

# Review of Evidence-Based Psychotherapies for Pediatric Mood and Anxiety Disorders

Helen Verdeli<sup>\*1</sup>, Laura Mufson<sup>2,3</sup>, Lena Lee<sup>4</sup> and Jessica A. Keith<sup>5</sup>

<sup>1</sup>Teachers College, Columbia University, New York, USA

<sup>2</sup>Department of Clinical Psychology, New York State Psychiatric Institute, USA

<sup>3</sup>Columbia University College of Physicians and Surgeons, New York, USA

<sup>4</sup>Doctoral Program in Clinical Psychology, City University of New York, USA

<sup>5</sup>Doctoral Program in Clinical Psychology, Columbia University, New York, USA

**Abstract:** Aim: To review the literature on randomized clinical trials for pediatric anxiety and depression, and evaluate their quality using the criteria developed by the American Psychological Association. Method: Inclusion of randomized controlled clinical trials in the medical and psychological literature. Results: Research evidence thus far suggests that CBT is a probably efficacious treatment for depression in children. None of the CBT protocols for depressed adolescents (taken independently) meet criteria for a well-established treatment, however, if the different protocols are taken as an aggregate, then CBT meets well-established treatment criteria. In addition, IPT-A is a well-established treatment for adolescent depression. CBT is the best established treatment for a number of child and adolescent anxiety disorders. Conclusion: While there has been an increase in the number of clinical trials of psychotherapeutic interventions for depression and anxiety as well as support for empirically-based treatments, the scope of these studies is still limited and research is still needed to examine the transportability of these treatments to diverse community settings.

## INTRODUCTION

Treatment research for pediatric mood and anxiety disorders significantly lags behind its adult counterpart. It is mostly in the last 2 decades that the majority of the clinical trials of medication and psychotherapy for mood and anxiety disorders in youth have been conducted. Unfortunately, this increasing body of efficacy research is still a work in progress, with only a limited number of treatments scientifically ready for broader community use. In addition, our understanding of barriers to access and effectiveness of treatment in community settings has been fragmented due to the paucity of intervention research in the community (effectiveness research). The recent debate on the efficacy and safety of SSRIs for pediatric mood disorders increases the need to provide the pediatric population with good treatment alternatives such as efficacious psychotherapies. In this context, the critical examination of the efficacy of existing psychotherapies for pediatric mood and anxiety disorders is of public health significance.

The terms “evidence-based” and “empirically-supported” therapies have been used interchangeably in the past [1]. The latter term has been used in conjunction with the American Psychological Association Division 12 criteria and is used in this paper [2]. The current paper will review the empirical support for psychotherapeutic prevention and intervention for mood and anxiety disorders in children and adolescents. Specifically, it aims to: 1) critically assess psychosocial empirically-supported treatments (EST) for these 2 groups of

psychiatric conditions, organized by disorder and by age group; 2) review the educational and training background of the therapists who participated in the studies, and its implications for transportability and dissemination; and 3) examine the extent to which the definitional criteria developed by the American Psychological Association (Division 12) for EST apply to the psychotherapies reviewed.

## Guidelines for Interpreting the Evidence

Empirically Supported Treatments: According to the definition of the American Psychological Association (Division 12) for EST, a “well-established” treatment meets 2 criteria [1-3]:

1. In at least 2 scientifically sound between-group studies with adequate sample sizes, it must either be superior (statistically significant) to pill, psychological placebo, or another treatment, or be equivalent to an already established treatment in studies with adequate sample size. Alternatively, the treatment may demonstrate efficacy in a large series of single-case design studies ( $n > 9$ ) with good experimental methods and a comparison group as described above.
2. Experiments must be conducted in accordance with a treatment manual, sample characteristics must be detailed, and at least 2 different research teams must demonstrate intervention effects.

To be characterized as “probably efficacious” a treatment must meet the above criteria with the exception of the criterion of replication of efficacy findings by independent investigators OR be superior to a wait list condition in at least 2 studies (not necessarily by independent investigators) [1-3].

\*Address correspondence to this author at the Clinical Psychology Program, Box 102, Teachers College, 525 W 120<sup>th</sup> Street, New York, NY 10027, USA; Tel: 212-678-3099; Fax: 212-212-543-6660; E-mail: hv2009@columbia.edu

**Age Groups Included:** The studies included in this review have been conducted with children (ages 6-11 years) and adolescents (12-18 years). Some studies have been conducted with only one of these age groups and other studies have included both. We classified the latter studies according to the mean age of the participants or, if this information was not available, according to the mean of the age range provided.

### Disorders Included

1. **Mood disorders:** Studies are included in which the child and adolescent participants were diagnosed with Major Depressive Disorder, Depressive Disorder NOS, Dysthymic Disorder, Bipolar I Disorder, Bipolar II Disorder, and/or subsyndromal depression symptoms.
2. **Anxiety disorders:** Studies are included in which the participants were diagnosed with Panic Disorder and/or Agoraphobia, Social Phobia, Specific Phobia, Obsessive Compulsive Disorder, Posttraumatic Stress Disorder, Generalized Anxiety Disorder, and/or Separation Anxiety Disorder. In addition, studies with psychotherapies targeting subsyndromal conditions of any of the above disorders have been included.

**Studies Included:** Eligible studies were identified through searches using Medline and PsycINFO databases (years 1970-2005) applying the following terms: Major Depressive Disorder, depression, anxiety disorders, Panic Disorder, Agoraphobia, Social Phobia, Simple and Specific Phobia, Obsessive Compulsive Disorder, Posttraumatic Stress Disorder, Generalized Anxiety Disorder, Separation Anxiety Disorder, child/adolescent/pediatric/juvenile, psychotherapy. In order to be included in this review, studies were required to be controlled clinical trials with treatment techniques specified in a manual, and whose design included a formal assessment process with independent evaluators. In addition, they were required to include age groups and disorders as specified above. The results of this review are summarized in tables representing each EST per disorder and age group.

There are 2 important issues to keep in mind when reviewing EST literature critically: publication bias and the problem of inadequate control conditions. These issues are significant because they can bias the public's view of evidence for treatments by limiting access to certain studies and not setting up reasonable and valid comparison treatments.

**Publication Bias:** The major source of evidence for both psychotherapy and psychopharmacology interventions is provided by peer-reviewed publications of clinical trials. However, studies with equivocal or negative findings for the treatment of interest tend to be submitted less frequently [4, 5] and chosen for publication by editors less frequently than those with positive results, leading readers to receive biased information. Such biases in presenting negative results from clinical trials severely threaten the validity of published research [6].

**Inadequate control conditions:** Psychotherapy treatment studies use the double blind randomized placebo control condition design to control for the effects of common treat-

ment factors on treatment outcome. The assumption is that if the target treatment produces better results than the placebo control condition, these results are attributable to the specific active and unique ingredients of the treatment of interest. The goal is to emulate the role placebos play in the medical model of testing drug efficacy. However, the selection of an appropriate control condition for a psychosocial treatment is a complicated issue and represents a key methodological challenge in psychotherapy research [7]. Initial testing of a psychotherapy usually involves comparison of the treatment of interest to a wait list control condition or a minimal treatment condition, in which some patients receive either very minimal or no therapy contact. This is the most common comparison of cognitive behavior therapy (CBT) trials for depressed and anxious prepubertal and adolescent youth (see Tables). However, many psychotherapy researchers consider the comparison between an experimental treatment and a wait list control meaningless, since a wide range of interventions (including faith healing) may be more mobilizing than no intervention.

Another approach selected to create a psychological placebo is the attention control condition which is used as a comparison to address whether the techniques specific to a particular treatment model are the active ingredients rather than the non-specific factors. However, this control treatment may not be equivalent to the active treatment in dosage, intensity, attention, and credibility. An extension of the attention control approach is the use of supportive psychotherapy as the comparison treatment. This is usually characterized in a brief manual that consists of guidelines prohibiting advice-giving or the use of active ingredients of the treatment of interest.

More recently, the use of a treatment-as-usual (TAU) comparison has gained acceptance in the transition from efficacy to effectiveness research. This comparison may address whether the treatment of interest is superior to the care usually delivered in that setting, but the 2 may not actually be comparable in amount and intensity of treatment offered. Another drawback to using a TAU comparison is that it may be difficult to characterize the treatment techniques used in TAU and thus difficult to explain the findings.

There are therefore several challenges facing psychosocial researchers in selecting control conditions. Ideally, all factors except those purported to be the active ingredients of the target treatment must be made equivalent (i.e., structurally indistinguishable from the target treatment); participants and evaluators involved in the study should be blind to the treatment conditions, which is near impossible; and the credibility of the comparison treatment must be comparable to the active treatment [8]. Very few studies meet these criteria. It is important to review these aspects of the study designs in order to best understand the implications of the results.

What follows is a review of the clinical trials literature on pediatric depression and anxiety disorders. The review presents these studies in light of the limitations discussed above and within the framework of the criteria for EST as it stands currently [1-3]. The end result is an up-to-date snapshot of the state of the art in psychotherapy research for children and adolescents with depression and anxiety disorders.

## PEDIATRIC DEPRESSION

Depression affects a large portion of children and adolescents in the United States: 2% of children and 8-10% of adolescents suffer from a depressive disorder or clinically significant depressive symptoms [9, 10]. Depression in youth raises the risk for subsequent depression in adulthood, suicide, substance use, and impairment in social and academic life [11, 12]. Although early treatment of pediatric depression is imperative, the actual rate and amount of treatment (pharmacologic as well as psychotherapeutic) provided in outpatient community settings has been minimal. In the 4-year (1996-1999) Medical Expenditure Panel survey of treatment use by children and adolescents representing the general population in the U.S., Olfson and colleagues showed that only 1% of children and adolescents receive treatment for depression; that substantially fewer African American, Hispanic and uninsured youth received treatment; and that the majority (79%) of the treated youth received some form of psychotherapy whereas half of the youth received antidepressant medication [13]. The average number of psychotherapy sessions delivered for pediatric depression treatment was approximately 8 per year. The authors noted that medication was used much more frequently than expected based on practice guidelines.

When comparing the results of studies, it is important to consider the criteria used to define presence of depression, depression severity, and depression remission. The inclusion criteria for all studies reviewed is depressive symptomatology; however, this is assessed by different means including clinician and self-report measures, with different cut-off scores for severity. Not all studies require a DSM diagnosis of major depression or dysthymia, thus varying the baseline severity of the depression being treated. It is possible that treatments found to be efficacious for less depressed participants may not be efficacious for more severely depressed individuals. Similarly, studies use different methods to assess outcome, including self-report and clinician-administered measures of depressive symptomatology. The more rigorous outcomes are characterized by percentage of participants recovered from depression (defined either by absence of clinical diagnosis or by scores on depression scales, below a certain cut-off maintained over a period of time).

### Psychotherapy for Pediatric Depression

Although psychotherapy for the depressed pediatric population constitutes the majority of outpatient treatment [13], it is unclear what types of modalities and techniques are practiced and to what degree they represent EST practices. It is known that the 3 professional groups conducting most of the psychotherapy (psychiatrists, psychologists, and social workers) tend not to receive education and supervision in these EST during their training years [14].

The majority of psychotherapy studies for pediatric depression include case studies and single participant designs. Randomized clinical trials with well-characterized treatment goals, strategies, and process (through the use of a psychotherapy manual), and well-specified design and participant characteristics have only appeared relatively recently. The psychotherapy studies reviewed for depressed children and adolescents (Tables 1 to 5) are organized under the 2 psychotherapies that fulfill criteria for "probably efficacious" and

"well established" treatments for pediatric depression, namely Cognitive Behavior Therapy (CBT) and Interpersonal Psychotherapy (IPT). The majority of the trials are based on a variant of CBT, with a small but increasing number of trials on IPT for depressed adolescents (IPT-A). Psychoanalytic/ psychodynamic psychotherapy was not included since it has not been tested in randomized trials for depressed children and adolescents. One of the reasons for this may be the difficulties in manualizing psycho-analytic treatment. Family therapy was also not included, due to the absence of trials with clinical outcomes (although other outcomes such as treatment adherence and improvement of family attitudes about the disorder have been reported) [15, 16].

### CBT and Variants

CBT is the psychotherapy with the largest number of published studies in adult, adolescent, and childhood depression. CBT for depressed youth targets 2 central vulnerabilities of this population: 1) deficits in behavioral skills for social involvement, support, and affect regulation, and 2) maladaptive and distorted cognitions [17]. It has been shown that depressed youth have difficulties participating in pleasurable activities and are more adversely affected by stressful life events. They also tend to experience more negative and hopeless thoughts and have lower levels of perceived competence compared to non-depressed adolescents [18, 19]. The different CBT treatments typically involve combinations of some or all of the following skill-building components [21,34]:

Behavioral activation involves identification of an increase in pleasurable and mastery activities. Mood and event-scheduling charts are typically used to help the planning of these rewarding activities.

Cognitive restructuring focuses on identifying and transforming cognitive distortions, which involve inaccurate and/or unhelpful beliefs, rules, or cognitive schemata about the depressogenic situation.

Problem solving involves the following stages: (1) identifying the specific problem; (2) generating options for dealing with the problem (at this stage one should not evaluate the feasibility or desirability of these options); (3) evaluating each option by exploring costs and benefits; (4) determining and implementing one or a combination of the most feasible/useful options; and (5) evaluating the result.

Affect regulation involves the adaptive modulation of affect expression and experience. Behaviorally, it is translated into the identification of different points in an escalating affective state (e.g., point of action, point of no return/boiling point) and the planning of adaptive action for each one.

Communication skills/conflict resolution involves helping the person refine interpersonal skills such as active listening, conveying empathy, making requests for change, disagreeing while still maintaining the relationship, etc.

There are 2 main models for CBT for pediatric depression. The Lewinsohn and Clarke model that is the basis for the Coping with Depression Course adheres to the principle that depression results from learned maladaptive behaviors and thinking patterns that interact with the person's biological diathesis for depression [20]. Therefore, the model fo-

cuses on learning new, more adaptive skills that will replace the maladaptive patterns through increased reinforcement for the new positive skills. This is consistent with the social learning model of depression [20]. Lewinsohn's treatment for depression has focused on helping adolescents to obtain the needed positive reinforcement to break the depressive feedback cycle by working to increase pleasurable activities, teaching problem-solving and social skills, training assertiveness, and teaching emotion regulation [21]. The model also incorporates elements from Beck's theory of depression and its focus on negative and maladaptive schemas of self, the world, and the future. In addition to addressing the reinforcement paradigm, the Coping with Depression course focuses on exploring the validity and usefulness of depressogenic beliefs that can lead individuals to interpret their world negatively. The model promotes the idea that people can get depressed through multiple, different pathways and that an effective treatment must address all of these pathways including cognition, positive reinforcement, and skill building to overcome depression and prevent possible future episodes.

