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The Youth-Nominated Support Team for Suicidal Adolescents – Version II: A Randomized Controlled Intervention Trial

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Abstract

The purpose of this study was to examine the efficacy of the Youth-Nominated Support Team – Version II (YST-II) for suicidal adolescents, an intervention based on social support and health behavior models, which was designed to supplement standard treatments. Psychiatrically hospitalized and suicidal adolescents, ages 13 to 17 years, were randomly assigned to treatment-as-usual (TAU) plus YST-II (n = 223) or TAU only (n = 225). YST-II provided tailored psychoeducation to youth-nominated adults in addition to weekly check-ins for three months following hospitalization. In turn, these adults had regular supportive contact with adolescents. Adolescents assigned to TAU+YST-II had an average of 3.43 (SD = .83) nominated adults. Measures included the Suicidal Ideation Questionnaire-JR (SIQ-JR), Children's Depression Rating Scale-Revised (CDRS-R), Beck Hopelessness Scale (BHS), and Child and Adolescent Functional Assessment Scale (CAFAS). YST-II had very limited positive effects, which were moderated by history of multiple suicide attempts, and no negative effects. It resulted in more rapid decreases in suicidal ideation (SIQ-JR) for multiple suicide attempters during the initial 6 weeks after hospitalization (small – moderate effect size). For non-multiple attempters, it was associated with greater declines in functional impairment (CAFAS) at 3- and 12-months (small effect sizes). YST-II had no effects on suicide attempts, and no enduring effects on SIQ-JR scores.

Keywords

Suicide Risk; Psychosocial intervention; teens; social support; psychoeducation

Introduction

Prevalence rates for suicidal ideation and behavior among adolescents are strikingly high. Based on nationally representative data, 8.4% of high school students have attempted suicide one or more times in the preceding year and 16.9% have seriously considered attempting suicide (Eaton et al., 2006). In a prospective study, Lewinsohn et al. (1996) found that 16.7% of adolescents with high suicidal ideation at baseline made a suicide attempt in the following year. Furthermore, 10 to 18% of youth hospitalized because of an

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attempt made repeat attempts within six months (Brent, Kolko, Wartella, & Boylan, 1993; King, Hovey, Brand, & Wilson, 1997).

The nearly complete absence of empirically validated interventions for suicidal adolescents was highlighted in a review of youth suicide risk and preventive interventions (Gould, Greenberg, Velting, & Shaffer, 2003). Only a small number of interventions have been studied in randomized controlled clinical trials. Moreover, positive effects in reducing suicidal ideation or attempts in these trials have consisted of nonsignificant trends (e.g., Cotgrove, Zirinsky, Black, & Weston, 1995), have been found in secondary analyses only (e.g., Harrington et al., 1998; King et al., 2006), or remain unreplicated (e.g., Huey et al., 2004; Wood, Trainor, Rothwell, Moore, & Harrington, 2001).

Multisystemic Therapy (MST) is among the more promising approaches to date. This intensive, multi-faceted intervention incorporates evidence-based interventions and addresses a broad range of risk factors (Henggeler, Schoenwald, Rowland, & Cunningham, 2002). Huey et al. (2004) found that MST was more effective than emergency hospitalization at decreasing rates of attempted suicide at 1-year follow-up. MST was not, however, associated with reductions in suicidal ideation, hopelessness, or depression severity, and there were baseline differences between groups in histories of suicide attempts, such that findings warrant replication.

Wood et al. (2001) compared a group therapy plus routine care to routine care alone in adolescents who had deliberately and repeatedly harmed themselves. Those in group therapy were less likely to engage in repeated deliberate self-harm; however, there was no effect on depressive symptoms, suicidal ideation, or the likelihood of any deliberate self-harm. In a study of a home-based family intervention for youth who had poisoned themselves, Harrington et al. (1998) found no differences in primary outcome analyses between routine care and family intervention groups for suicidal ideation. Cotgrove et al. (1995) found that permitting adolescents to rehospitalize themselves if needed was associated with a nonsignificant reduction in suicide attempts at 1-year follow-up.

