



NIH Public Access

Author Manuscript

Child Adolesc Psychiatr Clin N Am. Author manuscript; available in PMC 2012 April 1.

Published in final edited form as:

Child Adolesc Psychiatr Clin N Am. 2011 April ; 20(2): 217–238. doi:10.1016/j.chc.2011.01.003.

Cognitive Behavioral Therapy for Anxiety Disorders in Youth

Laura D. Seligman, PhD^a and Thomas H. Ollendick, PhD^{b,c}

^a Associate Professor, Department of Psychology University of Toledo, Toledo, Ohio

^b University Distinguished Professor, Department of Psychology, Virginia Polytechnic Institute and State University, Blacksburg, Virginia

^c Director, Child Study Center, Virginia Polytechnic Institute and State University, Blacksburg, Virginia

Synopsis

Cognitive behavioral therapies (CBTs) have been shown to be efficacious for the treatment of anxiety disorders in children and adolescents. Randomized clinical trials indicate that approximately two-thirds of children treated with CBT will be free of their primary diagnosis at posttreatment. Although several CBT treatment packages have been investigated in youth with diverse anxiety disorders, common core components have been identified. A comprehensive assessment, development of a good therapeutic relationship and working alliance, cognitive restructuring, repeated exposure with reduction of avoidance behavior, and skills training comprise the core procedures for the treatment of anxiety disorders in youth.

Keywords

anxiety; cognitive therapy; behavioral therapy; children; adolescents

Overview and Clinical Presentation

Epidemiological studies suggest that anxiety disorders are the most frequently diagnosed class of disorders in children and adolescents and that most people who develop an anxiety disorder do so by late adolescence or early adulthood [1, 2]. While some fears and anxiety can be adaptive and developmentally appropriate [3], clinical levels of fear and anxiety can engender significant distress in children and their families and are likely to interfere with academic and social functioning [4–6]. Moreover, the high prevalence of anxiety disorders coupled with the negative effects on functioning results in a significant economic burden on society [7].

According to the DSM-IV-TR, children and adolescents can be diagnosed with 12 different anxiety disorders -- separation anxiety disorder, panic disorder with or without agoraphobia,

© 2011 Elsevier Inc. All rights reserved.

^aCorresponding author for proof and reprints: Laura D. Seligman, PhD, Department of Psychology, University of Toledo, Toledo Ohio 43606, (419) 530-4399, (540) 231-3652 (fax), laura.seligman@utoledo.edu.

^cCoauthor(s) address(es): Thomas H. Ollendick, PhD, Child Study Center, 460 Turner Street, Suite 207, Blacksburg, Virginia 24060, (540) 231-6451, (419) 530-8479 (fax), tho@vt.edu

The authors have nothing to disclose.

Publisher's Disclaimer: This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

agoraphobia without a history of panic disorder, specific phobias, social phobia, obsessive-compulsive disorder, posttraumatic stress disorder, acute stress disorder, generalized anxiety disorder, anxiety disorder due to a medical condition, substance-induced anxiety disorder, and an anxiety disorder not otherwise specified [8]. While decisions regarding the status of anxiety disorders in DSM-V have not been finalized, it seems that only a few changes are proposed for the updated diagnostic manual planned for publication in 2013. Specifically, changes under consideration include specific criteria for posttraumatic stress disorder in preschool children, removal of agoraphobia without a history of panic disorder, and movement of separation anxiety disorder from Disorders Usually First Diagnosed in Infancy, Childhood, or Adolescence to the Anxiety Disorders section of the DSM [9].

Comorbidity is the rule rather than the exception in the clinical presentation of anxiety disorders. Epidemiological and clinical studies show that in about 75% of cases youth are diagnosed with multiple anxiety disorders and about 50% to 60% of children and adolescents diagnosed with an anxiety disorder evidence a comorbid affective disorder^[10, 11]. Comorbidity of anxiety disorders with disruptive behavior disorders is also common, with some estimates suggesting that between 25% and 33% of youth diagnosed with an anxiety disorder will evidence a comorbid externalizing disorder^[12]. Therefore the treatment of anxiety disorders in youth must necessarily take into account the presence of comorbid conditions. Interestingly, however, comorbidity does not seem to predict treatment outcome^[13], suggesting that cognitive behavior therapy (CBT) for anxiety disorders can be effective regardless of the presence of comorbid conditions. Presentations of somatic complaints in anxious youth, particularly stomach complaints in younger children and headache in older children and adolescents, is common^[14].

History of CBT for Anxiety Disorders in Childhood

Like CBT for anxiety disorders in adults, CBT for childhood anxiety disorders emerged from two areas of experimental psychology -- learning theory and cognitive psychology. Mary Cover Jones, one of J. B. Watson's students, was among the first to apply behavioral principles to the treatment of childhood anxiety. More specifically, Jones used modeling and exposure to treat childhood fears and phobias. Although these types of treatments were considered controversial at first, by the 1960s and 1970s recognition of their success was growing and behavioral treatments became widely accepted. Also, around this time, significant developments in the clinical application of social learning theory and cognitive theory by Bandura and Beck led to an integration of cognitive and behavioral treatments.

Two pioneering books were among the first to recognize the importance of these approaches. First, Donald Meichenbaum's *Cognitive-Behavior Modification*^[15], discussed CBT for the treatment of anxiety; soon after, Ollendick and Cerny published *Clinical Behavior Therapy with Children*^[16]. Today, there is a growing literature on the use of CBT for the treatment of anxiety disorders in youth and, while questions and controversies remain – including the comparative and combined efficacy of CBT and other available treatments and the active “ingredients” or mediators of CBT, CBT is used in a variety of settings including schools, outpatient clinics, inpatient or partial-hospitalization programs, and primary care practices. Moreover, research suggests that these treatments can be effective in significantly ameliorating the distress suffered by children with anxiety disorders.

Evidence of Efficacy and Effectiveness

Over 40 studies have been conducted to examine CBT for anxiety disorders and anxiety symptoms in youth and, taken together, these studies provide the empirical support necessary to make CBT the only psychological treatment identified to date as an evidence-

based treatment [17, 18]. (See Table 1 for a list of these studies.) Effect sizes from randomized controlled trials are generally large [19], and posttreatment assessments suggest that approximately two out of three children treated with CBT can expect to be free of their primary diagnosis with a course of treatment that usually lasts between 12 and 16 weeks. Maintenance of treatment gains, and in some cases, further improvement, can be seen in studies that follow treated youth up to nine years post treatment [20].

Moreover, as indicated previously, CBT for anxiety disorders in youth appears to be efficacious even in the presence of comorbid conditions [13, 21] and across different ethnic and cultural groups [22-24]. Although more work is needed to test the effectiveness or generalizability of CBT for youth with anxiety disorders, available evidence suggests the potential transportability of these treatments from the lab to a wide variety of clinical settings with little detriment to the size of treatment effects [25, 26].

Core Procedures in the Cognitive Behavioral Treatment of Anxiety Disorders in Youth

Given CBT's roots in learning and cognitive theory, it follows that the primary goals of CBT for child anxiety are to change maladaptive learning and thought patterns. What may be less obvious are that the implications of these foci make CBT approaches to child anxiety distinct from many other psychosocial interventions for youth. First, CBT approaches to child anxiety attempt to understand the roots of the presenting problem only to the degree that this understanding gives rise to a way to intervene in the "here and now". Treatment is much more focused on addressing the factors that maintain the child's symptoms rather than understanding what gave rise to the disorder. For example, one might want to know how a parent has reacted in the past to a child's attempts at avoidance but rather than focusing on these past interactions, this knowledge would be used to help the clinician know whether to work with parents on developing a new approach with the result of allowing for an altered learning experience for the child.

