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ANXIETY DISORDERS (A PELISSOLO, SECTION EDITOR)

Cognitive Behavioral Therapy for Childhood Anxiety Disorders: a Review of Recent Advances

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Abstract

Purpose of Review We review recent research validating cognitive behavioral therapy (CBT) as a first-line intervention for childhood anxiety disorders. We also review recent research aimed at enhancing exposure-based CBT components and adapting CBT to work with specific populations.

Recent Findings Exposure-based CBT is a well-established intervention. Different research groups have found positive evidence to augment CBT by evaluating inhibitory learning principles, the role of parents in child treatment, an individualized case formulation, computer and online forms of CBT, and virtual and augmented reality systems for exposure practice. Specific programs have been developed to meet specific needs of preschoolers, adolescents, and children with comorbid autism spectrum disorder and anxiety.

Summary Successful adaptations to CBT exist and the field should continue to improve the generalizability, feasibility, and expected benefit of CBT to improve its effectiveness.

Keywords Anxiety · Children · Cognitive behavior therapy

Introduction

Anxiety disorders are the most common class of psychiatric disorder across the lifespan with a lifetime prevalence rate of 28.8% and a median age of onset of 11 years old [1]. Cognitive behavioral therapy (CBT) for anxiety is an intervention that involves targeting cognitions and behaviors that reinforce and maintain maladaptive anxiety, and a key part of this intervention is exposure and response prevention [2]. The use of CBT to treat childhood anxiety has repeatedly been shown to be effective and superior to control conditions [3] and is considered the gold standard for the treatment of anxiety disorders in youth. Researchers have aimed to continue improving the effectiveness of CBT treatment for children. This article provides an overview of recent research advances to validate CBT intervention, to enhance specific aspects of CBT, and to adapt CBT to be effective for specific populations. Throughout the article, we use the term "anxiety disorders" to refer to generalized anxiety disorder, separation anxiety disorder, and social anxiety disorder, which are all common and often comorbid anxiety disorders frequently studied together in children.

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Cognitive Behavioral Therapy as an Approach to Treatment for Anxiety

The practice of exposure-based CBT is the current gold standard treatment for anxiety and OCD. Although there has been concern that CBT may not demonstrate significant clinical gains over other active treatment conditions [4], these concerns have not been supported in the empirical literature. Some studies examining the effectiveness of CBT in comparison to active treatment-as-usual for the management of childhood anxiety disorders have found little difference between the two

approaches [5–7], but these programs do not have an emphasis on exposure practice, which is the primary component of intervention for anxiety disorders. A recent study directly comparing CBT with child-centered therapy (CCT) found that children in the CBT condition were significantly more likely to achieve remission of symptoms (66.7%) than children in the CCT condition (46.5%), and, at 1-year follow-up, children in the CBT condition showed significantly higher rates of response and remission [8•]. This study provides further evidence that CBT has better long-term benefits than other methods of treatment.

A difficulty with making general statements about the efficacy of CBT is that the label of "CBT" has been used for programs involving different treatment components and principles. An examination of treatment components in well-established studies with the best research support found exposure to be the most commonly applied element (occurring in 87.9% of examined studies), followed by cognitive, relaxation, psychoeducation, and modeling techniques (occurring in 61.8, 53.9, 42.0, and 33.9% of studies, respectively) [9••]. Higa-McMillan and colleagues [9••] examined previous studies by coding them into specific "treatment families" by identifying common themes to the intervention. Of note is that CBT and exposure were separated into two different groups. CBT-coded interventions may have included exposure practice, but they also included other anxiety management techniques, such as cognitive restructuring. Analyses indicated that treatments identified within CBT, exposure, modeling, CBT with parents, education, and CBT + medication families demonstrated the best support as well-established treatments. Several other treatment families were deemed to be probably efficacious, such as those within the domains of family psychoeducation, relaxation, assertiveness training, attention control, CBT for child and parent, cultural storytelling, hypnosis, and stress inoculation. These findings indicate CBT- and exposure-based interventions have strong support when analyzing reduction of anxiety symptoms and improvement in functional impairment, and solidified the argument that CBT should be used as a first-line treatment for anxiety disorders in youth. CBT should also involve elements of exposure practice since interventions that included an element of exposure practice result in larger effect sizes [9••].

Critiques about the generalizability of CBT have also been addressed by taking a transdiagnostic approach to treatment. There have certainly been approaches and manuals developed to treat specific anxiety and obsessive-compulsive disorders. However, given the high comorbidity of anxiety disorders, a transdiagnostic approach may be taken to address common underlying mechanisms, such as avoidance, anxious cognitions, and anxious parenting behaviors [10]. Findings from Ewing and colleagues [10] indicate transdiagnostic CBT is an efficacious treatment in both group and individual format for treating anxiety disorders. A recent meta-analysis specifically focused on reviewing articles that used transdiagnostic CBT in order to evaluate this approach to treat childhood anxiety disorders. Results from the meta-analysis indicate transdiagnostic CBT is efficacious, with youth completing treatment found to be over nine times more likely to have symptom remission than youth in control groups. These findings indicated that results are similar to a disorder-specific treatment approach; however, other researchers have found superior outcomes in disorder-specific CBT intervention [11]. This may be because certain co-occurring disorders (e.g., generalized anxiety disorder, separation anxiety disorder, and specific phobia) respond well to a transdiagnostic approach, but disorders in other categories, such as obsessive-compulsive disorder (OCD), panic disorder, and post-traumatic stress disorder (PTSD), may require more specialized approaches. Some research has emerged indicating that social anxiety disorder does not respond as well to CBT, suggesting that continued specialized approaches for social anxiety disorder may also be warranted [12]. There have also been limited studies investigating the effect of transdiagnostic CBT on anxiety disorders in older adolescents [10]. In summary, there is evidence to support a transdiagnostic treatment approach, but additional research may be warranted to determine which populations may necessitate a specialized and specific approach.