Another model of depression focuses on skill deficits and habits that may lead to and prolong depression in youth. These skill deficits and negative cognitions including learned helplessness may lead to unsuccessful interpersonal situations that can result in depression symptoms. The model allows for individual differences in whether skill deficits or thoughts play a larger role in the person's depression; the treatment can be tailored accordingly. Weisz and colleagues developed a treatment intervention called Primary and Secondary Control Enhancement Training (PASCET) based upon this model. They identify primary control as efforts to cope by changing the conditions to meet a person's expectations. Secondary control is defined as the efforts made to adjust oneself to fit more successfully with the objective conditions. Consequently, the children learn to change conditions that are modifiable (such as increasing one's number of friends and setting achievement goals) and change themselves in conditions that are not modifiable (such as parental disputes/separation, family relocating, etc.) [22]. The skill deficits fall into the primary control work and the dysfunctional thoughts fall into the secondary control work. The intervention teaches a multitude of primary and secondary control coping strategies for change allowing the therapist and patient to choose what would be most helpful for the specific individual. PASCET is an approximately 15-session treatment program for depressed youth ages 8-15 years.

### **CBT Evidence for Prepubertal Depression**

The 6 randomized clinical trials examining CBT for depressed children are listed in Table 1. The trials have small sample sizes with only one trial including over 50 participants [23]. All studies were delivered in a group format and were conducted in primary schools with treatment duration ranging from 8 to 26 sessions. The children who participated in these studies were 7 to 12 years old, and showed elevated levels of depression in self-report measures, but did not necessarily meet diagnostic criteria for depressive disorders.

Two of these trials used attention control conditions [24, 25], 3 others used wait list and no treatment control [23, 26, 27], and one compared CBT to counseling as usual [28]. The

therapists who participated in these trials were either graduate psychology students or doctoral-level psychologists.

Five of these trials showed a statistically significant reduction of depression in the group CBT condition when compared to the control condition [23, 24, 26-28]. The one trial that was negative [25] included younger participants (7 year olds), raising the question of whether CBT is less efficacious with younger children due to its cognitive skill requirements. In the positive trials, therapeutic gains were reportedly maintained over a 2-month follow-up [27] and over a 9-month follow-up [23]. In the Stark *et al.* study [28], although, the therapeutic gains were maintained at 7 month follow-up, the differences between groups disappeared. It should be noted that all of these studies used completer (as opposed to intent-to-treat) analyses, which tends to inflate the therapeutic effect by excluding the drop-outs. The risk of publication bias in the small size studies described above also needs to be taken into account. At the same time, the small size of these studies makes them more susceptible to type II error, and renders the detection of significance in the results all the more noteworthy.

At this time, research evidence suggests that group CBT is superior to wait list and traditional counseling for children ages 8 to 12, however, evidence that it is superior to an attention control condition is equivocal [24, 25]. In addition, the therapeutic gains only lasted for a few months. Group CBT, as specified by Stark and colleagues [27,28], meets criteria for a probably efficacious psychotherapy (as described above) for depressed children since there were 2 trials (although not by independent investigators), one involving an active treatment and the other a wait list condition.

### **CBT Evidence for Adolescent Depression**

Sixteen randomized clinical trials of CBT for depressed adolescents have been identified (Table 2). These studies include individual CBT (7 studies), group CBT (7 studies), bibliotherapy (one study) [29], and a quality improvement treatment for depression that incorporated CBT techniques as warranted (one study) [30]. The number of sessions in the reviewed CBT studies for depressed adolescents ranged from 5 to 21, but the majority of the studies were conducted within 12 to 16 sessions. Compared to CBT trials for prepubertal children, the majority of CBT trials for adolescents have a larger sample size (12 have more than 50 participants) and 5 include more than 100 participants [30-34]. The largest study in pediatric psychiatric research so far, the TADS [34], had the following 4 conditions: CBT alone, fluoxetine alone, CBT and fluoxetine, and pill placebo.

Regarding the setting and population of the reviewed trials, 6 were conducted in a community setting (2 in a school, 3 in an HMO, 1 in a county juvenile justice department) [30, 32, 35-38]. Two others involved community samples but were conducted in a university setting [21, 33]. Excluding the bibliotherapy study, the other 7 trials involved clinical samples and were conducted in a university clinic setting. These studies highlight that the origin of the sample is important information for interpreting results because it can reflect differences in severity and chronicity of illness as well as motivation for recovery. Brent *et al.* found that participants recruited through a clinic showed lower recovery

Table 1. CBT Clinical Trials for Depression in Prepubertal Children

Study	Treatment Modality	Number of Sessions	Control Condition	Age of Ss	N	Diagnosis	Setting	Therapist Credentials	Results
Asarnow, Scott, & Mintz, 2002	Child Group CBT sessions followed by a family education session at the end of treatment	10 sessions (9 child CBT, 1 family education)	Wait List	4th – 6th grade	23	Elevated depressive symptoms (CDI > 7)	Primary school	1 clinical psychology graduate student	Compared to the Wait List group, children in the CBT group showed significantly greater reductions in depressive symptoms, negative cognitions, and depressive and anxious responses to stress. No information given about follow-up.
Butler, Mietzitis, Friedman, & Cole, 1980	2 types of Group CBT: Role Play vs. Cognitive Restructuring	10 sessions	Attention Placebo and Wait List	10-12	56	Depression assessed by self-report measures	Primary school	Graduate students in applied psychology	Both CBT groups showed significant improvement compared to the Attention Placebo and Wait List control conditions. Children in the Role Play condition showed the most improvement, followed by children in the Cognitive Restructuring condition. No information given about follow-up.
Liddle & Spence, 1990	Group CBT (Social Competence Training)	8 sessions	Attention Placebo (a drama program) and Wait List	7-12	31	DSM-III-R depression (CDRS > 40 and CDI > 19)	Primary school	Second year graduate clinical psychology trainee	CBT did not produce significantly greater reductions in depression than either the Attention Placebo or Wait List conditions at post-treatment or at 8-week follow-up.
Stark, Reynolds, & Kaslow, 1987	2 types of Group CBT: Self-control Therapy vs. Behavioral Problem Solving Therapy	12 sessions	Wait List	9-12	29	Depressive symptoms labeled as dysphoria (CDS > 13)	Primary school	1 graduate level trainee, 1 Ph.D. psychologist	Compared to the Wait List group, children in both active treatments reported significantly fewer depressive symptoms at post-treatment; treatment gains were maintained at 8-week follow up. Neither active intervention appeared superior overall. Improvements in depressive symptoms failed to generalize to home environment. Both CBT groups reported fewer symptoms of anxiety at post-treatment.
Stark, Rouse, & Livingston, 1991	Group CBT (Self Control Therapy) and monthly family meetings	24-26 sessions	Counseling as Usual	9-13	24	MDD, Dysthymia, DDNOS, and elevated depression without diagnosis	Primary school	Graduate students and 1 Ph.D. psychologist	Both treatments resulted in significant reductions of depression. Compared to counseling, CBT lead to significantly fewer depressive symptoms and fewer depressive cognitions. At 7-month follow-up the differences between treatments disappeared (during follow-up there was a significant attrition of participants).
Weisz, Thurber, Sweeney, Proffitt, & LeGagnoux 1997	Group CBT (Primary and Secondary Enhancement Training)	8 sessions	No Treatment	8-12	48	Mild to moderate depression (CDI > 10 and CDRS-R > 33)	Primary school	Doctoral-level students in clinical psychology; 1 licensed Ph.D. psychologist	CBT was significantly more effective than the No Treatment control in reducing depressive symptoms in children. Effects were maintained at 9-month follow-up.

Table 2. CBT Clinical Trials for Depression in Adolescents

Study	Treatment Modality	Number of Sessions	Control Condition	Age of Ss	N	Diagnosis	Setting	Therapist Credentials	Results
Ackerson, Scogin, McKendree, & Lyman, 1998	Bibliotherapy (book assigned "Feeling good" by Burns)	Book had to be read over 4 weeks	Wait List	12-18	30	Mild and moderate depression (CDI $\geq 10$ , HAM-D $\geq 10$ )	No restriction where the book could be read	Not applicable	Compared to Wait List, CBT Bibliotherapy resulted in significantly greater reduction of depression in self-report measures. Parents' measures on the CBCL did not show difference between groups.
Asarow, Jaycox, Duan, LaBorde, Rea, Murray, Anderson, Landon, Tang, & Wells, 2005	Quality Improvement intervention aimed at increasing access to evidence-based depression treatments, including CBT	From 0-10 CBT sessions, conducted over a 6-month period	Usual Care	13-21	418	Sub-syndromal and MDD (endorsed "stem items" for MDD or Dysthymia; 1 week or more of past month depressive symptoms; CES-D > 15)	HMO	Case managers conducting the quality improvement intervention had master's or doctoral degrees in a mental health field or nursing	At 6-month follow-up, Quality Improvement patients had significantly fewer depressive symptoms, significantly higher mental health quality of life, and significantly greater satisfaction with mental health care, compared to Usual Care patients.
Brent, Holder, Kolko, Birmaher, Baugher, Roth, Iyengar, & Johnson, 1997	Individual CBT or Systemic Behavior Family Therapy (SBFT)	12-16 sessions	Non-directive Supportive Therapy (NST)	13-18	107	DSM-III-R diagnosis of MDD	University clinic	Master's degree in mental health and a median of 10 years of clinical experience	Compared to SBFT and NST, CBT emerged as more efficacious for adolescent MDD in clinical settings. There were no differences in suicidality and functioning among the groups. At 2-year follow-up, there were no differences among the 3 groups in recurrence or relapse.
Clarke, Rohde, Lewinsohn, Hops, & Seeley 1999; Lewinsohn, Clarke, & Rohde, 1994	Group CBT or Group CBT plus a parent group; 4 month booster sessions included as a follow-up for a randomly-assigned portion of the sample	16 sessions	Wait List	14-18	123; 96 in follow-up	Current DSM-III-R diagnosis of MDD or Dysthymia	University clinic	Advanced graduate psychology and social work students, and master's or doctoral level clinicians	Compared to the Wait List condition, CBT groups showed higher depression recovery rates (66.7% vs. 48.1%) and greater reduction in self-reported depression. No significant differences were found between the adolescent-only and adolescent + parent conditions. During the 2-year follow-up adolescents who were still depressed at termination and received booster sessions had an initially higher recovery rate than the assessment only group, but subsequently the assessment only group showed high recovery rates.
Clarke, Hornbrook, Lynch, Polen, Gale, O'Connor, Seeley, & Debar, 2002	Group CBT for depressed adolescent offspring of depressed parents	16 sessions	Usual HMO Care	13-18	88	Current DSM-III-R diagnosis of MDD and/or Dysthymia	HMO	2 therapists trained in the approach (credentials not specified)	No significant advantage was found in using the CBT program over Usual HMO Care. Both treatments lead to clinical improvement.

(Table 2) contd....

Study	Treatment Modality	Number of Sessions	Control Condition	Age of Ss	N	Diagnosis	Setting	Therapist Credentials	Results
Clarke, Debar, Lynch, Powell, Gale, O'Connor, Ludman, Bush, Lin, Von Korff, & Hertert, 2005	Individual CBT plus Treatment as Usual (TAU) administration of SSRI by PCP	5-9 sessions	TAU administration of SSRI by PCP	12-18	152	Current DSM-IV diagnosis of MDD	HMO	Master's level psychologists with previous CBT experience	No significant differences were found between CBT and TAU for depression recovery or relapse. A non-significant trend ( $p=0.07$ ) favored the CBT group for reduction of depression symptomatology as measured by the CES-D. At 1-year follow-up, compared to TAU, CBT had significant advantages in increasing self-report general health perception and in reducing outpatient visits and days supply of medication.
Fine, Forth, Gilbert, & Haley, 1991	Group CBT (Social Skills Training)	12 sessions	Group Supportive Psycho-therapy	13-17	66	Current DSM-III-R diagnosis of MDD and/or Dysthymia	University clinic	1 psychiatrist, 1 psychiatric resident, 2 psychologists, 3 social workers, 1 psychiatric nurse	Decrease in depression was significantly larger in the Supportive Psychotherapy compared to CBT group. At 9-month follow-up, differences between groups disappeared due to delayed improvement of the CBT group.
Kahn, Kehle, Jensen, & Clark, 1990	Group CBT	12 sessions	Relaxation Training, Self-modeling Treatment (SM), and Wait List	10-14 (Mean 12.1)	68	Moderate to severe depression based on a multi-stage assessment that included self-report measures and a structured clinical interview	School	1 school psychologist and 1 school counselor	Compared to Wait List, all active treatment groups showed a significant decrease in depressive symptoms and an increase in self-esteem. Subjects in the CBT group showed the most improvement. Treatment gains were maintained at 4-week follow-up for the CBT group. 50% of the SM group relapsed.
Lewinsohn, Clarke, Hops, & Andrews, 1990	Group CBT Adolescent and Parent vs. Adolescent Only	14 sessions; Parent group consisted of 7 sessions	Wait List	14-18	59	DSM-III diagnosis of MDD or RDC diagnosis of current minor or intermittent depressive disorder	Community samples seen in a university clinic	Graduate students in clinical, counseling, educational psychology, or social work	CBT subjects improved significantly on depression measures compared to the Wait List subjects. These findings were maintained throughout the 2-year follow-up. Parental involvement did not lead to significant differences in depression.
Reed, 1994	Individual Structured Learning Therapy (SLT)	6 sessions	Art and imagery exercises	14-19	18	DSM-III-R MDD or Dysthymia	University setting	Therapists (no information on credentials)	SLT was significantly more effective at reducing depression in males compared to the art and imagery exercises. Female subjects did not improve significantly. No information provided about follow-up.
Reynolds & Coats, 1986	Group CBT	10 sessions	Wait List or Relaxation Training	Mean 15.7	30	Depression indicated by BDI $\geq 12$ ; RADS $\geq 72$ ; and BID and BID (Bellevue Index of Depression) $\geq 12$	High school	School psychology doctoral student, employed as school psychologist for 4 years, experienced in behavior therapy	Both CBT and Relaxation Training were superior to Wait List in the reduction of depressive symptoms at post-test and at 5-week follow-up. There was no significant difference between active treatments in their effectiveness for reducing depression.

(Table 2) contd.....

