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Cognitive Behavior Therapy for Suicide Prevention (CBT-SP): Treatment Model, Feasibility and Acceptability

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Abstract

Objective—To describe the elements of a manualized cognitive behavior psychotherapy for suicide prevention (CBT-SP) and to report its feasibility in preventing the recurrence of suicidal behavior in adolescents who have recently attempted suicide.

Method—CBT-SP was developed using a risk reduction, relapse prevention approach and theoretically grounded in principles of cognitive behavior therapy, dialectical behavioral therapy and targeted therapies for suicidal, depressed youth. CBT-SP consists of acute and continuation phases, each lasting about 12 sessions, and includes a chain analysis of the suicidal event, safety plan development, skill building, psychoeducation, family intervention, and relapse prevention.

Results—CBT-SP was administered to 110 depressed, recent suicide attempters aged 13–19 years (mean 15.8±1.6) across five academic sites. Twelve or more sessions were completed by 72.4% of the sample.

Conclusions—A specific intervention for adolescents at high risk for repeated suicide attempts has been developed and manualized, and further testing of its efficacy appears feasible.

Keywords

Suicide; psychotherapy; depression; adolescents

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Introduction

The Surgeon General's Call to Action to Prevent Suicide (USPHS, 1999) emphasized the need for more effective suicide prevention strategies. This need is particularly pressing in adolescents, with nearly 9% reporting a suicide attempt in the prior year.¹ Furthermore, suicide is the third leading cause of death for adolescents in the U.S. Intervening with adolescents who recently attempted suicide or engaged in self-injury is vital because these behaviors are predictive of future suicidal behavior and risk of repetition is highest in the first 3–6 months post-attempt.^{2–7} Prior suicidal behavior elevates the risk for subsequent death by suicide 10–60 fold.^{7–10} Moreover, adolescents with depressive disorders and a history of suicidal behavior are a particularly high risk group for repeated and completed suicide.^{5–8,11}

Despite this public health problem, there are no empirically supported individual psychotherapies for adolescents shown effective in reducing suicidal behavior through randomized controlled trials (RCT).¹² Importing empirically-supported treatments for depressed adolescents to suicidal adolescents may not be appropriate because the trials in which efficacy was established excluded suicidal teens. In an effort to target the suicidal adolescent population, Dialectical Behavioral Therapy was adapted (DBT-A).¹³ DBT-A employs individual therapy and group skills training and targets suicidal behavior. A quasi-experimental investigation of DBT-A vs. usual care in suicidal adolescents with borderline personality disorder features reported that in the DBT-A group, although not statistically significant, fewer subjects made suicide attempts, fewer subjects were hospitalized, and the completion rates for treatment were higher. However, this was not an RCT and focused only on adolescents with borderline symptoms.

Family, group-oriented and brief, adjunctive psychosocial intervention models have been tested in suicidal adolescents. Wood, Trainor, Rothwell, Moore, and Harrington (2001) evaluated the efficacy of developmental group therapy for adolescents with self-injury behavior, using problem solving and cognitive behavior therapy, DBT, and psychodynamic group psychotherapy strategies.¹⁴ Patients attended six “acute” group sessions organized around specific themes (i.e., relationships, school problems and peer relationships, family problems, anger management, depression and self-harm, hopelessness and feelings about the future), followed by weekly group therapy. The experimental treatment, compared to routine care, showed a reduction in episodes of self-harm, time to first repetition of self-harm was also delayed and school attendance was improved. There was no differential treatment effect on depression, suicidal ideation, or global outcome.

Multisystemic therapy (MST), a family-based treatment developed for antisocial behavior and delivered in the natural environment, was associated with fewer suicide attempts but not greater reductions in suicidal ideation, hopelessness or depression.¹⁵ However, the results are difficult to interpret because about 50% of teens receiving MST required emergency hospitalization and, thus, the hospitalization itself may have been responsible for the lower suicide attempt rate. Cotgrove et al. (1995) found that permitting adolescents to rehospitalize themselves on demand was associated with a nonsignificant reduction in suicide attempts at one year follow-up.¹⁶ A post-hoc analysis seemed to indicate that open access was protective only for those at low or moderate risk for suicide re-attempt. Of those given open access, 11% requested hospitalization.

Other randomized controlled trials with high risk adolescents that have tested efficacy of a cognitive behavioral family intervention in the emergency department or outpatient family therapy have not been successful in reducing or preventing suicidal behavior.^{17–18} Rotheram-Borus et al. (2000) reported that, while 18-month follow-up re-attempt rates and suicidal

ideation were not different between the two groups, there was a non-significant trend for a lower re-attempt rate in the experimental group (8.7% vs. 14.6%).¹⁷ Harrington et al. (1998) compared a 5-session home-based family intervention plus routine care to routine care alone for adolescent who made suicide attempts.¹⁸ Although the experimental intervention was no better than routine care for reducing ideation or reattempts, among the non-depressed subgroup, the home-based treatment reduced suicidal ideation more than usual care. King et al. (2006) developed a novel intervention in which suicidal adolescents identified adults in their life who would be a source of ongoing support.¹⁹ Although there was no main effect for suicide ideation or attempts, females in the study intervention group reported greater decreases in suicide ideation than females in the control group.

The lack of empirically-based psychotherapies is further complicated by the high rate of treatment refusal and drop out by adolescents.¹⁷ While adolescents are difficult to engage and retain in treatment, suicidal individuals, irrespective of age, also refuse or drop out of treatment very quickly.²⁰ The task of engaging and retaining patients who are both adolescent and suicidal is daunting.