Pilot and quasi-experimental intervention studies have also been conducted. Donaldson, Spirito, & Esposito-Smythers (2005) piloted a cognitive behavioral therapy (CBT) intervention in which they taught adolescent suicide attempters problem solving and affect management skills. They found no significant differences in outcomes between the CBT group and a group that received supportive relationship treatment. In another study, 6 months of individual CBT and conjoint family therapy followed by bi-weekly booster sessions was piloted in an outpatient setting for adolescents with alcohol use disorders and suicidality (Esposito-Smythers, Spirito, Uth, & LaChance, 2006). Results suggested the treatment model was feasible and promising. It is not possible, however, to draw conclusions from this small nonrandomized pilot study. Dialectical behavior therapy (DBT) has also shown promise in a quasi-experimental pilot study with adolescents (Rathus & Miller, 2002). Taken together, research to date provides only tentative answers to questions about core interventions and their effectiveness. Further research on theoretically-based psychosocial interventions with suicidal adolescents is warranted.

Conceptual Model for a Social Support Intervention for Suicidal Adolescents

Social support warrants consideration as an intervention target for adolescents who are struggling with suicidal ideation and behavior. Providing a conceptual framework, Heaney and Israel (2002) described the structure, functions, and processes of social relationships in addition to the mechanisms through which social relationships, including social support, may positively impact mental health. Possible direct effects include an improved sense of belonging and companionship. Possible indirect or buffering effects include the facilitation

of problem-solving and access to helpful information, which may lead to more effective coping and reduced exposure to stressors (Heaney & Israel, 2002). According to the theory of symbolic interactionism (Israel, 1982), socially supportive relationships may also assist individuals in interpreting or reframing negative events or problems (e.g., depression) in a more constructive and less distorted manner (Thoits, 1995). Finally, socially supportive relationships may exert a positive effect via their influence on health behaviors such as treatment adherence.

Empirical Research Pertaining to Social Support and Adolescent Suicidality

Converging evidence from a large body of empirical studies suggests that social integration and social support may be protective against youth suicide (King & Merchant, 2008). This may be due to a stress buffering protective effect of social support via conditions associated with suicide. For example, family support has been inversely related to adolescents' substance use (Wills & Cleary, 1996), and low social support has been linked to multiple suicide risk factors including depression, conduct problems, and alcohol/substance problems (e.g., Kerr, Preuss, & King, 2006; Mazza & Reynolds, 1998; Prinstein, Nock, Spirito, & Grapentine, 2001).

Two large community studies support a link between low family support and both suicidal thoughts and behaviors among adolescents (Dubow, Kausch, Blum, Reed, & Bush, 1989; Perkins & Hartless, 2002). Furthermore, in a prospective community-based study of depressed adolescents, low social support was found to predict suicide attempts in adulthood (Lewinsohn, Rohde, Seeley, & Baldwin, 2001). In clinical studies, King and colleagues found that suicidal adolescent inpatients with mood disorders perceived lower levels of support from family compared to non-suicidal inpatients with mood disorders and non-patient adolescents (King, Segal, Naylor, & Evans, 1993); suicidal adolescents with lower levels of family support also were found to be more likely to attempt suicide in the six months following psychiatric hospitalization (King, Segal, Kaminski, & Naylor, 1995). Greater perceived peer rejection and less close friendship support were directly associated with more severe suicidal ideation among adolescent psychiatric inpatients (Prinstein, Boergers, Spirito, Little, & Grapentine, 2000).

Youth-Nominated Support Team Intervention (YST)

The present study examined the efficacy of the Youth-Nominated Support Team-Version II (YST-II) in a randomized controlled trial. Based on social support and health behavior models, YST-II was designed to supplement routine care for suicidal adolescents following psychiatric hospitalization, a period of high risk for suicidal incidents (Goldston et al., 1999). The intervention provides psychoeducation and ongoing consultation for the parent-approved adult support persons that have been nominated by the adolescent, providing them with information about the adolescent's emotional and behavioral problems or disorders, treatment plan and rationale for recommended treatments, signs of increased suicide risk, and availability of professional resources. The support persons maintain regular supportive contact with the adolescents for three months following hospitalization.

Social support has been categorized into four types: emotional support (e.g., empathy, caring), instrumental support (e.g., provision of tangible assistance), informational support (e.g., advice) and appraisal support (e.g., constructive feedback, social comparison) (Heaney & Israel, 2002). YST is conceptualized as providing emotional and appraisal support, providing a positive sense of connectedness, a supportive reframing of mental health problems (emphasizing that problems can be identified and treated), and opportunities for informal assistance with problem-solving. Previous research indicates that supportive

relationships with unrelated adults may minimize the impact of environmental risk (Grossman & Rhodes, 2002; Resnick et al., 1997).