Study	Treatment Modality	Number of Sessions	Control Condition	Age of Ss	N	Diagnosis	Setting	Therapist Credentials	Results
Rossello & Bernal, 1999	Individual CBT; Individual IPT-A	12 sessions	Wait List	13-18	71	DSM-III-R diagnosis of MDD	Clinic	Advanced graduate psychology students with 3 years of clinical experience	IPT-A and CBT groups improved more than the control group. There was no significant difference in the primary measure between CBT and IPT-A. IPT-A showed the greatest improvement in social functioning and self-esteem. No significant differences were found between IPT-A and CBT groups at 3-month follow-up.
Rohde, Clarke, Mace, Jorgensen, & Seeley, 2004	Group CBT for depressed adolescents with comorbid conduct disorder	16 sessions	Life Skills/Tutoring	13-17	93	DSM-IV diagnosis of MDD and Conduct Disorder	County juvenile justice department	Professionals with master's degrees in mental health	MDD recovery rate was significantly greater in the CBT group (39%) compared to the Life Skills/Tutoring control (19%) at termination but not at 6- and 12-month follow-up. The CBT group had significantly greater reduction in depression symptoms and greater improvement in social skills at termination.
Treatment of Adolescent Depression Study (TADS), 2004 (report on first 12 weeks of treatment)	Individual CBT, Individual CBT with Fluoxetine, and Fluoxetine alone	15-21 sessions (acute), biweekly and monthly maintenance	pill Placebo	12-17	439	DSM-IV MDD, moderate-severe, CDRS $\geq 45$	University clinic	Not specified	Results from the first 12 weeks indicated that CBT with Fluoxetine and Fluoxetine alone were superior to Placebo, whereas CBT alone was not. CBT with Fluoxetine was superior to CBT alone but not to Fluoxetine alone. Fluoxetine alone was superior to CBT alone. There was a small increase in suicide attempts (no completions occurred) in the Fluoxetine group (alone or with CBT). CBT had some prophylactic effect on suicidal ideation.
Vostanis, Feehan, Grattan, & Bickerton, 1996	Individual CBT	6 sessions (on average)	Non-focused Intervention (NFI; an attention placebo)	8-17 (Mean 12.7)	57	DSM-III-R MDD, minor depression, or DDNOS	Outpatient clinic	Child psychiatrists	Children in both the CBT and NFI conditions showed significant reduction in depression with no significant difference between the 2 conditions. Improvements for children in both the CBT and NCI condition were generally maintained at 9-month and 2-year follow-up. There was no difference in remission rates, which were high in both groups.
Wood, Harrington, & Moore, 1996	Individual CBT	5-8 sessions	Relaxation Training	9-17 (Mean 13.8)	53	DSM-III-R MDD or RDC minor depression	Clinic	Therapists with 3 years of experience in child psychiatry	At post-treatment, CBT showed a clear advantage over Relaxation Training on measures of depression and overall outcome. At 6-month follow-up, the differences between groups were reduced.



rates and higher likelihood of recurrence than those recruited through advertisement in the community, thus raising the question of comparability of these populations [31].

The majority of these studies included adolescents with DSM-III, III-R, and IV diagnosis of Major Depressive Disorder or Dysthymia, with strict exclusion criteria, thus limiting comorbid conditions largely to anxiety disorders, especially GAD and Social Phobia. The Rohde *et al.* study included adolescents with DSM-IV diagnoses of MDD and comorbid Conduct Disorder and kept exclusion criteria to a minimum [38]. Similarly, the TADS study recruited moderate to severely depressed adolescents and allowed for a number of comorbid disorders to increase the generalizability of their findings. The studies used various types of control conditions: CBT was compared to wait list [21, 29, 33, 36, 37], supportive/non-directive psychotherapy [31, 39, 40], relaxation [37, 41], art and imagery exercises [42], life skills/tutoring [38], treatment as usual [30, 35], treatment as usual including ongoing administration of an SSRI [35], and pill placebo [34]. Other comparison conditions included family therapy [31], IPT [43], self-modeling [36], and fluoxetine (alone or in combination with CBT) [34]. With the exception of a few studies [31, 34, 35, 41], most used completer analyses. The therapists who conducted the trials were most often graduate students in psychology and social work. The studies also employed a number of social workers, child psychiatrists, doctoral-level psychologists, and master's level school counselors, and, more rarely, psychiatric nurses and psychiatry residents.

One way of examining these studies is to look at them in regard to the dosage of therapy delivered within the trial. We defined low dosage CBT as 5-8 sessions and high dosage CBT as 10 or more sessions. Results of the 4 low-dosage CBT trials (all involving individual CBT) did not show a consistent advantage of CBT over the control conditions (which included active conditions as well as wait list only) [30, 40-42]. One study showed positive results [41] but the other 3 did not show any significant difference between CBT and the active comparison conditions on the primary outcome measures. Even in the positive trial [41], the gains were not maintained after 6 months. One trial of CBT bibliotherapy, involving the assignment of Burn's book "Feeling Good", showed promise in treating mildly depressed adolescents [29]. On the whole, low-dosage CBT does not meet criteria for probable or well-established efficacy; the evidence does, however, meet criteria for possibly efficacious treatment.

Trials with higher dose CBT yielded mixed results. Three trials (2 group and one individual) were negative [34, 35, 39]. One trial showed positive results for group CBT when compared to wait list but did not show any difference from the active comparison condition (relaxation training) [37]. The remaining 6 trials (4 group and 2 individual) were positive [21, 31, 33, 36, 38, 43]. The sample sizes of these 6 studies were considerable (ranging from 59 to 123 participants), but their most frequent control condition was wait list.

The current challenge is how to integrate the above study findings with those of the TADS. Before the publication of the TADS, the conclusion was that higher dosage CBT has demonstrated efficacy for the treatment of adolescent depres-

sion. In particular, Lewinsohn's coping skills group CBT meets criteria for a probably efficacious psychotherapy: 2 studies were conducted by the same investigator showing superiority of group CBT over wait list (as described above) [21, 33]. None of the CBT protocols for adolescents (taken independently) meet criteria for well-established, since, among other things, results have not been replicated by independent investigator teams. However, if one views the different manuals as an aggregate CBT approach, then the CBT approach to depression in adolescents does meet criteria for well-established.

The recent publication of the TADS trial has cast some doubt on the efficacy of CBT for depressed teens, since CBT alone failed to show superiority to pill placebo; fluoxetine was superior to both at the end of the acute phase [34]. A number of issues should be kept in mind, however, when reviewing the TADS results. First, the CBT manual was for individual therapy and had a specific format that is not necessarily generalizable to all CBT manuals. The adolescent participants had more severe depression in order to justify the use of medication. Thus, the TADS results should be generalized to only that nosological subgroup. Finally, these results represent the first 12 weeks (acute phase) of treatment. A number of adolescent participants (partial responders) continued to week 18 for the acute phase and it is still unknown whether they responded at that point. From the current analyses, it is unclear whether there is any delayed effect for CBT. There is a precedent for such an effect in Brent *et al.*'s trial [31], in which two-thirds of the remissions occurred after the end of the acute trial during 2 additional months following termination. Thus, it remains to be seen whether the difference between CBT, medication, and pill placebo lies in the efficacy or speed of recovery of the active conditions. Future analyses of longer term outcome results from the TADS trial will illuminate some unanswered issues, especially concerning response predictors such as comorbidity, the adolescent's cognitive level, therapist adherence to the manual, overall therapist competence, and patient-therapist alliance.

Findings regarding the long-term efficacy of CBT are equivocal, with some studies showing loss of the therapeutic advantage of CBT over the period of 2 years post-treatment [31, 38, 41, 45] and others maintaining it over that same period [21, 46]. Clarke and colleagues [33] found that low-dosage (every 4 months) booster sessions did not reduce the recurrence rate in the adolescents who recovered during the acute phase, but this was difficult to evaluate properly due to poor attendance. They suggested that booster sessions might serve better as a continuation treatment for partial responders rather than as a treatment to maintain therapeutic gains. Brent and colleagues [31] specified a number of predictors of poor response to CBT (defined as lack of recovery and high recurrence rates) that included severe baseline depression, recruitment from the clinic versus an advertisement, parent-child conflict, comorbid anxiety, and high levels of hopelessness. When they controlled for the number of adverse predictors, CBT fared better than supportive and family therapy. The authors concluded that CBT maintained its efficacy under these hard to treat conditions.

The intervention studies of CBT for depression have for the most part been efficacy studies. That is, they were con-

ducted under tightly controlled conditions, typically in university hospital settings, with many inclusion and exclusion criteria. Consequently, the studies are often criticized for the lack of generalizability of their findings to the populations that clinicians treat in community mental health clinics or their private offices. The samples tend to have fewer and less complicated comorbid disorders and are treated by expert clinicians with extensive training in the treatment modality being tested. These criticisms have resulted in a new emphasis on taking these treatments out of the academic setting and into the community to see if they are similarly effective for less homogenous populations and when delivered by community clinicians with varying levels of training and expertise. For example, Rohde and colleagues [38] investigated CBT for depressed adolescents with comorbid conduct disorder in a county juvenile justice department. There were no diagnostic exclusion criteria; comorbid diagnoses were common, with an average of 4 diagnoses per participant at intake. The study found that CBT, compared to a life skills/tutoring control group, significantly reduced depression severity at treatment termination, though these gains were not maintained at 6- and 12-month follow-up. Additionally, some studies with modified CBT approaches have been conducted in the community. They have so far yielded mixed results [30, 32, 35], and more studies are needed.

### **CBT Evidence for the Prevention of Depression**

Prevention strategies aim to reduce the impact of factors that put children and adolescents at risk for depression and/or build skills to increase their ability to cope with these factors. There are 3 primary prevention strategies: 1) Universal, which target an entire population not identified on the basis of risk; 2) Selective, which target a sub-group with a higher than average risk of developing a disorder; and 3) Indicated, which target individuals at high-risk for a disorder because of subsyndromal symptoms [47]. The current paper will focus on mood disorder symptoms therefore including only selective and indicated preventions.

**CBT for prevention of depression in children:** Table 3 presents the only prevention study published thus far for children at risk for depression. It represents a prospective study organized by the PENN Prevention Program for group CBT with 10-13 year old school children who had elevated symptoms of depression (but did not meet criteria for a disorder) and parental conflict. The therapists for this trial were graduate-level psychology students. Study results suggested that the CBT intervention resulted in significantly lower levels of self-reported depressive symptoms compared to the matched controlled condition; these results were maintained in the 6-month follow-up. Differences between the groups persisted for 2 years. Results on the CBCL did not discriminate between the groups. The prophylactic effect of CBT for depression was mediated by changes in the participants' explanatory style [48].

This is an important first step towards the understanding of preventive interventions in children, although the study has severe limitations. The assignment to treatment conditions was not random, the control group received no treatment, and the main positive outcome was based on self-reports. Since it has been conducted with older children, its results cannot be generalized to groups with younger chil-

dren. Thus, there is not yet conclusive evidence that this indicated group CBT has a preventive effect for children at risk for depression. It does not yet meet criteria for any level of efficacy. A randomized trial of the PENN program is underway.

**CBT for prevention of depression in adolescents:** Table 4 presents 2 preventive intervention studies with adolescents, both conducted by Clarke and colleagues [49, 50]. The adolescent participants in both studies were selected on the basis of elevated depression scores on the CES-D without meeting criteria for Major Depressive Disorder. The studies were conducted in a high school setting [49] and an HMO [50]. The therapists were master's level community clinicians. Results in both trials suggested that the group CBT indicated preventive interventions were successful in lowering subsyndromal symptomatology and preventing depressive disorders for up to a year following the termination. After that period, the gains of the intervention began to fade. Thus, it appears that group CBT indicated intervention as specified by Clarke [49, 50] meets criteria for a probably efficacious intervention for adolescents at risk for depression. This approach needs to be replicated by a different team in order to meet criteria for a well-established treatment.

### **Meta-Analysis of CBT for Adolescents and Children**

Three meta-analytic studies on the efficacy of CBT for pediatric depression have been conducted [51-53]. In Harrington's meta-analysis [51], 6 trials were included. Remission rates in the CBT group were calculated as 62% whereas the control group (mostly wait lists) was about 36%, yielding an odds ratio of 3.2. Lewinsohn and Clarke [52] conducted a meta-analysis of 12 studies and calculated an effect size of 1.27 for CBT. Recovery rates following CBT were estimated at 63%. Finally, Reinecke and colleagues [53] included 14 CBT trials in their meta-analysis and calculated an effect size of 1.02 by termination of the acute treatment. These studies did not include any of the most recent studies of CBT.

### **Interpersonal Psychotherapy (IPT-A)**

IPT is based on the principle that triggers (as opposed to causes) of depression occur in an interpersonal context and involve grief, interpersonal role disputes, role transitions, and/or interpersonal deficits [54, 55]. IPT has been tested and found efficacious for both mood and non-mood disorders in a number of randomized clinical trials with depressed adults [55]. It also has been adapted for use with depressed adolescents (IPT-A) by Mufson and colleagues [56, 57]. IPT-A targets interpersonal conflicts and deficits in interpersonal skills that have shown a strong association with higher risk for adolescent depression [46]. It addresses developmental issues of adolescence such as separation from parents, involvement in romantic relationships, first experience with sexuality, initial experiences with death of family or friends, and interactions with peers. Its goal is to reduce depressive symptomatology and improve interpersonal functioning. IPT-A accomplishes this by helping adolescents to link mood symptoms with interpersonal problems, to understand how their depression symptoms are affected by these interpersonal events and vice versa, and to devise constructive ways of communicating feelings and solving interpersonal problems. In IPT-A, the therapist meets individually with

**Table 3. CBT Clinical Trials for Prevention of Depression in Children**

Study	Treatment Modality	Number of Sessions	Control Condition	Age of Ss	N	Diagnosis	Setting	Therapist Credentials	Results
Jaycox, Reivich, Gillham, & Seligman, 1994	Group CBT Prevention Program (CBT-P) for children at risk for depression: Cognitive Training, Social Problem Solving, and Combination Groups	12 sessions	Wait List	10-13 (Mean 11.4)	143	Self-reported elevated but sub-syndromal depressive symptoms and parental conflict	School setting	Graduate level trainees	This was not a randomized group assignment. The CBT-P group reported significantly fewer depressive symptoms and significantly improved classroom behavior at post-treatment compared to the untreated groups. At 6-month follow-up, results were maintained. There was no significant between group differences on CBCL at post-treatment and 6-month follow-up. At 2-year follow-up, 44% of the children in the Wait List group reported moderate to severe levels of depressive symptoms as compared to 22% in the CBT-P group. Change in children's explanatory style mediated reduction of depressive symptoms.