Additionally, CBT is a skills building approach. This means that clinicians are directive and sessions may appear very didactic. However, sessions are seen only as an *initial* step in the learning process. Meetings with the child and/or parents are used to introduce skills, provide initial practice and problem-solve; however, homework assignments outside of session provide the repeated practice required for complete skill acquisition and refinement. Moreover, given the importance of the context in which the anxious behavior occurs in behavioral theory, it necessarily follows that CBT for child anxiety often introduces new skills for parents, teachers, and sometimes even siblings or peers. In fact, the child's parents often become the major agents of change and work together with the clinician to implement the treatment, especially so with younger children. Parents and teachers are often asked to change their behavior (e.g., model non-anxious self-talk), change their approach to their child's anxiety (e.g., reinforce approach and provide less opportunity for avoidance), and to act as a coach for the child when he or she is completing homework assignments or generalizing skills into everyday situations. This requires a commitment on the part of the child and his or her parents that extends beyond the typical one hour per week session. On the other hand, treatment is typically time-limited. Goals are set by the child and parents in collaboration with the therapist and once adequate skills have been developed and treatment goals are reached the termination process begins. In the case of most childhood anxiety disorders, treatment usually takes twelve to sixteen weeks, rarely extending beyond six months of active treatment. However, "booster sessions", spaced out sessions that may extend over a four to six month time period, may be used as a way to provide review of difficult skills. This may be particularly helpful in that effective treatment may lead a child to encounter new situations because of an increase in the ability to engage in a full-range of

activities. Booster sessions may be used to help a child generalize skills to these situations and ensure durability of treatment gains.

Although several different cognitive behavioral treatment manuals have been developed to more specifically explicate CBT treatment procedures for child anxiety, Woody and Ollendick and Ollendick and Hovey^[27, 28] have identified several principles that cut across these treatments. These are discussed below.

Empirically Sound Assessment of Anxiety Disorders in Children

A thorough assessment is necessary prior to beginning a successful course of CBT to address an anxiety disorder with a child or adolescent and his or her family. The assessment should begin with a complete diagnostic evaluation including determining whether the presenting symptoms are clinically significant and if so, conducting a thorough differential diagnosis to discriminate amongst the anxiety disorders and between anxiety disorders and those disorders with similar presentations, including medical conditions such as hyperthyroidism and asthma. Given the high rate of comorbidity in children seeking treatment for anxiety disorders, it is also necessary to determine if comorbid psychiatric conditions exist, and if so, which symptoms should be the primary targets of early treatment. In addition, specific examples of functional impairment, along with indicators of severity, should be identified in order to aide the child and therapist in establishing treatment goals and monitoring treatment progress. Cognitive appraisals of feared stimuli, attempts at approach, and environmental reactions to the child's avoidance should also be thoroughly assessed in order to develop a thorough case conceptualization.

Although a thorough review of the available measures and approaches to assessment of anxiety in youth is beyond the scope of the current review, recent reviews suggest that numerous standardized measures including diagnostic interviews and questionnaires, are available for collecting information from children, parents, and teachers^[29]. In addition, individually tailored behavioral avoidance/approach tests and monitoring forms can be particularly helpful in assessing functional impairment and monitoring treatment progress. However, much work remains to be done in this area, including understanding discrepancies between parent and child reports of symptoms and the discordance in the assessment of the tripartite features of anxiety (i.e., physiological arousal, subjective anxiety, and behavioral avoidance)^[30-32]. Moreover, additional work is needed to establish the clinical utility of laboratory measures of anxiety^[33] (e.g., computerized measures of attentional biases) and in efficiently assessing potential mediators of change and meaningful quality of life indicators. Further, in order for CBT to be considered as a first-line treatment, and for clinicians and patients to make informed choices about treatment options, better measures of the costs (financial and otherwise) associated with CBT for anxious youth are needed to allow for cost-benefit analysis at the individual and societal scale.

Establishing Rapport and working with the Parents of Children with Anxiety Disorders

The importance of the therapeutic relationship has long been recognized by clinicians working with children and adolescents. However, cognitive behavioral theory clearly hypothesizes specific factors in addition to the therapeutic relationship that are thought to be necessary for a full treatment response. Moreover, much of the cognitive behavioral treatment research has focused on treatment *procedures* given the relationship of these procedures to the core hypothesized mechanisms of change implicated in cognitive and behavioral theory. This is in contrast to humanistic therapies in which the therapeutic relationship is hypothesized to be the key mechanism for change. Perhaps because of this

contrast, CBT has sometimes been characterized as sterile or mechanistic and practitioners of CBT have been criticized for their lack of attention to the importance of the therapeutic relationship. We would submit, however, that this is far from the truth [34, 35]. In fact, even a cursory examination of most CBT treatment manuals for anxiety disorders in youth reveals that CBT treatments require development of a therapeutic relationship and working alliance in addition to an active, relatively prolonged effort on the part of the child and his and family. Exposure sessions, discussed below and widely recognized as a core component of effective CBT treatments for anxiety in youth, are inherently distressing and compliance would seem unlikely without a strong relationship with both the parents and the child and agreement on both the tasks and goals of treatment [36]. However, in addition to the empathic listening skills, genuineness, and positive regard often thought to be primary means of establishing the therapeutic relationship, CBT therapists may rely more heavily on the collaborative relationship inherent in CBT and the provision of a theoretical rationale and treatment plan to enable the child to experience the therapist as someone who can be of help. To date, though we know that a positive therapeutic relationship is related to better outcomes in CBT for childhood anxiety disorders [34], we know little about what constitutes a positive relationship or whether the therapist behaviors contributing to the therapeutic relationship vary across different therapeutic approaches..

Cognitive Restructuring

Given the theoretical link posited by cognitive theory between erroneous or maladaptive cognitions, the subjective experience of anxiety, and anxious behavior, one of the core components of CBT for child anxiety is cognitive restructuring of anxious cognitions. This requires the child to first explicitly recognize their “self-talk” and then to understand the links between self-talk and their symptoms. Monitoring in anxiety provoking situations is often used to help a child identify specific maladaptive cognitions. Restructuring may take the form of direct discussion or guided discovery to question the validity of a thought or belief. This discussion can take several forms but a basic approach is summarized in four steps recommended by Padesky [37], these include (1) asking informational questions to identify the thought and find data to test the veracity of the thought, (2) empathic listening, (3) summarizing, and (4) using synthesizing or analytical questions to help the child come to a new understanding. Of course, a purely cognitive exercise may be difficult to accomplish depending on the age and cognitive development of the child. Behavioral experiments may be particularly effective methods of cognitive restructuring in such cases.

Behavioral experiments can be used to target a specific cognition such as “if I ask a child to play with me, he will laugh at me”. In this case the child and therapist would design an experiment asking a peer to play with the explicit goal of testing the veracity of the child’s belief. The child is asked to engage in the experiment with the explicit goal of “data collection”. Almost all of the CBT treatments for anxiety disorders in youth use some form of cognitive restructuring. Most programs will have a component in which the child first monitors thoughts to identify those giving rise to symptoms, then actively disputes those thoughts first with the therapist and then with increasing independence, and then develops new more adaptive, coping thoughts [23, 38, 39].

Repeated Exposure and Reduction of Avoidance

Exposure to feared stimuli is arguably the central component in most CBTs for child anxiety. In fact, Chorpita and his colleagues found exposure based treatments for anxiety disorders in youth to be associated with the largest effect sizes [19]. Early exposure therapies guided by a reciprocal inhibition hypothesis paired feared stimuli (e.g., dogs, social situations, germs) with a response incompatible with anxiety - often muscle relaxation [40].

In such an approach the child would be trained in relaxation techniques and a hierarchy of feared stimuli would be developed. Systematic exposure to the feared stimuli would proceed with the child engaging in relaxation procedures. Any symptoms of anxiety would be countered with relaxation, as the goal would be to avoid the experience of anxiety in order to condition an association between the once-feared stimuli and relaxation. However, such an approach has largely fallen out of favor, in part because it has been found that the relaxation training component of the treatment was often not necessary and in part because of updated theories regarding the mechanisms responsible for change in exposure therapies [41–43]. Today exposure-based treatments generally have four basic phases (1) instruction, (2) hierarchy development, (3) exposure proper, (4) generalization and maintenance.