Findings from the preliminary YST-I trial, which was one of the first large-scale randomized trials to be conducted with suicidal adolescents in the United States, established the intervention's feasibility and yielded some promising findings for adolescent girls (King et al., 2006). Adolescents in this trial were randomly assigned to either treatment-as-usual (TAU) plus YST-I or TAU only. No main effects for the intervention were found. However, relative to girls in the TAU only condition, those in TAU+YST-I improved more on mood-related functional impairment in intent-to-treat analyses. There was also a suggestion that girls in TAU+YST-I showed greater decreases in suicidal ideation, although these effects were only evident in actually treated rather than intent-to treat analyses.

Based on YST-I data, several modifications were made to the intervention prior to the YST-II trial (YST-II intervention manual available from 1st author). In addition to updating psychoeducation resources for support persons, one change was to include only adults as support persons rather than offering each adolescent the option of also nominating one peer support person. This change was made because: a) There were no significant differences in outcome, on any measures of functioning, related to involvement or noninvolvement of a peer support person; b) The involvement of peers delayed intervention onset because of the extra step of obtaining written informed consent from each nominated peer's parent; c) There was significantly more dropout among peer support persons than among adult support persons; and d) other studies have indicated possible negative effects of involving peers in interventions with high-risk youth (Dishion, McCord, & Poulin, 1999).

A second change from YST-I to YST-II was to use a 3-month rather than a 6-month YST intervention. In the YST-I study, no significant difference was found in suicidal ideation at outcome between adolescents who obtained 3- versus 6-months of regular contact from support persons. Data did indicate, however, that feasibility was enhanced for the 3-month intervention. There was a 7-fold increase in the percentages of youth (from 6% to 42%) who were not contacted regularly (e.g., three of four weeks/month) between three and six months. Moreover, 94% of adolescents were contacted weekly by at least one support person and 75% were contacted weekly by two or more support persons for at least three months. In contrast, only 25% of adolescents were in contact with two or more support persons for six months.

Consideration of Possible Intervention Moderators

Because suicidal adolescents are highly heterogeneous in the type and severity of their presenting psychopathology and functional impairment (e.g., King, 1997), and because there are well established gender differences in perceptions of social support (Mahon, Yarcheski, & Yarcheski, 1994), the possibility of moderated intervention effects warrants consideration.

History of Multiple Suicide Attempts—Research indicates differences among suicidal adolescents based on history of multiple attempts. In a large non-referred sample, adolescents with multiple attempt histories more often made a subsequent attempt across a six year follow-up than those with histories of a single attempt (Miranda et al., 2008). Furthermore, adolescents who had made multiple attempts more often reported wishing to die, being uncertain or sorry about having recovered from their attempt, and planning attempts so that intervention was unlikely (Miranda et al., 2008). The finding that individuals with histories of multiple suicide attempts have more severe psychopathology than those with histories of single attempts has been reported in multiple clinical studies (Esposito, Spirito, Boergers, & Donaldson, 2003; Goldston et al., 1998; Hawton, Kingsbury, Steinhardt, James, & Fagg, 1999; Rudd, Joiner, & Rajab, 1996).

According to Linehan's biosocial theory, a combination of biological dysfunction in the emotion regulation system and an invalidating social environment lead to pervasive emotion dysregulation (Linehan, 1993), which is common among suicidal adolescents (Jacobson, Muehlenkamp, Miller, & Turner, 2008), particularly among those who engage in multiple suicide attempts (Esposito et al., 2003). Adolescents who engage in repetitive deliberate self-harm, including suicide attempts, often exhibit heightened interpersonal sensitivity, strong social validation needs, and elevated interpersonal problems, including adolescent-family dilemmas. It is possible that the facilitated support of YST (with staff support provided to support persons) and the involvement of nonfamily adults will be particularly beneficial for these adolescents.

