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Child and Adolescent Psychiatry (M DelBello, Section Editor)

The Treatment of Pediatric Suicidal Behavior

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Opinion statement

Psychotherapies have stronger empirical support of efficacy and do not have safety concerns associated with many medications; thus, at present, psychotherapy is an appropriate first-line treatment for suicidal ideation and behavior in youth. Integrated Cognitive-Behavioral Therapy (I-CBT) and Multisystemic Therapy (MST) have the strongest preliminary evidence for psychotherapeutic treatment of suicidal behavior in preadolescents and adolescents with a history of suicidal behavior. Mentalization-Based Treatment for Adolescents (MBT-A), Developmental Group Psychotherapy (DGP), and Dialectical Behavior Therapy for Adolescents (DBT-A) have received some support for youth engaging in non-suicidal and/or suicidal self-injurious behaviors. Resourceful Adolescent Parent Program (RAP-P) may be effective in reducing suicidal thoughts and/or self-injurious behaviors (Table 1). In children with a history of recurrent sui-

cidal behavior and for whom psychotherapy alone is ineffective, psychopharmacological treatment may be necessary. Responsible pharmacological treatment of pediatric suicidal behavior requires understanding of the current dearth of efficacy evidence and the limitations of safety evidence within pediatric populations, the range of possible serious side effects, and the potential use of medications, including less toxic SSRIs (Barbey and Roose J Clin Psychiatry 59:42–8, 1998) [IV], as a suicide method. Time to effect of antidepressants may coincide with heightened suicide risk (Simon et al. Am J Psychiatr 163(1):41–7, 2006) [I], and, thus, patients should be monitored particularly closely during this time period. Psychotropic medications for pediatric patients should be part of a comprehensive and integrated treatment and monitoring strategy, including therapeutic drug monitoring and coordinated communication among providers, caregivers, and patients. Although suicide attempts in children younger than five are extremely rare, they do occur (Rosenthal and Rosenthal Am J Psychiatr 141(4):520–25, 1984) [IV]; treatment will focus on family factors and will typically employ dyadic models of psychotherapy to develop or reestablish co-regulation between the child and the caregiver.

Introduction

Historically, suicidal behavior has been characterized as a symptom of depression, bipolar disorder, and borderline personality disorder in the medical classification systems (U.S. Diagnostic and Statistical Manual of Mental Disorders (DSM) and International Classification of Diseases (ICD)) [4, 5] [NC, NC]. In children and adolescents, suicide is a relatively rare event. Nevertheless, in 2010, it ranked as the third leading cause of death among children ages 10 to 14; and the second leading cause of death among adolescents [6] [NC]. Clinicians often do not pay close attention to suicidal ideation and behavior in patients before adolescence, believing that children are too young to understand suicide and see it as a method of alleviating stress. Yet children five years of age to six years of age understand the idea of killing themselves even if they still believe that death is not final. By age seven or eight, children develop an accurate view of death as being irrevocable, understand the concept of killing oneself, and know lethal methods [7–9] [IV, IV, IV]]. Oftentimes one of the more important interventions is to convey that suicide is not inevitable or constructive for anyone.

Recognizing the risk of suicidal behavior is difficult. In young children, clinicians must be attuned to pediatric manifestations of depression such as unprompted crying, poor concentration, withdrawal, blunted emotions, or morbid themes during play. Contrary to the common belief that children and adolescents should not be asked about topics such as suicide for fear of their suggestibility, asking direct questions is a safe method for determining risk [10] [I]. Several scales exist with specific prompts to assess for suicide risk and can be used in pediatric populations (e.g., Columbia Suicide Severity Rating Scale (C-SSRS), Suicidal Behaviors Questionnaire for Children (SBQ–C), Suicidal Ideation Questionnaire-Junior (SIQ-JR). A critical objective in any suicide risk assessment is to distinguish suicidal and non-suicidal behavior or ideation on the basis of intent to die (or any non-zero intent to die as a result of the act) or wish to die, respectively.

Herein, we review treatments for high-risk children and adolescents who have a history of suicidal behavior. Few randomized controlled treatment trials examine youth suicidal behavior as a primary or even secondary outcome, and those that do must contend with low base-rates of suicidal behavior [11] [IV] and inconsistent classification and assessment of suicidal behavior (and ideation) [12] [I]. In spite of significant limitations, some support exists for the efficacy of psychotherapeutic treatment modalities and several psychopharmacological agents have shown promise and merit further research as treatment options. Other somatic treatment options targeting psychopathology (e.g., electroconvulsive therapy, transcranial magnetic

stimulation, deep brain stimulation, or complementary and alternative medicine treatments such as creatine) have been tested in children and adolescents but are beyond the scope of this review.

Psychopharmacological treatment options

There is a dearth of randomized controlled trials (RCTs) to determine the safety, efficacy, and dosage of promising medications in children and adolescents engaging in suicidal behavior. Existing RCTs examine suicide-related outcomes in pediatric populations in the context of psychopathology such as major depressive disorder and many of them exclude patients with a history of suicidal behavior. Other limitations to be cognizant of in interpreting empirical findings are retrospective data collection methods, short study duration, other study design issues (e.g., open-label and uncontrolled trials, analyses that pool multiple medications), and failure to capture the substantial neurodevelopmental heterogeneity inherent in the pediatric population.

Currently, no medications demonstrate efficacy in the treatment of specifically pediatric suicidal behavior. Because of this and the unresolved safety concerns for several medications, clinicians should ensure careful monitoring of baseline and follow-up levels of anxiety, agitation, sleep disturbance, mixed states, or psychosis, all of which may increase suicide risk [13] [NC].

Evidence for psychopharmacological treatment efficacy of suicidal behavior in adults has been limited to lithium in major affective disorders [14, 15] [I, IV] and clozapine in psychotic illnesses [16] [II] and cannot be assumed to generalize to children and adolescents [17] [IV]. Drug effects and drug disposition may substantially differ between pediatric patients and adults and pharmacokinetics and pharmacodynamics may vary with age in childhood [18] [NC]. Additional limited, preliminary findings indicate efficacy of fluoxetine and venlafaxine in suicidal behavior treatment in adult and geriatric populations; in pediatric populations, fluoxetine efficacy was not found and venlafaxine efficacy was not examined [19••] [I]. However, antidepressants have demonstrated modest efficacy in the treatment of pediatric major depressive disorder [20] [I].

Three medication classes – antidepressants, mood stabilizers, and antipsychotics – are presented below on the basis of their use in pediatric major depressive disorder (MDD) and bipolar disorder (BP), which include suicidal behavior or ideation in their diagnostic criteria. Many RCT meta-analyses have suggested that antidepressants can paradoxically increase suicide risk for at least a subset of the pediatric population [20–22] [I, I, IV]; however, treatment benefits for primary diagnoses may outweigh risks [20] [I]. Additional evidence is presented within these medication classes regarding their efficacy in the treatment of aggression, which is thought to derive from similar mechanisms of serotonergic dysfunction as those underlying suicidal behavior [23–25] [NC, NC, IV]. Due to the lack of pharmacokinetic studies to determine dosage for the treatment of pediatric suicidal behavior, clinicians should incorporate knowledge of typical pediatric dosages, therapeutic drug monitoring, and clinical observation to formulate individualized dosage regimens.