In summary, there is a need for empirically supported, individual psychotherapies developed for suicidal adolescents to prevent recurrence of suicidal behavior. Interventions that aim to reduce the severity of established risk factors for suicidal behavior such as depression, suicide ideation and impulsivity may be beneficial. Such interventions are likely to be most effective if they target these prominent risk factors that exist during acute suicidal crises. The focus of this manuscript is to describe the elements of a newly developed manualized psychotherapy, Cognitive Behavior Therapy-Suicide Prevention (CBT-SP), that takes a risk reduction, relapse prevention approach and is aimed expressively at reducing risk for future suicidal behaviors in suicidal adolescents. This treatment was developed in the context of a multisite study, Treatment of Adolescent Suicide Attempters (TASA), designed to prevent reoccurrence of suicide attempts in depressed, suicidal adolescents. We report on treatment retention, patient acceptability, and frequency of the use of treatment modules in adolescents who received CBT-SP as part of a multisite feasibility study.

Method

CBT-SP Treatment Description

Overview—Cognitive Behavior Therapy-Suicide Prevention (CBT-SP) is a manualized cognitive behavioral treatment for adolescents who recently attempted suicide (≤ 90 days). Although CBT-SP was implemented with suicide attempters, the theoretical approach and strategies may also apply to adolescents who experience episodes of acute suicide ideation (as opposed to chronic, unremitting ideation) in which precipitants can be identified. The primary goals of this intervention are to reduce suicidal risk factors, enhance coping and to prevent suicidal behavior. Adolescents who make suicide attempts, or who have acute or persistent suicide ideation, typically have multiple psychiatric and environmental problems.⁹ CBT-SP is narrow in focus and is not designed to address all of the adolescent's problems. This approach recognizes that the teen may need further treatment. Instead, it focuses on developing skills (cognitive, behavioral and interactional skills) that will enable the adolescent to refrain from further suicidal behavior. Thus, CBT-SP is designed to help adolescents use more effective means of coping when faced with their stressors and problems that trigger suicidal crises. Parents meet with the therapist for family sessions focused specifically on suicide risk reduction strategies.

CBT-SP is based on a stress-diathesis model of suicidal behavior.²¹ Theoretically, the diathesis for suicidal behavior includes a combination of factors, such as sex, religion, familial and genetic components, childhood experiences and psychosocial support system. In this model,

stressors trigger suicidal behavior in the context of an individual who possesses the diathesis. Stressors include a variety of psychosocial events, such as interpersonal conflict, work or school-related difficulties. CBT-SP acts to modify reactions to stressors both acutely and chronically in the context of vulnerability (i.e. positive diathesis).

A central focus of CBT-SP is the identification of proximal risk factors and stressors, including emotional, cognitive, behavioral and family processes active just prior to and following the adolescent's suicide attempt or recent suicidal crisis. These processes include deficits in the adolescent's abilities or motivations to cope with suicidal crises. For example, such deficits may include the inability to regulate emotions, the inability to resolve problems, the inability to tolerate distress, the inability to address negative thoughts or beliefs such as hopelessness or worthlessness. These risk factors are identified by conducting a detailed chain analysis of the sequence of events, and their reactions to these events, that led to the suicidal crisis. A core feature of the treatment is the development of an individualized case conceptualization that identifies problem areas to be targeted and the specific interventions to be employed during periods of acute emotional distress.

Individual and family treatment strategies are selected based on their relevance from the perspective of the therapist, patient, and family for risk reduction for each adolescent. In particular, strategies are chosen collaboratively between therapist and patient with particular consideration for those strategies that are most likely to have an impact on reducing suicide risk and those that bolster already-existing strengths. These strategies may include a variety of CBT techniques already described in the literature. CBT-SP treatment was informed by several sources and includes cognitive restructuring strategies such as identifying and evaluating automatic thoughts from Cognitive Therapy,^{22–29} emotion regulation strategies such as action urges and choices, emotions thermometer, index cue cards, mindfulness, opposite action, and distress tolerance skills from Dialectical Behavior Therapy, as well as other CBT strategies such as behavioral activation and problem-solving strategies.^{30–31}

Family issues are addressed to the extent that they are viewed by the patient, family and clinician to be relevant to the case conceptualization and the prevention of a future suicide attempts. CBT-SP also recognizes that suicidal crises occur within the context of the adolescents' environment and these factors contribute to suicide risk. Specifically, such factors may include problematic peer or romantic relationships, physical, verbal or sexual abuse, dysfunctional family beliefs, high family expectations and low reinforcement, or poor school performance. Thus, CBT-SP also incorporates specific family therapy techniques to address these contextual concerns.^{25–26}

CBT-SP consists of acute and continuation phases, both of which are generally completed within six months. The acute phase of CBT-SP consists of approximately 12 to 16 weekly sessions and is comprised of mostly individual sessions as well as up to 6 family sessions. Family "check-ins" (5–15 minutes) may also be conducted on a weekly basis at the discretion of the therapist, and were not considered to be family sessions. The acute phase of treatment consists of an initial phase, a middle phase, and an end of acute treatment phase. This is followed by a continuation phase of treatment.

Initial Phase of Acute Treatment

The initial phase of acute treatment occurs during the first three sessions and consist of five main components: Chain Analysis, Safety Planning, Psychoeducation, Developing Reasons for Living and Hope, Case Conceptualization. The Chain Analysis, Safety Planning, and Psychoeducation components generally occur during the initial two sessions. Developing Reasons for Living and Case Conceptualization generally occurs during the third session.