**Table 4. CBT Clinical Trials for Prevention of Depression in Adolescents**

Study	Treatment Modality	Number of Sessions	Control Condition	Age of Ss	N	Diagnosis	Setting	Therapist Credentials	Results
Clarke, Hawkins, Murphy, Sheeber, Lewinsohn, & Seeley, 1995	Group CBT	15 sessions	Usual Care	14-16 (9th and 10th grade)	150	CES-D > 23 but does not meet criteria for MDD or Dysthymia (K-SADS)	High school	Trained school psychologists and counselors with at least a master's degree in clinical, counseling, or educational psychology	Compared with the control condition, there were significantly fewer adolescents diagnosed with MDD or Dysthymia at 6- and 12-month follow-up in the CBT group, with affective disorder total incidence rates of 14.5% for the active intervention versus 25.7% for the control condition. At post-test, higher GAF and lower CES-D scores were shown in the CBT group, but there were no differences shown at follow-up.
Clarke, Hornbrook, Lynch, Polen, Gale, Beardslee, O'Connor, & Seeley, 2001	Group CBT	15 sessions	Usual HMO Care	13-18	94	Sub-syndromal depressive symptoms insufficient to meet full DSM-III-R criteria for mood disorder	HMO	Master's level therapists	Compared to the Usual Care control condition, the CBT condition showed significant preventive effects. The adjusted risk for development of depression in the Usual Care group was more than 5 times that of the CBT prevention group. Significant effects were maintained at 15-month follow-up (9.3% cumulative major depression incidence in the CBT group, compared with 28.8% incidence of depression in the Usual Care group.) However, at 2-year follow-up, conditions were beginning to converge.

the adolescent and the adolescent's parents in addition to conjoint sessions on occasion to review the adolescent's symptoms, consult on ways to help the adolescent feel and function better, and to address specific problems in the parent-child relationship.

### **IPT Evidence for Adolescent Depression**

To date, there have been several studies on the use of Interpersonal Psychotherapy for depressed adolescents: 2 efficacy studies [43, 57], and one effectiveness study [56]. This review focuses on the 3 randomized controlled clinical trials (listed in Table 5). These trials have medium-sized samples of between 50 and 80 adolescents. They all deliver the treatment as an individual psychotherapy. The 2 efficacy studies were conducted in university hospital outpatient settings with Latino adolescents, as a native majority population in Rosselló and Bernal's study [43] and as an immigrant minority population in Mufson and colleagues study [57]. Adolescents who participated, ages 12-18 years, typically received 12 weeks of treatment consisting of between 12-15 sessions. The adolescents were eligible to participate if they met criteria for major depression according to a semi-structured interview [57] or self-report instrument [43]. Mufson and colleagues [57] used a clinical management/minimal treatment control condition and Rosselló and Bernal [43] compared IPT to CBT and a wait list condition. Mufson *et al.* [57] found IPT-A to be significantly better than clinical management in decreasing depression symptoms and improving global and social functioning. Rosselló and Bernal [43] found that both IPT and CBT were superior to wait list but that the effect size for IPT was .72 compared to .43 for CBT. In addition, they found that 82% of those adolescents treated with IPT fell into the functional range on self-reports at the end of treatment compared to 59% of those treated with CBT. Interpretation of the findings in the Rosselló and Bernal study [43] are limited because of their reliance on self-report measures and their lack of a post-treatment diagnostic interview or assessment. In addition, it must be noted that they used a different adaptation of the adult IPT manual [55] than Mufson [57]. Despite these limitations, the study provides additional support for the efficacy of the interpersonal approach to depression in adolescents.

The therapists in Mufson *et al.*'s study [57] included child psychiatrists, psychologists, and advanced graduate students in clinical psychology who participated in weekly IPT-A supervision with the principal investigator and developer of the treatment manual. In the Rosselló and Bernal study [43], the therapy was delivered by advanced graduate students in clinical psychology with an average of 3 years of clinical experience who were supervised in weekly meetings by doctoral level psychologists with expertise in the 2 therapeutic approaches. These 2 studies were efficacy studies in that they were conducted with strict exclusion criteria limiting the comorbid disorders largely to anxiety, used expert clinicians, and were conducted in tightly controlled university settings.

IPT-A is unique in that there has been an additional study conducted to assess its transportability from the university setting into a community setting. The effectiveness study of IPT-A compared to treatment as usual (TAU) in school-based health clinics was conducted in both middle schools

and high schools in the New York metropolitan area [56], TAU was characterized as largely supportive psychotherapy. This study addresses some of the potential limitations of more traditional efficacy trials including a lack of generalizability and use by community clinicians. The treating clinicians were largely social workers and several psychologists who were already employed in the school-based clinics rather than the investigator's favorite expert clinicians. Their years of experience as therapists ranged from 2 to 40 and they received one day of didactics on IPT-A followed by one hour of weekly supervision for the duration of the study. They were rated by the IPT-A supervisors as competent IPT-A therapists based on supervision notes due to the inability to audio or videotape in the school setting. Students were included if they had a diagnosis of MDD, Dysthymia, DDNOS, or Adjustment Disorder with depressed mood. Exclusion criteria were limited to 1) active suicidality, 2) evidence of psychosis, 3) substance abuse/dependence disorder and 4) in concurrent treatment for the same disorder. The treatment protocol offered the therapists some flexibility in delivering the 12 sessions of therapy. They conducted 8 consecutive weekly sessions followed by 4 additional sessions that could be conducted over the next 8 weeks, enabling the therapists to tailor session frequency to the perceived clinical needs and progress of the adolescent.

The results demonstrate the effectiveness of IPT-A as compared to TAU for the treatment of adolescent depression in school-based health clinics in impoverished urban communities in New York City [56]. Adolescents treated with IPT-A showed significant reductions in depression symptoms and improvements in functioning by both clinician ratings, independent evaluator ratings, and self-report. The current findings extend treatment effects observed in carefully controlled clinical trials with depressed adolescents to treatment in school-based health clinics of students with a more varied diagnostic profile and delivered by real world clinicians after a streamlined training experience.

Research evidence thus far suggests that IPT-A is a well-established treatment for adolescent depression. It has been demonstrated as efficacious by 2 different teams of investigators, it has a well-delineated treatment manual, and it has been compared to a minimal treatment comparison as well as to another active treatment. The studies were of relatively good sample sizes with detailed sample characteristics. The main limitation for IPT-A is that there is little follow-up data available to evaluate its longer term effects. However, it is one of the few treatments that has demonstrated transportability and continued effectiveness when delivered by community clinicians in a real world setting.

### **PEDIATRIC ANXIETY**

Anxiety disorders are the most common psychiatric diagnoses in children and adolescents [58]. It is estimated that 10 to 21% of U.S youth have at some point suffered from an anxiety disorder [59, 60]. Although fears in childhood are part of normal development and tend to decrease in frequency and intensity with age [61], clinical anxiety is persistent and impairing: children's social and academic functioning become seriously affected with important consequences for family and peer relationships [62, 63]. As they enter late adolescence and adulthood, anxious individuals continue to

**Table 5. IPT Studies for Depressed Adolescents**

Study	Treatment Modality	Number of Sessions	Control Condition	Age of Ss	N	Diagnosis	Setting	Therapist Credentials	Results
Mufson, Weissman, Moreau, & Garfinkel, 1999	Individual IPT-A	12 sessions	Clinical Monitoring	12-18	48	DSM-III-R diagnosis of MDD	Clinic	Master's level clinical psychologist	The IPT-A group showed greater reductions in depression and more improvement in social and global functioning than the clinical monitoring control group. No follow-up reported.
Rossello & Bernal, 1999	Individual IPT-A; Individual CBT	12 sessions	Wait List	13-18	71	DSM-III-R diagnosis of MDD	Clinic	Advanced graduate psychology students with 3 years of clinical experience	The IPT-A and CBT groups improved more than the control group. There was no significant difference in the primary measure between CBT and IPT-A. The IPT-A group showed greatest improvement in social functioning and self-esteem. No significant differences were found between IPT-A and CBT groups at 3-month follow-up.
Mufson, Dorta, Wickramaratne, Nomura, Olfson, & Weissman, 2004	Individual IPT-A	12 sessions	Treatment as Usual	12-17	63	DSM-IV diagnosis of MDD, Dysthymia, DDNOS, or Adjustment Disorder with depressed mood	School-based clinics	School-based social worker and doctoral level psychologists	Adolescents treated with IPT-A showed significant reductions in depression symptoms by both clinician (HRSD) and self-report (BDI) measures, as well as significant improvement in overall functioning (C-GAS) and in specific domains of social functioning (SAS-SR).

struggle with anxiety [64] and are at elevated risk for mood disorders and substance use, reduced access to resources and social support, and underemployment [65].

### Psychotherapy for Pediatric Anxiety

Two national surveys representative of the U.S. population found that, between 1987 and 1999, there was an increase in the outpatient treatment of adult anxiety disorders, characterized by increased use of antidepressants [16]. However, analysis from a national database on privately insured children and adolescents showed that there were significant reductions in the use of inpatient and outpatient services, affecting to a large extent children with anxiety and mood disorders [66]. Angold and colleagues [67] showed that youths' use of treatment services for psychiatric problems appear to be mediated by the amount of burden parents experience as a result of the problem. Anxiety disorders, although very distressing to the individual, are not as burdensome to the parents compared to externalizing disorders, and thus result in underutilization of treatment services [67, 68]. Nevertheless, the past decade has seen an increase in research on psychotherapy for youth anxiety disorders [68].

### COGNITIVE BEHAVIOR THERAPY AND BEHAVIOR THERAPY FOR CHILD AND ADOLESCENT ANXIETY DISORDERS

In contrast to the literature on pediatric depression, the randomized controlled trials of psychotherapy for anxious children and adolescents reported to date represent mainly CBT and Behavior Therapy (BT) strategies and techniques. The majority of the intervention studies have been conducted in university and/or hospital outpatient clinics with a minority conducted in school settings. Those conducted in schools tend to be prevention studies.

Interventions for anxious children and adolescents typically include a psycho-educational component, followed by behavioral and/or cognitive strategies. A relapse prevention phase is usually included at termination. During the psycho-education component, the child, and in many instances the parent, are taught the signs and symptoms of anxiety conditions, the theoretical framework for the development and maintenance of symptoms, and the framework for symptom treatment. Psycho-educational materials including brochures and books are distributed.

The behavioral and cognitive strategies administered in the trials included in this review are the following:

#### Behavioral Strategies

Exposure involves confrontation of the feared situation, either in imagery or *in vivo*, gradually (graded exposure) or all at once (flooding). It also includes exposure to anxiety-provoking bodily sensations (i.e., interoceptive exposure, used in the treatment of panic disorder).

Modeling involves the presentation of appropriate handling of the feared stimulus by another individual. The presentation can be direct (live modeling) or indirect, involving use of films or pictures (symbolic modeling).

Desensitization involves the association of the feared situation with a state incompatible with fear (i.e., relaxation). It can be conducted in imagery or *in vivo*.

Contingency management focuses on administering a reward following the successful interaction with the feared stimulus, or withholding a reward following avoidance.

Self-management involves instructions and monitoring of accurate perceptions of a feared situation and adaptive reactions to it. It includes management of somatic symptoms, such as breathing retraining, relaxation, and mindfulness training.

#### Cognitive Strategies

Cognitive restructuring involves the identification of inaccurate and/or not useful automatic thoughts and the articulation and routine use of realistic counter-thoughts.

Problem solving, as defined in the section on treatment for depression, above.

Finally, during the relapse prevention phase, the child and therapist discuss the upcoming termination of the treatment, the possibility of a maintenance plan or of management of a relapse, and articulate the therapeutic gains.

These strategies have been combined in various ways by different investigators culminating in multiple CBT manuals for anxiety disorders, in both individual and group modalities and targeting both single and mixed anxiety disorders. The psychotherapy randomized controlled trials for anxious children and adolescents are presented in Tables 6 to 8 and discussed below. They are organized by age group and by anxiety disorder.

### CBT EVIDENCE FOR PREPUBERTAL ANXIETY

#### Specific Phobia in Children

Two RCTs examining individual CBT for children with specific phobias are listed in Table 6a. A study by Menzies and Clarke involved comparison of different types of exposure (*in vivo*, vicarious, and their combination) to an assessment only control group for water phobia in young children (preschool and the first years of elementary school) [69]. The other trial, by Cornwall and colleagues, involved a variant of desensitization compared to a wait list control for the treatment of fear of darkness with 7 to 10 year olds [70]. The therapists conducting the treatment in these trials were undergraduate students and master's level psychologists. In both, all active treatments except vicarious exposure resulted in significant symptomatic reduction, although their long-term benefits are unclear as both had very short follow-up periods. However, since neither was compared against an active psychological placebo group, they are classified in this review as promising, possibly efficacious (a step below probably efficacious) treatments.

#### Social Phobia in Children

Table 6b shows the 2 RCTs reviewed for children with Social Phobia [71, 72]. Both studies had a considerable sample size (n=67 in Beidel, Turner, and Morris's study [72]; n=50 in Spence, Donovan, and Brechman-Toussaint's study [71]). CBT treatments in both were conducted in a group format, although in Beidel *et al.* [72] individual sessions were included as well. Spence *et al.* [71] used wait list as a control condition. Beidel *et al.* [72] used a psychological placebo, "Testbusters", which provided test-taking strategies, since test anxiety is a common complaint in socially phobic

children. The clinicians who conducted the studies were doctorate level [72] or qualified clinicians [71].

Both group CBT treatments were superior to the control interventions, with gains maintained for up to one year following termination. Group CBT as specified by Beidel and colleagues [72] meets criteria for probably efficacious treatment for social phobia in children, since it used a psychological placebo control group, whereas Spence *et al.*'s group CBT [71], although promising, is a possibly efficacious treatment because there is just one study of its manual. Spence's study additionally attempts to answer the important question of whether parental involvement in the child's treatment can augment the therapeutic gains. Results from this trial did not support this interesting hypothesis.

### CBT for PTSD in Children

The 7 RCTs of CBT for PTSD in children are reviewed in Table 6c. Six of these concerned sexual trauma [73-78]; one concerned exposure to violence [79]. Most CBT interventions for sexual abuse were conducted in an individual format with child and/or parent. One CBT intervention for sexual abuse [77] and the intervention for exposure to violence [79] were conducted in a group format. The comparison groups used were treatment as usual [74, 76], wait list [78, 79], supportive group therapy [77], child centered therapy [75], and conventional sexual abuse therapy [73]. One study addressed the question of whether the addition of a behavioral strategy (stress inoculation) added to the therapeutic effects of a conventional treatment for sexual abuse [73]. The clinicians who participated in these trials ranged from licensed/registered psychologists to school clinicians (bachelor's or master's level). There appear to be no differences in outcomes based upon the training level of the clinicians.

One group CBT study for exposure to violence showed positive results compared to a wait list control [79]. Three out of the 6 CBT treatments for sexually abused children [74, 76, 78] showed a significant reduction in PTSD symptoms compared to the control condition (child centered therapy, treatment as usual, and wait list, respectively). The other 3 CBT treatments for sexually abused children [73, 74, 77] failed to differentiate from the control condition (conventional sexual abuse treatment, supportive group therapy, and treatment as usual). Three of the above trials, 2 individual [75, 76] and 1 group one [77] were based on Deblinger's treatment manual. The 2 individual ones had substantial sample sizes (N=229 and 90 respectively), active control groups (child centered therapy and treatment as usual) and were both positive. The group CBT study had a smaller sample size (N=44) and was negative. Deblinger's individual CBT for sexually abused children meets criteria for a well-established treatment, since it was tested by 2 different research teams [76, 77]. It should be noted that Deblinger herself was also involved in Cohen and colleagues 2004 study [75].

