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Cognitive-behavioral therapy for adolescent depression and suicidality

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Synopsis

CBT has emerged as a well-established treatment for depression in children and adolescents but treatment trials for adolescents with suicidality are few in number, and their efficacy to date is rather limited. Although a definitive treatment for adolescent suicide attempters has yet to be established, the limited literature suggests that suicidal thoughts and behavior should be directly addressed for optimal treatment outcome. This chapter reviews the rationale underlying the use of CBT for the treatment of depression and suicidality in adolescents, the literature supporting the efficacy of CBT for depressed adolescents, and whether CBT for depression reduces suicidal thoughts and behavior. A description of some of the core cognitive, affective, and behavioral techniques used in CBT treatments of suicidal ideation and behavior in depressed adolescents is included.

Keywords

adolescents; suicide; depression; CBT

Depression is one of the most common reasons adolescents seek treatment. While there are a number of treatment options available, Cognitive-Behavioral Therapy (CBT) has been the most widely researched psychotherapy approach to treating depression in adolescents. Among depressed adolescents, it is common for these youths to experience suicidal thoughts

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or engage in suicidal behaviors. While it is evident that such symptoms require psychological treatment, there is some debate over the best means of targeting these distressing thoughts and behaviors. Some clinical researchers have postulated that if you adequately treat the underlying depressive disorder, suicidal ideation and behavior will remit along with the disorder. However, there has been some evidence, with adults,[1] that suggests this is not the case. That is, suicidal thoughts and behavior need to be directly addressed if these problems are to improve. In this chapter we first review the rationale underlying the use of CBT for the treatment of depression and suicidality (defined as suicidal thoughts and suicide attempts) in adolescents. We then briefly review the literature supporting the efficacy of CBT for depressed adolescents. Because there are many excellent recent reviews of the efficacy of CBT for adolescent depression (see below), our review of the depression literature is brief. Instead, we focus primarily on whether CBT for depression reduces suicidal thoughts and behavior. A description of some of the core cognitive, affective, and behavioral techniques used in CBT treatments of suicidal ideation and behavior in depressed adolescents concludes the chapter.

Rationale for treating suicidal states with CBT

A developmentally sensitive cognitive-behavioral model of adolescent suicidal behavior[2] adapted from an adult model of suicidality[3] postulates that suicide attempts emerge from reciprocity among maladaptive cognition, behavior, and affective responses to stressors. This model posits that there is a predisposing vulnerability among youth who attempt suicide, which results from a significant genetic predisposition toward psychopathology [4] and/or exposure to significant negative life events, such as a history of abuse or neglect,[5] adverse parenting resulting from parental psychopathology[6] and peer victimization and bullying.[7] These same factors also place youth at risk for a depressive episode.

Stress, most commonly from an interpersonal conflict, may initially trigger a depressive episode and/or suicidal crisis in predisposed adolescents. In the face of stress, cognitive errors (e.g., catastrophizing, personalization) and negative views of self and the future may occur. Indeed, one study [8] that examined adolescents with a mood disorder in an inpatient setting found higher catastrophizing, personalization, selective abstraction, overgeneralization, and total cognitive errors, in those who were suicidal compared to non-suicidal adolescents with a mood disorder. In addition to cognitively distorting the severity and consequences of the stressor, predisposed youth may also experience difficulties generating and/or viewing solutions to the stressor. Suicidal adolescents report greater difficulty generating and implementing effective alternative solutions to problems compared to non-suicidal adolescents.[9] Suicidal youth are also more likely to view problems as irresolvable.[10] This difficulty in cognitive processing and problem-solving, which is also characteristic of depressed adolescents, can result in negative affect including anger[11] and a worsening of the current mood state. Suicidal adolescents report greater difficulty regulating their internal states and using affect regulation skills compared to non-symptomatic adolescents.[12]

In response to distorted cognitive processing, lack of perceived adaptive solutions, and heightened affective arousal related to the stressor, adolescents may engage in maladaptive behavior as a means to cope with the stressor. This may include the use of passive and/or aggressive communication styles and behavior to address stressors resulting from conflict with peers[13] and family members.[14] Self-medication with alcohol or drugs,[15] and non-suicidal self-injury, such as superficially cutting or burning oneself,[16] may also be used as an means to reduce negative affect. The maladaptive behavior chosen may have been modeled by parents, peers, or other important figures in the life of suicidal, depressed adolescents.