1. **Instruction.** In the instruction phase, the parent and child are presented with the rationale for exposure treatment. This would often include a learning based rationale – that is, that past avoidance has been negatively reinforced with the reduction of anxiety thereby increasing the likelihood of future avoidance and escape during the peak of their fear. As such, there is little opportunity to learn the feared stimulus is in fact innocuous. A cognitive rationale emphasizing the role of increased self-efficacy and the development of more accurate and adaptive cognitions, may also be included, helping the child and parent to understand that exposure without avoidance will show the child that he or she has the skills to cope with the feared situation. It is also important that the instruction phase include basic information on the understanding of fear and anxiety as many anxious children, and perhaps their parents, at least implicitly expect the anxiety to increase interminably and to spiral out of control with prolonged exposure. For this reason, the child and parents need to understand the nature of anxiety and that it will peak and then decrease with prolonged exposure.
2. **Development of a hierarchy.** Once the child and parents understand the rationale for exposure therapy the next step is typically to develop a graded hierarchy of feared situations that can realistically be used for exposure sessions. More specifically, an exposure hierarchy consists of a series of anxiety provoking situations arranged from the least anxiety provoking to the most. It is important to make sure that enough steps are included in the hierarchy so that each step represents a *gradual* progression from the previous step and that the hierarchy as a whole captures all the components necessary to illicit the fear response in the child. For example, a child experiencing social anxiety may need to include steps in his or her hierarchy that include overt criticism in order to evoke an anxiety response and allow for habituation and the development of an increased perception of self-efficacy. Importantly, it may be necessary to include steps in the hierarchy that are more anxiety provoking than those the child may ever realistically be expected to face.
3. **Exposure proper.** In this step the child is exposed to each of the situations in the hierarchy until the anxiety dissipates. Modeling by the therapist, in which the therapist first engages in the anxiety provoking task allowing the child to watch, may precede direct engagement by the child. Attention should be paid to both within session habituation (e.g., decrease in subjective distress or indicators of physiological arousal) and between session habituation, as these have been found to be predictive of outcome [43–45]. Exposure may be in-vivo or imaginal, although in most cases in-vivo exposure is generally preferred and more effective. When circumstances do not allow for in-vivo exposures (e.g., repeated flights for a child with a fear of flying), virtual-reality based exposures may prove to be a useful alternative when available. During this phase, elimination of avoidance or escape

behaviors is emphasized in order to facilitate exposure and allow the child a return to normal activities [28].

4. Generalization and maintenance. In order to generalize treatment gains across situations the child is usually given homework assignments to repeat exposures that are mastered in session across similar situations outside of the therapy room. In addition to allowing for generalization, these activities allow for solidification of the skills learned in session, and ensure that the child does not see the presence of the therapist as necessary to the control of the anxiety. Once the child has progressed through the entire hierarchy and anxiety has significantly dissipated, planning for termination and maintenance begins. Given that anxiety and stressful situations are a normal part of life, termination should be considered when treatment goals are achieved and anxiety appears to be within normal levels for the child's developmental level. Depending on the age of the child, this phase would include giving the child or parent increasing responsibility for planning exposure or cognitive restructuring exercises when new challenges present themselves. Planning for stressful situations and providing the child with written materials that can be used to reinforce and review skills after the termination of therapy can be helpful [46]. Moreover, current research on the mechanisms involved in the extinction of anxious responses suggests several important avenues for planning for relapse prevention. This may include increasingly conducting exposure sessions outside of the typical therapy context (i.e., in real life situations in which the client might expect a relapse) and providing the child with a physical or cognitive cue of the exposure sessions in order to facilitate retrieval of the nonanxious learning that took place during treatment sessions [47-51].

Skills Training and Behavioral Rehearsal

There is some debate about whether children with anxiety disorders evidence true skills deficits (e.g., social skills deficits, lack of test-taking skills, emotion regulation skill deficits) or whether they possess these skills but are unable to effectively use them because of the interference engendered by their anxiety. However, because the research is equivocal, many CBT treatments for child anxiety include a skills training component. In early phases, this training may be very didactic and psychoeducational but learning is often reinforced with modeling by the therapist and behavioral rehearsal. Behavioral rehearsal is coupled with reinforcement by the therapist, oftentimes social reinforcement in the form of praise and positive feedback that is gradually phased out in favor of self-reinforcement.

Conclusions and Future Directions

CBT for child anxiety disorders has a rich history dating back to the beginnings of the behavioral movement in the 1920s. These treatments were unique in their strong ties to both theory *and* empiricism. Today, over 40 randomized clinical trials support the efficacy of CBT for the treatment of anxiety disorders in children and adolescents. These studies find that the majority of youth with anxiety disorders treated with CBT will see substantial benefits. Moreover, the effects seen in these studies suggest that changes are clinically significant as well as statistically significant. Further, CBT is a time-limited skills building treatment and this has important implications for families. This means that children can expect relief from symptoms within a relatively brief period (e.g., three to four months) and that the need for a therapist can be phased out as the child and family master the requisite skills. Continued improvement does not depend on regular meetings with the therapist; in fact, follow-up studies suggest that many children who see benefits from CBT will maintain their treatment gains and continue to improve even after treatment has formally terminated [20, 52]. These characteristic have the potential to make CBT for child anxiety

stand-out amongst other treatment options for its high potential benefit and relatively low costs.

Given the preponderance of evidence in support of CBT as an evidence-based treatment for child anxiety, future research needs to move beyond the basic question of whether CBT works. Although clinicians in practice must adapt traditional CBT methods to a child or adolescent's developmental level and other contextual factors, little systematic research is available to guide these decisions. Moreover, additional work is needed to establish the mediators and moderators of treatment outcome – essentially for whom is CBT more or less effective and why does CBT for child anxiety work. Further, although some work has been done to guide clinicians in treatment resistant cases, additional studies are needed to guide clinician decision-making when first-line CBT treatments do not work. Finally, although studies suggest that CBT should represent a first-line treatment for children presenting with an anxiety disorder, it is rarely the case that these children receive CBT at any point in their treatment. This seems to be the case even when families see a clinician claiming to use CBT. Therefore, additional empirical work is needed to guide the training and supervision of student clinicians and to investigate effective means of disseminating knowledge of CBT treatments and treatment advances to those already in clinical practice.

Acknowledgments

This review was funded in part by the National Institute of Mental Health Grant R01 074777 to Thomas H. Ollendick (PI).

References

1. Kessler RC, Berglund P, Demler O, Jin R, Walters EE. Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication. *Archives of General Psychiatry*. 2005; 62(6):593–602. [PubMed: 15939837]
2. Cartwright-Hatton S, McNicol K, Doubleday E. Anxiety in a neglected population: Prevalence of anxiety disorders in pre-adolescent children. Special Issue: Anxiety of childhood and adolescence: Challenges and opportunities. 2006; 26(7):817–833.
3. Gullone E. The development of normal fear: A century of research. *Clinical Psychology Review*. 2000; 20(4):429–451. [PubMed: 10832548]
4. Strauss CC, Frame CL, Forehand R. Psychosocial impairment associated with anxiety in children. *Journal of Clinical Child Psychology*. 1987; 16(3):235–239.
5. Ginsburg GS, La Greca AM, Silverman WK. Social anxiety in children with anxiety disorders: Relation with social and emotional functioning. *Journal of Abnormal Child Psychology*. 1998; 26(3):175–185. [PubMed: 9650624]
6. Ialongo N, Edelsohn G, Werthamer-Larsson L, Crockett L, Kellam S. Social and cognitive impairment in first-grade children with anxious and depressive symptoms. *Journal of Clinical Child Psychology*. Mar; 1996 25(1):15–24.
7. Greenberg PE, Sisitsky T, Kessler RC, et al. The economic burden of anxiety disorders in the 1990s. *Journal of Clinical Psychiatry*. July; 1999 60(7):427–435. [PubMed: 10453795]
8. American Psychiatric Association. *Diagnostic and statistical manual of mental disorders*. 4. Washington, DC: American Psychiatric Association; 2000. Revised
9. American Psychiatric Association. *DSM-5: The future of psychiatric diagnosis*. 2010.
10. Brady EU, Kendall PC. Comorbidity of anxiety and depression in children and adolescents. *Psychological Bulletin*. 1992; 111(2):244–255. [PubMed: 1557475]
11. Seligman LD, Ollendick TH. Comorbidity of anxiety and depression in children and adolescents: An integrative review. *Clinical Child and Family Psychology Review*. 1998; 1(2):125–144. [PubMed: 11324302]