Antidepressants

In 2004, the FDA issued a warning on possible increased risk for suicide in children and adolescents taking antidepressants. Pooled analyses of randomized controlled trials in FDA databases suggested, based on adverse event reports, that pediatric patients receiving antidepressants had twice the risk of suicidal ideation or behavior compared to those receiving placebo (4 % versus 2 %); however, no deaths by suicide occurred in any of the treatment arms [26] [I]. In 2007, after reviewing adult studies [27] [I], the FDA expanded its warning to include young adults ages 18–24. The review found a modest protective effect of antidepressants in adults ages 25–64 and a stronger protective effect in adults aged 65 and older [27] [I], findings that have been further substantiated by a subsequent FDA meta-analysis [28] [I]. Pharmaceutical industry meta-analyses in adults have also shown improvements in suicidal ideation or behavior for specific antidepressants [29, 30] [I, I], while research findings regarding antidepressant safety in children, adolescents, and adults younger than 25 years remain mixed [19••, 22] [I, IV]. Notably, the direction of the relationship between medication and suicidal events depended on the assessment method; the analysis of symptom scales in the 2006 FDA meta-analysis showed no deterioration in suicidal ideation or behavior, while the analysis of the spontaneous reports of suicide-related adverse events showed onset or worsening in suicidal ideation or behavior. The discrepancy between adverse event report data and rating scale data is illustrated in the Treatment for Adolescents with Depression Study (TADS). While fluoxetine was effective in treating depression and suicidal ideation assessed with rating scales, spontaneous reports of suicidal ideation and behavior were increased in those administered fluoxetine relative to placebo [31, 32] [I, I].

More recent RCT meta-analyses replicate findings that antidepressants are not effective in the treatment of suicidal behavior in children and adolescents in the short-term [20] [I] [19••] [I]. However, a decrease in U.S. SSRI prescription rates as a result of the FDA warning has been associated with an increase in the rate of pediatric suicides in the U.S. [33] [NC]. Conversely, a steady increase in SSRI prescriptions is associated with a decline in the pediatric suicide rate [34] [NC]. Additionally, antidepressants are effective in the treatment of pediatric major depressive disorder (MDD), obsessive-compulsive disorder (OCD), and non-OCD anxiety disorders [20] [I], all of which are risk factors for pediatric suicidal behavior [35] [NC]. Altogether, these findings suggest the possibility of long-term antidepressant efficacy for pediatric suicidal behavior [36, 37•, 38] [IV, IV, I].

Antidepressants can differentially impact subsets of the pediatric population (e.g., by age group [20] [I], severity of depression [32] [I]); thus, it is also possible that specific antidepressants may increase suicide risk for some and reduce risk for others. Some original research is consistent with this hypothesis. A recent industry-sponsored uncontrolled open-label study on duloxetine in pediatric patients with MDD found worsening of suicidal ideation and behavior in 2.8 % of all patients, along with a 90 % improvement rate in suicidal ideation among those with suicidal ideation at baseline [39] [IV]. Clinicians may need to weigh the potential treatment benefits against possible increased suicide risk for a subset of patients.

The majority of primary research suggests that antidepressants, when analyzed individually or pooled, are no more effective than psychotherapy, placebo, or other individual antidepressants in the short term in reducing suicide-related outcomes. The only existing pediatric study with suicidal behavior as a primary outcome is the Treatment of Adolescent Suicide Attempters study (TASA), with an uncontrolled, open treatment design, which used The Texas Medication Algorithm, consisting of antidepressants and mood stabilizers [40] [IV]. Medication was found to be no more effective than psychotherapy or combination treatment in reducing suicidal outcomes [41] [IV]. A randomized placebo-controlled multisite trial found that both escitalopram and placebo were associated with increased suicidal ideation during the trial and that few in either group had a worsening of suicidal behavior [42] [I]. The Treatment of SSRI-Resistant Depression in Adolescents (TORDIA) study found no treatment differences in primary and secondary outcome measures related to depression or to suicidal ideation or behavior (all showed decreases over time) between switching to venlafaxine or to another SSRI (either paroxetine, citalopram, or fluoxetine) [43] [II].

Some side effects of venlafaxine (SNRI) may be more frequent or severe relative to those of SSRIs in adolescents [43] [II] and venlafaxine may show increases in suicidal ideation or behavior in youth in spite of its efficacy in the treatment of pediatric major depression [44] [I]. When choosing an antidepressant, clinicians may decide to prescribe SSRIs due to their low side effect profiles, but such a rationale may be premature without more extensive knowledge of long-term efficacy and mechanisms of action of specific antidepressants. Monoamine oxidase inhibitors (MAOIs) and tricyclic antidepressants (TCAs), on the other hand, are not recommended due to more severe side effect profiles than the newer SSRIs, a higher potential for lethal overdose, and the finding that suicide rates have decreased since the increase in use of non-MAOI and non-TCA antidepressants in the 1980s [13, 45, 46] [NC, NC, NC].

Knowledge of time to effect of specific antidepressants may help illuminate understanding of whether there is increased short-term suicide risk in the period before onset of drug effect or whether short-term risk increases in periods corresponding to the onset of side effects such as akathisia. Drugs with shorter times to effect may be good initial candidates for research that determines antidepressant effects on suicidal behavior.

Contraindications SSRI-induced manic episodes have been reported in children and adolescents with bipolar disorder [47] [NC]. Duloxetine should be administered with caution in children with epilepsy [48] [NC]. Venlafaxine doses should be adjusted in patients with hepatic or renal disease, as they may eliminate venlafaxine at a slower rate and experience increased serum levels [49] [NC].

Main drug interactions SSRI interactions include MAOIs, triptans, ergotamines, tryptophan, CYP2A4-inhibiting SSRIs, tramadol, CYP2D6-inhibiting SSRIs, and tight protein-bound medications (e.g., warfarin, diazepam propandol) [50] [NC]. SNRI interactions include MAOIs, tryptophan, tramadol hyperchloride, and medications that utilize the CYP450, CYP2D6 and/or CYP1A2 pathways, including some antipsychotics, β–blockers, and antiarrhythmics.

Main side effects Side effects of SSRIs, many of which appear within the first few weeks of treatment but resolve over time, include nausea, vomiting, mania, increased

sweating, headaches, dizziness, diarrhea, fluctuations in appetite, weight changes, vivid dreams, bruxism, somnolence, tremors, and akathisia. Risk of bleeding may increase and sexual side effects may also occur [48] [NC]. Reports of SNRI side effects include headache, abdominal pain, anorexia, accidental injury, nausea, constipation, and increased blood pressure [51–54] [I, I, IV, IV].

Special points Fluoxetine is indicated for use by the FDA in children eight years and older with MDD. Escitalopram is FDA-approved for children 12 years and older with MDD [17] [NC].