Enhancing Cognitive Behavioral Therapy Treatment Components

Researchers have continued to strive and find ways to improve the efficacy and effectiveness of CBT intervention. Reviews of CBT trials indicate typically only one half to two thirds of children who receive CBT intervention achieve anxiety diagnosis remission at post-treatment [13, 14], and most studies occur in a clinical setting. Researchers have sought to better understand the specific mechanism of change of CBT in order to maximize gains with patients. For example, a recent study looking at negative self-talk and coping efficacy in the Child/Adolescents Anxiety Multimodal Study (CAMS) found that coping efficacy mediated treatment gains at 3 months post-treatment [15]. The authors postulate this to be an active mechanism in anxiety disorder treatment in youth, and findings replicate earlier studies that have also identified coping efficacy as a mediator of treatment [16, 17].

Understanding predictors, mediators, and moderators of CBT treatment for childhood anxiety helps us to determine the best ways to enhance, individualize, emphasize, and augment routine treatment with different treatment components. In this section, we discuss ways researchers have sought to improve treatment by applying inhibitory learning principles, including parents in treatment, using an individual case conceptualization, and incorporating different aspects of technology.

Application of Inhibitory Learning Principles

Historically, cognitive behavioral therapists understood exposure therapy through emotional processing theory [18], with habituation serving as the primary therapeutic process [19]. However, Craske and colleagues have disseminated findings from the inhibitory learning theoretical perspective, which is based in learning and memory research, to CBT and exposure practice [20, 21]. Craske emphasized the importance of the acquisition, consolidation, and retrieval of new learning, which can be applied to exposure practice by incorporating expectancy violation, deepened and reinforced extinction, variability of exposure stimuli, removal of safety behaviors, attentional focus to the exposure stimuli, affect labeling, and mental retrieval cues [21]. Researchers have continued to study these specific concepts with adult samples. For example, findings have demonstrated that within-session habituation may not be necessary for positive treatment outcome [22], affective labeling during exposure practice may have added benefit [23, 24], and exposure to multiple stimuli is related to treatment outcome [25]. Safety behaviors interfere with exposure practice [26], and strategies based on inhibitory learning theory can positively augment exposure therapy [27]. Researchers have also started to apply inhibitory learning approaches to OCD with specific applications to treatment [28]. Limited studies related to inhibitory learning theory have been applied to children, although one study examining different factors of exposure practice found that while preparation for exposure was not related to outcome, processing after exposure practice was related to improvement [29]. Approaching CBT from a different theoretical perspective may alter the way therapy is conducted and result in increased treatment gains. Research in this area should continue to be applied to child populations.

Family Involvement in Cognitive Behavioral Therapy for Children

Because of the evidence demonstrating the relation between parental variables and the presence of anxiety in youth, such as family accommodation and conflict, parents have been included in several child anxiety treatment programs [30]. Results from a recent meta-analysis examining symptom reduction found both CBT and CBT with parents to be well-established interventions [9••]. Research studies show mixed findings as to whether including parents in these treatments leads to increased efficacy for improvement in child anxiety symptoms [30], but recent studies demonstrate that parental inclusion might have added benefits above and beyond child-focused treatment, including parent acceptability and long-term maintenance of treatment gains [31, 32]. Studies that have not found added benefit with parental involvement may not have addressed parental and familial factors that impact anxiety and obsessive-compulsive symptoms from a strong conceptual framework. It is the view of the authors that family involvement is a core component of exposure-based CBT for children.

Parental accommodation is a factor that lends credence to the argument for increased parental involvement in anxiety disorder treatment. Increased parental accommodation is associated with increased symptom severity, increased impairment, and worse treatment outcomes for children with obsessive-compulsive and anxiety disorders [33, 34]. Lebowitz's SPACE program has shown evidence that parent-focused intervention aimed at reducing family accommodation results in decreased accommodation, decreased child anxiety, and high parental satisfaction with treatment [35]. Decreasing parental accommodation is an important factor to include in child anxiety disorder treatment and an important reason to guide parental involvement.

Researchers have continued to examine moderators that may help guide practitioners to understand which children may require increased parental involvement in treatment. For example, studies have found that certain treatment conditions may work better for specific groups, such as the finding that girls and younger children of both sex respond better to intervention with a family component compared to individual intervention [36]. Another study that sought to examine specific parenting characteristics and family functioning found that anxiety-associated parenting behaviors improved after treatment across family-based and individual child-based CBT [37•]. However, these parenting behaviors did not differ between children presenting with anxiety disorders and a control sample [37•]. Additional studies are needed to examine what aspects of CBT work for which patients in contexts with and without parental involvement.