12. Russo MF, Beidel DC. Comorbidity of childhood anxiety and externalizing disorders: Prevalence, associated characteristics, and validation issues. *Clinical Psychology Review*. 1994; 14(3):199–221.
13. Ollendick TH, Jarrett MA, Grills-Taquetel AE, Hovey LD, Wolff JC. Comorbidity as a predictor and moderator of treatment outcome in youth with anxiety, affective, attention deficit/hyperactivity disorder, and oppositional/conduct disorders. *Clinical Psychology Review*. 2008; 28(8):1447–1471. [PubMed: 18973971]
14. Masi G, Favilla L, Millepiedi S, Mucci M. Somatic symptoms in children and adolescents referred for emotional and behavioral disorders. *Psychiatry: Interpersonal & Biological Processes*. Sum; 2000 63(2):140–149.
15. Meichenbaum, D. Cognitive behavior modification. General Learning Press; 1974.
16. Ollendick, TH.; Cerny, JA. Clinical behavior therapy with children. New York: Plenum Press; 1981.
17. Ollendick TH, King NJ. Empirically supported treatments for children with phobic and anxiety disorders: Current status. *Journal of Clinical Child Psychology*. 1998; 27(2):156–167. [PubMed: 9648033]
18. Ollendick, TH.; King, NJ.; Chorpita, BF. Empirically Supported Treatments for Children and Adolescents. In: Kendall, PC., editor. *Child and adolescent therapy: Cognitive-behavioral procedures*. 3. 2006. p. 492–520.
19. Chorpita BF, Yim LM, Donkervoet JC, 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. *Clinical Psychology: Science and Practice*. 2002; 9(2):165–190.
20. Nevo GA, Manassis K. Outcomes for treated anxious children: A critical review of long-term-follow-up studies. *Depression and Anxiety*. 2009; 26(7):650–660. [PubMed: 19496175]
21. Ollendick TH, Öst L-G, Reuterskild L, Costa N. Comorbidity in youth with specific phobias: Impact of comorbidity on treatment outcome and the impact of treatment on comorbid disorders. *Behaviour Research and Therapy*. 2010; 48:827–831. [PubMed: 20573338]
22. Ginsburg GS, Drake KL. School-based treatment for anxious African-American adolescents: A controlled pilot study. *Journal of the American Academy of Child & Adolescent Psychiatry*. 2002; 41(7):768–775. [PubMed: 12108800]
23. Kendall PC. Treating anxiety disorders in children: Results of a randomized clinical trial. *Journal of Consulting and Clinical Psychology*. 1994; 62(1):100–110. [PubMed: 8034812]
24. Toren P, Eldar S, Cendorf D, et al. The prevalence of mitral valve prolapse in children with anxiety disorders. *Journal of Psychiatric Research*. Jul-Aug; 1999 33(4):357–361. [PubMed: 10404474]
25. Chorpita BF, Yim LM, Donkervoet JC, 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. *Clinical Psychology: Science & Practice*. 2002; 9(2):165–190.
26. Bernstein GA, Bernat DH, Victor AM, Layne AE. School-based interventions for anxious children: 3-, 6-, and 12-month follow-ups. *Journal of the American Academy of Child & Adolescent Psychiatry*. 2008; 47(9):1039–1047. [PubMed: 18665000]
27. Woody, SR.; Ollendick, TH. Technique factors in treating anxiety disorders. In: Castonguay, L.; Beutler, LE., editors. *Principles of therapeutic change that work*. New York: Oxford University Press; 2006. p. 167–186.
28. Ollendick, TH.; Hovey, LD. Competencies for treating phobic and anxiety disorders in children and adolescents. In: Thomas, J.; Hersen, M., editors. *Handbook of clinical psychology competencies*. New York: Springer Verlag; 2009.
29. Silverman, WK.; Ginsburg, GS. Anxiety Disorders. In: Ollendick, TH.; Hersen, M., editors. *Handbook of Child Psychopathology*. 3. New York: Plenum Press; 1998. p. 239–268.
30. Silverman WK, Ollendick TH. Evidence-Based Assessment of Anxiety and Its Disorders in Children and Adolescents. *Journal of Clinical Child and Adolescent Psychology*. 2005; 34(3):380–411. [PubMed: 16026211]
31. Grills AE, Ollendick TH. Multiple informant agreement and the Anxiety Disorders Interview Schedule for Parents and Children. *Journal of the American Academy of Child & Adolescent Psychiatry*. 2003; 42(1):30–40. [PubMed: 12500074]

32. Reuterskiold L, Ost L-G, Ollendick T. Exploring child and parent factors in the diagnostic agreement on the Anxiety Disorders Interview Schedule. *Journal of Psychopathology and Behavioral Assessment*. 2008; 30(4):279–290.
33. Egloff B, Schmukle SC. Predictive validity of an implicit association test for assessing anxiety. *Journal of Personality and Social Psychology*. 2002; 83(6):1441–1455. [PubMed: 12500823]
34. Hughes AA, Kendall PC. Prediction of cognitive behavior treatment outcome for children with anxiety disorders: Therapeutic relationship and homework compliance. *Behavioural and Cognitive Psychotherapy*. 2007; 35(4):487–494.
35. Leahy RL. The therapeutic relationship in cognitive-behavioral therapy. Special Issue: Developments in the theory and practice of cognitive and behavioural therapies. 2008; 36(6):769–777.
36. Hayes SA, Hope DA, VanDyke MM, Heimberg RG. Working alliance for clients with social anxiety disorder: Relationship with session helpfulness and within-session habituation. *Cognitive Behaviour Therapy*. 2007; 36(1):34–42. [PubMed: 17364650]
37. Guided discovery using socratic dialogue [Compact Disc]. Huntington Beach, CA: Center for Cognitive Therapy; 1996.
38. Kendall PC, Flannery-Schroeder E, Panichelli-Mindel SM, Southam-Gerow M, Henin A, Warman M. Therapy for youths with anxiety disorders: A second randomized clinical trial. *Journal of Consulting & Clinical Psychology*. Jun; 1997 65(3):366–380. [PubMed: 9170760]
39. Shortt AL, Barrett PM, Fox TL. Evaluating the FRIENDS Program: A cognitive-behavioral group treatment for anxious children and their parents. *Journal of Clinical Child Psychology*. 2001; 30(4):525–535. [PubMed: 11708240]
40. Wolpe, J. *Psychotherapy by reciprocal inhibition*. Oxford, England: Stanford University Press; 1958.
41. Stewart SH, Watt MC. Introduction to the special issue on interoceptive exposure in the treatment of anxiety and related disorders: Novel applications and mechanisms of action. *Journal of Cognitive Psychotherapy*. 2008; 22(4):291–302.
42. Foa EB, Kozak MJ. Emotional processing of fear: Exposure to corrective information. *Psychological Bulletin*. 1986; 99(1):20–35. [PubMed: 2871574]
43. Foa, EB.; Huppert, JD.; Cahill, SP. Emotional Processing Theory: An Update. In: Rothbaum, BO., editor. *Pathological anxiety: Emotional processing in etiology and treatment*. 2006. p. 3-24.
44. Jaycox LH, Foa EB, Morral AR. Influence of emotional engagement and habituation on exposure therapy for PTSD. *Journal of Consulting and Clinical Psychology*. 1998; 66(1):185–192. [PubMed: 9489273]
45. van Minnen A, Hagenaars M. Fear activation and habituation patterns as early process predictors of response to prolonged exposure treatment in PTSD. *Journal of Traumatic Stress*. 2002; 15(5): 359–367. [PubMed: 12392223]
46. Linares Scott TJ, Feeny NC. Relapse prevention techniques in the treatment of childhood anxiety disorders: A case example. *Journal of Contemporary Psychotherapy*. 2006; 36(4):151–157.
47. Bouton, ME.; Woods, AM.; Moody, EW.; Sunsay, C.; Garcia-Gutierrez, A. Counteracting the Context-Dependence of Extinction: Relapse and Tests of Some Relapse Prevention Methods. In: Craske, MG.; Hermans, D.; Vansteenwegen, D., editors. *Fear and learning: From basic processes to clinical implications*. 2006. p. 175-196.
48. Hermans D, Craske MG, Mineka S, Lovibond PF. Extinction in human fear conditioning. *Biological Psychiatry*. 2006; 60(4):361–368. [PubMed: 16503330]
49. Vansteenwegen, D.; Dirikx, T.; Hermans, D.; Vervliet, B.; Eelen, P. Renewal and Reinstatement of Fear: Evidence From Human Conditioning Research. In: Craske, MG.; Hermans, D.; Vansteenwegen, D., editors. *Fear and learning: From basic processes to clinical implications*. 2006. p. 197-215.
50. Bouton ME, Frohardt RJ, Sunsay C, Waddell J, Morris RW. Contextual control of inhibition with reinforcement: Adaptation and timing mechanisms. *Journal of Experimental Psychology: Animal Behavior Processes*. 2008; 34(2):223–236. [PubMed: 18426305]
51. Wuyek, LA.; Seligman, LD. Reducing the renewal effect: Cognitive retrieval cues in maintaining extinction. 2010. Manuscript submitted for publication