Family members are involved in all of the initial sessions. Each of the components that occur during the initial phase are discussed below.

Chain analysis—The basic strategy that sets the framework for the CBT-SP is a detailed chain analysis of events associated with the index suicide attempt or suicidal crisis. The chain analysis includes identification of vulnerability factors and activating events associated with the crisis as well as the adolescents' thoughts, feelings and behaviors in reaction to these events. To conduct a chain analysis of a suicide attempt, the therapist asks the teen to describe the events that led to and followed the suicide attempt as well as the details of the actual attempt. A good metaphor for this process is to ask the teen to describe the “frames in the film” of the suicide attempt.³² The therapist can then guide the teen to “freeze the frame” at a specific point in time so they can learn more details about thoughts, feelings and behaviors that were occurring at that moment. Often, the chain analysis begins with a specific stressful life event that is identified by the patient. However, the therapist may also begin the chain analysis by starting at the time of the attempt and work backwards. Other recommended starting points for describing the chain of events include when the patient woke up the morning of the attempt or the evening prior to the attempt.

Conducting the chain analysis, by itself, is beneficial, not only because detailing the sequence of events, thoughts and feelings from the adolescent's perspective is crucial to selecting intervention strategies, but also because it gives patients the opportunity to feel understood and counteract a frequent feeling that the suicidal behavior “just happened.” Sharing of the details of the suicide attempt or suicidal crisis (and circumstances surrounding it) facilitates rapport building and helps patients engage in treatment. The intervention also facilitates the development of a conceptualization of patients' suicidality and assessment of future risk. Once the chain was been fully described in written form, it can be revisited and revised during the treatment.

Safety Planning—Safety planning is a technique to help patients remain safe and not to engage in further suicidal behavior, at least until the next therapy session.^{29,33} Safety planning, as developed in CBT-SP, provides patients with a prioritized and specific set of coping strategies and sources of support that can be used during a suicidal crisis. It also includes a section on means restriction. The intent of safety planning is to help individuals lower their imminent risk for suicidal behavior by consulting this pre-determined set of potential coping strategies and list of individuals or agencies whom they may contact. Given that the highest risk period for a re-attempt is shortly after the indexed attempt, as well as during during the time immediately following discharge from inpatient treatment, it is essential to develop a safety plan early in treatment for high suicide risk adolescents who are being treated as outpatients. Its development conveys to the adolescent that the behavior is serious and worthy of immediate attention, yet manageable.

The safety plan includes a stepwise increase in the level of intervention from internal (“within-self”) strategies to external (“outside-self”) strategies. Internal strategies comprise a list of activities that the patient could do to cope with suicidal urges without the assistance of other people. These are usually behavioral activities that are done to distract the patient from thinking about suicide. Patients are informed that when such internal strategies do not work, the patient should then turn to external strategies. External strategies include a range of behaviors from receiving help from friends or family members to emergency psychiatric evaluation and possible hospitalization. The external strategies may start with people in the patient's social environment who can help distract them as well as adults whose help the patient can ask for. The final external strategy includes a list of the emergency psychiatric services available to the teen.

The therapist and patient should review each step of the plan and collaboratively problem-solve any potential obstacles to implementation. The plan should also include a list of the patient's warning signs of a suicidal crisis (usually based on specific situations, emotional state and/or cognitions) to indicate when the safety plan should be used. The safety plan is discussed and revised in every CBT-SP session, especially after each time the safety plan is used. Usually skills/strategies are added to the safety plan throughout treatment.

The safety plan is always written and kept where it can be retrieved during times of crises. Family members, especially parents, may be involved in the safety planning. The therapist and patient collaborate on how the family can be helpful in supporting the patient to use the safety plan. It is important to discuss with the patient and parents the elimination of any potential lethal means in the patient's environment. Every effort must be made for a responsible adult to remove firearms from the patient's access.

For the initial session, there may not be sufficient time to develop a full elaboration of the safety plan based on a chain analysis. However, it is essential to develop a rudimentary safety plan and chain analysis, both of which are elaborated in later sessions. Thus, the first session always includes a written safety plan and is further modified in subsequent sessions as more information was gathered through a more detailed chain analysis.

Psychoeducation—The therapist's role in CBT-SP includes educating the patient and family in several areas during the initial phase of treatment. The therapist's first task is to explain to the patient and parents the nature of suicidal behavior, the role of depression and the need for securing potential lethal means. The therapist also introduces the patient and family to the basic principles and goals of CBT-SP. Parents may also help to further elaborate on the chain analysis from their perspective and may contribute to development and implementation of the safety plan. Although there is parental input to the chain analysis and safety plan, the clinician works with the adolescent to determine which aspects of parental input are helpful in advancing their understanding of the chain and enhancing safety. In other words, the adolescent's perceptions of the sequence of events is most crucial.

Addressing Reasons for Living and Building Hope—Given that hopelessness is often associated with suicide risk, it is important to include treatment strategies that instill a sense of hope. One strategy for increasing hopefulness early in treatment is to discuss the adolescent's personal reasons for living. Delineating reasons to live is an important activity because learning to cope with suicidal urges is rather empty if there are no reasons to want to cope. The reasons for staying alive may include the people who care about the patient; things the patient can look forward to in the future; things the patient likes to do; and things that the patient cares about. The therapist should explain how recalling reasons to stay alive may be impaired during a crisis. The ability to recall reasons for living can be used as a specific coping strategy in distressing times.