For the preschool age range, the question seems to be whether children receive additional gains from participating in intervention, or if parent-focused intervention in and of itself is what is necessary for treatment. Researchers have demonstrated that parent-focused CBT intervention results in significantly decreased anxiety symptoms in children ages 4–7 [38]. Several comparison studies have also been completed. For example, researchers evaluating a clinical program for preschoolers compared concurrent parent and child groups to a parent-only intervention [39]. While significant decreases in anxiety were measured in both groups, Monga and colleagues [40] found significantly more improvement in the families that received intervention aimed at both the parents and the children, concluding that teaching skills to young children is also important for this age range. However, an earlier study evaluating group CBT for 4- and 5-year-old children found similar gains in the parent-only condition as compared to the child and parent condition [41], so the answer remains unclear. Additional preschool-specific factors are discussed [ES5] in the "Preschoolers" section below.

Individualized Case Formulation-Based CBT

Incorporation of individualized case formulations was developed as a way to augment CBT treatment to improve treatment gains and to increase effectiveness of CBT across treatment settings [42]. Individualized case formulation-based CBT incorporates use of case conceptualization to adjust the number of sessions spent on different treatment targets. In this way, it can be used with a manualized treatment approach to better meet individual needs. Esbjørn and colleagues [43] described case formulation as identification of the child's thoughts, feelings, and behaviors and identification of relevant family factors. They evaluated and assessed feasibility of individualized case formulation-based CBT and examined whether this approach is best utilized treating parents as co-facilitators or as co-clients with school-age youth. Results indicated a remission rate of 50.0% at post-treatment for the primary diagnosis and of 68.5% at 6-month follow-up. The authors determined treatment was feasible and acceptable, as no families dropped out; however, no differences were found between treatment conditions examining different parental roles. Lundkvist-Houndoumadi, Thastum, and Hougaard [44•] took the use of applying individualized case formulation-based CBT to a sample of "non-responders," i.e., a sample of 9–17 year olds who did not show clinical improvement 3 months after undergoing manualized group CBT treatment. Case formulation in this study involved including additional aspects to CBT treatment based on the specific anxiety diagnosis, comorbid diagnoses, complicating family factors, or other contributing child-specific factors (e.g., cognitive difficulties, school refusal, and excessive avoidance). In this sample, 57.1% responded after individualized case formulation-based CBT with 78.6% responding at 3-month follow-up. These two studies add to the literature examining the importance of individualizing treatment.

An additional example of the importance in treatment individualization based on case formulation for children with panic or health anxiety. For this population, interoceptive exposure practice is often warranted to address avoidance and distress caused by physiological symptoms. There are even treatment components commonly included in CBT, such as diaphragmatic breathing techniques, that are contraindicated for children with panic disorder. This indicates another area where examination of specific treatment outcomes is important to best individualize treatment. Research in this area suggests that children benefit from CBT when it is customized based on individualized case conceptualizations.

Cognitive Behavioral Therapy and Technology

Two areas of CBT research have been progressive within the field of technology. One has been to provide standard programs for online and computer-assisted CBT, and the other is the use of virtual or augmented reality to supplement therapy and exposure practice.

In the past decade, multiple online and computer-assisted CBT programs have been developed and evaluated for school-age youth and adolescents [45]. Some examples include *BRAVE* [46], *BRAVE-Online* [47–49], *Camp Cope-A-Lot* [50], *Cool Teens* [51], and *Think, Feel, Do* [52]. Several online and computer-based CBT parent programs have also been developed for anxiety in preschool-age children [53, 54]. A recent review and meta-analysis that sought to look at the outcomes for preadolescent children found that some of the computer-based programs yielded outcome results similar or superior to results of clinic-based intervention [46, 50]. However, another study found that only 30% of children showed improvement in the computer-assisted program, and the improvement in the computer-assisted program was only slightly superior to a waitlist control [47]. There are promising results to suggest benefit from online and computer-based programs, which may help increase the accessibility of CBT intervention to families who may be otherwise unable to seek services. However, as technology and graphics continue to advance, these programs may need to adapt to continue to appeal to youth [55].

Using virtual and augmented reality to facilitate exposure practice has demonstrated increased popularity. Incorporating virtual reality into exposure practice for specific phobias has been used with adult patients for several decades. As virtual reality technology has been able to be more interactive, it has been applied to exposure practice for social phobia. Results from studies using virtual reality stimuli for exposures show significant decrease in anxiety, thus indicating this may be an effective form of exposure practice for adults [56, 57]. More recently, virtual and augmented reality practices have been applied to children with anxiety disorders. While results are promising, more research is necessary to understand how to complete exposure trials using this technology and how to assess reliability and validity with these tools [58].