The issue of whether parental participation contributed to the therapeutic gains in children with PTSD remains unanswered: 2 studies found that parental participation increased parenting skills and led to less depression in sexually abused children [75, 76] but 2 other studies did not find any significant benefits of parental participation [77, 78].

### CBT for OCD in Children

Table 6e presents 2 RCTs for CBT for childhood obsessive compulsive disorder (OCD) [80, 81]. The trial by Barrett and colleagues [80] involved family CBT, whereas the POTS study [81], a multi-site trial, involved individual CBT. The clinicians in the Barrett *et al.* trial [80] were graduate students in clinical psychology, whereas in the POTS study clinicians' credentials were not reported [81]. Both trials had considerable sample sizes (N=77 and 112 respectively) and used CBT techniques based on March's manual [82]. In this manual, psychoeducation focuses on separating the child from the illness, by referring to OCD as a "bully" who "messes up" the child's life, and needs to be confronted. Exposure and response prevention techniques were used but exposure was graded. Although 2 different teams found this psychotherapy efficacious, technically it does not meet the full criteria of a well-established treatment because it was tested in 2 different modalities (in Barrett *et al.*'s trial as a family therapy [80] and in the POTS trial [81] as an individual one). The individual CBT as specified in the POTS study manual met criteria for a probably efficacious treatment. Also, it should be kept in mind that CBT combined with sertraline was superior to the monotherapies [81].

### Mixed Anxiety Disorders in Children

The majority of RCTs in pediatric anxiety were conducted with children with a variety of anxiety diagnoses. The most frequent comorbid disorders in these trials, presented in Table 6d, concern Separation Anxiety (SAD), Social Phobia (SocP) and Generalized Anxiety Disorder (GAD). Velting and colleagues [83] summarized the following reasons for this: 1) these 3 disorders tend to occur comorbidly, both cross-sectionally as well as longitudinally; 2) they share a similar anxiety construct; 3) they show similar familial patterns; and 4) they tend to respond to similar psychotherapeutic and pharmacological treatments.

In Table 6d, the 16 RCTs for mixed anxiety disorders are reviewed: 8 involve individual CBT [84-91], 5 involve group CBT [92-96], and 3 involve group and individual CBT [97-99]. The majority of the control conditions used involve a wait list; 3 trials compared 2 active conditions and did not involve a control group; 2 involved a non-treatment control; and only 3 involved a psychological placebo group. The majority of therapists participating in these 16 trials were psychologists, most frequently at the level of advanced graduate students. Results of these trials do not seem to vary according to training level of the clinicians.

For those trials involving a wait list, all except one [88] showed superiority of CBT (individual and group) over the control condition. Kendall and his team conducted 2 individual CBT studies [86, 87] involving relatively large samples (n=47 and 94 respectively). His CBT package, the Coping Cat, showed superiority to wait list on a number of symptom and function measures. Moreover, these results were sustained after a 2-5 year follow-up. Barrett, Dadds, and Rapee [88] adapted Kendall's Coping Cat program for use with Australian children (Coping Koala) and found it superior to a wait list in reducing self-report anxiety. An addition of a Family Anxiety Management component increased response for female participants on self-report and clinician measures

**Table 6. CBT Clinical Trials for Children with Anxiety  
6a. Simple Phobia in Children**

Study	Treatment Modality	Number of Sessions	Control Condition	Age of Ss	N	Diagnosis	Setting	Therapist Credentials	Results
Cornwall, Spence, & Schotte, 1996	Emotive Image Therapy (EIT) for the treatment of childhood darkness fear	6 sessions	Wait List	7-10	24	DSM-III-R Simple Phobia (darkness fear) based on ADIS structured interview	University outpatient clinic	1 master's level psychologist	Compared to Wait List, EIT was associated with significantly greater reductions on all child and parent outcome measures and behavioral measures. EIT group continued to show greater reductions in symptoms of darkness phobia at 3-month follow-up.
Menzies & Clarke, 1993	<i>In Vivo</i> Exposure + Vicarious Exposure (IVVE); Vicarious Exposure (VE); <i>In Vivo</i> Exposure (IVE) for water phobia	3 sessions	Assessment only	3-8	48	Parent identified water phobia	University clinic	1 male undergraduate student	Both IVE and IVVE groups showed significant improvement relative to the control condition. There was no significant difference between IVE and IVVE groups at post-treatment and follow-up. Post-treatment scores for VE group were not significantly different from the control, thus vicarious exposure failed to produce benefits when used alone and failed to enhance benefits achieved through <i>in vivo</i> exposure.

**6b. Social Phobia in Children**

Study	Treatment Modality	Number of Sessions	Control Condition	Age of Ss	N	Diagnosis	Setting	Therapist Credentials	Results
Beidel, Turner, & Morris, 2000	Social Effectiveness Therapy for Children (SET-C) included group and individual sessions	24 sessions (twice weekly across 12 weeks)	Nonspecific intervention (Testbusters)	8-12	67	DSM-IV diagnosis of Social Phobia	University clinic	Clinicians (Beider and Turner)	SET-C was highly effective in treating social phobia. 67% of the SET-C group did not meet diagnostic criteria for Social Phobia at post-treatment compared with 5% of those in the Testbusters group. SET-C was associated with significantly greater improvement across multiple social domains, including improved social skills, reduced social fear, anxiety and distress, and improved functioning in daily social interactions. Treatment gains were sustained at 6-month follow-up.
Spence, Donovan, & Brechman-Toussaint, 2000	Child-focused CBT; CBT + Parent Involvement (CBT-P)	12 weekly sessions followed by 2 booster sessions	Wait List	7-14 (Mean 10.7)	50	DSM-IV diagnosis of Social Phobia based on ADIS-P structured interview	University clinic	Psychologists	Compared to Wait List, both CBT treatments were associated with significantly lower child self-report measures of anxiety and social phobia. Parents and independent observer ratings of social skill and social competence improved across both treatments. No significant differences between the two active treatment groups were found. However, a non-significant trend emerged showing superior treatment effects for CBT-P in the percentage of children who no longer met diagnostic criteria at post-treatment. Treatment gains were maintained in both groups at 6- and 12-month follow-up.



(Table 6) contd....

6c. PTSD in Children

Study	Treatment Modality	Number of Sessions	Control Condition	Age of Ss	N	Diagnosis	Setting	Therapist Credentials	Results
Berliner & Saunders, 1996	Conventional Sexual Abuse Group Therapy + Stress Inoculation Training and Gradual Exposure	10 sessions	Conventional Sexual Abuse Group Therapy	4-13 (Mean 8.2)	80	History of child sexual abuse; 81% had chart diagnosis of PTSD	Outpatient specialty clinic	Master's level clinical social workers	The addition of Stress Inoculation Training and Gradual Exposure to standard group treatment did not produce greater improvement on measures of fear and symptoms of anxiety. Outcomes for both groups improved over time. 20% to 40% of children in both groups improved at 2-year follow up. 5% to 15% of children in both groups deteriorated substantially over time.
Celano, Hazzard, Webb, & McCall, 1996	Recovery from Sexual Abuse Program based on Finkelhor's four-factor model (RAP); child and female caretaker participated	8 sessions	Treatment as Usual	8-13 (Mean 10.5)	32	Girls with a documented history of sexual abuse	Hospital outpatient clinic	Licensed clinicians and trainees	Both treatments were associated with significant reductions in self-reported PTSD symptomology and improved overall functioning. Compared to Treatment as Usual, RAP was more effective in increasing abuse-related caretaker support of the child, decreasing caretaker self-blame, and decreasing expectations of negative impact on child.
Cohen, Deblinger, Mannarino, & Steer, 2004	Individual Trauma-focused CBT (TF-CBT) for children and parents	12 sessions for both children and parents	Child Centered Therapy	8-14	229	History of child sexual abuse; PTSD symptoms; 89% met DSM-IV PTSD criteria	University clinic	Psychologists and social workers	Compared to the Child Centered Therapy group, children in the TF-CBT group had significant improvements in PTSD and depression symptoms, behavior problems, shame, and abuse-related attributions. Parents in the TF-CBT group showed improvements in depression symptoms and parenting abilities.
Deblinger & Lippman, 1996; Deblinger, Steer, & Lippman, 1999	Child-only CBT (CBT-C); Parent-only CBT (CBT-P); and Combined Child and Parent CBT (CBT-CP) for sexual abuse	12 sessions	Standard Community Care	7-13	90	Documented history of contact sexual abuse and DSM-III-R PTSD or PTSD based on K-SADS-E structured interview	Outpatient specialty clinic	Not specified	Compared to children who did not receive the experimental treatment (CBT-P and Community Care), children who did (CBT-C and CBT-CP) reported significantly greater reductions in overall PTSD symptomology. Compared to mothers who did not receive the experimental treatment (CBT-C and Community Care), mothers who did (CBT-P and CBT-CP) reported greater use of effective parenting skills and significant decreases in their children's externalizing behaviors, and their children reported significantly fewer symptoms of depression. All treatment gains were maintained at follow-up, except gains in parenting skills.
Deblinger, Stauffer, & Steer, 2001	Group CBT for non-offending mothers and children	11 sessions	Supportive Group Therapy	2-8	44	Recent sexual abuse history	Child abuse treatment center	Not specified	Although PTSD symptoms decreased in both groups, children in the CBT group did not show significantly greater reductions in PTSD symptoms compared to the control group. At post-treatment, mothers in the CBT group, compared to the control group, reported greater reductions in intrusive thoughts relating to the abuse and in negative emotional parental reactions regarding the abuse. These improvements were maintained at 3-month follow-up.

(Table 6) contd.,...

Study	Treatment Modality	Number of Sessions	Control Condition	Age of Ss	N	Diagnosis	Setting	Therapist Credentials	Results
King, Tong, Mullen, Paul, Myerson, Heyne, Rollings, Martin, & Ollendick, 2000	Child CBT (CBT-C); Family CBT (CBT-F) for sexual abuse	20 sessions	Wait List	5-17 (Mean 11.5)	36	History of child sexual abuse and DSM-IV PTSD based on ADIS-C or features of PTSD; 69% met DSM-IV criteria for PTSD	Outpatient clinic	Registered psychologists	Compared to Wait List, both active treatments were associated with fewer symptoms of PTSD, lower self-reported emotional distress associated with sexual abuse, and higher clinician ratings of global functioning. All improvements were sustained at 12-week follow-up. There were not significant differences between the CBT-C and CBT-F groups on any outcome measure at post-treatment or follow-up. 60% of subjects in both treatments did not meet diagnostic criteria at post-treatment (vs. 20% in Wait List).
Stein, Jaycox, Kataoka, Wong, Tu, Elliott, & Fink, 2003	Group CBT	10 sessions	Wait List	6th grade	126	Symptoms of PTSD in the clinical range (17-item Child PTSD Symptom Scale)	School setting	Trained school mental health clinicians	At post-treatment, children in the treatment group had significantly fewer symptoms of PTSD compared to the Wait List group. After the Wait List group received treatment, they too showed a significant reduction in symptoms of PTSD. At 6-month follow-up, after both groups received the CBT intervention, children in both groups had similar levels of PTSD symptoms, depression, and psychosocial functioning.

**6d. OCD in Children**

Study	Treatment Modality	Number of Sessions	Control Condition	Age of Ss	N	Diagnosis	Setting	Therapist Credentials	Results
Barrett, Healy-Farrell, & March, 2004	2 versions of Cognitive Behavioral Family-based Therapy: Individual (I-CBFT) and Group (G-CBFT)	14 weekly sessions	Wait List	7-17 (Mean I-CBFT 11.2; Mean G-CBFT 12.4)	77	DSM-IV primary diagnosis of OCD	University psychology clinic	Graduate students, trained and supervised by the first author	Children in both the I-CBFT and G-CBFT conditions showed clinically significant pre-treatment to post-treatment change in OCD diagnostic status and severity. There were no significant differences in improvement ratings between conditions, and no significant changes across measures for the Wait List condition. Treatment gains were maintained at 6-month follow-up.
The Pediatric OCD Treatment Study (POTS) Team, 2004	CBT alone; Sertraline alone; CBT and Sertraline	14 sessions over 12 weeks	Pill Placebo	7-17	112	CY-BOCS score < 16	University clinic	Not specified	Combined treatment of CBT and Sertraline was superior to CBT alone, Sertraline alone, or Pill Placebo. CBT alone and Sertraline alone did not differ.

(Table 6) contd.....

6e. Studies Including a Number of Anxiety Disorders in Children

Study	Treatment Modality	Number of Sessions	Control Condition	Age of Ss	N	Diagnosis	Setting	Therapist Credentials	Results
Barrett, Dadds, & Rapee, 1996; Barrett, Duffy, Dadds, & Rapee, 2001 [115]	CBT, CBT + Family Management (CBT + FAM)	12 sessions	Wait List	7-14 (Mean 9.3)	79	DSM-III-R diagnosis of OAD, SAD, or SocP based on ADIS-C/P structured interviews	University clinic	Registered clinical psychologists	Both CBT conditions were effective in treating anxiety disorders. Compared to Wait List, both active treatments were associated with clinically significant gains across multiple outcomes including overall reduction in self-reported anxiety. Gains were maintained at 6- and 12-month follow-up. Compared to CBT, CBT+ FAM was superior on several outcomes, with differences greatest on clinician ratings and for younger children and girls. Treatment gains were maintained at long-term follow-up, as measured by clinician, parent, and child ratings. 86% achieved a no-diagnosis status at long-term follow-up, compared to 80% at the 12-month follow-up. 13% had relapsed by long-term follow-up. Contrary to previous findings, CBT and CBT+ FAM were found to be equally effective at long-term follow-up.
Barrett, 1998	Group CBT for Child only (GCBT), Group CBT for Child and Parent + Family Management Training (GCBT+ FAM)	12 weekly sessions	Wait List	7-14	40	DSM-III-R diagnoses of OAD, SAD, or SocP based on ADIS-C/P structured interviews	University outpatient clinic	Registered psychologists	Both treatment groups showed significant improvements on clinician, child, and parent outcomes at post-treatment and follow-up. 56% of GCBT, 71% of GCBT+FAM, and 25% of Wait List subjects no longer met diagnostic criteria for any current anxiety disorder. No significant difference between treatment groups on diagnostic status at post-treatment or follow-up was found. Compared to GCBT, GCBT+ FAM was associated with marginally better improvement at post-treatment and follow-up.
Cobham, Dadds, & Spence, 1998	Child-focused CBT, Child-focused CBT plus Parental Anxiety Management (CBT + PAM)	10 weekly sessions	No control group, only 2 active treatments	7-14 (Mean 9.6)	67	DSM-III-R or DSM-IV diagnosis of SAD, OAD, GAD, SocP, or Agoraphobia	University clinic	Trained clinicians and 1 clinical psychologist (Cobham)	Among children without anxious parent(s), at post-treatment 82% in the CBT condition improved compared to 80% in CBT + PAM. Among children with anxious parent(s), however, only 39% in the CBT condition improved compared with 77% in CBT + PAM. At follow-up, these differences were maintained, with some weakening over time.
Flannery-Schroeder & Kendall, 2000	Group CBT (GCBT); Individual CBT (ICBT)	18 weekly sessions	Wait List	8-14	45	DSM-III-R diagnosis of GAD, SAD, or SocP based on ADIS-C/P structured interviews	University outpatient clinic	Doctoral candidates	Compared to Wait List, both ICBT and GCBT groups reported significantly lower general anxiety and enhanced coping abilities. 73% of ICBT, 50% of GCBT, and 8% of Wait List subjects did not meet criteria for their primary diagnosis at post-treatment. Only the ICBT group showed improvements in self-reported anxiety. Treatment gains in both treatment groups were maintained at 3-month follow-up. Overall, ICBT and GCBT were comparable.