The adolescent is also encouraged to construct a "Hope Kit," a concrete implementation of the patients' reasons to stay alive.^{34–35} The kit serves as a memory aid to be used in times of crisis, can help to increase hopefulness about the future and provide reminders about patients' sense of purpose. Hope kits can contain pictures of loved ones, reminders of aspirations and places that give them pleasure (e.g. seashells, picture of mountains).

Case Conceptualization—Following the first two sessions, the therapist develops a case conceptualization based on the chain analysis. As mentioned earlier, the therapist identifies the specific cognitive, behavioral, affective, and contextual problems that were identified during the chain analysis and then selects corresponding strategies to address these problems. The therapist and patient discuss the specific goals for reducing suicidal risk and then discuss the

suggested approach in a collaborative manner. Adjustments to the treatment plan are made for each patient. The prioritization of specific skills training should include those skills that are most likely to prevent a subsequent suicide attempt and that build on the adolescent's existing strengths. Once the interventions are collaboratively selected by the therapist and patient, the treatment plan is presented to the family for feedback.

Middle Phase of Acute Treatment

During the middle phase of acute treatment (approximately sessions 4–9), after the immediate suicidal crisis has resolved, the primary area of intervention is behavioral and/or cognitive skills training using individual or family sessions. Skills training is included as a series of optional individual and family modules. These modules are presented below.

Individual Skill Modules—The skill modules are drawn from empirically supported cognitive behavioral treatments. Patients may receive some but not all of these modules. The choice of modules is based on several factors: (1) Review of the chain analysis and subsequent case conceptualization which identifies deficits and, therefore, skills that can be taught; (2) Assessment of the patient's strengths (e.g., if a patient is hopeless and has a cognitive approach to problem solving, using cognitive restructuring may be most accessible to the teen and, therefore, most helpful early on); and (3) Identification of skills that are most likely to yield the quickest, most effective results. Choosing which skill module to implement is an extremely important decision because of the time-limited nature of the treatment. Individual skill modules include: (1) Behavioral activation and increasing pleasurable activities; (2) Mood monitoring; (3) Emotion regulation and distress tolerance techniques; (4) Cognitive restructuring; (5) Problem solving; (6) Goal setting; (7) Mobilizing social support; and (8) Assertiveness skills.

Family Skill Modules—The goal of CBT-SP's family intervention is focused on reducing suicide risk by encouraging family support; improving the family's problem solving skills; and modifying the family's communication patterns. The family modules may be implemented as part of or as adjunctive to the corresponding individual module, or they may be implemented during a distinct, separate session. The family interventions include parents and the suicidal adolescent, but do not normally include siblings.

During the family sessions, the therapist chooses which family skill modules to use and in what order, based on the case conceptualization. The core family modules include: (1) Family behavioral activation; (2) Family emotion regulation; (3) Family problem solving; (4) Family communication; and (5) Family cognitive restructuring.

Session Structure—The general structure of the sessions is consistent throughout the middle and ending phases of the acute treatment as well as during the continuation phase. Sessions are typically one hour in duration, except for the first two sessions which are one and a half hours because they include a family component. A typical CBT-SP session starts with the patient and therapist collaboratively setting the agenda for the session. When setting the agenda, priority should be given to those problems that are perceived to be the most life threatening or dangerous by the patient and the therapist. In the beginning of each session, the therapist reviews current mood symptoms and conducts an assessment of the patient's ongoing risk for suicide that includes the patient's current suicide status. The therapist reviews with the adolescent whether any elements of the safety plan have been used since the last session, and whether changes in the plan are needed to improve it by making it more feasible, usable or comprehensive. The adolescent and therapist then review the material covered in the prior session and any homework given during the prior session. In every session the therapist and adolescent conduct a review of progress that has been made in therapy and areas that still need attention.

The majority of CBT-SP sessions are devoted to introducing and teaching new skills and uses multiple modalities to assist the teenager to learn the relevant skill. These include presenting the rationale, explaining and teaching the skill, using role-play during the session to rehearse the skill, reviewing the role-play to understand the adolescent's (or parent's) reaction, and working collaboratively to develop a homework assignment so that the new skill can be used in the patient's life. Each session ends with a summary and a collaborative agreement about a homework assignment. The therapist helps the teen to summarize the key points that have been raised or the key elements of new learning that appear to be relevant to prevent recurrence of suicidal behavior. In the first few sessions, the therapist may be very active in summarizing the content of the session but it is important for the teen to do it by him- or herself as the therapy proceeds. In addition, it is very important for the therapist to elicit feedback throughout the session and at the end of the session. Feedback helps the therapist to understand those aspects of the session that were perceived to be most helpful and to address any issues that may have been upsetting for the patient.

End of Acute Treatment and Continuation Phase

The final component of the acute intervention phase includes a relapse prevention task. Once patients have successfully completed the relapse prevention task, the continuation phase is conducted.

Relapse Prevention Task—This module, conducted at approximately sessions 10 to 12, usually marks the end of the acute phase of treatment. The relapse prevention task is an “in-vivo” guided-imagery technique to test the efficacy of the acquisition of skills and coping capabilities in preventing suicidal behavior in the future.^{34–35} If the patient has difficulty completing the relapse prevention task, the therapist and adolescent identify obstacles to its completion and may review previously taught skills or add new skills.