Adapting CBT for Specific Populations

Preschoolers

There has been considerably less research looking at effective approaches to treat anxiety disorders in preschoolers compared to school-age children [10]. In recent years, researchers have found that anxiety disorders, typically within the domains of separation anxiety, social anxiety, and generalized anxiety, do present during the preschool years with prevalence estimates from 10 to 20% [59–61]. Most preschool CBT programs involve a play-based format for

children to use CBT skills, along with parental psychoeducation and some parent training. A few clinic-based programs have been developed and shown to be efficacious interventions for young children with anxiety disorders, including *Being Brave* for children 4–7 years old [62, 63] and *Taming Sneaky Fears* for children 5–7 years old [39, 40]. Additionally, disorder-specific CBT interventions have been developed and found to be effective for use with separation anxiety disorder [64] and obsessive-compulsive disorders [65]. School-based CBT interventions for preschoolers have also been developed. A universal CBT-based prevention program, *Fun Friends* [66, 67], showed promising results, and more recently, a school-based early intervention program, *Get Lost Mr Scary* [68•], was studied and found to significantly decrease anxiety symptoms at post-treatment and 12-month follow-up. As CBT-based preschool programs continue to develop, clinicians should focus on inclusion of developmentally appropriate parent and child psychoeducation, parent behavior management skills training (including differential attention, modeling, and scaffolding), externalizing anxiety, exposure practice, and family process components.

Adolescents

Many specific interventions have been developed for both school-age children and adolescents, but adolescent-specific interventions are rarer. While meta-analyses indicate CBT is just as effective for adolescents as for children [69, 70], it is necessary to tailor and individualize treatment so that it meets the unique developmental needs of adolescents with anxiety disorders. The *Launching Emerging Adults Program* (LEAP) has developed an approach to CBT for adolescents transitioning into adulthood by incorporating developmental milestones and a developmental goals hierarchy into anxiety disorder treatment [71].

Comorbid Autism Spectrum Disorder

CBT to treat anxiety has been adapted for use with children with autism spectrum disorder (ASD). Several studies have used or adapted the Behavioral Interventions for Anxiety in Children with Autism (BIACA), which is a modular approach to intervention with child-focused, parent-focused, and family-focused aspects [72–74]. The intervention includes core CBT and social skills intervention modules for both youth and parents, along with modules to address school support disruptive behaviors, or OCD-specific behaviors. A meta-analysis and systematic review found that CBT to treat anxiety in youth with high-functioning ASD had an overall moderate effect size, and neither anxiety information nor treatment modality (e.g., individual, group, child-focused, or parental involvement) moderated treatment outcome [75].

Conclusion

The purpose of this article was to review recent research findings related to childhood CBT for anxiety disorders. For the past several decades, CBT has been considered the gold standard treatment of anxiety disorders and many researchers have studied aspects of applying CBT to children. It would be remiss to neglect to mention research that has examined third-wave approach, such as acceptance and commitment therapy (ACT), which incorporates CBT techniques in addition to mindfulness and acceptance [76]. In discussions comparing the use of CBT and ACT to treat anxiety disorders, researchers have argued the approaches actually involve similar mechanisms [77]. A recent randomized controlled trial compared an ACT intervention, CBT intervention, and waitlist control in children [78••]. Results from the study indicated both CBT and ACT resulted in clinically significant gains over waitlist control, maintained at a 3-month follow-up. Results from CBT and ACT approaches did not significantly differ from one another. It should also be noted that exposure-based behavioral approaches were incorporated into both treatments, potentially providing evidence that exposure-based therapy is one of the primary components resulting in treatment gains. Research examining and comparing CBT and ACT should continue to focus on causal mechanisms of these treatment approaches. While many research and intervention gains have been made, factors still need to be studied in order to improve the effectiveness of interventions for children with anxiety disorders.

Despite critiques that CBT has not demonstrated superiority to other active treatments, research indicates that CBT is well-supported with the best research evidence for use in treating children with anxiety disorders [9••]. Additionally, transdiagnostic CBT should be considered a valid treatment option, especially when a disorder-specific approach in a specialty clinic is unavailable to a family. Gains have been made to enhance CBT treatment through inhibitory learning principles, parental involvement, case formulation approaches, and the use of technology. Additionally, researchers are working to apply CBT for anxiety to specific populations, such as preschoolers, adolescents, and children with comorbid ASD. At this time in our field, the emphasis of research should not be spent on solely examining the efficacy of CBT. One way to continue to improve is to examine predictors, moderators, and mediators of CBT in order to isolate and enhance causal mechanisms of treatment with the ultimate goals of increasing the feasibility, generalizability, and expected benefit of CBT treatment [9••, 79, 80].

Compliance with Ethical Standards

Conflict of Interest Kelly N. Banneyer, Liza Bonin, Karin Price, and Wayne K. Goodman each declare no potential conflicts of interest.