(Table 6) contd.....

Study	Treatment Modality	Number of Sessions	Control Condition	Age of Ss	N	Diagnosis	Setting	Therapist Credentials	Results
Kendall, 1994; Kendall & Southam-Gerow, 1996 [116]	Individual CBT	16 sessions	Wait List	9-13	47	DSM-III-R diagnosis OAD, SAD, or Avoidant Disorder based on ADIS-P structured interview	University clinic	Doctoral candidates	The CBT group reported significantly lower general anxiety and enhanced coping abilities. Parent rating of anxiety/depression and social competence also improved. Teacher ratings did not change. Total behavioral observational score differentiated the CBT and Wait List groups. 60% of subjects were within the non-deviant range at post-treatment. Treatment gains were maintained at 12-month follow-up. At long term follow-up, subjects treated between 2-5 years earlier largely maintained treatment gains from the previous 1-year follow-up. At long-term follow-up, 74% of the subjects remained below clinical levels on the CBCL.
Kendall, Flannery-Schroeder, Panichelli-Mindel, Southam-Gerow, Henin, & Warman, 1997	Individual CBT	16-20 sessions (average 18 sessions)	Wait List	9-13	94	DSM-III-R diagnosis of OAD, Avoidant Disorder, or SAD based on ADIS-C/P structured interviews	University clinics	Doctoral candidates	CBT significantly improved symptoms in youth with anxiety disorders over time, compared to the Wait List control. The CBT group reported significantly lower general anxiety and enhanced coping abilities. Total behavioral observation scores differentiated the CBT and Wait List groups. Treatment gains were sustained at 1-year follow-up.
King, Tonge, Heyne, Pritchard, Rollings, Young, Myerson, & Ollendick, 1998	CBT (Child Therapy & Parent/Teacher Training)	Child Therapy 6 sessions; Parent/Teacher Training 5 sessions	Wait List	5-15 (Mean 11.0)	34	DSM-III-R diagnosis of anxiety disorder	School Refusal Clinic (established for the purpose of the study)	Registered psychologists	Relative to Wait List, children receiving CBT improved significantly in school attendance. They also improved on measures of anxiety, fear, and depression and reported increased confidence in ability to cope with anxiety-provoking situations. Parent reports of CBT children showed significant improvement for internalizing problems. No significant between-group differences were found on teacher reports. Treatment gains were maintained at 12-week follow-up.
Last, Hansen, & Franco, 1998	CBT	12 weekly sessions	Educational Support Therapy (EST)	6-17 (Mean CBT 11.7; EST 12.4)	56	School refusal and DSM-III-R anxiety disorder based on K-SADS-P	University clinic	Not specified	Few significant differences between the CBT and EST treatments were found. Children in both groups improved over time on a variety of measures including rate of return to school. Treatment gains were maintained or increased in both groups at follow-up. Younger children and children with higher baseline school attendance levels showed the greatest improvement.
Manassis, Mendlowitz, Scapillato, Avery, Fiksenbaum, Freire, Monga, & Owens, 2002	Individual CBT; Group CBT	12 sessions	No control, only 2 active conditions	8-12 (Mean 10.0)	78	Primary diagnosis of GAD, SAD, SimP, SocP, or Panic Disorder with or without Agoraphobia	Hospital clinic	Senior level staff and psychology trainees under supervision	Both treatments were associated with significant improvements on child and parent ratings. Individual CBT was more effective for children reporting high rates of social anxiety.

(Table 6) contd....

Study	Treatment Modality	Number of Sessions	Control Condition	Age of Ss	N	Diagnosis	Setting	Therapist Credentials	Results
Mendlowitz, Manassis, Bradley, Scapillato, Miezitis, & Shaw, 1999	Child-only Group CBT; Parent-only Group CBT (CBT-P); Parent and Child Group CBT	12 sessions	No control, only 3 active conditions	7-12	68	DSM-IV diagnosis of anxiety disorder	Hospital	Psychology graduate student with 10 years of clinical experience, psychiatrists, and a child youth worker	All 3 treatments were associated with significant improvements in depression and anxiety symptoms. Children in the Child and Parent CBT group reported using more adaptive coping skills than the other 2 treatment conditions at post-treatment. Parents in this condition reported a significantly greater improvement in their children's emotional wellbeing than parents in the other treatment conditions.
Muris, Mayer, Bartelds, Tierney, & Bogie, 2001	Individual CBT; Group CBT	12 sessions	No control, only 2 active conditions	8-13 (Mean 9.9)	36	DSM-III-R diagnosis of SAD, GAD, SocP, or OCD	School	Clinical psychology students	Both treatments resulted in equal improvements in the reduction of children's anxiety symptoms.
Muris, Meesters, & van Melick, 2002	Group CBT; Group Emotional Disclosure (ED)	12 sessions	No Treatment	9-12	30	DSM-III-R diagnosis of SAD, GAD, or SocP	School	Clinical psychology student	CBT was superior to ED and No Treatment; ED failed to differentiate from No Treatment.
Nauta, Scholing, Emmelkamp, & Minderaa, 2003	Individual CBT; Individual CBT + Cognitive Parent Training (CBT + CPT)	12 weekly sessions	Wait List	7-18 (Mean 11.0)	79	Primary diagnosis of SAD, SocP, GAD or PAD	Regional centers for mental health; university clinic	Advanced students in clinical psychology and registered child psychologists	Children in both CBT groups showed substantial improvement in their anxiety symptoms. Significant treatment gains were shown in the treated children with regard to diagnostic status and parent reports, but not in child self-reports. At post-treatment, 54% of the CBT children no longer met criteria for an anxiety disorder compared to 10% in the Wait List group. Results were maintained at 3-month follow-up. No significant effect of CPT was found.
Shortt, Barrett, & Fox, 2001	Group CBT	10 sessions + 2 booster sessions	Wait List	6-10	71	Primary diagnosis of SAD, GAD, or SocP	University clinic	Master's level clinical doctoral candidates	Compared to Wait List, GCBT was associated with greater improvements across all outcomes. Results indicated that 69% of children in GCBT condition were diagnosis-free at post-treatment compared to 6% of children in the Wait List condition. At 12-month follow-up 68% of the children in the GCBT condition were diagnosis-free.
Silverman, Kurtines, Ginsburg, Weems, Lumpkin, & Carmichael, 1999	Group CBT	12 sessions	Wait List	6-16 (Mean 10.0)	56	DSM-III-R diagnosis of SocP, OAD, or GAD	University clinic	Licensed psychologist and doctoral level psychology students	Children in GCBT showed significant improvement on all the main outcome measures. Gains were maintained at 3-, 6-, and 12-month follow-up. Children in the Wait List condition did not show improvements from the pre- to post-assessment point.
Silverman, Kurtines, Ginsburg, Weems, Rabian, & Serafini, 1999	Exposure-based Contingency Management (CM); Exposure-based Cognitive Self-Control (SC)	10 weekly sessions	Education Support (ES)	6-16 (Mean 9.9)	81	DSM-III-R diagnosis of phobic disorder; majority met criteria for SimP, remainder for SocP and agoraphobia	University clinic	2 postdoctoral fellows (treated 67% of cases); doctoral level graduate students in psychology (treated 31% of cases)	Children in all 3 conditions showed substantial improvement on all of the outcomes measures. These gains were maintained at 3-, 6-, and 12-month follow-ups. SC and CM did not differentiate from the ES control.

of anxiety. Because of the nature of the control condition (wait list) in the 3 studies, the Coping Cat/Coping Koala individual CBT does not qualify as well-established treatment, but rather meets criteria as a probably efficacious treatment for comorbid SAD, GAD, and SocP. A multi-site trial based on the Coping Cat manual is underway (Child and Adolescent Anxiety Multimodal Treatment Study, CAMS).

Of the 2 trials involving psychological placebo control conditions (emotional disclosure by Muris, Meesters, and van Melick [94]; educational support by Silverman and colleagues [91]), only one found CBT to be superior to the control [94]. The positive finding is for a 12-session group CBT model. Muris's group CBT model fulfills criteria for probably efficacious treatment for a mixture of anxiety disorders in children, since it involves a psychological placebo condition but only one study of the treatment.

Another interesting group of studies were conducted in which there was a comparison of individual versus group CBT [97-99]. In each of these studies, both treatments were associated with significant improvements and there were no advantages for either of the 2 conditions in symptomatic relief and functioning.

## **CBT EVIDENCE FOR ANXIETY DISORDER IN ADOLESCENTS**

### **Social Phobia in Adolescents**

Table 7a shows one RCT for Social Phobia in adolescents [100], a study of group CBT for socially phobic female teens compared to a no treatment control. The clinicians participating in the study were clinical psychologists and child psychiatrists. This trial showed that group CBT was successful in reducing symptoms of social phobia compared to no treatment. Therapeutic gains were lost after one year, however. Due to methodological limitations, Hayward's group CBT does not meet standards for a probably efficacious psychotherapy for socially phobic adolescents and is best characterized as a possibly efficacious treatment.

### **PTSD in Adolescents**

Table 7b includes one RCT of a group CBT/family therapy intervention for PTSD for 150 adolescents with a history of childhood cancer and their families [101]. Four sessions were conducted over the course of one day. A wait list group served as the control. This group intervention was successful in reducing arousal PTSD symptoms in the adolescent cancer survivors compared to the wait list group, however it did not reduce intrusion or avoidance symptoms. This intervention does not meet standards for a probably efficacious psychotherapy.

### **CBT for Mixed Anxiety Disorders in Adolescents**

Table 7b shows an RCT for school-based group CBT for adolescents with a number of anxiety disorders other than OCD or PTSD [102]. The control condition (attention and support group) fulfilled many of the requirements of a valid psychological placebo group. This was a positive trial of group CBT, which differentiated from the control condition in regard to the decrease in anxiety symptoms at post-treatment. No follow-up data were reported. The small sam-

ple size of the trial (n=12), however, disqualifies this group CBT model from meeting criteria as a probably efficacious treatment for this population, despite its promising results.

### **CBT Evidence for the Prevention of Anxiety Disorders**

The study of risk and protective factors for child anxiety is a rapidly growing area. Risk factors that have the most empirical support include parental anxiety and mood disorders, insecure parent-child attachment, anxiogenic parenting behaviors and aspects of the family environment, behavioral inhibition in the child, subsyndromal anxiety in the child, and stressful life events (disasters, divorce, school transitions, etc.) [103-105]. Protective factors are likely to be innate or developed in the child (e.g., specific skills or cognitive abilities), family (positive parent-child interactions), or school and community (e.g. low rates of violence) [105]. Additional research on both risk and protective factors will be valuable for designing and enhancing potency of preventive interventions.

One RCT of a preventive intervention for children at risk for an anxiety disorder is presented in Table 8 [106]. As is common for prevention programs it was conducted in a school setting. The study by Dadds and colleagues included group CBT for the child with the addition of a family-based group intervention component. This intervention was used as an indicated primary prevention for children with elevated anxiety symptoms as well as a secondary/tertiary prevention treatment for children with existing anxiety disorders to prevent chronicity and impairment. With one of the longest follow-up periods in pediatric anxiety disorders, the study showed that at 6 and 24 months post-treatment (but curiously not at 12 months), the rate of anxiety disorders was significantly reduced for the group CBT condition compared to the wait list. For those children who had only symptoms of anxiety and not a full-blown disorder, group CBT with the parent group component was successful in significantly preventing the development of anxiety disorders. The clinicians in this trial were either clinical psychologists or advanced level graduate students in clinical psychology. Due to the nature of the control condition involved (wait list) and the lack of a second study, Dadds' group CBT, although promising, cannot qualify as a probably efficacious preventive treatment for anxiety in youth and it is best characterized as possibly efficacious.

Overall, the evidence for CBT as an evidence based treatment for anxiety disorders suggests the following: 1) CBT is a well-established treatment for PTSD in children; 2) CBT is a probably efficacious treatment for the treatment of social phobia, and mixed anxiety disorders in children; 3) CBT does not meet criteria as a probably efficacious treatment for the treatment of any anxiety disorder in adolescents due to the small number of studies, few psychological comparison treatments, and small sample sizes in extant studies; and 4) CBT does not meet criteria as a probably efficacious treatment for prevention of anxiety due to methodological limitations but appears to be promising. Parental involvement does not appear to have significant added benefits to the treatment of anxiety disorders in children. Long-term follow-up data are limited but positive for Kendall's Coping Cat treatment, but more follow-up studies are needed.

7a. Social Phobia in Adolescents

Study	Treatment Modality	Number of Sessions	Control Condition	Age of Ss	N	Diagnosis	Setting	Therapist Credentials	Results
Hayward, Varady, Albano, Thienemann, Henderson, & Schatzberg, 2000	Group CBT for female adolescents (CBGT-A)	16 sessions	No Treatment	Mean 15.8	35	DSM-IV diagnosis of Social Phobia	University clinic	Clinical psychologist and child psychiatrist assisted by research assistant	At post-treatment, there was a significant reduction in the number of subjects meeting DSM-IV criteria for Social Phobia in the CBGT-A group compared to the No Treatment group. At 1-year follow-up, there were no significant differences between treatment conditions. There was evidence suggesting that treatment of Social Phobia lowers the risk for relapse of major depression among those with a history of major depression.