52. Kendall PC, Southam-Gerow MA. Long-term follow-up of a cognitive-behavioral therapy for anxiety-disordered youth. *Journal of Consulting & Clinical Psychology*. 1996; 64(4):724–730. [PubMed: 8803362]
53. Barrett PM, Dadds MR, Rapee RM. Family treatment of childhood anxiety: A controlled trial. *Journal of Consulting & Clinical Psychology*. 1996; 64(2):333–342. [PubMed: 8871418]
54. Kendall PC, Sugarman A. Attrition in the treatment of childhood anxiety disorders. *Journal of Consulting and Clinical Psychology*. 1997; 65(5):883–888. [PubMed: 9337507]
55. Barrett PM. Evaluation of Cognitive-Behavioral Group Treatments for Childhood Anxiety Disorders. *Journal of Clinical Child Psychology*. 1998; 27(4):459–468. [PubMed: 9866083]
56. Cobham VE, Dadds MR, Spence SH. The role of parental anxiety in the treatment of childhood anxiety. *Journal of Consulting and Clinical Psychology*. 1998; 66(6):893–905. [PubMed: 9874902]
57. De Haan E, Hoogduin, Kees AL, Buitelaar, Jan K, Keijsers, Ger PJ. Behavior Therapy Versus Clomipramine for the Treatment of Obsessive-Complusive Disorder in Children and Adolescents. *Journal of the American Academy of Child and Adolescent Psychiatry*. 1998; 37(10):1022–1029. [PubMed: 9785713]
58. King NJ, Tonge BJ, Heyne D, et al. Cognitive-behavioral treatment of school-refusing children: A controlled evaluation. *Journal of the American Academy of Child and Adolescent Psychiatry*. 1998; 37(4):395–403. [PubMed: 9549960]
59. Last CG, Hansen C, Franco N. Cognitive-behavioral treatment of school phobia. *Journal of the American Academy of Child & Adolescent Psychiatry*. 1998; 37(4):404–411. [PubMed: 9549961]
60. Muris P, Merckelbach H, Holdrinet I, Sijssenaar M. Treating phobic children: Effects of EMDR versus exposure. *Journal of Consulting and Clinical Psychology*. 1998; 66(1):193–198. [PubMed: 9489274]
61. Mendlowitz SL, Manassis K, Bradley S, Scapillato D, Meiezitis S, Shaw BF. Cognitive-behavioral group treatments in childhood anxiety disorders: The role of parental involvement. *Journal of American Academy of Child and Adolescent Psychiatry*. 1999; 38(10):1223–1229.
62. Silverman WK, Kurtines WM, Ginsburg GS, Weems CF, Rabian B, Serafini LT. Contingency management, self-control, and education support in the treatment of childhood phobic disorders: A randomized clinical trial. *Journal of Consulting & Clinical Psychology*. Oct; 1999 67(5):675–687. [PubMed: 10535234]
63. Silverman WK, Kurtines WM, Ginsburg GS, Weems CF, Lumpkin PW, Carmichael DH. Treating anxiety disorders in children with group cognitive-behavioral therapy: A randomized clinical trial. *Journal of Consulting & Clinical Psychology*. Dec; 1999 67(6):995–1003. [PubMed: 10596522]
64. Beidel DC, Turner SM, Morris TL. Behavioral treatment of childhood social phobia. *Journal of Consulting and Clinical Psychology*. 2000; 68(6):1072–1080. [PubMed: 11142541]
65. Berman SL, Weems CF, Silverman WK, Kurtines WM. Predictors of outcome in exposure-based cognitive and behavioral treatments for phobic and anxiety disorders in children. *Behavior Therapy*. 2000; 31(4):713–731.
66. Flannery-Schroeder EC, Kendall PC. Group and individual cognitive-behavioral treatments for youth with anxiety disorders: A randomized clinical trial. *Cognitive Therapy and Research*. 2000; 24(3):251–278.
67. Hayward C, Varady S, Albano AM, Thienemann M, Henderson L, Schatzberg AF. Cognitive-behavioral group therapy for social phobia in female adolescents: Results of a pilot study. *Journal of the American Academy of Child & Adolescent Psychiatry*. Jun; 2000 39(6):721–726. [PubMed: 10846306]
68. King NJ, Tonge BJ, Mullen P, et al. Treating sexually abused children with posttraumatic stress symptoms: A randomized clinical trial. *Journal of the American Academy of Child & Adolescent Psychiatry*. Nov; 2000 39(11):1347–1355. [PubMed: 11068889]
69. Spence SH, Donovan C, Brechman-Toussaint M. The treatment of childhood social phobia: The effectiveness of a social skills training-based, cognitive-behavioural intervention, with and without parental involvement. *Journal of Child Psychology & Psychiatry & Allied Disciplines*. Sep; 2000 41(6):713–726.