Mood stabilizers

The efficacy of mood stabilizers in treating suicidal behavior in children and adolescents has not been researched. In adults with mood disorders, research suggests lithium is effective in the treatment of suicidal behavior [14, 15] [I, IV]. Lithium may be useful in treating manic episodes in some children and adolescents [55–58] [IV, IV, IV, IV], as well as depressive episodes in adolescents [59] [IV], and in preventing symptomatic relapse in adolescents with bipolar disorder [60, 61] [NC, NC]. Symptom-reduction in bipolar disorder may serve to reduce suicidal ideation or behavior, a DSM-5 sub-criterion of bipolar disorder, particularly during depressive or mixed episodes, which may confer additional suicide risk [62, 63] [NC, NC]. Lithium has also been shown to effectively treat aggression in children and adolescents with conduct disorder [64–66] [I, IV, I]; in adults with mood disorders, aggression is associated with suicide attempts [67–69] [NC, NC, NC].

Divalproex sodium is commonly used to treat mania or mixed episodes in children and adolescents with bipolar disorder. However research is inconclusive regarding its efficacy [57, 70] [IV, I], and a recent single-blind RCT indicates that risperidone may be more effective than lithium or divalproex sodium in treating mania in children (with the disadvantage of metabolic side effects) [71] [II]. Additionally, divalproex sodium may be less safe than lithium with regard to the risk of suicide attempts or deaths by suicide among patients 14 years of age and older [72] [IV]. This is consistent with an FDA meta-analysis of spontaneous reports, which found twice the risk among patients receiving antiepileptics compared to those receiving placebo – leading to the warning (non-Black-Box) on product labels issued by the FDA in 2008 [73] [I]. Divalproex may reduce aggression, explosive temper, and mood lability - risk factors for suicidal behavior - in children and adolescents with disruptive disorders. Youth with PTSD and conduct disorder receiving high doses of divalproex showed significant improvement in aggression suppression relative to those receiving low doses [74] [II]. In children and adolescents with oppositional defiant disorder or conduct disorder ages 10–18, divalproex demonstrated efficacy in the treatment of explosive temper and mood lability [75] [I].

Contraindications Patients with renal, cardiovascular, or thyroid disease as well as those with severe dehydration should have their serum levels monitored closely when administered lithium. Serum level and liver functions should also be carefully monitored in individuals with significant liver dysfunction [76] [NC] or deficits in ammonia metabolism [77, 78] [NC,

NC]. Divalproex sodium is contraindicated for any condition in children younger than two years of age [79] [NC]. Pregnant youth should not take lithium or divalproex sodium due to an association between lithium and fetal cardiac abnormalities [80] [NC].

Main drug interactions Interactions may occur with medications metabolized by the same cytochrome P450 enzymes as divalproex sodium. These include erythromycin, SSRIs, cimetidine, salicylates, phenobarbital, primidone, carbamazepine, phenytoin, tricyclics, and lamotrigine [48] [NC]. Antibiotics, nonsteroidal anti-inflammatory agents, angiotensin-converting enzyme inhibitors, calcium channel blockers, antipsychotic agents, propanolol, and SSRIs may increase lithium level.

Main side effects Nausea, diarrhea, abdominal distress, sedation, tremor, polyuria, weight gain, and acne are common side effects from lithium. Due to lithium's low therapeutic index, care should be taken not to exceed lithium's therapeutic serum level. Tremor, headache, sedation, polycystic ovary syndrome, nausea, stomach pains, leucopenia, thrombocytopenia, elevated liver function enzymes or pancreatic enzymes, and hepatic failure (potentially fatal) may occur with divalproex sodium use [79] [NC].

Special points Lithium is FDA-approved to treat manic episodes in patients with bipolar disorder who are 12 years of age or older.

Second generation antipsychotics

Although several studies have demonstrated efficacy of atypical antipsychotics in pediatric populations for the treatment of aggression in disruptive disorders (risperidone) [81, 82] [II, I] and mania in bipolar disorders (quetiapine and ziprasidone) [83, 84] [I, IV], no efficacy studies have been conducted specifically for suicidal behavior. In adults with bipolar disorder, augmentation of mood stabilizers with olanzapine was associated with reduced suicidal ideation [85] [I].

Contraindications Those with myeloproliferative disorders, uncontrolled epilepsy, a history of clozapine-induced agranulocytosis or severe granulocytopenia, hepatic impairment, renal impairment, familial long QT syndrome, history of cardiac arrhythmias, or other significant cardiovascular illnesses should not take certain second generation antipsychotics [79] [NC].

Main drug interactions Drugs that are metabolized by the same cytochrome P450 enzyme, which include CYP450 3A4, 2D6, 1A2, 2C19 and 2C9 for many atypical antipsychotics, should be avoided [86] [NC]. Only 33 % of ziprasidone undergoes CYP first-pass metabolism; hence, the probability of its drug-drug interactions is lower relative to most other antipsychotic medications.

Main side effects Side effects can include nausea, emesis, headache, sedation, activation, akathisia and other extrapyramidal side-effects (EPSE), weight gain, agranulocystosis, neutropenia [87] [IV], seizures, glucose intolerance, orthostasis, cataracts (found in animal studies of quetiapine), prolactin elevation, QTc prolongation, and elevated heart rate [88] [NC].

Special points Risperidone, aripiprazole, quetiapine, and olanzapine are FDA-approved to treat bipolar disorder in children ten years and older. Clozapine is FDA-approved to treat suicidal ideation and behavior in adults with schizophrenia. However, clozapine has a severe side-effect profile in children and adolescents; it induces neutropenia at a higher rate in children than in adults [87] [IV] and is associated with risk for potentially fatal agranulocytosis [88]

[NC]. Clozapine may be indicated for children and adolescents with schizophrenia or schizoaffective disorder who are at high-risk for re-experiencing suicidal behavior [79] [NC].

Psychotherapeutic models of treatment

Psychotherapeutic models of treatment for youth suicidal behavior aim to reduce frequency and to treat underpinnings of the behavior. Suicidal ideation is necessarily a primary foci of psychotherapy with suicidal patients, and, as such, is typically examined in any treatment efficacy study for suicidal behavior. Some therapies directly target suicidal thoughts and behaviors while others target assumed underlying psychopathology [89, 90].

This review of empirically-tested psychotherapies for pediatric suicidal behavior limits its scope to treatments that 1) were developed or adapted specifically to reduce suicidal ideation and/or suicidal behavior in the pediatric population, 2) were examined in at least one randomized controlled trial, and 3) demonstrated significant effects in reducing suicidal ideation and/or suicidal behavior. Nine treatments were identified that meet these criteria: MST, ABFT, MBT-A, DBT-A, I-CBT, IPT-A-IN, YST, DGP, and RAP-P (Table 1).

These psychotherapeutic treatments share common elements of providing psychoeducation, increasing crisis management skills, teaching problem-solving and coping skills, enhancing familial relationships, and improving global functioning, but their postulated mechanisms of change vary. Further, they range widely in duration (e.g., five sessions or year-long intensive treatment programs), therapy setting (e.g., outpatient, home, school, or emergency departments), and therapist time commitment (e.g., time-limited sessions or on-call 24 hours/day and 7 days/week).