7b. PTSD in Adolescents

Study	Treatment Modality	Number of Sessions	Control Condition	Age of Ss	N	Diagnosis	Setting	Therapist Credentials	Results
Kazak, Alderfer, Srejsand, Simms, Rourke Barakat, Gallagher, & Chaan, 2004	Group Treatment combining CBT and Family Therapy	4 sessions conducted sequentially in 1 day	Wait List	10-19	150	History of childhood cancer; 24 had elevated posttraumatic stress symptoms	Hospital	Psychologists, psychology graduate students, social workers	Adolescent survivors of cancer in the CBT group had significantly greater reduction in arousal symptoms compared to the Wait List group. The groups did not differ significantly on change in intrusion or avoidance symptoms.

7c. Studies Including a Number of Anxiety Disorders in Adolescents

Study	Treatment Modality	Number of Sessions	Control Condition	Age of Ss	N	Diagnosis	Setting	Credentials	Results
Ginsburg & Drake, 2002	School-based Group CBT	10-12 sessions	Group Attention Support	14-17	12	DSM-IV diagnosis of anxiety disorder, excluding OCD and PTSD	High school	Advanced graduate students in psychology, trained in the delivery of CBT	At post-treatment, 75% of the adolescents in the CBT group no longer met diagnostic criteria for their primary anxiety disorder, compared with 20% in control. Clinician ratings of impairment and self-report levels of overall anxiety were significantly lower at post-treatment in CBT compared with the control. Teenagers in both groups reported lower levels of social anxiety from pre- to post-treatment.

Table 8. Psychotherapy Clinical Trials for the Prevention of Anxiety Disorders in Children

Study	Treatment Modality	Number of Sessions	Control Condition	Age of Ss	N	Diagnosis	Setting	Therapist Credentials	Results
Dadds, Spence, Holland, Barrett, & Laurens, 1997; Dadds, Holland, Barrett, Laurens, & Spence, 1999	Group CBT + Family-based Group Intervention	10 sessions	Wait List	7-14	128	DSM-IV anxiety disorder (74%) or features based on child or teacher report, verified by ADIS-P structured interview	School	Clinical psychologists and graduate level trainees	At post-treatment both groups showed improvements in rates of diagnosis. At 6-month follow-up, the treatment group emerged with lower rates of diagnosis. Of the children who did not have a diagnosis before treatment and participated in CBT, significantly fewer developed a diagnosable anxiety disorder at post-treatment and 6-month follow-up. Treatment was associated with greater child and family adjustment at post-treatment and follow-up. At 12-month follow-up, the two groups converged, but the superiority of the intervention group was evident at 2-year follow-up.

## PEDIATRIC BIPOLAR DISORDER

One of the most controversial areas in child psychiatry these days involves the diagnosis of bipolar disorder in youth. Historically, pediatric bipolar disorder has been understudied, under-recognized, and, not infrequently, misdiagnosed. The center of the current controversy involves developmental differences in the presentation of symptoms of mania and mixed episodes in children and adolescents versus adults, with some but not all studies suggesting that adolescent mania may present with relatively higher rates of irritability, affective lability, depression, and psychosis [107]. Diagnosis of manic episodes in prepubertal children is more controversial. Recent reports of relatively high rates of bipolar disorder being diagnosed in prepubertal, mostly male samples of children with Attention-Deficit Hyperactivity Disorder (ADHD) have conflicted with the long-held notion that bipolar disorder rarely presents in this prepubertal age period. As it stands now, there are no age-specific alterations in the DSM-IV criteria for diagnosing manic episodes in prepubertal children or adolescents, but the legitimacy of such an approach to the classification of children with affective disorders, with or without co-morbid ADHD, remains an empirical question.

In the last 10 years in adult bipolar studies, a number of randomized clinical trials of CBT [108, 109], IPT plus a Social Rhythm component (IPSRT) [110], and Family Focused Treatment (FFT) [111] have shown that when combined with medication, psychosocial interventions result in (1) higher medication adherence, (2) fewer relapses and hospitalizations, and (3) better inter-episode functioning than medication alone. For pediatric bipolar disorder, 3 psychosocial interventions combined with medication have been adapted for this population and are in the process of being tested in open trials: FFT adapted for adolescents by Miklowitz [112]; multi-family psycho-education groups for bipolar children and adolescents by Fridstad [16]; and CBT with a family component by Pavuluri and colleagues [113]. All 3 studies have a psycho-education component (as do the bipolar adult psychosocial interventions) to inform patients and family about the symptoms in the different phases of the disorder, to help them identify the first signs of relapse, to encourage them to accept that they have an impairing illness that needs long-term and carefully monitored pharmacological treatment, and to assist them in finding resources and support to handle efficiently education, health, and social issues. These interventions will be tested in RCTs to understand their effects on medication adherence and symptomatic improvement as well as on improvement in functioning. This focus is important given that there is considerable functional impairment in young bipolar patients. Even when symptoms subside, improvement in functioning does not necessarily increase [114]. Since no RCTs have been conducted with this population, their evidence for efficacy cannot be assessed.

## OVERALL CONCLUSION

Significant progress has been made recently in the testing of treatments for depression and anxiety disorders in children and adolescents. A database of evidence-based treatments is developing, however, it is still quite limited due to the size of studies and type of comparison conditions they include. As such, many of the most promising treatments are still at the

level of "probably efficacious," with the exception of IPT-A and some forms of CBT which meets criteria for "well-established". The challenge for the field is to be able to disseminate these treatment models in studies with more valid psychosocial and/or medication comparison treatments, with bigger samples in community settings and delivered by community clinicians. The TADS study was one such venture in including more valid comparison treatments with a larger sample size. The CAMS study, currently underway, is another. There is variability among the studies in the type of clinician delivering the treatment although little attention has been paid to this variable and its effect on outcome. The effect of the clinician's adherence and competence is another area in need of research in order eventually to be able to transport and disseminate effectively psychotherapies that have gained sufficient empirical support from randomized controlled trials.

## ACKNOWLEDGEMENTS

This paper was supported by a Josiah Macy Jr. Foundation grant.

## REFERENCES

- [1] Chorpita BF. The frontier of evidence-based practice. In: Kazdin AE, Weisz JR Eds, Evidence-based psychotherapies for children and adolescents. New York, Guilford Press 2003; 42-59.
- [2] Crits-Christoph P, Baker MJ, Johnson B, *et al.* An update on empirically validated therapies. *Clin Psychologist* 1996; 49: 5-18.
- [3] Chambless, DL, Baker MJ, Baucom DH, *et al.* Update on empirically validated therapies, II. *Clin Psychologist* 1998; 51: 3-20.
- [4] Dickersin K. The existence of publication bias and risk factors for its occurrence. *JAMA* 1990; 263: 1385-9.
- [5] Dickersin K, Min YI, Meinert CL. Factors influencing publication of research results: Follow-up of applications submitted to two institutional review boards. *JAMA* 1992; 267: 374-8.
- [6] Sohn D. Publication bias and the evaluation of psychotherapy efficacy in reviews of the research literature. *Clin Psychol Rev* 1996; 16: 147-56.
- [7] Mufson L, Velting DM. Psychotherapy for depression and suicidal behavior in children and adolescents. In: Shaffer D, Waslick BD Eds, The many faces of depression in children and adolescents. Washington, DC, American Psychiatric Publishing, Inc. 2002; 37-72.
- [8] Baskin TW, Tierney SC, Minami T, Wampold, BE. Establishing specificity in psychotherapy: A meta-analysis of structural equivalence of placebo controls. *J Consult Clin Psychol* 2003; 71: 973-9.
- [9] Shaffer D, Fisher P, Dulcan M, *et al.* The NIMH Diagnostic Interview Schedule for Children, Version 2.3 (Disc 2.3): Description, acceptability, prevalence rates, and performance in the MECA study. *J Am Acad Child Adolesc Psychiatry* 1996; 49: 865-77.
- [10] Kessler RC, Walters EE. Epidemiology of DSM-III-R major depression and minor depression among adolescents and young adults in the National Comorbidity Survey. *Depress Anxiety* 1998; 7: 3-14.
- [11] Weissman MM, Wolk S, Goldstein RB, *et al.* Depressed adolescents grown up. *JAMA* 1999; 281: 1707-13.
- [12] Brent DA, Baugher M, Bridge J, Chen T, Chiappetta L. Age- and sex-related risk factors for adolescent suicide. *J Am Acad Child Adolesc Psychiatry* 1999; 38: 1497-505.
- [13] Olfson M, Marcus SC, Druss B, Pincus, HA. National trends in the use of outpatient psychotherapy. *Am J Psychiatry* 2002; 159: 1914-20.
- [14] Weissman MM, Sanderson WC. In: Hager M Ed, Modern Psychiatry: Challenges in Educating Health Professionals to Meet New Needs. New York, Josiah Macy, Jr. Foundation 2002; 132-165.
- [15] Fridstad MA, Gavazzi SM, Soldano KW. Multi-family psychoeducation groups for childhood mood disorders: A program description and preliminary efficacy data. *Contemp Fam Ther* 1998; 20: 385-402.



- [16] Fristad MA, Goldberg-Arnold JS, Gavazzi SM. Multi-family psychoeducation groups in the treatment of children with mood disorders. *J Marital Fam Ther* 2003; 29: 491-504.
- [17] Kazdin AE, Weisz JR. Identifying and developing empirically supported child and adolescent treatments. *J Consult Clin Psychol* 1998; 66: 19-36.
- [18] Garber J, Weiss B, Shanley N. Cognitions, depressive symptoms, and development in adolescents. *J Abnorm Psychol* 1993; 102(1):47-57.
- [19] Weisz JR, Stevens JS, Curry JF, *et al.* Control-related cognitions and depression among inpatient children and adolescents. *J Am Acad Child Adolesc Psychiatry* 1989; 28: 358-63.
- [20] Clarke GN, Debar LL, Lewinsohn PM. Cognitive-behavioral group treatment for adolescent depression. In: Kazdin AE, Weisz JR Eds, Evidence-based psychotherapies for children and adolescents. New York, Guilford Press 2003; 120-34.
- [21] Lewinsohn PM, Clarke G, Hopes H, Andrews J. Cognitive-behavioral treatment for depressed adolescents. *Behav Res Ther* 1990; 21: 163-71.
- [22] Weisz JR, Southam-Gerow MA, Gordis EB, Connor-Smith J. Primary and secondary control enhancement training for youth depression: Applying the deployment-focused model of treatment development and testing. In: Kazdin AE, Weisz JR Eds, Evidence-based psychotherapies for children and adolescents. New York, Guilford Press 2003; 165-82.
- [23] Weisz JR, Thurber CA, Sweeney L, Proffitt VD, LeGagnoux GL. Brief treatment of mild-to-moderate child depression using primary and secondary control enhancement training. *J Consult Clin Psychol* 1997; 65: 703-7.
- [24] Butler L, Mieztis S, Friedman R, Cole E. The effect of two school-based intervention programs on depressive symptoms in preadolescents. *Am Edu Res J*, 1980; 17: 111-9.
- [25] Liddle B, Spence SH. Cognitive-behaviour therapy with depressed primary school children: A cautionary note. *Behav Psychother* 1990; 18: 85-102.
- [26] Asarnow JR, Scott CV, Mintz J. A combined cognitive-behavioral family education intervention for depression in children: A treatment development study. *Cogn Ther Res* 2002; 26: 221-9.
- [27] Stark KD, Reynolds WM, Kaslow NJ. A comparison of the relative efficacy of self-control therapy and a behavioral problem-solving therapy for depression in children. *J Abnorm Child Psychol* 1987; 15: 91-113.
- [28] Stark KD, Rouse L, Livingston R. Treatment of depression during childhood and adolescents: Cognitive-behavioral procedures for the individual and family. In Kendall PC Ed, Child and adolescent therapy: Cognitive-behavioral procedures. New York, Guilford Press 1991; 165-208.
- [29] Ackerson J, Scogin F, Lyman RD, Smith N. Cognitive bibliotherapy for mild and moderate adolescent depressive symptomatology. *J Consult Clin Psychol* 1998; 66: 685-90.
- [30] Asarnow JR, Jaycox LH, Duan N, *et al.* Effectiveness of a quality improvement intervention for adolescent depression in primary care clinics. *JAMA* 2005; 293: 311-9.
- [31] Brent DA, Holder D, Kolko D, *et al.* A clinical psychotherapy trial for adolescent depression comparing cognitive, family, and supportive therapy. *Arch Gen Psychiatry* 1997; 54:877-85.
- [32] Clarke G, Lynn D, Lynch F, *et al.* A randomized effectiveness trial of brief cognitive-behavior therapy for depressed adolescents receiving antidepressant medication. *J Am Acad Child Adolesc Psychiatry* 2005; 44(9): 888-98.
- [33] Clarke GN, Rodhe P, Lewinsohn PM, Hops H, Seeley JR. Cognitive-behavioral treatment of adolescent depression: efficacy of acute group treatment and booster sessions. *J Am Acad Child Adolesc Psychiatry* 1999; 38: 272-9.
- [34] Treatment for Adolescents With Depression Study (TADS) Team. Fluoxetine, cognitive-behavioral therapy, and their combination for adolescents with depression. *JAMA* 2004; 292: 807-20.
- [35] Clarke GN, Hornbrook M, Lynch F, *et al.* Group cognitive-behavioral treatment for depressed adolescent offspring of depressed parents in a health maintenance organization. *J Am Acad Child Adolesc Psychiatry* 2003; 41:305-13.
- [36] Kahn JS, Kehle TJ, Jenson WR, Clark E. Comparison of cognitive-behavioral, relaxation, and self-modeling interventions for depression among middle-school students. *Sch Psychol Rev* 1990; 19: 196-211.
- [37] Reynolds WM, Coats KJ. A comparison of cognitive-behavioral therapy and relaxation training for the treatment of depression in adolescents. *J Consult Clin Psychol* 1986; 54: 653-60.
- [38] Rohde P, Clarke GN, Mace DE, Jorgensen JS, Seeley JR. An efficacy/effectiveness study of cognitive-behavioral treatment for adolescents with comorbid major depression and conduct disorder. *J Am Acad Child Adolesc Psychiatry* 2004; 43: 660-8.
- [39] Fine S, Forth A, Gilbert M, Haley G. Group therapy for adolescent depressive disorder: A comparison of social skills and therapeutic support. *J Am Acad Child Adolesc Psychiatry* 1991; 30, 79-85.
- [40] Vostanis P, Feehan C, Grattan E, Bickerton WL. Treatment for children and adolescents with depression: Lessons from a controlled trial. *Clinical Child Psychol Psychiatry* 1996; 1: 199-212.
- [41] Wood A, Harrington R, Moore A. Controlled trial of a brief cognitive-behavioral intervention in adolescent patients with depressive disorders. *J Child Psychol Psychiatry* 1996; 37: 737-46.
- [42] Reed MK. Social skills training to reduce depression in adolescents. *Adolescence* 1994; 29: 293-302.
- [43] Rossello J, Bernal G. The efficacy of cognitive-behavioral and interpersonal treatments for depression in Puerto Rican adolescents. *J Consult Clin Psychol* 1999; 67: 734-45.
- [44] Asarnow JR. Childhood-onset schizotypal disorder: A follow-up study and comparison with childhood-onset schizophrenia. *J Child Adolesc Psychopharmacol* 2005; 15: 395-407.
- [45] Birmaher B, Brent DA, Kolko D, *et al.* Clinical outcome after short-term psychotherapy for adolescents with major depressive disorder. *Arch Gen Psychiatry* 2000; 57: 29-36.
- [46] Lewinsohn PM, Clarke G, Rohde P. Psychological approaches to the treatment of depression in adolescents. In: Reynolds WM, Johnston HF Eds, Handbook of depression in children and adolescents. New York, Plenum Press 1994; 309-44.
- [47] National Institute of Mental Health (NIMH). Priorities for Prevention Research at NIMH. Bethesda, NIMH 1998; Publication No. 98-4321.
- [48] Jaycox LH, Reivich KJ, Gillham J, Seligman ME. Prevention of depressive symptoms in school children. *Behav Res Ther* 1994; 32: 801-16.
- [49] Clarke GN, Hawkins W, Murphy M, Sheeber LB. Targeted prevention of unipolar depressive disorder in an at-risk sample of high school adolescents: a randomized trial of group cognitive intervention. *J Am Acad Child Adolesc Psychiatry* 1995; 34: 312-21.
- [50] Clarke GN, Hornbrook M, Lynch F, *et al.* A randomized trial of a group cognitive intervention for preventing depression in adolescent offspring of depressed parents. *Arch Gen Psychiatry* 2001; 58: 1127-34.
- [51] Harrington R, Campbell F, Shoebridge P, Whittaker J. Meta-analysis of CBT for depression in adolescents. *J Am Acad Child Adolesc Psychiatry* 1998; 37: 1005-6.
- [52] Lewinsohn PM, Clarke GN. Psychosocial treatments for adolescent depression. *Clin Psychol Rev* 1999; 19: 329-42.
- [53] Reinecke MA, Dattilio FM, Freeman A Eds. Cognitive Therapy with Children and Adolescents: A Casebook for Clinical Practice. New York, Guilford Press 1996.
- [54] Klerman GL, Weissman MM, Rousaville BJ, Chevron E. Interpersonal Psychotherapy of Depression. New York, Basic Books 1984.
- [55] Weissman MM, Markowitz JC, Klerman GL. Comprehensive Guide to Interpersonal Psychotherapy. New York, Basic Books 2000.
- [56] Mufson L, Dorta KP, Wickramaratne P, Nomura Y, Olfson M, Weissman MM. A randomized effectiveness trial of interpersonal psychotherapy for depressed adolescents. *Arch Gen Psychiatry* 2004; 61: 577-84.
- [57] Mufson L, Weissman MM, Moreau D, Garfinkel R. The efficacy of interpersonal psychotherapy for depressed adolescents. *Arch Gen Psychiatry* 1999; 56: 573-9.
- [58] Costello EJ, Angold A. Developmental epidemiology. In: Cicchetti D, Cohen D J Eds, Developmental Psychopathology, Vol. 1: Theory and Methods. Oxford, England, John Wiley & Sons 1995; 25-36.
- [59] Kashani JH, Orvaschel H. A community study of anxiety in children and adolescents. *Am J Psychiatry* 1990; 147:313-8.
- [60] Shaffer D, Fisher P, Dulcan M, *et al.* The NIMH Diagnostic Interview Schedule for Children, Version 2.3 (Disc 2.3): Description, acceptability, prevalence rates, and performance in the MECA study. *J Am Acad Child Adolesc Psychiatry* 1996; 49: 865-77.