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References

Papers of particular interest, published recently, have been highlighted as:

- • Of importance
- •• Of major Importance

1. Kessler RC, Berglund P, Demler O, Jin R, Merikangas KR, Walters EE. Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication. Arch Gen Psychiatry. 2005;62:593–602.
2. McKay D, Storch EA. Cognitive behavior therapy for children: treating complex and refractory cases. Springer Publishing Company; 2009.
3. James AC, James G, Cowdrey FA, Soler A, Choke A. Cognitive behavioural therapy for anxiety disorders in children and adolescents. Cochrane Database Syst Rev 2013;6:CD004690.
4. Leichsenring F, Steinert CI. Cognitive behavioral therapy the gold standard for psychotherapy?: the need for plurality in treatment and research. JAMA. 2017;318:1323–4.
5. Barrington J, Prior M, Richardson M, Allen K. Effectiveness of CBT versus standard treatment for childhood anxiety disorders in a community clinic setting. Behav Change. 2005;22:29–43.
6. Ginsburg GS, Becker KD, Drazdowski TK, Tein J-Y. Treating anxiety disorders in inner city schools: results from a pilot randomized controlled trial comparing CBT and usual care. In Child & Youth Care Forum. 2012;41:1–19.
7. Southam-Gerow MA, Weisz JR, Chu BC, McLeod BD, Gordis EB, Connor-Smith JK. Does cognitive behavioral therapy for youth anxiety outperform usual care in community clinics? An Initial Effectiveness Test J Am Acad Child Adolesc Psychiatry. 2010;49:1043–52.
8. • Silk JS, Tan PZ, Ladouceur CD, Meller S, Siegle GJ, McMakin DL, et al. A randomized clinical trial comparing individual cognitive behavioral therapy and child-centered therapy for child anxiety disorders. J Clin Child Adolesc Psychol. 2016:1–13. **No differences between CBT and child-center therapy were found in treatment response, but children in the CBT condition were significantly more likely to achieve treatment recovery and children in the CBT condition showed significantly higher rates of response and recovery at the 12-month follow-up.**
9. •• Higa-McMillan CK, Francis SE, Rith-Najarian L, Chorpita BF. Evidence base update: 50 years of research on treatment for child and adolescent anxiety. J Clin Child Adolesc Psychol. 2016;45:91–113. **This article breaks down child anxiety treatment into specific treatment families and identifies CBT, exposure, modeling, CBT with parents, education, and CBT + medication as well-established treatments with strong research support. Exposure is also identified as the most common treatment element in interventions with the highest support.**
10. Ewing DL, Monsen JJ, Thompson EJ, Cartwright-Hatton S, Field A. A meta-analysis of transdiagnostic cognitive behavioural therapy in the treatment of child and young person anxiety disorders. Behav Cogn Psychother. 2015;43:562–77.
11. Reynolds S, Wilson C, Austin J, Hooper L. Effects of psychotherapy for anxiety in children and adolescents: a meta-analytic review. Clin Psychol Rev. 2012;32:251–62.
12. Ginsburg GS, Kendall PC, Sakolsky D, Compton SN, Piacentini J, Albano AM, et al. Remission after acute treatment in children and adolescents with anxiety disorders: findings from the CAMS. J Consult Clin Psychol. 2011;79:806.
13. Cartwright-Hatton S, Roberts C, Chitsabesan P, Fothergill C, Harrington R. Systematic review of the efficacy of cognitive behaviour therapies for childhood and adolescent anxiety disorders. Br J Clin Psychol. 2004;43:421–36. https://doi.org/10.1348/0144665042388928/full.
14. Silverman WK, Hinshaw SP. The second special issue on evidence-based psychosocial treatments for children and adolescents: a 10-year update. J Clin Child Adolesc Psychol. 2008;37:1–7. https://doi.org/10.1080/15374410701817725.
15. Kendall PC, Cummings CM, Villabø MA, Narayanan MK, Treadwell K, Birmaher B, et al. Mediators of change in the child/adolescent anxiety multimodal treatment study. J Consult Clin Psychol. 2016;84:1.
16. Lau W-Y, Chan CK-Y, Li JC-H, Au TK-F. Effectiveness of group cognitive-behavioral treatment for childhood anxiety in community clinics. Behav Res Ther. 2010;48:1067–77.
17. Hogendoorn SM, Prins PJM, Boer F, Vervoort L, Wolters LH, Moorlag H, et al. Mediators of cognitive behavioral therapy for anxiety-disordered children and adolescents: cognition, perceived control, and coping. J Clin Child Adolesc Psychol. 2014;43:486–500.
18. Foa EB, Kozak MJ. Emotional processing of fear: exposure to corrective information. Psychol Bull. 1986;99:20–35. Available from: https://www.ncbi.nlm.nih.gov/pubmed/2871574
19. Benito KG, Walther M. Therapeutic process during exposure: habituation model. J Obsessive Compuls Relat Disord. 2015;6:147–57. https://doi.org/10.1016/j.jocrd.2015.01.006.
20. Craske MG, Kircanski K, Zelikowsky M, Mystkowski J, Chowdhury N, Baker A. Optimizing inhibitory learning during exposure therapy. Behav Res Ther. 2008;46:5–27. https://doi.org/10.1016/j.brat.2007.10.003.
21. Craske MG, Treanor M, Conway CC, Zbozinek T, Vervliet B. Maximizing exposure therapy: an inhibitory learning approach. Behav Res Ther. 2014;58:10–23. https://doi.org/10.1016/j.brat.2014.04.006.
22. Baker A, Mystkowski J, Culver N, Yi R, Mortazavi A, Craske MG. Does habituation matter? Emotional processing theory and exposure therapy for acrophobia. Behav Res Ther. 2010;48:1139–43. https://doi.org/10.1016/j.brat.2010.07.009.
23. Kircanski K, Lieberman MD, Craske MG. Feelings into words: contributions of language to exposure therapy. Psychol Sci. 2012;23:1086–91. https://doi.org/10.1177/0956797612443830.
24. Niles AN, Craske MG, Lieberman MD, Hur C. Affect labeling enhances exposure effectiveness for public speaking anxiety. Behav Res Ther. 2015;68:27–36. https://doi.org/10.1016/j.brat.2015.03.004.
25. Shiban Y, Schelhorn I, Pauli P, Mühlberger A. Effect of combined multiple contexts and multiple stimuli exposure in spider phobia: a randomized clinical trial in virtual reality. Behav Res Ther. 2015;71:45–53. https://doi.org/10.1016/j.brat.2015.05.014.
26. Blakey SM, Abramowitz JS. The effects of safety behaviors during exposure therapy for anxiety: critical analysis from an inhibitory learning perspective. Clin Psychol Rev. 2016;49:1–15. https://doi.org/10.1016/j.cpr.2016.07.002.