Of the nine treatments reviewed, I-CBT and MST were the only treatments shown to significantly reduce suicidal behaviors, defined as self-injurious behavior with intent to die. Both emphasize caregiver involvement in the treatment process and the importance of repairing family relationships. The efficacy studies of MBT-A, DGP, DBT-A, and RAP-P claiming reduction in suicidal behaviors used a range of outcomes that combined suicidal behavior

Table 1. Psychotherapy abbreviations

ABFT	Attachment Based Family Therapy
DBT-A	Dialectical Behavior Therapy for Adolescents
DGP	Developmental Group Psychotherapy
I-CBT	Integrated Cognitive-Behavioral Therapy
IPT-A-IN	Intensive Interpersonal Psychotherapy for Depressed Adolescents with Suicide Risk
MST	Multisystemic Therapy
MBT-A	Mentalization-Based Therapy for Adolescents
RAP-P	Resourceful Adolescent Parent Program
YST	Youth-Nominated Support Team

with non-suicidal self-injurious behavior and/or suicidal ideation. Attachment Based Family Therapy (ABFT), Intensive Interpersonal Psychotherapy for Depressed Adolescents with Suicide Risk (IPT-A-IN), and Youth-Nominated Support Team (YST) have only demonstrated reduction of suicidal ideation. None of the treatments have been studied with children younger than ten.

Multisystemic therapy (MST)

Description MST is an intensive, home-based treatment rooted in the principle that maladaptive behaviors result from the interaction of individual, family, school, peer, and neighborhood factors. This treatment was originally developed for high-risk antisocial adolescents with the goal of rehabilitating them in their natural environments and has since been adapted for youth with suicidal behavior. The aim of MST is to engage members of the adolescent's entire social network to aid in the reduction of suicidal behaviors, ideation and planning. The protocol involves administering family therapy (including behavioral parent training), teaching crisis management techniques, and training caregivers in containment and monitoring procedures, such as structuring time and supporting youth in disengaging from delinquent social networks.

Efficacy of MST has been tested in one randomized controlled trial. Participants were youth aged 10 to 17 presenting to the emergency department with a suicide attempt, suicidal ideation, suicide plans, homicidal behavior, homicidal ideation, or psychosis [91] [I]. MST-treated youth showed a reduction of self-reported suicide attempts at the one-year follow-up. No reductions in rates of depression, suicidal ideation, or hopelessness were reported [91] [I].

Treatment Duration 3–6 months

Minimum Degree to Practice MSW

Training Information may be accessed at http://www.mstservices.com.

Special Points MST is a home-based treatment; therapists are on call 24 hours/day, 7 days/week to assist during crises and may engage in daily contact with family when appropriate.

Contraindications MST is not appropriate in cases where family and/or school involvement cannot be secured.

Attachment based family therapy (ABFT)

Description ABFT is based on the notion that adolescent suicide emerges as a result of family conflict when parents fail to help their adolescent work through difficult experiences. ABFT utilizes parent-adolescent dialogue to rebuild trust and reestablish caregivers as the "secure base," (i.e., being caring and protective while supporting the adolescent's autonomy and ability to withstand life stress independently). The protocol aims to increase familial support, communication, and problem-solving skills among family members. Parents are taught skills in emotion-focused parenting and in monitoring and contingency management.

One randomized controlled study has examined the efficacy of ABFT specifically for suicide risk. Participants were adolescents aged 12 to 17 presenting to primary care or emergency departments with suicidal ideation and above moderate depression [92] [I]. ABFT-treated youth showed a reduction of suicidal ideation at three and six months follow-up. ABFT did not demonstrate an effect on suicidal behavior [92] [I].

Treatment Duration 3 months

Minimum Degree to Practice MSW

Training Information may be accessed at http://www.research.chop.edu/programs/cfis/contactus.php.

Contraindications ABFT is not appropriate in cases where family involvement cannot be secured.

Mentalization-based treatment for adolescents (MBT-A)

Description MBT-A is grounded in attachment theory and is often used to treat borderline personality disorder [93•] [I]. MBT-A is a psychoanalytic treatment based on the notion that self-harming behaviors, as a form of disrupted self-regulation, are rooted in difficulties with envisioning internal states of self and others (mentalization) – a capacity that makes behavior meaningful and predictable. Enhancing one's ability to mentalize is hypothesized to decrease impulsivity, improve affect regulation, and aid in establishing a coherent concept of self, thereby enhancing interpersonal relationships and reducing self-harming behaviors.

One randomized controlled trial was conducted to determine the efficacy of MBT-A in reducing occurrences of self-harm. Participants were adolescents aged 12 to 17 presenting to community mental health services or emergency care with self-harm. MBT-A resulted in the reduction of self-harming occurrences and depression at the one-year follow-up [93•] [I]. This effect was mediated by self-reported mentalization and a decrease in avoidant attachment. The outcome measure did not distinguish between self-injurious behaviors enacted with and without suicidal intent.

Treatment Duration 12 months

Minimum Degree to Practice MSW

Training Information may be accessed at http://www.annafreud.org/pages/mentalization-based-treatment-training-programme.html.

Special Points MBT-A includes weekly individual and monthly family therapy sessions.

Contraindications None

Dialectical behavior therapy for adolescents (DBT-A)

Description DBT is a form of cognitive-behavioral therapy, originally developed for chronically suicidal patients [94] [II]. It has since been adapted for adolescents who have attempted suicide (DBT-A) [89] [NC]. It is a multi-modal and multi-phase treatment that utilizes individual and group therapy and phone and treatment team consultations to progress patients from gaining behavioral control over immediate actions, to improving their overall emotional functioning, to reducing problems in everyday living, and, ultimately, to discovering joy. The primary target of treatment is the adolescent's life-threatening behaviors. To that end, stabilization in the initial phase of treatment is achieved by reducing behaviors interfering with quality of life (e.g., non-suicidal self-injury) and with therapy (e.g., missing sessions), and increasing behavioral skills - most importantly, emotion regulation. Therapists teach adolescents mindfulness, interpersonal effectiveness, and stress tolerance skills.

In an ongoing RCT of a 20-week version of DBT-A with child and adolescent outpatients (ages 10–18), preliminary data suggest that participants receiving DBT-A show reductions in suicidal ideation and frequency of self-harming behaviors relative to those receiving Treatment As Usual (TAU) [95] [I].

	Follow-up studies of these patients to determine maintenance of gains are currently underway.
Treatment Duration	5 months
Minimum Degree to Practice	MSW
Training	Information regarding DBT training may be accessed at www.behavioraltech.org.
Special Points	Extensive clinician training is needed and therapists are on call 24 hours/day, 7 days/week to assist during crises.
Contraindications	None

Integrated cognitive-behavioral therapy (I-CBT)

Description	I-CBT focuses on teaching individuals how to identify the relationship between their thoughts and feelings in order to alter thought patterns that lead to negative behaviors. I-CBT targets suicidal behaviors directly by modifying thoughts, behaviors, and affective response patterns that trigger suicidal ideation and behavior. Therapists working with adolescents employ motivational interviewing and teach skills in coping, problem solving, affect regulation, cognitive restructuring, and communication. The goal of parent sessions is to increase adolescent-parent communication and to teach parents skills in modeling, affect regulation and contingency management [96••]. In a RCT of I-CBT, developed for adolescents with co-occurring suicidal ideation or behavior (a suicide attempt in the past three months or elevated suicidal ideation in the past month) and alcohol or other drug use disorder (AOD), the I-CBT group showed reductions in suicide attempts, emergency department visits, arrests, inpatient psychiatric hospitalization, heavy drinking days, marijuana use, and global impairment [96••] [I].
Treatment Duration	6 months
Minimum Degree to Practice	MSW
Training	Information can be obtained from the corresponding author of Esposito-Smythers et al. (2011).
Special Points	Two therapists are assigned to each case; one administers adolescent individual therapy and another administers parent and family therapy.
Contraindications	None