- [61] Ollendick TH, King NJ. Fears and their level of interference in adolescents. *Behav Res Ther* 1994; 32: 635-8.
- [62] Chansky TE, Kendall PC. Social expectancies and self-perceptions in anxiety-disordered children. *J Anxiety Disord* 1997; 11: 347-63.
- [63] King NJ, Ollendick TH. School refusal: Graduated and rapid behavioral treatment strategies. *Aust N Z J Psychiatry* 1989; 23: 213-23.
- [64] Pine DS, Cohen P, Gurley D, Block J, Ma Y. The risk for early-adulthood anxiety and depressive disorders in adolescents with anxiety and depressive disorders. *Arch Gen Psychiatry* 1998; 55: 56-64.
- [65] Kessler RC, McGonagle KA, Zhao S, *et al.* Lifetime and 12-month prevalence of DSM-III-R psychiatric disorders in the United States: Results from the National Comorbidity Survey. *Arch Gen Psychiatry* 1994; 51: 8-19.
- [66] Martin A, Leslie D. Psychiatric inpatient, outpatient, and medications utilization and costs among privately insured youths, 1997-2000. *Am J Psychiatry* 2003; 160: 757-64.
- [67] Angold A, Messer SC, Stangl D, Farmer EM, Costello EJ, Burns BJ. Perceived parental burden and service use for child and adolescent psychiatric disorders. *Am J Public Health* 1998; 88: 75-80.
- [68] 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.
- [69] Menzies RG, Clarke J. A comparison of *in vivo* and vicarious exposure in the treatment of childhood water phobia. *Behav Res Ther* 1993; 31: 9-15.
- [70] Cornwall E, Spence SH, Schotte D. The effectiveness of emotive imagery in the treatment of darkness phobia in children. *Behav Change* 1996; 13: 223-9.
- [71] 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. *J Child Psychol Psychiatry* 2000; 41: 713-26.
- [72] Beidel DC, Turner SM, Morris TL. Behavioral treatment of childhood social phobia. *J Consult Clin Psychol* 2000; 68: 1072-80.
- [73] Berliner L, Saunders BE. Treating fear and anxiety in sexually abused children: Results of a controlled 2-year follow-up study. *Child Maltreat* 1996; 1: 194-309.
- [74] Celano M, Hazzard A, Webb C, McCall C. Treatment of traumatic beliefs among sexually abused girls and their mothers: An evaluation study. *J Abnorm Child Psychol* 1996; 24: 1-17.
- [75] Cohen JA, Deblinger E, Mannarino AP, Steer RA. A Multisite, randomized controlled trial for children with sexual abuse-related PTSD symptoms. *J Am Acad Child Adolesc Psychiatry* 2004; 43: 393-402.
- [76] Deblinger E, Lippman J, Steer R. Sexually abused children suffering posttraumatic stress symptoms: Initial treatment outcome findings. *Child Maltreat* 1996; 1: 310-21.
- [77] Deblinger E, Stauffer LB, Steer RA. Comparative efficacies of supportive and cognitive behavioral group therapies for young children who have been sexually abused and their nonoffending mothers. *Child Maltreat* 2001; 6: 332-43.
- [78] King NJ, Tonge BJ, Mullen P, *et al.* Treating sexually abused children with posttraumatic stress symptoms: A randomized clinical trial. *J Am Acad Child Adolesc Psychiatry* 2000; 39: 1347-55.
- [79] Stein BD, Jaycox LH, Kataoka SH, *et al.* A mental health intervention for schoolchildren exposed to violence: A randomized controlled trial. *JAMA* 2003; 290: 603-11.
- [80] Barrett PM, Healy-Farrell LJ, March JS. Cognitive-behavioural family based treatment for childhood OCD: A randomised controlled trial. *J Am Acad Child Adolesc Psychiatry* 2004; 43: 46-63.
- [81] POTS 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* 2004; 292: 1969-76.
- [82] March JS, Mulle K. *OCD in Children and Adolescents: A Cognitive-Behavioral Treatment Manual*. New York, Guilford Press 1998.
- [83] Velting ON, Setzer NJ, Albano AM. Update on and advances in assessment and cognitive-behavioral treatment of anxiety disorders in children and adolescents. *Prof Psychol: Res Pract* 2004; 35: 42-54.
- [84] Barrett PM, Dadds MR, Rapee RM. Family treatment of childhood anxiety: A controlled trial. *J Consult Clin Psychol* 1996; 64: 333-42.
- [85] Cobham VE, Dadds MR, Spence SH. The role of parental anxiety in the treatment of childhood anxiety. *J Consult Clin Psychol* 1998; 66: 893-905.
- [86] Kendall PC. Treating anxiety disorders in children: results of a randomized clinical trial. *J Consult Clin Psychol* 1994; 62: 100-10.
- [87] Kendall PC, Flannery-Schroeder E, Panichelli-Mindel SM, Southam-Gerow M. Therapy for youths with anxiety disorders: A second randomized clinical trial. *J Consult Clin Psychol* 1997; 65: 366-80.
- [88] King NJ, Tong BJ, Heyne D, *et al.* Cognitive-behavioral treatment of school-refusing children: a controlled evaluation. *J Am Acad Child Adolesc Psychiatry* 1998; 37: 395-403.
- [89] Last CG, Hansen C, Franco N. Cognitive-behavioral treatment of school phobia. *J Am Acad Child Adolesc Psychiatry* 1998; 37: 404-11.
- [90] Nauta MH, Scholing A, Emmelkamp PM, Minderaa RB. Cognitive-behavioral therapy for children with anxiety disorders in a clinical setting: No additional effect of a cognitive parent training. *J Am Acad Child Adolesc Psychiatry* 2003; 42: 1270-78.
- [91] 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. *J Consult Clin Psychol* 1999; 67: 675-87.
- [92] Barrett PM. Evaluation of cognitive-behavioral group treatments for childhood anxiety disorders. *J Clin Child Psychol* 1998; 27: 459-68.
- [93] Mendlowitz SL, Manassis K, Bradley S, Scapillato D, Miezitis S, Shaw BF. Cognitive-behavioral group treatments in childhood anxiety disorders: The role of parental involvement. *J Am Acad Child Adolesc Psychiatry* 1999; 38: 1223-9.
- [94] Muris P, Meesters C, van Melick M. Treatment of childhood anxiety disorders: A preliminary comparison between cognitive-behavioral group therapy and a psychological placebo intervention. *J Behav Ther Exp Psychiatry* 2002; 33: 143-58.
- [95] Shortt AL, Barrett PM, Fox TL. Evaluating the FRIENDS Program: Cognitive-behavioral group treatment for anxious children and their parents. *J Consult Clin Psychol* 2001; 30: 525-35.
- [96] 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. *J Consult Clin Psychol* 1999; 67: 995-1003.
- [97] Flannery-Schroeder EC, Kendall PC. Group and individual cognitive-behavioral treatments for youth with anxiety disorders: A randomized clinical trial. *Cognit Ther Res* 2000; 24: 251-78.
- [98] Manassis K, Mendlowitz SL, Scapillato D, *et al.* Group and individual cognitive-behavioral therapy for childhood anxiety disorders: A randomized trial. *J Am Acad Child Adolesc Psychiatry* 2002; 41: 1423-30.
- [99] 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. *Br J Clin Psychol* 2001; 40: 323-36.
- [100] 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. *J Am Acad Child Adolesc Psychiatry* 2000; 39: 721-6.
- [101] Kazak AE, Alderfer MA, Streisand R, *et al.* Treatment of post-traumatic stress symptoms in adolescent survivors of childhood cancer and their families: A randomized controlled trial. *J Fam Psychol* 2004; 18: 493-504.
- [102] Ginsburg GS, Drake KL. School-based treatment for anxious African-American adolescents: A controlled pilot study. *J Am Acad Child Adolesc Psychiatry* 2002; 41: 768-75.
- [103] Rapee RM, Jacobs D. The reduction of temperamental risk for anxiety in withdrawn preschoolers: A pilot study. *Behav Cognit Psychother* 2002; 30: 211-6.
- [104] Dadds MR, Holland DE, Laurens KR, Mullins M, Barrett PM, Spence SH. Early intervention and prevention of anxiety disorders in children: Results at 2-year follow-up. *J Consult Clin Psychol* 1999; 67: 145-50.

- [105] Ginsburg GS, Siqueland L, Masia-Warner C, Hedtke KA. Anxiety disorders in children: Family matters. *Cognit Behav Pract* 2004; 11: 28-43.
- [106] Dadds MR, Spence SH, Holland DE, Barrett, PM, Laurens KR. Prevention and early intervention for anxiety disorders: A controlled trial. *J Consult Clin Psychol* 1997; 65: 627-35.
- [107] Geller B, Tillman R, Craney JL, Bolhofner K. Four-year prospective outcome and natural history of mania in children with a prepubertal and early adolescent bipolar disorder phenotype. *Arch Gen Psychiatry* 2004; 61: 459-67.
- [108] Lam DH, Bright J, Jones S, Hayward P, Schuck N, Chisholm D, Sham P. Cognitive therapy of bipolar illness: A pilot study. *Cognit Ther Res* 2000; 24: 503-20.
- [109] Colum F, Vieta E, Martinez-Aran A, *et al.* A randomized trial on the efficacy of group psychoeducation in the prophylaxis of recurrences in bipolar patients whose disease is in remission. *Arch Gen Psychiatry* 2003; 60: 402-7.
- [110] Frank E, Swartz HA, Mallinger AG, Thase ME, *et al.* Adjunctive psychotherapy for bipolar disorder: Effects of changing treatment modality. *J Abnorm Psychol* 1999; 108: 579-87.
- [111] Miklowitz DJ, Hooley JM. Developing family psychoeducational treatments for patients with bipolar and other severe psychiatric disorders: A pathway from basic research to clinical trials. *J Marital Fam Ther* 1998; 24: 419-35.
- [112] Miklowitz DJ. Family-focused treatment for bipolar disorder. In: Hofmann SG, Tompson MC Eds. *Treating chronic and severe mental disorders: A handbook of empirically supported interventions.* New York, Guilford Press 2002; 159-74.
- [113] Pavuluri MN, Graczyk PA, Henry DB, Carbray JA, Heidenreich J, Miklowitz DJ. Child- and family-focused cognitive-behavioral therapy for pediatric bipolar disorder: development and preliminary results. *J Am Acad Child Adolesc Psychiatry* 2004; 43: 528-37.
- [114] Weller EB, Danielyan AK, Weller RA. Somatic treatment of bipolar disorder in children and adolescents. *Child Adolesc Psychiatr Clin N Am* 2002; 11: 595-617.
- [115] Barrett PM, Duffy AL, Dadds MR, Rapee RM. Cognitive-behavioral treatment of anxiety disorders in children: Long-term (6-year) follow-up. *J Consult Clin Psychol* 2001; 69: 135-41.
- [116] Kendall PC, Southam-Gerow MA. Long-term follow-up of a cognitive-behavioral therapy for anxiety-disordered youth. *J Consult Clin Psychol* 1996; 64: 724-30.

Copyright of Current Psychiatry Reviews is the property of Bentham Science Publishers Ltd. and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.

Copyright of Current Psychiatry Reviews is the property of Bentham Science Publishers Ltd. and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.