Adolescents may cycle through this cognitive, affective, and behavioral process numerous times, with each cycle leading to greater dysfunction and depressed mood. This cycle may take place over a few days, weeks, or even months. Either way, the end result of this cycle, if not interrupted, is intolerable affect and the perception that the situation is hopeless. Adolescents may then begin to experience passive suicidal thoughts, such as "I would be better off dead" which over time may become active suicidal thoughts, and a suicide attempt, with or without prior planning, may result.

Once suicidal behavior occurs, it may sensitize adolescents to future suicide-related thoughts and behavior.[17] Suicidal behavior makes the suicidal cognitive schema more easily accessible and triggered in future stressful situations.[18] Joiner[17] suggests that suicide attempts habituate individuals to the experience of engaging in dangerous self-injurious behavior. When combined with interpersonally-related cognitive distortions, this habituation increases the possibility of future suicidal behavior. Once the taboo against suicide has been broken, it becomes easier to view suicide as a viable solution to life's problems. CBT may be effective with depressed, suicidal adolescents because it is based on the premise that maladaptive cognitive, behavioral, and affective responses, such as those described in the model above, can be changed.

The efficacy of CBT in the treatment of adolescent depression

CBT treatments for adolescent depression place varying emphasis on the cognitive and behavioral components of care. The behavioral component of treatments for depression emphasizes various skill deficits in the domains of coping skills, interpersonal relationships, social problem solving, and participation in pleasant activities. [19] The cognitive component typically focuses on identifying and challenging schemas, automatic thoughts, and cognitive distortions that cast experiences in an overly negative manner. In all, CBT for depressed adolescents addresses lagging cognitive and behavioral skills that are needed to create and maintain supportive relationships and to regulate emotion.

The first reviews of the efficacy of CBT for adolescent depression demonstrated strong support for the use of CBT with depressed youth [20 21] For example, the effect sizes calculated in early meta-analytic reviews were 1.27 in one study [22] and 1.02 in another study [23] . A more recent meta-analysis of youth depression psychotherapy trials, including both CBT and non-CBT approaches to treatment [24] concluded that the mean effect size of treatment was 0.34 (i.e. somewhere between a small and medium effect). Five studies demonstrated large effects and three of these used CBT. Nonetheless, within the CBT category, effects were quite variable. In another meta-analysis using 11 randomized trials of CBT for adolescents who met diagnostic criteria for unipolar depression [25] , the authors found a mean effect size of .53, i.e. a medium effect. These smaller effects might be a function of the increasing severity of the samples studied or larger methodological differences in trials which can have a substantial influence on effect sizes.

In 2008, a review of the literature was conducted to determine what treatments for childhood depression could qualify as evidence-based.[26] Given that the childhood depression treatment literature includes primarily between group experiments, studies were rated using criteria for between-group designs. Interventions were deemed, from most to least rigorous, as well-established, probably efficacious, or experimental treatments. For a treatment to be considered well-established, there had to be at least two well conducted between group-design experiments, conducted by at least two independent researchers or research teams, which found the treatment to either be superior to pill or psychological placebo or to another treatment, or equivalent to an already established treatment in adequately powered experiments. Further, these studies had to employ treatment manuals and present detailed

sample characteristics. Treatments were deemed probably efficacious if they were supported by at least two well conducted between-group experiments that found the treatment to be superior to a wait-list control group, or one or more well conducted experiments, that met the well-established treatment criteria, with the exception of the requirement that the treatment was tested by at least two independent researchers or research teams. Probably efficacious treatments also had to include a treatment manual and well specified sample characteristics. Experimental treatments were defined as treatments with at least one well conducted study that yielded a significant treatment effect. This review of the depression treatment literature[26] concluded that for children and adolescents, group CBT programs, with or without a parent component, are well-established treatment approaches. For adolescents, individual CBT, with or without a parent component, and individual Interpersonal Therapy, were deemed to be "probably efficacious" treatments. Other approaches, such as supportive group therapy and family systems-oriented treatments, were rated as experimental.