70. Barrett PM, Duffy AL, Dadds MR, Rapee RM. Cognitive-behavioral treatment of anxiety disorders in children: Long-term (6-year) follow-up. *Journal of Consulting & Clinical Psychology*. 2001; 69(1):135–141. [PubMed: 11302272]
71. Kendall PC, Brady EU, Verduin TL. Comorbidity in childhood anxiety disorders and treatment outcome. *Journal of the American Academy of Child & Adolescent Psychiatry*. 2001; 40(7):787–794. [PubMed: 11437017]
72. Muris P, Mayer B, Bartelds E, Tierney S, Bogie N. The revised version of the Screen for Child Anxiety Related Emotional Disorders (SCARED-R): Treatment sensitivity in an early intervention trial for childhood anxiety disorders. *British Journal of Clinical Psychology*. 2001; 40(3):323–336. [PubMed: 11593959]
73. Ost L-G, Svensson L, Hellstrom K, Lindwall R. One-session treatment of specific phobias in youths: A randomized clinical trial. *Journal of Consulting and Clinical Psychology*. 2001; 69(5): 814–824. [PubMed: 11680558]
74. Southam-Gerow MA, Kendall PC, Weersing VR. Examining outcome variability: Correlates of treatment response in a child and adolescent anxiety clinic. *Journal of Clinical Child Psychology*. 2001; 30(3):422–436. [PubMed: 11501258]
75. Waters TL, Barrett PM, March JS. Cognitive-behavioral family treatment of childhood obsessive-compulsive disorder: Preliminary findings. *American Journal of Psychotherapy*. 2001; 55(3):372–387. [PubMed: 11641879]
76. Heyne D, King NJ, Tonge BJ, et al. Evaluation of child therapy and caregiver training in the treatment of school refusal. *Journal of the American Academy of Child & Adolescent Psychiatry*. 2002; 41(6):687–695. [PubMed: 12049443]
77. Manassis K, Mendlowitz SL, Scapillato D, et al. Group and individual cognitive-behavioral therapy for childhood anxiety disorders. A randomized trial. *Journal of the American Academy of Child and Adolescent Psychiatry*. 2002; 41(12):1423–1430. [PubMed: 12447028]
78. Muris P, Meesters C, Gobel M. Cognitive coping versus emotional disclosure in the treatment of anxious children: A pilot-study. *Cognitive Behaviour Therapy*. 2002; 31(2):59–67.
79. Nauta MH, Scholing A, Emmelkamp PMG, Minderaa RB. Cognitive-behavioral therapy for children with anxiety disorders in a clinical setting: No additional effect of a cognitive parent training. *Journal of the American Academy of Child & Adolescent Psychiatry*. 2003; 42(11):1270–1278. [PubMed: 14566163]
80. Pina AA, Silverman WK, Fuentes RM, Kurtines WM, Weems CF. Exposure-based cognitive-behavioral treatment for phobic and anxiety disorders: Treatment effects and maintenance for Hispanic/Latino relative to European-American youths. *Journal of the American Academy of Child & Adolescent Psychiatry*. 2003; 42(10):1179–1187. [PubMed: 14560167]
81. Rapee RM. The influence of comorbidity on treatment outcome for children and adolescents with anxiety disorders. *Behaviour Research & Therapy*. 2003; 41(1):105–112. [PubMed: 12488123]
82. Barrett P, Healy-Farrell L, March JS. Cognitive-behavioral family treatment of childhood obsessive-compulsive disorder: A controlled trial. *Journal of the American Academy of Child & Adolescent Psychiatry*. 2004; 43(1):46–62. [PubMed: 14691360]
83. Flannery-Schroeder E, Suveg C, Safford S, Kendall PC, Webb A. Comorbid Externalising Disorders and Child Anxiety Treatment Outcomes. *Behaviour Change*. 2004; 21(1):14–25.
84. Gallagher HM, Rabian BA, McCloskey MS. A brief group cognitive-behavioral intervention for social phobia in childhood. *Journal of Anxiety Disorders*. 2004; 18(4):459–479. [PubMed: 15149708]
85. Kendall PC, Safford S, Flannery-Schroeder E, Webb A. Child Anxiety Treatment: Outcomes in Adolescence and Impact on Substance Use and Depression at 7.4-Year Follow-Up. *Journal of Consulting and Clinical Psychology*. 2004; 72(2):276–287. [PubMed: 15065961]
86. Manassis K, Avery D, Butalia S, Mendlowitz S. Cognitive-Behavioral Therapy With Childhood Anxiety Disorders: Functioning in Adolescence. *Depression and Anxiety*. 2004; 19(4):209–216. [PubMed: 15274169]
87. Pediatric OCD Treatment Study Team. Cognitive-Behavior Therapy, Sertraline, and their Combination for Children and Adolescents with Obsessive-Compulsive Disorder: The Pediatric

OCD Treatment Study (POTS) Randomized Controlled Trial. *JAMA: Journal of the American Medical Association*. 2004; 292(16):1969–1976.

88. Asbahr FR, Castillo AR, Ito LM, Latorre MDRDDO, Moreira MN, Lotufo-Neto F. Group cognitive-behavioral therapy versus sertraline for the treatment of children and adolescents with obsessive-compulsive disorder. *Journal of the American Academy of Child & Adolescent Psychiatry*. 2005; 44(11):1128–1136. [PubMed: 16239861]
89. Baer S, Garland EJ. Pilot Study of Community-Based Cognitive Behavioral Group Therapy for Adolescents With Social Phobia. *Journal of the American Academy of Child & Adolescent Psychiatry*. 2005; 44(3):258–264. [PubMed: 15725970]
90. Beidel DC, Turner SM, Young B, Paulson A. Social Effectiveness Therapy for Children: Three-Year Follow-Up. *Journal of Consulting and Clinical Psychology*. 2005; 73(4):721–725. [PubMed: 16173859]
91. Bernstein GA, Layne AE, Egan EA, Tennison DM. School-based interventions for anxious children. *Journal of the American Academy of Child & Adolescent Psychiatry*. 2005; 44(11): 1118–1127. [PubMed: 16239860]
92. Flannery-Schroeder E, Choudhury MS, Kendall PC. Group and Individual Cognitive-Behavioral Treatments for Youth With Anxiety Disorders: 1-Year Follow-Up. *Cognitive Therapy and Research*. 2005; 29(2):253–259.
93. Masia-Warner C, Klein RG, Dent HC, et al. School-based intervention for adolescents with social anxiety disorder: Results of a controlled study. *Journal of Abnormal Child Psychology: An official publication of the International Society for Research in Child and Adolescent Psychopathology*. 2005; 33(6):707–722.
94. Beidel DC, Turner SM, Young BJ. Social Effectiveness Therapy for Children: Five Years Later. *Behavior Therapy*. 2006; 37(4):416–425. [PubMed: 17071218]
95. Lyneham HJ, Rapee RM. Evaluation of therapist-supported parent-implemented CBT for anxiety disorders in rural children. *Behaviour Research and Therapy*. 2006; 44(9):1287–1300. [PubMed: 16313883]
96. Rapee RM, Abbott MJ, Lyneham HJ. Bibliotherapy for children with anxiety disorders using written materials for parents: A randomized controlled trial. *Journal of Consulting and Clinical Psychology*. 2006; 74(3):436–444. [PubMed: 16822101]
97. Spence SH, Holmes JM, March S, Lipp OV. The feasibility and outcome of clinic plus Internet delivery of cognitive-behavior therapy for childhood anxiety. *Journal of Consulting and Clinical Psychology*. 2006; 74(3):614–621. [PubMed: 16822117]
98. Wood JJ, Piacentini JC, Southam-Gerow M, Chu BC, Sigman M. Family Cognitive Behavioral Therapy for Child Anxiety Disorders. *Journal of the American Academy of Child & Adolescent Psychiatry*. 2006; 45(3):314–321. [PubMed: 16540816]
99. Beidel DC, Turner SM, Sallee FR, Ammerman RT, Crosby LA, Pathak S. SET-C versus fluoxetine in the treatment of childhood social phobia. *Journal of the American Academy of Child & Adolescent Psychiatry*. 2007; 46(12):1622–1632. [PubMed: 18030084]
100. Chalfant AM, Rapee R, Carroll L. Treating anxiety disorders in children with high functioning autism spectrum disorders: A controlled trial. *Journal of Autism and Developmental Disorders*. 2007; 37(10):1842–1857. [PubMed: 17171539]
101. de Groot J, Cobham V, Leong J, McDermott B. Individual versus group family-focused cognitive-behaviour therapy for childhood anxiety: Pilot randomized controlled trial. *Australian and New Zealand Journal of Psychiatry*. 2007; 41(12):990–997. [PubMed: 17999271]
102. Levy K, Hunt C, Heriot S. Treating comorbid anxiety and aggression in children. *Journal of the American Academy of Child & Adolescent Psychiatry*. 2007; 46(9):1111–1118. [PubMed: 17712234]
103. March JS, Franklin ME, Leonard H, et al. Tics Moderate Treatment Outcome with Sertraline but not Cognitive-Behavior Therapy in Pediatric Obsessive-Compulsive Disorder. *Biological Psychiatry*. 2007; 61(3):344–347. [PubMed: 17241830]
104. Masia Warner C, Fisher PH, Shrout PE, Rathor S, Klein RG. Treating adolescents with social anxiety disorder in school: An attention control trial. *Journal of Child Psychology and Psychiatry*. 2007; 48(7):676–686. [PubMed: 17593148]