The relapse prevention task includes five steps: (1) Preparation, (2) Review of the Indexed Attempt or Suicidal Crisis, (3) Review of the Attempt or Suicidal Crisis using Skills, (4) Review of a Future High Risk Scenario, and (5) Debriefing and Follow-up. During the preparation phase, the therapist introduces the rationale for this task in an attempt to increase the patient's motivation, and obtains verbal consent. Patients are informed that they will be asked to recall their recent suicide attempt or suicidal crisis, their thoughts, feelings and the reactions of people and to try to imagine as much as possible that they are re-experiencing that time. They are told that by imagining the suicide attempt and reliving the pain that was experienced, patients will have the opportunity to assess whether the coping skills learned in therapy can be recalled. During the review of the indexed attempt or suicidal crisis, the patient is asked to imagine the sequence of events that led to the index suicide attempt and the associated thoughts and feeling leading up to and following the suicide attempt. Next, the clinician again leads patients through the same sequence of events, but this time the therapist encourages the patient to imagine using the skills learned in therapy to cope with the events, feelings and thoughts. As they imagine the chain, teens are asked to describe the sequence of events and coping skills out loud and using the present tense. Teens are encouraged to rehearse applying the skills learned in therapy to the situation described in the chain analysis to result in a better outcome. During the next step, patients are encouraged to imagine, and describe in detail, a future scenario that could lead to a suicidal crisis. A crucial part of the task is for patients to anticipate when and how they can apply the skills learned in therapy in future situations. Finally, debriefing is conducted after the relapse prevention task has been completed and follow-up plans are formulated. Patients are provided with support and encouragement for conducting this task. In addition, feedback should be obtained from patients. At the end of the intervention and in the following sessions the therapist and patient review the changes the patient has made over the course of

treatment and the skills he/she have learned. It is crucial that they also review the safety plan before patients leave the relapse prevention session.

Continuation Phase—The continuation phase is an additional 12 weeks and consists of up to 6 sessions that are tapered in frequency. In addition, there may be up to three family sessions during the continuation phase. During the continuation phase, the therapist may introduce new skills or continue to help the patient or family to learn and implement the skills introduced in the acute phase. The termination sessions include explicit discussion of reactions to the conclusion of treatment, review of successful strategies that were learned in the therapy and the goals that were accomplished as well as a discussion of whether treatment is needed for other problems the adolescent may be experiencing, e.g. social anxiety, panic disorder, eating disorder.

In this final phase, the therapist also encourages the adolescent to identify specific anticipated difficult or stressful situations and review the use of the new skills as they would apply to these future situations. It is important to prepare the patient for mood fluctuations and setbacks and discuss specific signs of personal risk that have been identified through the chain analysis and the course of treatment with the patient. The importance of continuation or maintenance treatment for both partially and fully recovered teens should be emphasized. Issues surrounding ending treatment also should be discussed with the family and include: (1) Review of warning signs of depressive symptoms and suicidal crises, (2) Goals achieved in therapy, (3) Impact of treatment on the rest of the family, (4) Strategies for handling possible future episodes, and (5) The current need for further treatment.

Results

Treatment Retention, Acceptability and Adherence

Study Design and Participants—The TASA study began as a randomized controlled trial and due to feasibility issues, the methods were changed so that participants could decide to be randomized or choose among 3 treatment conditions: (1) CBT-SP alone; (2) Medication Management alone; or (3) Combination of CBT-SP and Medication Management (see Brent et al., 2009 and Vitiello et al, 2009 for detailed description of the study design and group comparisons). One hundred and ten adolescents, ages 13 to 19, received CBT-SP following assent and permission of a parent or legal guardian. Inclusion criteria were a recent suicide attempt (within the past 90 days) and clinically diagnosed depression (K-SADS PL) significant enough to warrant treatment (CDRS Revised ≥ 36) at entry into the study. Table 1 presents the characteristics of patients who received CBT-SP. Patients were predominantly female and Caucasian with a mean age of 15.8 years. Most were high school students with a mean of 9.8 years of schooling. They came from fairly well-educated families with more than 75% of the heads of household having at least some college education. The sample manifested significant psychopathology having made an average of 2.3 suicide attempts, and relatively severe depression at baseline as measured by both the Children Depression Rating Scale (CDRS) and the Beck Depression Inventory (BDI-II).

Treatment Retention—The majority of patients had a full course of the acute phase of treatment with 72.4% of adolescents receiving 12 or more individual sessions (Table 2). Only 14.3% of the patients completed ≤ 5 sessions. There was a considerable number of drop outs during the continuation phase with only 28.6% of patients receiving >16 sessions.

Treatment Acceptability—A subset of patients (N=42) were questioned about their knowledge of the treatment, the methodology and the acceptability of CBT-SP using an exit interview designed by the investigators based on questionnaires used in their prior studies. The