Notably, the aforementioned review included the multisite Treatment for Adolescents Depression Study (TADS) [27], the largest multisite treatment study for adolescent depression. TADS examined the efficacy of four interventions (CBT alone, fluoxetine alone, a combination of both medication and CBT, and placebo pill alone) for adolescents with depression. The study was a randomized, masked effectiveness trial that included 439 adolescents between the ages of 12 and 17. Participants could attend up to 15 sessions during the first 12 weeks of treatment, weekly or biweekly sessions during the next 6 weeks, and booster sessions every 6 weeks thereafter. Results suggest that the combined treatment was more effective (73% response rate) than either fluoxetine alone (62%), CBT alone (48%) or the pill placebo in reducing clinician rated depressive symptoms. Further, fluoxetine alone was superior to CBT alone, and CBT alone was not more effective than placebo. Following 12 weeks of acute treatment, 71% of teens across groups no longer met diagnostic criteria, but 50% had residual symptoms. Follow-up results at longer time periods were more positive for CBT : at week 18, the response rates were 85% for combination therapy, 69% for fluoxetine therapy, and 65% for CBT. At week 36, response rates were 86% for combination therapy, 81% for fluoxetine therapy, and 81% for CBT[28].

Since the time of this review,[26] several other studies have added to the literature supporting individual CBT for adolescent depression. In the multi-site Treatment of SSRI-Resistant Depression in Adolescents study (TORDIA) [29], 334 depressed adolescents who failed to respond to a previous trial of a SSRI were randomized to one of four conditions: change to a different SSRI (n = 85), change to a different SSRI plus CBT (n = 83), change to venlafaxine (n = 83), or change to venlafaxine plus CBT (n= 83). CBT participants attended weekly sessions over the first 3 months of treatment then biweekly sessions. Results showed that switching to either medication regiment plus CBT resulted in a higher rate of clinical response (54.8%)than a medication switch alone. (40.5%). Most recently, Goodyer et al. [30] reported data from a study of British adolescents with moderate to severe MDD or probable MDD who had not responded to a brief initial intervention. They were randomized to either receive SSRI plus routine care (n=103) or an SSRI, routine care, and individual CBT (n = 75). At the end of the 12 week acute phase and 28 week maintenance phase, the addition of CBT had no benefit over treatment with the SSRI alone. These results stand in contrast to the TORDIA study which had a similar population of more severely depressed adolescents but did find an additive effect for CBT over medication alone. However, the authors note that there was relatively low attendance in the CBT condition, which may have affected their outcomes. Finally, one additional study[31] randomized 46 youths 11–18 years old who had responded to 12 weeks of fluoxetine to either medication management only (n = 24) or medication management with CBT (n= 22). The addition of CBT lowered the risk of relapse compared to medication management alone.

In sum, CBT for adolescent depression has received considerable support in the research literature. Individual and group CBT, with and without a parent component, appears to be well established and/or efficacious for the majority of participants. The next section will address the use of these treatments in addressing suicidality.

The effects of CBT for adolescent depression on suicidal ideation and attempts

There have been a number of treatment studies on adolescent depression that have examined CBT's effect on participant suicidality. Below we review primarily studies that were conducted in the last decade. Overall, results have shown that CBT for depression in adolescents is effective in reducing suicidality. In general, these programs teach coping skills and affect regulation techniques that can be applied to suicidal ideation.