105. Smith P, Yule W, Perrin S, Tranah T, Dalgleish T, Clark DM. Cognitive-behavioral therapy for PTSD in children and adolescents: A preliminary randomized controlled trial. *Journal of the American Academy of Child & Adolescent Psychiatry*. 2007; 46(8):1051–1061. [PubMed: 17667483]
106. Storch EA, Geffken GR, Merlo LJ, et al. Family-based cognitive-behavioral therapy for pediatric obsessive-compulsive disorder: Comparison of intensive and weekly approaches. *Journal of the American Academy of Child & Adolescent Psychiatry*. 2007; 46(4):469–478. [PubMed: 17420681]
107. Victor AM, Bernat DH, Bernstein GA, Layne AE. Effects of parent and family characteristics on treatment outcome of anxious children. *Journal of Anxiety Disorders*. 2007; 21(6):835–848. [PubMed: 17161582]
108. Kendall PC, Hudson JL, Gosch E, Flannery-Schroeder E, Suveg C. Cognitive-behavioral therapy for anxiety disordered youth: A randomized clinical trial evaluating child and family modalities. *Journal of Consulting and Clinical Psychology*. 2008; 76(2):282–297. [PubMed: 18377124]
109. Warner CM, Reigada LC, Fisher PH, Saborsky AL, Benkov KJ. CBT for anxiety and associated somatic complaints in pediatric medical settings: An open pilot study. *Journal of Clinical Psychology in Medical Settings*. 2009; 16(2):169–177. [PubMed: 19152057]
110. 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. *Behaviour Research and Therapy*. 2009; 47(8):654–662. [PubMed: 19457471]
111. Cobham VE, Dadds MR, Spence SH, McDermott B. Parental anxiety in the treatment of childhood anxiety: A different story three years later. *Journal of Clinical Child and Adolescent Psychology*. 2010; 39(3):410–420. [PubMed: 20419581]
112. Garcia AM, Sapota JJ, Moore PS, et al. Predictors and moderators of treatment outcome in the Pediatric Obsessive Compulsive Treatment Study (POTS I). *Journal of the American Academy of Child & Adolescent Psychiatry*. 2010; 49(10):1024–1033. [PubMed: 20855047]

Summary of treatment studies.

Table 1

Authors Year	N	Age (in years)	Diagnosis or Symptom Clusters	Treatment Conditions	Results
Kendall (1994) ^[23]	47	9–13	OAD, SAD, AD	CBT WL	CBT was superior to WL
Barrett et al. (1996) ^[53]	79	7–14	SAD, OAD, SOC	CBT CBT + family treatment WL	Both treatments were better than WL. Some measures showed marginal improvements with addition of family treatment component.
Kendall & Southam-Gerow (1996) ^[52]	36	11–18	OAD, SAD, AD	CBT – follow-up study	Treatment gains were generally maintained after approximately 3 years.
Kendall et al. (1997) ^[38]	94	9–13	OAD, SAD, AD	CBT WL	CBT was superior to WL
Kendall & Stigerman (1997) ^[54]	190	8–14	OAD, SAD, AD	Examined termination in CBT	Termination more likely for ethnic minority children, children who were less anxious, and children living in a single-parent household.
Barrett (1998) ^[55]	60	7–14	SAD, OAD, SOC	CBT – group CBT + family treatment – group WL	Both treatments were better than WL. Some measures showed marginal improvements with addition of family treatment component.
Cobham et al. (1998) ^[56]	67	7–14	SAD, OAD, GAD, SPEC, SOC, AG	CBT CBT + family treatment	The addition of family treatment was beneficial only in cases in which there was significant parental anxiety.
De Haan et al. (1998) ^[57]	22	8–18	OCD	BT Clomipramine	BT was superior to clomipramine on some measures; on others the two treatments were not different.
King et al. (1998) ^[58]	34	5–15	School refusal	CBT + parent and teacher training WL	CBT was superior to WL.
Last et al. (1998) ^[59]	56	6–17	School refusal	CBT Attention control treatment	Both treatments were effective; no differences between treatments.
Muris et al. (1998) ^[60]	26	8–17	SPEC	EMDR - In-vivo exposure Computerized exposure	In vivo-exposure superior to computerized exposure and EMDR.
Mendlowitz et al. (1999) ^[61]	62	7–12	Any anxiety disorder	CBT- parent only CBT – child only CBT – parent + child	All treatments were effective; some benefits with parental involvement.
Silverman et al. (1999) ^[62]	81	6–16	SPEC, SOC, AG	Exposure based self control treatment Exposure based contingency management Treatment Education support	All groups showed improvement.
Silverman et al. (1999) ^[63]	56	6–16	GAD, SOC, OAD	CBT – Group WL	CBT superior to WL.

Authors Year	N	Age (in years)	Diagnosis or Symptom Clusters	Treatment Conditions	Results
Beidel et al. (2000) ^[64]	67	8–12	SOC	CBT Active, non-specific treatment	CBT was superior to non-specific treatment.
Berman et al. (2000) ^[65]	106	6–17	SPEC, OAD, SOC, GAD, AG	CBT	Best predictors of treatment outcome were child's pretreatment levels of anxiety and depression and parental depression, hostility, and paranoia; however, effects of parental psychopathology were weaker for older children.
Flannery-Schroeder & Kendall (2000) ^[66]	37	8–14	GAD, SAD, SOC	CBT – Individual CBT – Group WL	Most measures suggested that both CBT treatments were better than WL but not different than each other.
Hayward et al. (2000) ^[67]	35	13–17	SOC	CBT – Group No treatment control	CBT was more effective than no treatment at post-treatment but not at 1 year follow-up. CBT did seem to decrease risk of relapse of depression for those who had already experienced a major depressive episode
King et al. (2000) ^[68]	36	5–17	PTSD	CBT CBT + family treatment WL	Both treatments were superior to WL but the additional family treatment did not add significant benefit.
Spence et al. (2000) ^[69]	50	7–14	SOC	CBT CBT + family treatment WL	Both treatments were superior to WL but the additional family treatment did not add significant benefit. Treatment gains were generally maintained after approximately 1 year.
Barrett et al. (2001) ^[70]	52	13–21	SAD, OAD, SOC	CBT CBT + family treatment	Treatment gains were generally maintained after approximately 6 years. Most measures did not show differences between the two treatments.
Kendall et al. (2001) ^[71]	173	8–13	GAD, SOC, SAD	Examined comorbidity in CBT and WL	Comorbidity did not predict treatment outcome or interact with treatment group.
Muris et al. (2001) ^[72]	36	8–13	GAD, SAD, SOC, OCD	CBT CBT – Group	Treatments were about equally effective.
Ost et al. (2001) ^[73]	60	7–17	SPEC	CBT CBT + Parent WL	Both treatments were effective but not different than one another; treatment gains maintained at approximately 1 year.
Shortt et al. (2001) ^[39]	71	6–10	SAD, SOC, GAD	CBT + family treatment –group WL	CBT was superior to WL
Southam-Getrow et al. (2001) ^[74]	135	7–15	SAD, GAD, SOC, AD	Examined correlates of outcome in CBT	Poorer treatment outcome was related to older age at treatment, more internalizing symptoms at pretreatment, and higher levels of maternal depression. Most demographic variables did not predict outcome.
Waters et al. (2001) ^[75]	7	10–14	OCD	CBT + family treatment	Six of the seven youth were diagnosis free at post-treatment.
Ginsburg & Drake (2002) ^[22]	9	14–17	Any anxiety disorder except PTSD or OCD	CBT Attention Control Placebo	CBT was superior to placebo.