27. Weisman JS, Rodebaugh TL. Exposure therapy augmentation: a review and extension of techniques informed by an inhibitory learning approach. Clin Psychol Rev. 2018;59:41–51. https://doi.org/10.1016/j.cpr.2017.10.010.
28. Jacoby RJ, Abramowitz JS. Inhibitory learning approaches to exposure therapy: a critical review and translation to obsessive-compulsive disorder. Clin Psychol Rev. 2016;49:28–40. https://doi.org/10.1016/j.cpr.2016.07.001.
29. Tiwari S, Kendall PC, Hoff AL, Harrison JP, Fizur P. Characteristics of exposure sessions as predictors of treatment response in anxious youth. J Clin Child Adolesc Psychol. 2013;42:34–43. https://doi.org/10.1080/15374416.2012.738454.
30. Barmish AJ, Kendall PC. Should parents be co-clients in cognitive-behavioral therapy for anxious youth? J Clin Child Adolesc Psychol. 2005;34:569–81. https://doi.org/10.1207/s15374424jccp3403_12.
31. Brendel KE, Maynard BR. Child–parent interventions for childhood anxiety disorders: a systematic review and meta-analysis. Res Soc Work Pract. 2013;24:287–95. https://doi.org/10.1177/1049731513503713.
32. Manassis K, Lee TC, Bennett K, Zhao XY, Mendlowitz S, Duda S, et al. Types of parental involvement in CBT with anxious youth: a preliminary meta-analysis. J Consult Clin Psychol. 2014;82:1163–72. https://doi.org/10.1037/a0036969.
33. Lebowitz ER, Woolston J, Bar-Haim Y, Calvocoressi L, Dauser C, Warnick E, et al. Family accommodation in pediatric anxiety disorders. Depress Anxiety. 2013;30:47–54. https://doi.org/10.1002/da.21998.
34. Lebowitz ER, Scharfstein LA, Jones J. Comparing family accommodation in pediatric obsessive-compulsive disorder, anxiety disorders, and nonanxious children. Depress Anxiety. 2014;31:1018–25. https://doi.org/10.1002/da.22251/full.
35. Lebowitz ER, Omer H, Hermes H, Scahill L. Parent training for childhood anxiety disorders: the SPACE Program. Cogn Behav Pract. 2014;21:456–69. Available from: http://www.sciencedirect.com/science/article/pii/S1077722913000977
36. Barrett PM, Dadds MR, Rapee RM. Family treatment of childhood anxiety: a controlled trial. J Consult Clin Psychol. 1996;64:333–42. Available from: https://www.ncbi.nlm.nih.gov/pubmed/8871418
37.• Jongerden L, Bögels SM. Parenting, family functioning and anxiety-disordered children: comparisons to controls, changes after family versus child CBT. J Child Fam Stud. 2015;24:2046–59. **This study found limited differences in anxiety-associated parenting behaviors between children presenting for anxiety treatment and a control sample. However, anxiety-associated parenting behaviors were found to improve after treatment across family-based and individual child-based CBT study conditions. For adolescents in the sample, improvements were associated with positive family relations at post-treatment.**
38. van der Sluis CM, van der Bruggen CO, Brechman-Toussaint ML, Thissen MAP, Bögels SM. Parent-directed cognitive behavioral therapy for young anxious children: a pilot study. Behav Ther. 2012;43:583–92.
39. Monga S, Young A, Owens M. Evaluating a cognitive behavioral therapy group program for anxious five to seven year old children: a pilot study. Depress Anxiety. 2009;26:243–50.
40. Monga S, Rosenbloom BN, Tanha A, Owens M, Young A. Comparison of child–parent and parent-only cognitive-behavioral therapy programs for anxious children aged 5 to 7 years: short-and long-term outcomes. J Am Acad Child Adolesc Psychiatry. 2015;54:138–46.
41. Waters AM, Ford LA, Wharton TA, Cobham VE. Cognitive-behavioural therapy for young children with anxiety disorders: comparison of a child+ parent condition versus a parent only condition. Behav Res Ther. 2009;47:654–62.