More specifically, in one of the first studies, 107 adolescents (13–18 years old) diagnosed with Major Depressive Disorder (MDD) were randomized into one of three treatment groups: individual CBT, Systematic Behavior Family Therapy (SBFT), or individual Nondirective Supportive Therapy (NST) [32] . Each treatment condition consisted of an active phase of 12–16 sessions over 12–16 weeks, and a booster phase of 2–4 sessions over 12–16 weeks. At baseline nearly a third of participants in each condition endorsed current suicidality, while close to 25% had a history of a suicide attempt. Participants in the CBT group showed a lower rate of MDD compared with those in the NST group at the end of the study, and a higher rate of remission than the SBFT group. There was also a significant decrease in suicidality across all three treatment conditions, with the greatest decrease occurring between intake and 6 weeks. These findings suggest that suicidality and depression in adolescents may be reduced through different processes, and that suicidality tends to drop in the early stages of treatment regardless of treatment modality. Similar results were found in a group CBT study [33] with a sample of 88 depressed adolescents, aged 13–18 years, who also had depressed parents. Adolescents exhibited comparable reductions in suicidal ideation, regardless of whether they were randomized to a 16-week group CBT program or care as usual.[33]

Suicidal ideation in depressed adolescents has also been examined in studies that evaluate the effectiveness of combined CBT therapy and medication. One study[34] evaluated combined CBT and a Selective Serotonin Reuptake Inhibitor (SSRI) in comparison to either treatment on its own. In this study, 73 adolescents (age 12–18 years) diagnosed with MDD, dysthymic disorder, or depressive disorder not otherwise specified, were randomized to 12 weeks of CBT, CBT and sertraline, or sertraline alone. Results from the three treatment groups showed comparable, statistically significant improvement in suicidal ideation after acute treatment that was maintained at the 6 month follow-up.[34]

In another study,[30] 208 depressed adolescents (ages 11–17) were randomized into groups that received 12 weeks of both CBT and an SSRI (primarily fluoxetine), or clinical care and SSRI. Suicidality was rated at baseline, 6, 12, and 28 weeks. At each follow-up point, the number of participants experiencing suicidal symptoms and the frequency of these symptoms (thoughts, ideation, attempts, and self-harm) was lower in both groups in comparison to baseline. There was no significant difference found between adolescents receiving SSRIs and clinical care or those receiving CBT along with SSRIs. [30]

Treatment with fluoxetine and CBT was also examined in a study of 13–19 year old adolescents with major depression, behavior problems, and substance use disorders [35]. In this study, 126 adolescents were randomized to a fluoxetine and CBT group or a placebo and CBT group. Each group had 16 weekly therapy and medication monitoring sessions.

Participant suicidality was assessed monthly and found to be comparable in both groups; however five participants were hospitalized during the course of treatment for increased suicidality (4 in the Fluoxetine-CBT condition). For all five of these participants, suicide severity ratings decreased during the first month of treatment, but worsened during weeks 8 and 12 in response to psychosocial stressors. Thus, although suicidality showed an initial response to treatment, these adolescents did not respond well when additional psychosocial stressors arose. However, given the small number of hospitalizations in this trial, it is difficult to draw conclusions.

Rohde and colleagues[36] examined depressed adolescents, ages 13–17, with comorbid conduct disorder. Depressed adolescents with conduct disorder were randomized to a CBT intervention designed for adolescents with this comorbid symptomatology (CWD-A) or a life skills/tutoring control (LS) program. Each treatment option offered 16 group sessions over 8 weeks. Of the 93 participating adolescents, 40% had a history of suicide attempts. Results showed that CWD-A intervention was initially more effective at reducing MDD than the LS program. However, post-treatment, 6-, and 12-month assessments revealed no significant difference in number of suicide attempts. [36]

Two large multisite studies examining combined pharmacotherapy and CBT for MDD, also examined the effects of their protocols on suicidality. In TADS[27], which was discussed above, 30% of participants had clinically significant suicidal ideation at baseline. At 12 weeks, reductions in suicidality were greater for youth randomized to combination therapy than fluoxetine therapy, CBT only, and the placebo condition, though suicidal ideation was lower than baseline in all conditions. Further, participants who received CBT (4.5%), placebo (5.4%), or combination therapy (8.4%) were less likely to experience a suicidal event during treatment than those who received fluoxetine alone (11.9%). The authors concluded that there was a slight protective effect of CBT on both suicidal ideation and suicidal behavior. At 36 weeks of treatment, suicidal events were more common in patients treated with fluoxetine alone (14.7%), compared with 8.4% for combination therapy and 6.3% for CBT alone in the intent-to-treat analyses.[41]

In the multi-site Treatment of SSRI-Resistant Depression in Adolescents study (TORDIA) [29] described previously, 58.5% of participants reported clinically significant suicidal ideation and 23.7% reported a prior suicide attempt. During the trial, suicidal ideation decreased from baseline to post-treatment for participants across all conditions. Approximately 5% of participants attempted suicide and 20% experienced a self-harm related event (suicidal ideation, suicide attempt, self-injurious behavior) during treatment, with no differences across conditions.