interview consisted of 20 open ended and closed (yes/no) questions asked by the local research assistant or coordinator. A qualitative data coding guide was created by several investigators by identifying major themes in the interviews and youth suicide research literature. All exit interviews were then coded independently by four study staff. Consensus was reached by these investigators in cases where less than 3 of the staff coded the item similarly. Therefore, these results must be interpreted with caution due to the small, non-random sub-sample of participants who completed the exit interview. Within this subgroup, all patients (100%) reported feeling that CBT-SP was helpful. When questioned about what they would change, 42% stated they would not make any changes while 18% reported that they would change some aspect of the therapy. The types of changes the youths suggested included specific aspects of the treatment (e.g., use reward system to increase motivation), assessments (e.g., too lengthy), research protocol (e.g., preferring not to be weighed or videotaped during sessions), developmental appropriateness of the treatment (e.g., add interactive activities for younger adolescents), and site specific variables (e.g., closer to home). Eighty-six percent reported that they would recommend CBT-SP to a friend who was considering this treatment. Another 10% said that it “took a lot of time but was worth it.” When asked whether the psychotherapy, medication or the combination the two was most helpful, 44.7% cited the therapy, 27.6% reported that they felt that the combination of therapy and medication was most helpful and only 6.4% reported that they thought the medication was the most helpful component of their progress. Twenty-one percent stated that there were other reasons that the treatment was helpful, with their relationship with the therapist as the most important reason. Sixty nine percent reported that they felt suicidal during the treatment. Because frequent direct assessment of suicidality is intrinsic to the treatment approach, patients were asked about the impact of having their suicidality assessed. Thirty percent of teens reported that it had no impact, 19% felt it had a positive effect. However, 30.9% reported that it had a mildly negative result (common answers included “bored,” “repetitive,” and “annoying”) and 11.9% stated that repeated assessment of suicidality was very aversive (e.g., “I didn’t like it.” and “Uncomfortable.”). But no patient reported that it increased their suicide ideation.

Adherence—Adherence is defined here as the clinician-reported use of the mandatory components of CBT-SP and teaching of appropriate skill modules. Therapist certification, weekly multi-site calls with therapists and supervisors, and regular site supervision meetings were used to enhance adherence. Assessing adherence through review of audiorecordings of sessions is crucial. Those results will be reported in later manuscripts. However, at this phase, it was important to first evaluate whether therapists and patients would perceive that they were able to adhere to the demands of the treatment structure. After each session, therapists recorded which modules or strategies that were used. Table 3 shows the number of patients and frequency of use of the modules or strategies. As expected, almost all patients received the safety plan, chain analysis and assessing/addressing suicidality and hopelessness modules. The safety plan and assessing/addressing suicidality and hopelessness modules were the most frequently used strategies and were addressed in an average of 8 sessions per patient. Relapse prevention, a mandatory intervention conducted during the last sessions of the acute phase, was conducted with 93.3% of the patients who received 12 or more sessions. A small number of patients refused to perform this task. Of the optional modules, the most frequently used modules were cognitive restructuring, mood monitoring, and emotional regulation. Modules addressing social skills were least frequently used. Fewer than one third of the adolescents received these modules. In contrast, family sessions (Table 4) were used most often to discuss the adolescent’s safety plan, to address improving communication and to provide psychoeducation.

Discussion

CBT-SP is a cognitive behavioral therapy for suicidal depressed adolescents specifically aimed at preventing reoccurrence of suicidal behavior and reducing associated risk factors. The

treatment includes a 12-week acute phase and a continuation phase, over 6 months of contact. CBT-SP is primarily individual therapy but also includes family interventions as needed to reduce the adolescent's suicide risk.

Results demonstrated that CBT-SP is a feasible treatment to deliver and is acceptable to patients. Retention of patients, despite the difficult nature of the patient population, was remarkably high. The majority of patients remained in therapy long enough to receive the essential components. However, many patients terminated during the continuation phase. Our high retention during the acute phase may be as a result of the focused nature of the treatment. Several patients noted that they really appreciated the therapy because they were learning specific skills as opposed to "just talking" about their problems. Also, the time limited nature of this therapy, which was discussed at the outset with patients, may have increase retention during the acute phase. Tapering treatment, as done in the continuation phase, seemed to contribute to patients' decision to leave treatment. In the future, treatments targeting this population should perhaps include more frequent sessions at the beginning and limit the number of sessions during the continuation phase or end the continuation phase earlier.

Based on therapist ratings, the essential modules of the treatment were delivered as prescribed in the manual. Rating tape recordings of sessions to evaluate adherence to the model are required to substantiate therapist reports and will be described in other reports. Although CBT-SP is a manualized treatment, the content of the therapy sessions is flexible and is based on the specific patients' needs assessed in a formal case conceptualization. Variability in the frequency of the modules that were used confirms that the treatment was provided in a flexible manner.

This study has several limitations. Because this treatment was open and delivered in a non-randomized manner, we cannot address questions of the efficacy of our intervention, or its component parts. Furthermore, our findings are limited by the relatively small number of participants and homogeneity in entry criteria. All adolescents met criteria for depression in this protocol. A significant proportion of adolescent suicide attempts occur outside the context of depression. Feasibility and acceptability of CBT-SP in the non-depressed adolescent suicide attempter population is unknown. Furthermore, adolescents with psychotic symptoms or requiring primary substance abuse treatment were excluded which limits the generalizability of CBT-SP. Also, all adolescents had a recent suicide attempt in our study. Depressed adolescents with significant suicide ideation are also at increased risk for suicidal behavior. It is likely that CBT-SP can be adapted for this population but this study does not address this population.

In conclusion, our results support the feasibility and acceptability of implementing this CBT-SP treatment in the context of an open clinical trial of depressed, suicidal teens. CBT-SP promises to be a flexible and appropriate treatment to prevent recurrence of suicidal behavior in depressed adolescents. Testing its efficacy in an RCT is an important next step.