Intensive interpersonal psychotherapy for depressed adolescents with suicide risk (IPT-A-IN)

Description	Interpersonal psychotherapy (IPT) was adapted for adolescents by Mufson and colleagues (2004) to treat adolescent depression (IPT-A) [97, 98] [I, I]. IPT-A-IN is a shortened and more intense form of the manualized IPT-A and is designed to address imminent suicide risk in depressed adolescents [99] [I]. IPT-A-IN is based on the premise that depression and associated self-injurious behaviors result from ineffective and conflict-ridden interpersonal relationships. The protocol involves providing adolescents with psychoeducation about interpersonal conflicts and their relationship to mood states. Therapists work with adolescents on negotiating developmental tasks (e.g., autonomy exploration). A RCT [99] [I] compared IPT-A-IN (administered by a treating clinician in bi-weekly sessions over six weeks) with TAU in 12–18 year olds with suicidal ideation, a previous suicide attempt, or elevated symptoms of depression, anxiety, or hopelessness. The IPT-A-IN group showed significant

reductions in depression, hopelessness, and suicidal ideation but not in suicidal behaviors.

Treatment Duration 6 weeks

Minimum Degree to Practice MSW

Training Information can be obtained from the corresponding author of Tang et al. (2009).

Special Points Treatment typically occurs in outpatient settings, including schools.

Contraindications None

Youth-nominated support team (YST)

Description YST was developed as an adjunctive treatment to standard care for adolescents with recent suicidal ideation or a suicide attempt. YST is grounded in the view that social support may be a powerful protective factor against suicidal behaviors among youth. The program aims to reduce suicidal ideation and behavior through enhancing social integration and support. Adolescents nominate a guardian and three other individuals to act as support team members [100] [I] who will maintain weekly check-ins with the adolescent. Psychoeducation and crisis management are taught to the support team members in either individual or group sessions.

Two randomized controlled trials with psychiatrically hospitalized adolescents with recent (past four weeks) significant suicidal ideation or behavior have been conducted to examine the efficacy of six-month (YST-1) and three-month (YST-2) versions of the treatment. YST-1 with 12–17 year olds demonstrated reduction of suicidal ideation and functional impairment among girls at the 6-month follow-up, with no significant reductions in suicidal behaviors in either gender [100] [I]. YST-2, with 13–17 year olds did not demonstrate reduction of suicidal ideation or behavior among the general sample. In those with a history of multiple suicide attempts, it reduced suicidal ideation more rapidly than routine care measured at the six-week follow up; this effect did not hold after the six-week follow-up [101] [I].

Treatment Duration 6 months (YST-1); 3 months (YST-2)

Minimum Degree to Practice Therapists are required to have at minimum a Master's level clinical degree.

Training Information regarding procedures can be obtained from the principal investigator, Dr. Cheryl King [101].

Contraindications None

Developmental group psychotherapy (DGP)

Description DGP [102] [I] was developed specifically for adolescents with self-injurious behavior, addressing themes deemed important to them [103–105] [NC, NC, NC]: relationships, school and family problems, anger management, depression and self-harm, and hopelessness. The program employs positive corrective relationships and clinical techniques derived from CBT [106] [II], DBT [107] [I], and psychodynamic group psychotherapy with the goal of reducing repeated self-harm.

In a pilot RCT [102] [I] with youth aged 12–16 with depression and repeated self-harm, routine care with DGP showed a decrease in the number of self-harm occurrences and an increased mean time to re-occurrence compared to routine care alone. There was no significant difference in reduction of suicidal ideation. Two subsequent studies [108, 109] [I, I] failed to replicate these results. Differences in treatment fidelity, treatment duration, and quality of routine care may account for the differences in the results.

Treatment Duration	6+ months
Special points	The trials involved adolescents with repeated deliberate self-harm but did not distinguish suicidal from non-suicidal intent [110] [NC]. An acute and a long-term group were run continuously to allow for immediate start of treatment at a time of crisis.
Training	The treatment manual is available from Dr. Harrington, the corresponding author [102] [II].
Contraindications	None

Resourceful adolescent parent program (RAP-P)

Description	RAP-P was originally developed to promote healthy adolescent development and to build parent skills for managing parent-adolescent conflict and negative emotional reactions. RAP-P was later modified to treat suicidal adolescents, based on the premise that family conflict and poor parent-adolescent relationships lead to suicide risk. To adapt RAP-P for suicidal adolescents [111] [I], a primary psychoeducational component was incorporated, focusing on increasing parent understanding of the occurrence of suicidal thoughts and behaviors and teaching parents skills in safety planning and crisis management. In a RCT with adolescents (aged 12 to 17) presenting to the emergency department with a history of suicidal ideation, non-suicidal self-injury, or suicidal behavior within the past 2 months [111] [I], routine care plus RAP-P led to a significant reduction on a combined measure of suicidal ideation, suicidal plans, suicidal threats, deliberate self-injury, and suicide attempts in comparison with routine care alone [111] [I]. This effect was partially mediated by change in family functioning, as reported by adolescents. Use of a combined measure of suicidal outcomes precludes conclusion that this therapy is effective specifically in reducing suicidal ideation or suicidal behaviors.
Treatment Duration	2 weeks - 1 month
Minimum Degree to Practice	Professionals in education or mental health are eligible for training.
Training	Information can be accessed at http://www.rap.qut.edu.au/programs/rap-p.jsp.
Special Points	Treatment typically occurs in home-based settings.
Contraindications	RAP-P is not appropriate in cases where family involvement cannot be secured.

Compliance with Ethics Guidelines

Conflict of Interest

Taylor Burke, Jacqueline Buchanan, Leora Amira, and Kseniya Yershova declare that they have no conflict of interest.

Kelly Posner is the director of the Center for Suicide Risk Assessment which, as part of an effort to help execute the FDA suicidality classification mandates, has received support from Abbott, Albany Molecular Research, Alfresa, Alkermes, Amgen, AstraZeneca, Biodelivery Sciences, Biomarin, Bristol-Myers Squibb, Canam, Cato Research, Cephalon, Cetero Research, Covance, CRI Worldwide, Depomed, Douglas Pharmaceuticals, EISAI, Euthymics, Forest Laboratories, GlaxoSmithKline, GW Pharma, Human Genome Sciences, i3 Research, ICON,

IntelGenx Corp., Intracellular Therapies, Johnson & Johnson, Kendle Early Stage, Lilly USA, Lundbeck A/S, Lundbeck USA, MedImmune, Medtronic, Merck, Neurosearch, Next Wave Pharmaceuticals, Novartis, Noven, NovoNordisk, Orexigen, Otsuka, Parexel, Pfizer, PGx Health, PPDI, Psyadon, QED, Quintiles, Reckitt Benckiser, Roche, Sanofi-Aventis, Schering-Plough Corporation, SCOPE International, Sepracor/Sunovion, Shire, Siena Biotech, Supernus, Synosia Therapeutics, Takeda Pharmaceutical Company, Theravance, Upsher-Smith, Valeant Pharmaceuticals, Vivus, World Wide Clinical Trials and Wyeth Research. Dr. Posner receives royalty payments from the e-CSSRS.