In summary, the majority of studies of CBT for depressed adolescents have found a reduction in suicidal ideation regardless of CBT format (i.e., individual, group). It should be noted that reductions in suicidality have also been found in response to family therapy,[32] supportive therapy[32] and pharmacotherapy [30].[34] Nonetheless, while various forms of therapy resulted in comparable reductions in adolescent suicidality, CBT has shown the most promise in concurrently reducing MDD diagnoses/symptoms and suicidal ideation.

CBT studies specifically treating suicidality in adolescents

Only a few studies have used CBT to specifically treat suicidal ideation and behavior. One study [37] used a quasi-experimental design to compare the treatment efficacy of dialectical behavior therapy (DBT), a treatment to approach that heavily employs cognitive behavioral techniques, to treatment-as-usual (TAU), for suicidal adolescents. The DBT protocol was designed to improve distress tolerance, emotional regulation, and interpersonal effectiveness. Though adolescents in the DBT condition reported more severe baseline

symptomatology than those in the TAU condition, they had fewer psychiatric hospitalizations and higher rates of treatment completion than the TAU group at follow-up. No differences were found on repeat suicide attempts. About 40% of adolescents re-attempted over the course of treatment.

In another trial,[38] individual CBT was compared to an individual problem-oriented supportive therapy with adolescents immediately following a suicide attempt. More than half of the sample reported at least one prior suicide attempt. Adolescents were randomized to either 10 sessions of CBT (N = 15) or the problem-oriented supportive treatment (N = 16). The CBT condition focused on teaching adolescents problem solving and affect management skills. Each session included an assessment of suicidality, instruction in a skill, and skill practice (both in-session and homework assignments). Participants were taught steps of effective problem solving and cognitive and behavioral strategies for affect management (e.g., cognitive restructuring, relaxation). Homework assignments were given to assist in skill acquisition and generalization. Participants in both conditions reported significant reductions in suicidal ideation and depression at 3 month follow-up but there were no between-groups differences. At 6 months, both groups retained improvement over baseline but levels of suicide ideation and depression were slightly higher (though not statistically significant) than at 3 month follow-up. Only 5% of adolescents re-attempted during the course of the study.

A more recent study[39] compared an integrated cognitive behavioral treatment (I-CBT; N = 19) protocol for adolescents with co-occurring suicidality (suicidal ideation and/or attempt) and substance use disorders to enhanced treatment as usual (E-TAU; N = 17) in a randomized clinical trial. Approximately 77% of adolescents had a prior suicide attempt and 94% a current depressive disorder. I-CBT included a 6 month active, 3 month continuation, and 3 month maintenance treatment phase. The protocol included individual, parent training, and family therapy sessions and used a two-therapist model. One therapist worked with the adolescent and a second therapist worked with the parents. E-TAU included psychotherapy services through community providers. However, adolescents in both treatment conditions were offered medication management for free with the same study employed child psychiatrist. I-CBT was associated with a lower incidence of suicide attempts (5% in I-CBT vs. 35% in E-TAU) as well as fewer psychiatric hospitalizations, heavy drinking days, and days of cannabis use relative to E-TAU over 18 months. Further, there was a trend for fewer youth in I-CBT than E-TAU to have a depressive disorder (7% vs. 31%) by 18 months. Comparable reductions in adolescent self-report of suicidal ideation, number of drinking days, and depressive symptoms were reported across groups.