42. Persons JB. The case formulation approach to cognitive-behavior therapy. Guilford Press; 2012.
43. Esbjørn BH, Reinholdt-Dunne ML, Nielsen SK, Smith AC, Breinholst S, Leth I. Exploring the effect of case formulation driven CBT for children with anxiety disorders: a feasibility study. Behav Cogn Psychother. 2015;43:20–30.
44.• Lundkvist-Houndoumadi I, Thastum M, Hougaard E. Effectiveness of an individualized case formulation-based CBT for non-responding youths with anxiety disorders. J Child Fam Stud. 2016;25:503–17. **Within this study, most children received ten sessions of individualized case formulation-based CBT, but session length ranged from six to 20 sessions. In this sample of children who originally had not responded to manualized group treatment, 57.1% responded after individualized case formulation-based CBT with 78.6% responding at 3-month follow-up.**
45. Stasiak K, Fleming T, Lucassen MFG, Shepherd MJ, Whittaker R, Merry SN. Computer-based and online therapy for depression and anxiety in children and adolescents. J Child Adolesc Psychopharmacol. 2016;26:235–45.
46. Spence SH, Holmes JM, March S, Lipp OV. The feasibility and outcome of clinic plus internet delivery of cognitive-behavior therapy for childhood anxiety. J Consult Clin Psychol. 2006;74:614.
47. March S, Spence SH, Donovan CL. The efficacy of an internet-based cognitive-behavioral therapy intervention for child anxiety disorders. J Pediatr Psychol. 2008;34:474–87.
48. Spence SH, Donovan CL, March S, Gamble A, Anderson R, Prosser S, et al. Online CBT in the treatment of child and adolescent anxiety disorders: issues in the development of BRAVE–ONLINE and two case illustrations. Behav Cogn Psychother. 2008;36:411–30.
49. Spence SH, Donovan CL, March S, Gamble A, Anderson RE, Prosser S, et al. A randomized controlled trial of online versus clinic-based CBT for adolescent anxiety. J Consult Clin Psychol. 2011;79:629.
50. Khanna MS, Kendall PC. Computer-assisted cognitive behavioral therapy for child anxiety: results of a randomized clinical trial. J Consult Clin Psychol. 2010;78:737.
51. Wuthrich VM, Rapee RM, Cunningham MJ, Lyneham HJ, Hudson JL, Schniering CA. A randomized controlled trial of the Cool Teens CD-ROM computerized program for adolescent anxiety. J Am Acad Child Adolesc Psychiatry. 2012;51:261–70.
52. Stallard P, Richardson T, Velleman S, Attwood M. Computerized CBT (Think, Feel, Do) for depression and anxiety in children and adolescents: outcomes and feedback from a pilot randomized controlled trial. Behav Cogn Psychother. 2011;39:273–84.
53. Donovan CL, March S. Online CBT for preschool anxiety disorders: a randomised control trial. Behav Res Ther. 2014;58:24–35.
54. Morgan AJ, Rapee RM, Bayer JK. Prevention and early intervention of anxiety problems in young children: a pilot evaluation of Cool Little Kids Online. Internet Interventions. 2016;4:105–12.
55. Whalen DJ, Sylvester CM, Depression LJL. Anxiety in preschoolers: a review of the past 7 years. Child Adolesc Psychiatr Clin N Am. 2017;26:503–22.
56. Parsons TD, Rizzo AA. Affective outcomes of virtual reality exposure therapy for anxiety and specific phobias: a meta-analysis. J Behav Ther Exp Psychiatry. 2008;39:250–61.
57. Freeman D, Reeve S, Robinson A, Ehlers A, Clark D, Spanlang B, et al. Virtual reality in the assessment, understanding, and treatment of mental health disorders. Psychol Med. 2017;47:2393–400.
58. Parsons TD, Riva G, Parsons S, Mantovani F, Newbutt N, Lin L, et al. Virtual reality in pediatric psychology. Pediatrics. 2017;140:S86–91.
59. Sterba S, Egger HL, Angold A. Diagnostic specificity and nonspecificity in the dimensions of preschool psychopathology. J Child Psychol Psychiatry. 2007;48:1005–13.