Human and Animal Rights and Informed Consent
This article does not contain any studies with animal subjects performed by any of the authors.

References and Recommended Reading

Papers of particular interest, published recently, have been highlighted as:
- • Of importance
- •• Of major importance

1. Barbey JT, Roose SP. SSRI safety in overdose. J Clin Psychiatry. 1998;59:42–8.
2. Simon GE et al. Suicide risk during antidepressant treatment. Am J Psychiatr. 2006;163(1):41–7.
3. Rosenthal PA, Rosenthal S. Suicidal behavior by preschool children. Am J Psychiatr. 1984;141(4):520–5.
4. American Psychiatric Association. Diagnostic and statistical manual of mental disorders: DSM-IV-TR. American Psychiatric Publishing, Inc ;2000.
5. Organization WH. The ICD-10 classification of mental and behavioural disorders: diagnostic criteria for research. World Health Organization; 1993.
6. Centers for Disease Control and Prevention: National Center for Injury Prevention and Control. Web-based Injury Statistics Query and Reporting System (WISQARS) [online]; 2010.
7. Normand CL, Mishara BL. The development of the concept of suicide in children. OMEGA–J Death Dying. 1992;25(3):183–203.
8. Speece MW, Brent SB. Children's understanding of death: a review of three components of a death concept. Child Dev. 1984:1671–86.
9. Mishara BL. Conceptions of death and suicide in children ages 6–12 and their implications for suicide prevention. Suicide Life Threat Behav. 1999;29(2):105–18.
10. Gould MS et al. Evaluating iatrogenic risk of youth suicide screening programs: a randomized controlled trial. JAMA. 2005;293(13):1635–43.
11. Hawton K. Assessment of suicide risk. Br J Psychiatry. 1987.
12. Posner K et al. Columbia Classification Algorithm of Suicide Assessment (C-CASA): classification of suicidal events in the FDA's pediatric suicidal risk analysis of antidepressants. Am J Psychiatr. 2007;164(7):1035–43.
13. Association AP. American Psychiatric Association Practice Guidelines for the treatment of psychiatric disorders: compendium 2006. American Psychiatric Pub.; 2006.
14. Cipriani A et al. Lithium in the prevention of suicidal behavior and all-cause mortality in patients with mood disorders: a systematic review of randomized trials. Am J Psychiatr. 2005;162(10):1805–19.
15. Tondo L, Baldessarini RJ, Floris G. Long-term clinical effectiveness of lithium maintenance treatment in types I and II bipolar disorders. Br J Psychiatry. 2001;178(41):s184–90.
16. Meltzer HY, Okayli G. Reduction of suicidality during clozapine treatment of neuroleptic-resistant schizophrenia: impact on risk-benefit assessment. Am J Psychiatr. 1995;152(2):183–90.
17. McVoy M, Findling RL. Clinical manual of child and adolescent psychopharmacology. American Psychiatric Pub.; 2012.
18. Stephenson T. How children's responses to drugs differ from adults. Br J Clin Pharmacol. 2005;59(6):670–3.
19. •• Gibbons RD, et al. Suicidal thoughts and behavior with antidepressant treatment: reanalysis of the randomized placebo-controlled studies of fluoxetine and venlafaxine. Arch Gen Psychiatry. 2012: p. archgenpsychiatry. 2011.2048 v1.

This well-designed RCT meta-analysis improves upon the U.S. Food and Drug Administration (FDA) Black Box warning meta-analyses by analyzing short-term data longitudinally, from both published and unpublished studies, and with suicide-

specific outcomes that consist of an aggregate of rating scale and adverse event report data to examine antidepressant safety and efficacy on suicidal thoughts and behavior in multiple age groups. Fluoxetine and venlafaxine were found to be efficacious in reducing short-term suicidal symptoms in adult and geriatric populations, but not in youths (fluoxetine analyzed only). Importantly, no evidence of increased suicide risk was observed in youths receiving fluoxetine.

20. Bridge JA et al. Clinical response and risk for reported suicidal ideation and suicide attempts in pediatric antidepressant treatment. JAMA: J Am Med Assoc. 2007;297(15):1683–96.
21. Hammad TA, Laughren T, Racoosin J. Suicidality in pediatric patients treated with antidepressant drugs. Arch Gen Psychiatry. 2006;63(3):332.
22. Schneeweiss S et al. Comparative safety of antidepressant agents for children and adolescents regarding suicidal acts. Pediatrics. 2010;125(5):876–88.
23. Brown GL et al. Aggression in humans correlates with cerebrospinal fluid amine metabolites. Psychiatry Res. 1979;1(2):131–9.
24. Coccaro EF et al. Serotonergic studies in patients with affective and personality disorders: correlates with suicidal and impulsive aggressive behavior. Arch Gen Psychiatry. 1989;46(7):587.
25. Mann JJ, Currier D. Medication in suicide prevention insights from neurobiology of suicidal behavior. In: Dwivedi Y, editor. The neurobiological basis of suicide. Boca Raton: Llc; 2012.
26. Hammad T. Review and evaluation of clinical data. Washington: US Food and Drug Administration; 2004. 16.
27. US Food and Drug Administration. Clinical review: relationship between antidepressant drugs and suicidality in adults. 2006.
28. Stone M, et al. Risk of suicidality in clinical trials of antidepressants in adults: analysis of proprietary data submitted to US Food and Drug Administration. BMJ: Br Med J. 2009;339.
29. Acharya N et al. Duloxetine: meta-analyses of suicidal behaviors and ideation in clinical trials for major depressive disorder. J Clin Psychopharmacol. 2006;26(6):587–94.
30. Beasley Jr CM et al. Fluoxetine and adult suicidality revisited: an updated meta-analysis using expanded data sources from placebo-controlled trials. J Clin Psychopharmacol. 2007;27(6):682–6.
31. Emslie G et al. Treatment for Adolescents with Depression Study (TADS): safety results. J Am Acad Child Adolesc Psychiatry. 2006;45(12):1440–55.
32. March J et al. Fluoxetine, cognitive-behavioral therapy, and their combination for adolescents with depression: Treatment for Adolescents With Depression Study (TADS) randomized controlled trial. JAMA: J Am Med Assoc. 2004;292(7):807–20.
33. Gibbons R et al. Early evidence on the effects of regulators' suicidality warnings on SSRI prescriptions and suicide in children and adolescents. Am J Psychiatr. 2007;164(9):1356–63.
34. Olfson M et al. Relationship between antidepressant medication treatment and suicide in adolescents. Arch Gen Psychiatry. 2003;60(10):978.
35. Gould MS et al. Psychopathology associated with suicidal ideation and attempts among children and adolescents. J Am Acad Child Adolesc Psychiatry. 1998;37(9):915–23.
36. Angst J et al. Suicide in 406 mood-disorder patients with and without long-term medication: a 40 to 44 years' follow-up. Arch Suicide Res. 2005;9(3):279–300.
37.• Leon AC et al. Antidepressants and risks of suicide and suicide attempts: a 27-year observational study. J Clin Psychiatry. 2011;72(5):580.