In a multi-site study, referred to as Treatment of Adolescent Suicide Attempters (TASA),[40] 124 depressed adolescents who made a suicide attempt in the prior three months were entered in one of three conditions: SSRI (n =15), Cognitive-Behavior Therapy for Suicide Prevention (CBT-SP; n =18), or combination therapy (n = 93). Treatment assignment could be random or chosen by study participants. Most participants (84%) chose their treatment condition. CBT-SP incorporated a risk reduction and relapse prevention approach to treatment and integrated CBT techniques, dialectical behavior therapy techniques, and other intervention techniques for depressed youth with suicidality. Participants could attend up to 22 sessions over the course of 6 months, including individual adolescent and conjoint parent-adolescent sessions. All participants showed a significant decrease in suicidal ideation from baseline to the end of treatment. Approximately 12% of participants re-attempted suicide and 19% experienced a suicidal event (suicide attempt, suicide completion, preparatory acts toward suicidal behavior, significant suicidal ideation) during treatment. After controlling for baseline differences across treatment conditions, there was no differential effect of monotherapy versus combination therapy on suicide outcomes.[40]

In all, treatment studies that target adolescent suicidality suggest that CBT results in improvements in suicidal ideation and depressed mood, though results are generally comparable to active comparison treatments. Similarly, with one exception,[39] the incidence of suicide attempts rarely differs between CBT and other active interventions. A significant percentage of adolescents re-attempt suicide (5%–40%) during the course of treatment for suicidal behavior.

CBT techniques commonly used to address depression and suicidality

In our studies and treatment manuals for suicidal adolescents,[38 39] individual CBT sessions follow a standard format. They begin with a medication adherence check, if applicable, followed by an assessment of suicidal thoughts or behavior as well as any alcohol or drug use since the last session. If the adolescent does appear to be at significant risk for suicidal behavior, we conduct an assessment of current suicidality, and either review or negotiate a safety plan, adapted from other important work in this area [41]. The safety plan includes a "personal reasons to live" list with at least five reasons to live (e.g., "to have a family of my own and to see my little brother grow up"). A coping card is created in which the adolescent generates a list of strategies that he or she can use in stressful situations, as well as phone numbers to contact in an emergency. A copy of the coping card is given to the adolescent to place in his or her wallet for immediate access.

A typical cognitive-behavioral session that follows the format used in TADS[27] and TORDIA[29] is as follows: the adolescent is first asked to identify an agenda item that will be discussed in the session, homework from the prior session is reviewed, a new skill is introduced or a previously taught skill reviewed, the skill is practiced, the agenda item is discussed and whenever possible the newly taught skill or a previously taught skill is applied to the agenda item. Worksheets and handouts for each skill taught are used to assist in the learning process. All individual sessions also include a parent check-in at the end and a personalized homework assignment is created.

Below, we describe cognitive and behavioral techniques that can be used to address both depression and suicidality in the skill portion of a CBT session. First, we present the approach our group uses to teaching cognitive restructuring and problem-solving, two key cognitive interventions with this population. More details on how to implement these techniques have been described elsewhere.[42] We then describe a number of cognitive techniques specifically useful for suicidalilty which are based on suggestions by Freeman and Reinecke. [43] A more in-depth description of how to adapt these techniques with adolescents is also available.[44] We conclude with a description of affect regulation techniques.

Cognitive Restructuring—In our studies we have modified techniques based on Rational Emotive Therapy[45] for children and adolescents[46] to teach cognitive restructuring. We call our techniques the ABCDE method and introduce this method to adolescents as a skill that helps adolescents deal with negative beliefs or thoughts. Each letter of the **ABCDE** method stands for a different step in the cognitive restructuring process. The first step in changing negative thought is to identify the **A**, activating event, that is associated with negative thoughts. In teaching the **ABCDE** method, the letter **C** (**C**onsequences) is described next to the adolescent as the **C**onsequences or Feelings related to the **A**ctivating Event. Next, the adolescent is taught that the **B** of the **ABCDE** method stands for **B**eliefs, and that it is one's beliefs that lead to negative affect. The adolescent is then taught that, in order to feel better, he/she must confront these negative beliefs or **D**ispute them. We explain to the adolescent that most people don't dispute their negative beliefs, are left feeling very upset, and that is when they make unsafe decisions, such as hurting themselves. The last step begins with an **E**

and stands for **E**ffect. Effecting something is presented as trying to change something. Adolescents are taught that they may not be able to change the fact that a negative activating event happened but they can change negative beliefs and feelings surrounding the event.

