.* The relation between parent mental health and child internalizing symptoms in parent-child interaction therapy. *J Child Fam Stud* 2022.
74. Dekkers TJ, Hornstra R, van der Oord S, *et al.* Meta-analysis: which components of parent training work for children with attention-deficit/hyperactivity disorder? *J Am Acad Child Adolesc Psychiatry* 2022; 61:478–494.
- Meta-analysis of PMT for youth with ADHD showed that greater intervention focuses on antecedents resulted in better parent mental health outcomes, whereas greater focus on reinforcement was associated with larger decreases in negative parenting.
75. Mah JWT, Johnston C. Parental social cognitions: considerations in the acceptability of and engagement in behavioral parent training. *Clin Child Fam Psychol Rev* 2008; 11:218–236.
76. Sawrikar V, Dadds M. What role for parental attributions in parenting interventions for child conduct problems? Advances from research into practice. *Clin Child Fam Psychol Rev* 2018; 21:41–56.
77. Kil H, Singh AD, Bains A, *et al.* Parental attributions in ethnocultural minority, immigrant, and country of origin parents: a scoping review and call for research. *Clin Child Fam Psychol Rev* 2021; 24:707–724.
78. Kil H, Martini J, Andrade BF. Parental attributions, parenting skills, and readiness for treatment in parents of children with disruptive behavior. *J Psychopathol Behav Assess* 2020; 42:464–474.
79. Sawrikar V, Hawes DJ, Moul C, Dadds MR. How do mothers' parental attributions affect child outcomes from a positive parenting intervention? A mediation study. *Child Psychiatry Hum Dev* 2020; 51:597–608.
80. Hawes DJ, Dadds MR. Practitioner review: parenting interventions for child conduct problems: reconceptualising resistance to change. *J Child Psychol Psychiatry* 2021; 62:1166–1174.
81. Dadds MR, Thai C, Diaz AM, *et al.* Therapist-assisted online treatment for child conduct problems in rural and urban families: two randomized controlled trials. *J Consult Clin Psychol* 2019; 87:706–719.
82. Day JJ, Baker S, Dittman CK, *et al.* Predicting positive outcomes and successful completion in an online parenting program for parents of children with disruptive behavior: an integrated data analysis. *Behav Res Ther* 2021; 146:103951.
83. Högström J, Enebrink P, Melin B, Ghaderi A. Eighteen-month follow-up of internet-based parent management training for children with conduct problems and the relation of homework compliance to outcome. *Child Psychiatry Hum Dev* 2015; 46:577–588.
84. Piotrowska PJ, Tully LA, Collins DAJ, *et al.* ParentWorks: evaluation of an online, father-inclusive, universal parenting intervention to reduce child conduct problems. *Child Psychiatry Hum Dev* 2020; 51:503–513.
85. Sourander A, McGrath PJ, Ristikari T, *et al.* Internet-assisted parent training intervention for disruptive behavior in 4-year-old children: a randomized clinical trial. *JAMA Psychiatry* 2016; 73:378–387.
86. Jones DJ, Loisselle R, Zachary C, *et al.* Optimizing engagement in behavioral parent training: progress toward a technology-enhanced treatment model. *Behav Ther* 2021; 52:508–521.
87. Comer JS, Furr JM, Miguel EM, *et al.* Remotely delivering real-time parent training to the home: an initial randomized trial of Internet-delivered parent-child interaction therapy (I-PCIT). *J Consult Clin Psychol* 2017; 85:909–917.

88. Ghaderi A, Kadesjö C, Björnsdotter A, Enebrink P. Randomized effectiveness trial of the family check-up versus internet-delivered parent training (iComet) for families of children with conduct problems. *Sci Rep* 2018; 8:11486.
 89. Nock MK, Kazdin AE. Randomized controlled trial of a brief intervention for increasing participation in parent management training. *J Consult Clin Psychol* 2005; 73:872–879.
 90. Chesterfield JA, Porzig-Drummond R, Stevenson RJ, Stevenson CS. Evaluating a brief behavioral parenting program for parents of school-aged children with ADHD. *Parenting* 2020; 21:216–240.
 91. Fadus MC, Ginsburg KR, Sobowale K, Halliday-Boykins CA, *et al*. Unconscious bias and the diagnosis of disruptive behavior disorders and ADHD in African American and Hispanic youth. *Acad Psychiatry* 2019; 44:95–102.
 92. Davis EM, Garcia D, Andrew Rothenberg W, *et al*. A preliminary analysis of parent-child interaction therapy plus natural helper support to increase treatment access and engagement for low-income families of color. *Children Youth Serv Rev* 2022; 134:106370.
 93. Van Mourik K, Crone MR, de Wolff MS, Reis R. Parent training programs for ethnic minorities: a meta-analysis of adaptations and effect. *Prevent Sci* 2017; 18:95–105.
 94. Turner KMT, Singhal M, McIlduff C, *et al*. Chapter 19 - evidence-based parenting support across cultures: the triple P—Positive Parenting Program experience. In: Halford WK, van de Vijver F, editors. *Cross-cultural family research and practice*. Cambridge: Academic Press; 2020. pp. 603–644.
 95. Gerdes AC, Kapke TL, Grace M, Castro A. Feasibility, acceptability, and preliminary outcomes of a culturally adapted evidence-based treatment for latino youth with ADHD. *J Attention Disord* 2019; 25:432–447.
 96. Huey SJ, Tilley JL, Jones EO, Smith CA. The contribution of cultural competence to evidence-based care for ethnically diverse populations. *Annu Rev Clin Psychol* 2014; 305–338.
 97. Schilling S, Romero-Cely D, Mebane A, Perreira KM. *Criando Niños Con Cariño: Primary care-based group parenting program adaptation and pilot*. 2022. Available at: www.jdbp.org [1. [Accessed June 2022]].
 98. McCabe KM, Yeh M, Zerr AA. Personalizing behavioral parent training interventions to improve treatment engagement and outcomes for culturally diverse families. *Psychol Res Behav Manage* 2020; 13:41–53.
 99. Sanchez AL, Jent J, Aggarwal NK, *et al*. Person-centered cultural assessment can improve child mental health service engagement and outcomes. *JJ Clin Child Adolesc Psychol* 2022; 51:1–22.
- The use of a cultural formulation interview with caregivers, along with usual assessment, was associated with significantly better retention in treatment for child disruptive behaviour than usual assessment alone.
100. Schilling S, Mebane A, Perreira KM. Cultural adaptation of group parenting programs: review of the literature and recommendations for best practices. *Fam Process* 2021; 60:1134–1151.
- Review of cultural adaptations of group parenting programs provides an overview of the types of existing adaptations and highlights the need for empirical evaluation of these adapted programs.
101. Weisz JR, Kuppens S, Ng MY, *et al*. What five decades of research tells us about the effects of youth psychological therapy: a multilevel meta-analysis and implications for science and practice. *Am Psychologist* 2017; 72:79–117.
 102. Steketee G, Chambless DL. Methodological issues in prediction of treatment outcome. *Clin Psychol Rev* 1992; 12:387–400.