This longitudinal, observational study prospectively examined antidepressant effects over the long term and included a broader range of participants that is more representative of the patient population treated with antidepressants. The finding that risk of suicide attempts and suicides was reduced by 20 % among adult participants taking antidepressants lends support to a potential long-term beneficial effect of antidepressants on suicidal behavior in adults and points to an important area for further research in the treatment of pediatric suicidal behavior.

38. Verkes RJ et al. Reduction by paroxetine of suicidal behavior in patients with repeated suicide attempts but not major depression. Am J Psychiatry. 1998;155(4):543–7.
39. Prakash A et al. An open-label safety and pharmacokinetics study of duloxetine in pediatric patients with major depression. J Child Adolesc Psychopharmacol. 2012;22(1):48–55.
40. Hughes CW et al. Texas children's medication algorithm project: update from Texas consensus conference panel on medication treatment of childhood major depressive disorder. J Am Acad Child Adolesc Psychiatry. 2007;46(6):667–86.
41. Brent DA et al. The Treatment of Adolescent Suicide Attempters study (TASA): predictors of suicidal events in an open treatment trial. J Am Acad Child Adolesc Psychiatry. 2009;48(10):987–96.
42. Emslie GJ et al. Escitalopram in the treatment of adolescent depression: a randomized placebo-controlled multisite trial. J Am Acad Child Adolesc Psychiatry. 2009;48(7):721–9.

43. Brent D et al. Switching to another SSRI or to venlafaxine with or without cognitive behavioral therapy for adolescents with SSRI-resistant depression. JAMA:J Am Med Assoc. 2008;299(8):901–13.
44. Emslie GJ et al. Venlafaxine ER for the treatment of pediatric subjects with depression: results of two placebo-controlled trials. J Am Acad Child Adolesc Psychiatry. 2007;46(4):479–88.
45. Carlsten A et al. Antidepressant medication and suicide in Sweden. Pharmacoepidemiol Drug Saf. 2001;10(6):525–30.
46. Joyce PR. Improvements in the recognition and treatment of depression and decreasing suicide rates. N Z Med J. 2001;114(1145):535–6.
47. McClellan J, Kowatch R, Findling RL. Practice parameter for the assessment and treatment of children and adolescents with bipolar disorder. J Am Acad Child Adolesc Psychiatry. 2007.
48. Dulcan MK. Dulcan's textbook of child and adolescent psychiatry [With Free Web Access]. American Psychiatric Pub.; 2010
49. Grunbaum JA et al. Youth risk behavior surveillance–United States, 2003. MMWR Surveill Summ. 2004;53(2):1–96. Washington, D.C.: 2002.
50. Martin A, Scahill L, Kratochvil C, editors. Pediatric psychopharmacology: principles and practice, Second Edition. New York: Oxford University Press; 2011.
51. Rynn M et al. Efficacy and safety of extended-release venlafaxine in the treatment of generalized anxiety disorder in children and adolescents: two placebo-controlled trials. Am J Psychiatr. 2007;164(2):290–300.
52. Rynn MA, Siqueland L, Rickels K. Placebo-controlled trial of sertraline in the treatment of children with generalized anxiety disorder. Am J Psychiatr. 2001;158(12):2008–14.
53. Meighen KG. Duloxetine treatment of pediatric chronic pain and co-morbid major depressive disorder. J Child Adolesc Psychopharmacol. 2007;17(1):121–7.
54. Pushpal Desarkar MD D, Anindya Das MD D, Sinha VK. Duloxetine for childhood depression with pain and dissociative symptoms. Eur Child Adolesc Psychiatry. 2006;15(8):496–9.
55. Findling RL et al. Combination lithium and divalproex sodium in pediatric bipolarity. J Am Acad Child Adolesc Psychiatry. 2003;42(8):895–901.
56. Kafantaris V et al. Lithium treatment of acute mania in adolescents: a large open trial. J Am Acad Child Adolesc Psychiatry. 2003;42(9):1038–45.
57. Kowatch RA et al. Effect size of lithium, divalproex sodium, and carbamazepine in children and adolescents with bipolar disorder. J Am Acad Child Adolesc Psychiatry. 2000;39(6):713–20.
58. Youngerman J, Canino IA. Lithium carbonate use in children and adolescents: a survey of the literature. Arch Gen Psychiatry. 1978;35(2):216.
59. Patel NC et al. Open-label lithium for the treatment of adolescents with bipolar depression. J Am Acad Child Adolesc Psychiatry. 2006;45(3):289–97.
60. Dailey LF et al. Recidivism in medication-noncompliant serious juvenile offenders with bipolar disorder. J Clin Psychiatry. 2005;66(4):477–84.
61. Strober M et al. Recovery and relapse in adolescents with bipolar affective illness: a five-year naturalistic, prospective follow-up. J Am Acad Child Adolesc Psychiatry. 1995;34(6):724–31.
62. Oquendo MA et al. Prospective study of clinical predictors of suicidal acts after a major depressive episode in patients with major depressive disorder or bipolar disorder. Am J Psychiatr. 2004;161(8):1433–41.
63. Goldstein TR et al. History of suicide attempts in pediatric bipolar disorder: factors associated with increased risk. Bipolar Disord. 2005;7(6):525–35.
64. Campbell M et al. Lithium in hospitalized aggressive children with conduct disorder: a double-blind and placebo-controlled study. J Am Acad Child Adolesc Psychiatry. 1995;34(4):445–53.
65. Campbell M, Katantaris V, Cueva JE. An update on the use of lithium carbonate in aggressive children and adolescents with conduct disorder. Psychopharmacol Bull. 1995.
66. Malone RP et al. A double-blind placebo-controlled study of lithium in hospitalized aggressive children and adolescents with conduct disorder. Arch Gen Psychiatry. 2000;57(7):649.
67. Brodsky BS et al. The relationship of childhood abuse to impulsivity and suicidal behavior in adults with major depression. Am J Psychiatr. 2001;158(11):1871–7.
68. Oquendo MA et al. Suicidal behavior in bipolar mood disorder: clinical characteristics of attempters and nonattempters. J Affect Disord. 2000;59(2):107–17.
69. Placidi GP et al. Anxiety in major depression: relationship to suicide attempts. Am J Psychiatr. 2000;157(10):1614–8.
70. Wagner KD et al. A double-blind, randomized, placebo-controlled trial of divalproex extended-release in the treatment of bipolar disorder in children and adolescents. J Am Acad Child Adolesc Psychiatry. 2009;48(5):519–32.
71. Geller B, et al. A randomized controlled trial of risperidone, lithium, or divalproex sodium for initial treatment of bipolar I disorder, manic or mixed phase, in children and adolescents. Arch Gen Psychiatry. 2012: p. archgenpsychiatry. 2011.1508 v1.
72. Goodwin FK et al. Suicide risk in bipolar disorder during treatment with lithium and divalproex. JAMA: J Am Med Assoc. 2003;290(11):1467–73.