When adolescents begin to use this method, the therapist helps the adolescent question the evidence that is used to support a negative view through Socratic questioning.[47] Questions that we commonly use include: Is this belief true? What is the evidence for or against this belief?; Does this belief help you feel the way that you want?; What would your friend say if he/she heard this belief?; and Is there another explanation for this event? This technique is based on findings that suicide attempters often selectively attend to a particular set of evidence which confirms their negative interpretation. We also give the adolescent a handout on "Thinking Mistakes" , e.g., black/white thinking, predicting the worst, missing the positive, feelings as facts, jumping to conclusions, expecting perfection, which we simplified from a similar worksheet for adults.[48] We ask the adolescent to identify any thinking mistakes in his/her beliefs and then to dispute these mistakes.

Problem-Solving—Deficits in problem-solving include difficulty generating alternative solutions and identifying positive consequences of potential solutions. We use the acronym "SOLVE",[49] to cover the basic steps in problem-solving. We begin with generating a list of triggers for suicidality, typically two to five events, and then the therapist teaches the adolescent the SOLVE system. Each letter in the word SOLVE stands for a different step of the problem-solving process: **S** stands for "Select a problem," **O** for "generate Options," **L** for rate the "Likely outcome" of each option, **V** for choose the "Very best option," and **E** stands for "Evaluate" how well each option worked. A worksheet is used to assist in the SOLVE process. The therapist may need to model the skills necessary to progress through the problem-solving steps. The typical depressed adolescent will have difficulties generating "Options" but usually improves with practice. After each option is rated, the therapist helps the adolescent select the "Very best option" or combination of options to try out. Lastly, the adolescent is asked to evaluate how well the process works. If it appears the option will work out well, then this option is selected. If it does not appear to lead to a workable solution, then the adolescent is instructed to go back to the list of "Options," weigh them again, and pick another option to try. The adolescent does this until a solution to the problem is generated. A simpler version of problem-solving is to ask the adolescent to list the pros and cons of an action such as breaking up with a boyfriend/girlfriend.

When working with adolescents who have attempted suicide, the therapist reframes the suicide attempt as a failure in problem solving. This explanation helps provide adolescents with a better sense of control over future problems that arise. The therapist points out that many teenagers who attempt suicide pick the only option that they think that have, which is to hurt themselves. The therapist emphasizes that the more adolescents practice coming up with a list of "Options", the more potential solutions they have to choose from when stressed, and the less likely they will feel that the only thing they can do is to hurt themselves.

One contentious aspect of problem-solving is whether to have a suicidal individual include suicide as an option during the brainstorming portion of SOLVE. Some therapists feel that allowing suicide as an option facilitates the problem-solving discussion. Others fear that a cognitively restricted suicidal individual will not be able to generate other options beside kill oneself. Schneidman[50] described one way to include suicide as an option with a suicidal young adult who was pregnant. After allowing his client to list suicide as an option to her problem, Schneidman had her write a list of alternatives without regard to their feasibility, (e.g., have an abortion, put the child up for adoption, raise the child on her own, etc.). Then he had her rank order the options from the least onerous to most onerous. Although she said

that none of the options were good ones, this procedure helped her to see that there were other options besides suicide. Moreover, once she no longer ranked suicide as her first or second option, her suicidal ideation decreased significantly.

Other Cognitive Techniques

A number of other techniques to address suicidal thinking have been outlined in detail elsewhere.[43 44] We briefly review a few techniques here. First, re-attribution is a technique that can be used to help the adolescent change the self-statement, “It's all my fault” to a new statement in which responsibility is attributed more appropriately, perhaps to friends or parents, or chance. The therapist may initially support the adolescent's view that it is his/her fault but then asks the adolescent to break down what he/she contributes to the situation and what other people contribute. Second, decatastrophizing helps the adolescent decide whether he/she is overestimating the catastrophic nature of the precipitating event. The therapist asks the adolescent, “What would be the worst thing that will arise if _____ occurs?” “If _____ does occur, how will it affect your life in 3 months? 6 months?” “What is the most likely thing to happen here?” “How will you handle it?” A third cognitive approach is scaling the severity of an event. In this technique, the therapist asks the adolescent to scale the suicidal precipitant or anticipated future stressful event on a scale from 0 to 100. Scaling the severity of an event provides a way for adolescents to view situations along a continuum rather than in a dichotomous fashion.