Authors Year	N	Age (in years)	Diagnosis or Symptom Clusters	Treatment Conditions	Results
Heyne et al. (2002) ^[76]	61	7–14	Anxiety-based school refusal	CBT Parent and teacher training CBT + Parent and teacher training	All treatments were effective but CBT for the child only was not as good at increasing school attendance in the short-term. The combined treatment did not result in a significant benefit.
Manassis et al. (2002) ^[77]	78	8–12	GAD, SAD, SPEC, SOC, PD	CBT CBT – Group	Few differences between the two treatments.
Muris et al. (2002) ^[78]	30	9–12	SAD, GAD, SOC	CBT – Group Emotional disclosure WL	CBT superior to emotional disclosure and WL; emotional disclosure and WL did not result in significant improvements.
Nauta et al. (2003) ^[79]	79	7–18	SAD, SOC, GAD, PD	CBT CBT + family treatment WL	CBT treatments were both superior to WL.
Pina et al. (2003) ^[80]	131	6–16	SPEC, SOC, AG, GAD, OAD	Examined ethnicity as a predictor of treatment outcome in CBT	Treatment outcomes and maintenance of treatment gains were similar for Latino and European-American youth.
Rapee (2003) ^[81]	165	7–16	SAD, GAD, SOC, SPEC, OCD, PD	CBT + family treatment -Group	Treatment was about equally effective for youth with or without comorbid disorders.
Barrett et al. (2004) ^[82]	77	7–17	OCD	CBT + family treatment - Individual CBT + family treatment - Group WL	Both treatments were effective but not different than one another.
Flannery-Schroeder et al (2004) ^[83]	38	15–22	GAD, SAD, AD either with or without a comorbid externalizing disorder	CBT - follow-up study	Treatment was about equally effective for both those with and without an externalizing disorder at approximately 7 ½ years.
Gallagher et al. (2004) ^[84]	23	8–11	SOC	CBT – Group WL	Treatment was effective even through it was abbreviated (3 weeks).
Kendall et al. (2004) ^[85]	86	15–22	OAD, SAD, AD	CBT – follow-up study	Treatment gains were generally maintained after approximately 7 ½ years.
Manassis et al. (2004) ^[86]	43	Mean = 16.5	Any anxiety disorder	CBT – follow-up study	Males, youth diagnosed with GAD, and those with less severe anxiety at pretreatment had better outcomes at 6–7 year follow-up.
POTS Team (2004) ^[87]	112	7–17	OCD	CBT Sertraline, CBT + sertraline Pill placebo	All active treatments better than placebo, combined treatments better than CBT or sertraline alone; CBT and sertraline did not differ.
Asbahr et al. (2005) ^[88]	40	9–17	OCD	CBT-Group Sertraline	Both treatments were effective but CBT resulted in lower relapse rates.
Baer & Garland (2005) ^[89]	12	13–18	SOC	CBT – Group WL	CBT was superior to WL
Beidel et al. (2005) ^[90]	29	11–18	SOC	CBT – follow-up study	Treatment gains were generally maintained after approximately 3 years.
Berstein et al. (2005) ^[91]	61	7–11	SAD, GAD, or SOC	CBT – Group CBT + Parent training - Group	Both treatments were effective, some benefit with addition of parent training.

Authors Year	N	Age (in years)	Diagnosis or Symptom Clusters	Treatment Conditions	Results
Flannery-Schroder et al. (2005) ^[92]	30	9–15	SAD, GAD, or SOC	No treatment control CBT – Group CBT – Group	Treatment was about equally effective for both groups at approximately 1 year.
Masia-Warner et al. (2005) ^[93]	35	13–17	SOC	CBT – Group WL	CBT superior to WL.
Beidel et al. (2006) ^[94]	31	13–20	SOC	CBT – follow-up study	Treatment gains were generally maintained after approximately 5 years. Treated group was not different on a number of measures than youth who had never had social phobia.
Lyneham & Rapee (2006) ^[95]	100	6–12	GAD, SAD, SOC, OCD, SPEC, PD	CBT – Bibliotherapy + email contact CBT – Bibliotherapy + telephone contact CBT – Bibliotherapy + client initiated contacts WL	Bibliotherapy with therapist initiated telephone contact produced the best outcomes.
Rapee et al. (2006) ^[96]	267	6–12	GAD, SOC, SAD, SPEC, OCD, PD	CBT – Group CBT – Bibliotherapy WL	Both treatments superior to WL but bibliotherapy not as effective as standard CBT.
Spence et al. (2006) ^[97]	72	7–14	GAD, SAD, SOC, SPEC	CBT CBT delivered through internet WL	Both treatments were superior to WL but not different than one another; gains maintained at approximately 1 year
Wood et al. (2006) ^[98]	40	6–13	SAD, GAD, SOC	CBT CBT + family treatment	Both treatments were effective; some evidence of additional benefit of family treatment.
Beidel et al. (2007) ^[99]	60	7–17	SOC	CBT Fluoxetine Placebo	Both treatments were superior to placebo but CBT was superior to fluoxetine and the only treatment better than placebo for improving social skills.
Chalfant et al. (2007) ^[100]	47	8–13	High Functioning Autism Spectrum Disorders + an anxiety disorder	Family based CBT – Group WL	CBT was effective in treating anxiety disorders in youth comorbid with high-functioning autism spectrum disorders.
de Groot et al. (2007) ^[101]	29	7–12	Any anxiety disorder	CBT CBT- Group	Treatments were about equally effective.
Levy et al. (2007) ^[102]	69	8–14	Aggression comorbid with SAD, GAD, SOC, SPEC, or PD	CBT – for anxiety only CBT – for anxiety and aggression	Both treatments were effective; no significant benefit with the combined treatment.
March et al. (2007) ^[103]	112	7–17	OCD with or without comorbid tics	CBT Sertraline SBT + sertraline Placebo	Medication alone was less effective for youth with tics; comorbid tics did not negatively affect outcomes for CBT. In general the combination treatment resulted in the best outcome for youth with or without tics.
Masia-Warner et al. (2007) ^[104]	36	14–16	SOC	CBT – Group Attention control	CBT superior to attention control treatment.
Smith et al. (2007) ^[105]	24	8–18	PTSD	CBT WL	CBT superior to WL; outcome partially mediated by cognitive change.

Authors Year	N	Age (in years)	Diagnosis or Symptom Clusters	Treatment Conditions	Results
Storch et al. (2007)[106]	40	7-17	OCD	CBT – Intensive CBT – Weekly	Some short-term advantage for the intensive treatment but both treatments about equal at three months posttreatment.
Victor et al (2007)[107]	61	7-11	SAD, GAD, or SOC	CBT – Group No treatment control	Higher family cohesion was related to better outcome in CBT group.
Berstein et al. (2008)[26]	61	7-11	SAD, GAD, or SOC	CBT – Group CBT + Parent training - Group No treatment control	Treatment gains were generally maintained after approximately 1 year; some evidence of added benefit with addition of parent training.
Kendall et al (2008)[108]	161	7-14	SAD, SOC, GAD	CBT Family based CBT Family based education support	CBT groups were superior to family based support in reducing principal anxiety disorder. Individual CBT was superior to family based CBT on some measures but family based CBT was superior to individual CBT if both parents had an anxiety disorder.
Warner et al. (2009)[109]	7	8-15	Anxiety disorder + somatic complaints	CBT	All children responded to treatment.
Waters et al. (2009)[110]	60	4-8	SPEC, SOC, GAD, SAD	CBT – Parent only CBT – Parent + child WL	Both treatments superior to WL but not significantly different than one another; gains were generally maintained after approximately 1 year
Cobham et al. (2010)[111]	60	10-17	SAD, OAD, GAD, SPEC, SOC, AG	CBT CBT + family treatment – follow-up study	Children were more likely to be diagnosis free at 3 year follow-up if they had been in the CBT + family treatment condition, regardless of parents' level of anxiety at pretreatment.
Garcia et al. (2010)[112]	112	7-17	OCD	CBT Sertraline CBT + Sertraline Placebo	Less severe OCD, fewer externalizing symptoms, less family accommodation, and more insight was predictive of better treatment outcome.

Note: AD = avoidant disorder, AG = agoraphobia, BT = behavior therapy, CBT = cognitive-behavioral therapy, EMDR = eye movement desensitization and reprocessing therapy, GAD = generalized anxiety disorder, n = sample size, OAD = overanxious disorder, OCD = obsessive-compulsive disorder, PD = panic disorder, PTSD = post-traumatic stress disorder, SAD = separation anxiety disorder, SOC = social phobia, SPEC = specific phobia, WL = waitlist.