73. Katz R. Briefing document for the July 10. In 2008 Advisory Committee meeting to discuss antiepileptic drugs (AEDs) and suicidality: memorandum. 2008.
74. Steiner H et al. Divalproex sodium for the treatment of PTSD and conduct disordered youth: a pilot randomized controlled clinical trial. Child Psychiatr Hum Dev. 2007;38(3):183–93.
75. Donovan SJ et al. Divalproex treatment for youth with explosive temper and mood lability: a double-blind, placebo-controlled crossover design. Am J Psychiatr. 2000;157(5):818–20.
76. Asconapé JJ. Some common issues in the use of antiepileptic drugs. In Seminars in neurology. 2002. Copyright© 2002 by Thieme Medical Publishers, Inc., 333 Seventh Avenue, New York, NY 10001, USA. Tel.:+ 1 (212) 584–4662.
77. König A et al. Severe hepatotoxicity during valproate therapy: an update and report of eight new fatalities. Epilepsia. 1994;35(5):1005–15.
78. Treem WR. Inherited and acquired syndromes of hyperammonemia and encephalopathy in children. In Seminars in liver disease. 1994.
79. Green WH. Child and adolescent clinical psychopharmacology. Wolters Kluwer Health; 2007.
80. Cohen LS et al. A reevaluation of risk of in utero exposure to lithium. JAMA:J Am Med Assoc. 1994;271(2):146–50.
81. Findling RL et al. A double-blind pilot study of risperidone in the treatment of conduct disorder. J Am Acad Child Adolesc Psychiatry. 2000;39(4):509–16.
82. Snyder R et al. Effects of risperidone on conduct and disruptive behavior disorders in children with subaverage IQs. J Am Acad Child Adolesc Psychiatry. 2002;41(9):1026–36.
83. DelBello MP et al. A double-blind, randomized, placebo-controlled study of quetiapine as adjunctive treatment for adolescent mania. J Am Acad Child Adolesc Psychiatry. 2002;41(10):1216–23.
84. DelBello MP et al. Tolerability of oral ziprasidone in children and adolescents with bipolar mania, schizophrenia, or schizoaffective disorder. J Child Adolesc Psychopharmacol. 2008;18(5):491–9.
85. Houston JP et al. Reduced suicidal ideation in bipolar I disorder mixed-episode patients in a placebo-controlled trial of olanzapine combined with lithium or divalproex. J Clin Psychiatry. 2006;67(8):1246–52.
86. Meyer J. Drug-drug interactions with antipsychotics. CNS Spectrums. 2007;12(12 Suppl 21):6.
87. Sporn A et al. Clozapine-induced neutropenia in children: management with lithium carbonate. J Child Adolesc Psychopharmacol. 2003;13(3):401–4.
88. Findling R, Kuich K. Bipolar disorders. Clinical manual of child and adolescent psychopharmacology. New York: Guilford Press; 2008.
89. Miller AL, et al. Dialectical behavior therapy with suicidal adolescents. Guilford Publications; 2006.
90. Spirito A, Overholser JC. Evaluating and treating adolescent suicide attempters: from research to practice. Academic Press; 2003.
91. Huey Jr SJ et al. Multisystemic therapy effects on attempted suicide by youths presenting psychiatric emergencies. J Am Acad Child Adolesc Psychiatry. 2004;43(2):183–90.
92. Diamond GS et al. Attachment-based family therapy for adolescents with suicidal ideation: a randomized controlled trial. J Am Acad Child Adolesc Psychiatry. 2010;49(2):122–31.
93.• Rossouw TI, Fonagy P. Mentalization-based treatment for self-harm in adolescents: a randomized controlled trial. J Am Acad Child Adolesc Psychiatry. 2012; 51(12):1304–13 e3.

The article reports the findings of a randomized controlled trial for one of very few evidence-based treatments specially adapted for adolescent self-injury (broadly defined) comorbid with depression showing reduction in self-injurious behaviors. The assumed mechanism of MBT-A is that enhanced mentalization improves agency and self-control in those with affect dysregulation and impulse control problems and thus reduces self-injurious behaviors.

94. Rathus JH, Miller AL. Dialectical behavior therapy adapted for suicidal adolescents. Suicide Life Threat Behav. 2002;32(2):146–57.
95. Mehlum L, Ramburg M, Tørmoen AJ, Haga E, Stanley B, Laberg S. DBT for adolescents with recent and repeated suicidal and self-harm behavior—A randomized controlled trial In: Miller AL (Chair), Is DBT Effective With Multiproblem Adolescents? An International Presentation of Trials Evaluating DBT With Adolescents. Symposium conducted at the meeting of the Association for Behavioral and Cognitive Therapies, National Harbor, MD; 2012 November.
96.•• Esposito-Smythers C et al. Treatment of co-occurring substance abuse and suicidality among adolescents: a randomized trial. J Consult Clin Psychol. 2011;79(6):728–39.

This article reports the findings of the first randomized controlled trial of a therapy (I-CBT) that shows a reduction of suicidal behaviors among adolescents with co-occurring "suicidality" (ideation and/or behavior) and alcohol and other drug use disorder. I-CBT is one of two psychotherapies showing the strongest evidence for significant reduction in strictly-defined suicidal behaviors in a pediatric population.

97. Mufson L et al. A randomized effectiveness trial of interpersonal psychotherapy for depressed adolescents. Arch Gen Psychiatry. 2004;61(6):577–84.
98. Mufson L et al. Efficacy of interpersonal psychotherapy for depressed adolescents. Arch Gen Psychiatry. 1999;56(6):573–9.
99. Tang T-C et al. Randomized study of school-based intensive interpersonal psychotherapy for depressed adolescents with suicidal risk and parasuicide behaviors. Psychiatry Clin Neurosci. 2009;63(4):463–70.

100. King CA et al. Youth-Nominated Support Team for suicidal adolescents (Version 1): a randomized controlled trial. J Consult Clin Psychol. 2006;74(1):199.
101. King CA et al. The Youth-Nominated Support Team–Version II for suicidal adolescents: a randomized controlled intervention trial. J Consult Clin Psychol. 2009;77(5):880.
102. Wood A et al. Randomized trial of group therapy for repeated deliberate self-harm in adolescents. J Am Acad Child Adolesc Psychiatry. 2001;40(11):1246–53.
103. Hawton K et al. Repetition of deliberate self-harm by adolescents: the role of psychological factors. J Adolesc. 1999;22(3):369–78.
104. Kerfoot M. Deliberate self-poisoning in childhood and early adolescence. J Child Psychol Psychiatry. 1988;29(3):335–43.
105. Kerfoot M et al. Correlates and short-term course of self-poisoning in adolescents. Br J Psychiatry. 1996;168(1):38–42.
106. Harrington R et al. Randomized trial of a home-based family intervention for children who have deliberately poisoned themselves. J Am Acad Child Adolesc Psychiatry. 1998;37(5):512–8.
107. Linehan MM et al. COgnitive-behavioral treatment of chronically parasuicidal borderline patients. Arch Gen Psychiatry. 1991;48(12):1060–4.
108. Green J, et al. Group therapy for adolescents with repeated self harm: randomised controlled trial with economic evaluation. BMJ: Br Med J. 2011;342.
109. Hazell PL et al. Group therapy for repeated deliberate self-harm in adolescents: failure of replication of a randomized trial. J Am Acad Child Adolesc Psychiatry. 2009;48(6):662–70.
110. Hawton K, Catalan J. Attempted suicide: a practical guide to its nature and management. Oxford University Press; 1987.
111. Pineda J, Dadds MR. Family intervention for adolescents with suicidal behavior: a randomized controlled trial and mediation analysis. J Am Acad Child Adolesc Psychiatry. 2013;52(8):851–62.