60. Strickland J, Keller J, Lavigne JV, Gouze K, Hopkins J, LeBailly S. The structure of psychopathology in a community sample of preschoolers. J Abnorm Child Psychol. 2011;39:601–10.
61. Tandon M. Early childhood mental health: empirical assessment and intervention from conception through preschool. Child Adolesc Psychiatr Clin N Am 2017;26:xiii – xiv. Doi:10.1016/j.chc.2017.04.001.
62. Hirshfeld-Becker DR, Masek B, Henin A, Blakely LR, Rettew DC, Dufton L, et al. Cognitive-behavioral intervention with young anxious children. Harv Rev Psychiatry. 2008;16:113–25.
63. Hirshfeld-Becker DR, Masek B, Henin A, Blakely LR, Pollock-Wurman RA, McQuade J, et al. Cognitive behavioral therapy for 4-to 7-year-old children with anxiety disorders: a randomized clinical trial. J Consult Clin Psychol. 2010;78:498.
64. Schneider S, Blatter-Meunier J, Herren C, Adornetto C, In-Albon T, Lavallee K. Disorder-specific cognitive-behavioral therapy for separation anxiety disorder in young children: a randomized waiting-list-controlled trial. Psychother Psychosom. 2011;80:206–15.
65. Freeman J, Sapyta J, Garcia A, Compton S, Khanna M, Flessner C, et al. Family-based treatment of early childhood obsessive-compulsive disorder: the Pediatric Obsessive-Compulsive Disorder Treatment Study for Young Children (POTS Jr)—a randomized clinical trial. JAMA Psychiatry. 2014;71:689–98.
66. Anticich SAJ, Barrett PM, Silverman W, Lacherez P, Gillies R. The prevention of childhood anxiety and promotion of resilience among preschool-aged children: a universal school based trial. Adv Sch Ment Health Promot. 2013;6:93–121. https://doi.org/10.1080/1754730X.2013.784616.
67. Pahl KM, Barrett PM. Preventing anxiety and promoting social and emotional strength in preschool children: a universal evaluation of the Fun FRIENDS Program. Adv Sch Ment Health Promot. 2010;3:14–25. https://doi.org/10.1080/1754730X.2010.9715683.
68.• Ruocco S, Gordon J, McLean LA. Effectiveness of a school-based early intervention CBT group programme for children with anxiety aged 5–7 years. Adv Sch Ment Health Promot. 2016;9:29–49. **The *Get Lost Mr Scary* intervention was developed for use in schools for children 5–7 years old and was also found to significantly decreasing symptoms of anxiety, with results maintained at a 12-month follow-up.**
69. Bennett K, Manassis K, Walter SD, Cheung A, Wilansky-Traynor P, Diaz-Granados N, et al. Cognitive behavioral therapy age effects in child and adolescent anxiety: an individual patient data metaanalysis. Depress Anxiety. 2013;30:829–41.
70. Kendall PC, Peterman JS. CBT for adolescents with anxiety: mature yet still developing. Am J Psychiatry. 2015;172:519–30.
71. Zakarin EB, Albano AM. 47.2 The Launching Early Adults Program: overview of the cognitive behavioral and developmental launching emerging adults program model and implementation in a faculty practice. J Am Acad Child Adolesc Psychiatry. 2016;55:S72.
72. Wood JJ, Drahota A, Sze K, Har K, Chiu A, Langer DA. Cognitive behavioral therapy for anxiety in children with autism spectrum disorders: a randomized, controlled trial. J Child Psychol Psychiatry. 2009;50:224–34.
73. Wood JJ, Ehrenreich-May J, Alessandri M, Fujii C, Renno P, Laugeson E, et al. Cognitive behavioral therapy for early adolescents with autism spectrum disorders and clinical anxiety: a randomized, controlled trial. Behav Ther. 2015;46:7–19.
74. Storch EA, Lewin AB, Collier AB, Arnold E, De Nadai AS, Dane BF, et al. A radomized controlled trial of cognitive-behavioral therapy versus treatment as usual for adolescents with autism spectrum disorders and comorbid anxiety. Depress Anxiety. 2015;32:174–81.
75. Ung D, Selles R, Small BJ, Storch EA. A systematic review and meta-analysis of cognitive-behavioral therapy for anxiety in youth with high-functioning autism spectrum disorders. Child Psychiatry Hum Dev. 2015;46:533–47.
76. Fletcher L, Hayes SC. Relational frame theory, acceptance and commitment therapy, and a functional analytic definition of mindfulness. Journal of rational-emotive and cognitive-behavior therapy. 2005;23:315–36.
77. Arch JJ, Craske MG. Acceptance and commitment therapy and cognitive behavioral therapy for anxiety disorders: different treatments, similar mechanisms? Clin Psychol Sci Pract. 2008;15:263–79.
78.•• Hancock KM, Swain J, Hainsworth CJ, Dixon AL, Koo S, Munro K. Acceptance and commitment therapy versus cognitive behavior therapy for children with anxiety: outcomes of a randomized controlled trial. Journal of Clinical Child & Adolescent Psychology. 2018;47:296–311. **This RCT is the first to compare CBT, ACT, and WLC approaches to anxiety disorder intervention in children. Results indicated both CBT and ACT approaches were superior to WLC but did not significantly differ from one another. Authors conclude ACT should not be considered superior to CBT approaches but that ACT approaches may be considered appropriate for children with anxiety disorders.**
79. Chorpita BF, Yim LM, Donkervoet JC, Arensdorf A, Amundsen MJ, McGee C, et al. Toward large-scale implementation of empirically supported treatments for children: a review and observations by the Hawaii Empirical Basis to Services Task Force. Clin Psychol Sci Pract. 2002;9:165–90.
80. Chorpita BF, Daleiden EL, Ebesutani C, Young J, Becker KD, Nakamura BJ, et al. Evidence-based treatments for children and adolescents: an updated review of indicators of efficacy and effectiveness. Clin Psychol Sci Pract. 2011;18:154–72.