Affect Regulation Techniques—Affect regulation techniques, i.e. training adolescents to recognize stimuli that provoke negative emotions and teaching them to reduce physiological arousal via self-talk and relaxation, are also commonly used with suicidal adolescents. Below we describe our approach to affect management with suicidal adolescents. Another useful approach to affect management with these adolescents is Dialectal Behavior Therapy[51] a therapy designed to specifically target affect dysregulation in individuals with borderline personality disorder and self-injurious behavior. The reader is referred to the Klein and Miller chapter in this volume for a review of DBT with suicidal adolescents.

In our approach to affect management, we first review the rationale for managing emotions. Specifically, we relate the notion that when negative activating events trigger negative or untrue beliefs, these beliefs can cause depressed mood and anger. These negative feelings can also cause the body to start feeling out-of-control which can be experienced as muscle tightness, a faster heart rate, sweating, or shortness of breath. The more one’s body feels out of control, the harder it is to use problem-solving or dispute negative beliefs. Therefore, it is important to learn ways to keep negative affect under control.

The therapist then shows the adolescent a series of feelings cards and asks him/her to choose the card that best describes how he/she was feeling when a recent event resulted in upset. With suicidal adolescents, it is useful to focus on events that result in suicidal ideation or behavior. Next, the therapist presents the adolescent with a list of physiological and behavioral symptoms associated with negative affect, referred to as “body talk,” and asks the adolescent to pick out the symptoms he/she experienced when in the stressful situation.. The adolescent is then introduced to the concept of a “feelings thermometer.”[52] The bottom of the thermometer has a rating of “1” and stands for “calm and cool” and the top is “10” and stands for “extremely upset” or whatever the predominant feeling, e.g. anger, was for the adolescent at the time of the stressful event. Next, the adolescent is asked to indicate his/her personal “danger zone” on the thermometer or the point where his/her body spirals so far out-of-control that he/she is at risk for unsafe or suicidal behavior. Finally, the adolescent is asked to create a “stay cool” plan to use when he/she begins to notice early “body talk” and

negative beliefs to prevent him/her from reaching the point of "extreme upset" and unsafe behavior. Relaxation training is often taught to the adolescent as a means of managing physiologic arousal. There are numerous approaches to relaxation training including progressive muscle relaxation, guided imagery, and autogenics which have been described elsewhere.[53]

Anger is a very common emotion experienced by depressed youth who attempt suicide. There are some specific techniques for managing anger that may be useful when dealing with this population. One anger management protocol for adolescents[54] integrates cognitive restructuring and affect regulation technique described previously. Steps in this protocol include identifying the trigger for one's anger, altering the thoughts which lead to the angry feelings, using self-statements to guide oneself through angry provocations, and relaxation techniques to modulate physiologic arousal. Modeling and behavioral rehearsal are used to help teach the adolescent how to use these skills in anger-provoking situations.

Conclusions

In summary, considerable progress has been made over the past several years in the treatment of depression and suicidality in adolescence. CBT has emerged as a well-established treatment approach for children and adolescents.[26] While the number of efficacy studies for depression has increased, there is still little evidence based information indicating how or why these treatments work. In addition, treatment trials for adolescents with suicidality are few in number, and their efficacy to date is rather limited, especially with regard to repeat suicidal behaviors. Although, a definitive treatment for adolescent suicide attempters has yet to be established, the limited literature suggests that suicidal thoughts and behavior should be directly addressed for optimal treatment outcome. Training adolescents in specific coping skills and affect regulation techniques that can be applied to thoughts and behaviors associated with suicidality, shows some initial promise. However, future trials are necessary to inform best practices in treating this high-risk population.

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