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References

1. Grunbaum JA, Kann L, Kinchen SA, et al. Risk behavior surveillance - United States, 2001. *J Sch Health* 2002;72(8):313-328. [PubMed: 12389372]

2. Lipschitz DS, Winegar RK, Nicolaou AL, Hartnick E, Wolfson M, Southwick S. Perceived abuse and neglect as risk factors for suicidal behaviors in adolescent inpatients. *J Nerv Ment Dis* 1999;187(1): 32–39. [PubMed: 9952251]
3. Nock MK, Joiner TE Jr, Gordon KH, Lloyd-Richardson E, Prinstein MJ. Non-suicidal self-injury among adolescents: Diagnostic correlates and relation to suicide attempts. *Psychiatry Res* 2006;144(1):65–72. [PubMed: 16887199]
4. Larsson B, Sund AM. Prevalence, course, incidence, and 1-year prediction of deliberate self-harm and suicide attempts in early Norwegian school adolescent. *Suicide Life Threat Behav* 2008;38(2):152–65. [PubMed: 18444774]
5. Goldston D, Daniel SS, Reboussin DM, Reboussin BA, Frazier PH, Kelley AE. Suicide attempts among formerly hospitalized adolescents: A prospective naturalistic study of risk during the first 5 years after discharge. *J Am Acad Child Adolesc Psychiatry* 1999;38(6):660–671. [PubMed: 10361783]
6. Lewinsohn PM, Rohde P, Seeley JR. Adolescent suicidal ideation and attempts: Prevalence, risk factors, and clinical implications. *Clin Psychology Sci Pract* 1996;3(1):25–46.
7. Shaffer D, Gould MS, Fisher P, et al. Psychiatric diagnosis in child and adolescent suicide. *Arch Gen Psychiatry* 1996;53(4):339–348. [PubMed: 8634012]
8. Brent DA, Baugher M, Bridge J, Chen T, Chiappetta L. Age- and sex-related risk factors for adolescent suicide. *J Am Acad Child Adolesc Psychiatry* 1999;38(12):1497–1505. [PubMed: 10596249]
9. Bridge JA, Goldstein TR, Brent D. Adolescent suicide and suicidal behavior. *J Child Psychol Psychiatry* 2006;47(3–4):372–394. [PubMed: 16492264]
10. Lewinsohn PM, Rohde P, Seeley JR. Psychosocial risk factors for future adolescents suicide attempts. *J Consult Clin Psychol* 1994;62(2):297–305. [PubMed: 8201067]
11. Gould MS, King R, Greenwald S, et al. Psychopathology associated with suicidal ideation and attempts among children and adolescents. *J Am Acad Child Adolesc Psychiatry* 1998;37(9):915–923. [PubMed: 9735611]
12. Gould MS, Greenberg T, Velting D, Shaffer D. Youth suicide risk and preventive interventions: A review of the past 10 years. *J Am Acad Child Adolesc Psychiatry* 2003;42(4):386–405. [PubMed: 12649626]
13. Rathus JH, Miller AL. Dialectical behavior therapy adapted for suicidal adolescents. *Suicide Life Threat Behav* 2002;32(2):146–57. [PubMed: 12079031]
14. Wood A, Trainor G, Rothwell J, Moore A, Harrington R. Randomized trial of group therapy for repeated deliberate self-harm in adolescents. *J Am Acad Child Adolesc Psychiatry* 2001;40(11): 1246–53. [PubMed: 11699797]
15. Huey SJ Jr, Henggeler SW, Rowland MD, et al. Multisystemic Therapy Effects on Attempted Suicide by Youths Presenting Psychiatric Emergencies. *J Am Acad Adolesc Psychiatry* 2004;43(2):183–190.
16. Cotgrove A, Zirinsky L, Balck D, Weston D. Secondary prevention of attempted suicide in adolescence. *J Adolesc* 1995;18(5):569–577.
17. Rotheram-Borus MJ, Piacentini J, Cantwell C, Belin TR, Song J. The 18-month impact of an emergency room intervention for adolescent female suicide attempters. *J Consult Clin Psychol* 2000;68(6):1081–93. [PubMed: 11142542]
18. Harrington R, Kerfoot M, Dyer E, McNiven F, 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):512–518. [PubMed: 9585653]
19. King CA, Kramer A, Preuss L, Kerr DC, Weisse L, Venkataraman S. Youth- Nominated Support Team for Suicidal Adolescents (Version 1): a randomized controlled trial. *J Consult Clin Psychol* 2006;74(1):199–206. [PubMed: 16551158]
20. Kurz A, Moller H. Help-seeking behavior and compliance of suicidal patients. *Psychiatr Prax* 1984;11(1):6–13. [PubMed: 6709771]
21. Mann JJ. A current perspective of suicide and attempted suicide. *Ann Intern Med* 2002;136(4):302–311.22. [PubMed: 11848728]
22. Linehan, M. *Cognitive Behavior Therapy for Borderline Personality Disorder*. New York: Guilford Press; 1993.
23. Brent, D.; Poling, K. *Cognitive Therapy Treatment Manual for Depressed and Suicidal Youth*. Pittsburgh, PA: University of Pittsburgh; 1997.

24. Brent, D.; Bridge, M.; Bonner, C. Cognitive Behavior Therapy Manual for TORDIA. Pittsburgh, PA: University of Pittsburgh; 2000.
25. Curry, J.; Wells, K.; Brent, D., et al. Cognitive Behavior Therapy Manual for TADS. Durham NC: Duke University; 2000.
26. Wells, K.; Curry, JF. Family Cognitive Therapy Manual for TADS. Durham, NC: Duke University; 2000.
27. Brown, GK.; Henriques, G.; Ratto, C.; Beck, AT. Cognitive Behavior Therapy for Adult Suicide Attempters. Philadelphia PA: University of Pennsylvania; 2002.
28. Beck, AT. Cognitive therapy and the emotional disorders. Oxford, England: International Universities Press; 1976.
29. Brown GK, Have TT, Henriques GR, Xie SX, Hollander JE, Beck AT. Cognitive Therapy for the Prevention of Suicide Attempts: A Randomized Controlled Trial. *JAMA* 2005;294(5):563–570. [PubMed: 16077050]
30. Linehan MM, Armstrong HE, Suarez A, Allmon D, Heard HL. Cognitive-behavioral treatment of chronically parasuicidal borderline patients. *Arch Gen Psychiatry* 1991;48(12):1060–1064. [PubMed: 1845222]
31. Linehan MM, Heard HL, Armstrong HE. Naturalistic follow-up of a behavioral treatment for chronically parasuicidal borderline patients. *Arch Gen Psychiatry* 1993;50(12):971–974. [PubMed: 8250683]
32. Wexler, D. The PRISM Workbook. New York: WW Norton & Co; 2001.
33. Stanley, B.; Brown, GK. Safety planning: An intervention to mitigate suicide risk. Washington, D.C: Veterans Health Administration Publication; 2008.
34. Henriques GR, Beck AT, Brown GK. Cognitive therapy for adolescent and young adult suicide attempters. *Am Behav Sci* 2003;46(9):1258–1268.
35. Berk MS, Henriques GR, Warman DM, Brown GK, Beck AT. A cognitive therapy intervention for suicide attempters: An overview of the treatment and case examples. *Cogn Behav Pract* 2004;11(3): 265–277.

Table 1

Cognitive Behavior Therapy for Suicide Prevention Patient Characteristics

| Patient Characteristics | N=110 | Mean \pm SD |
|--|-------|-----------------|
| Age | | 15.8 \pm 1.6 |
| Female | 84 | 75.5% |
| Race | | |
| Caucasian | 72 | 66.0% |
| Black | 17 | 15.6% |
| Hispanic | 15 | 13.8% |
| Other | 6 | 4.6% |
| Years in school (grade) | | 9.8 \pm 1.6 |
| Head of Household Education Level | | |
| \leq 8th grade | 3 | 1.9% |
| Some high school | 4 | 2.9% |
| HS graduate | 14 | 12.5% |
| Some college | 30 | 27.9% |
| College graduate | 32 | 29.8% |
| Advanced degree | 27 | 25.0% |
| # of Suicide Attempts | | 2.3 \pm 2.3 |
| Baseline Children Depression Rating Scale | | 51.2 \pm 12.5 |
| Baseline Beck Depression Inventory | | 23.3 \pm 12.5 |

HS = high school

Table 2

Number of Individual Cognitive Behavior Therapy for Suicide Prevention Sessions Completed*

| # of Individual CBT-SP Sessions | N | % |
|---------------------------------|----|------|
| ≤5 | 15 | 14.3 |
| 6–11 | 14 | 13.3 |
| 12–16 | 46 | 43.8 |
| 17–20 | 25 | 23.8 |
| > 20 | 5 | 4.8 |

CBT-SP = Cognitive Behavior Therapy for Suicide Prevention

Table 3

Cognitive Behavior Therapy for Suicide Prevention Individuals Modules: Frequency of Use and Percentage of Patients Receiving the Module (Possible range = 1–18)

| CBT-SP Modules | # of Sessions in which Module was used Mean + SD | % of Patients Receiving Module |
|--------------------------------------|--|--------------------------------|
| Safety Plan | 8.7 ± 4.8 | 98 |
| Assess Suicide Risk and Hopelessness | 8.6 ± 5.1 | 95 |
| Chain Analysis | 2.2 ± 1.6 | 97 |
| Cognitive Restructuring | 4.1 ± 3.3 | 88 |
| Mood Monitoring | 3.4 ± 3.9 | 71 |
| Emotion Regulation | 2.8 ± 2.6 | 75 |
| Problem Solving | 2.2 ± 2.3 | 68 |
| Goal Setting | 1.6 ± 1.5 | 74 |
| Behavioral Activation | 1.2 ± 1.5 | 57 |
| Mobilizing Social Support | 0.7 ± 1.1 | 38 |
| Social Skills | 0.8 ± 1.5 | 35 |

CBT-SP = Cognitive Behavior Therapy for Suicide Prevention

Table 4

CBT-SP Family Modules: Frequency of Use and Percentage of Patients Receiving the Module

| Module | Frequency Mean + SD | % of Patients Receiving Module |
|-----------------------------------|---------------------|--------------------------------|
| Safety Plan | 2.2 + 2.2 | 75 |
| Communication skills | 1.6 + 1.6 | 70 |
| Psychoeducation | 1.5 + 2.0 | 69 |
| Goal Setting | 0.9 + 1.2 | 50 |
| Family Problem Solving | 1.0 + 1.5 | 49 |
| Contingency management | 0.9 + 1.8 | 34 |
| Family pleasant activities | 0.4 + 0.7 | 30 |
| Relapse Prevention | 0.4 + 0.8 | 29 |
| Reducing negative emotions | 0.4 + 0.9 | 27 |
| Mood Monitoring | 0.4 + 0.9 | 26 |
| Increasing positive reinforcement | 0.4 + 0.9 | 26 |
| Reducing high expectation | 0.3 + 0.8 | 23 |
| Attachment and commitment | 0.1 + 0.4 | 10 |

CBT-SP = Cognitive Behavior Therapy for Suicide Prevention