Gender—Research studies consistently document gender differences in boys' and girls' perceptions of their relationships with others. Adolescent girls tend to perceive higher levels of social support than do males (Burke & Weir, 1978; Leavy, 1983; Slavin & Rainer, 1990; Stokes & Wilson, 1984). They also report more satisfaction with the support they receive from parents, peers, and others in their lives (Kuttler, La Greca, & Prinstein, 1999; Valery, O'Connor, & Jennings, 1997). In comparison to males, females tend to have more intimate relationships (Valery et al., 1997) and spend more time sharing feelings and personal concerns with others (Mahon et al., 1994). Of particular relevance, social support predicted lower suicidal ideation among females, but not males in a community-based study (Mazza & Reynolds, 1998). Furthermore, the preliminary YST-I efficacy study yielded promising findings for girls only.

The Present Study

The randomized design in the present study contrasts YST-II plus treatment-as-usual (TAU) with TAU only. Due to ethical considerations, a no treatment condition or a condition in which standard treatments are withheld from suicidal adolescents was considered unacceptable. Hypotheses were (1) TAU+YST-II would be more effective than TAU in reducing suicidal ideation, decreasing depression severity, reducing hopelessness, and improving mood-related adaptive functioning among suicidal adolescents; and (2) intervention effects would be greater for females than males. An exploratory aim was to determine whether or not the intervention would be more effective for multiple suicide attempters.

Methods

Participants

A total of 448 suicidal adolescents (319 girls, 129 boys) enrolled in this NIMH-funded efficacy trial (YST-II) [ClinicalTrials.gov; ID: NCT00071617] between 2002 and 2005 (follow-up assessments completed December, 2006). The sample size was determined by power analyses based on data from the YST-I preliminary trial (King et al., 2006). Adolescents were psychiatrically hospitalized at either a university (n = 132) or private hospital (n = 316).

Inclusion criteria were (1) 13 to 17 years of age, and (2) significant suicidal ideation or suicide attempt within the past four weeks. The latter was defined by parent or adolescent report on the NIMH DISC-IV (Shaffer, Fisher, Lucas, & Board, 1998). The initial question posed was whether or not there had been a time within the past four weeks when the adolescent “thought seriously about killing” him or herself. If an affirmative response was given, follow-up questions were: “Did you think about killing yourself many times in the last four weeks?” and “Did you plan exactly how you would kill yourself?” The inclusion criterion was met by a positive response to either of these questions or to, “In the past

month, have you tried to kill yourself?" For 25 of the participants (5.6%) this inclusion criterion was met only by parent report on the DISC. However, for most of these (*n* = 18), the adolescent did report suicidal intent or a suicide attempt on another baseline measure (e.g., KSADS, CDRS-R, described below). Inclusion was based on parent-only report for seven adolescents (1.6%). For four cases missing the DISC, the criterion was met by either SIQ-JR responses to "I thought about killing myself" or "I thought about what to write in a suicide note" (almost every day in past month) or by a score indicative of suicidal intent or attempt on the CDRS-R or KSADS. Exclusion criteria included: (a) severe cognitive impairment (chart data and attending confirmation of mental retardation or acute psychosis; unable to provide informed assent; n = 196), (b) direct transfer to medical unit (n=2; medically unstable); (c) direct transfer to residential placement (n = 34), (d) lived > 1 hour drive (n = 123), or (e) no legal guardian available (ward of court or state; n = 36).

The average age of participating adolescents was 15.59 years (*SD* = 1.31); the racial/ethnic distribution was 84% Caucasian, 6% African American, 2% Hispanic, and 8% Other. The percentage of Caucasian participants is consistent with census data for the study region (83.4% Caucasian; U.S. Census Bureau, 2007). Socioeconomic status was highly variable, with 5% of families earning less than $15,000 per year, 19% earning between $15,000 and $39,000, 19% earning between $40,000 and $59,000, 14% earning between $60,000 and $79,000, 13% earning between $80,000 and $99,000, and 16% earning more than $100,000 per year. Parental education also varied across the subjects: 8% of mothers and 11% of fathers had less than a high school education, 20% of mothers and 26% of fathers had a high school degree, 34% of mothers and 27% of fathers had some college, 18% of mothers and 13% of fathers had college degrees, and 10% of mothers and 8% of fathers had professional or graduate degrees.

Adolescents and parents were independently administered the affective disorders section of the Schedule for Affective Disorders and Schizophrenia for School-Age Children (KSADS-PL) (Kaufman, Birmaher, Brent, & Rao, 1997); adolescents were also interviewed about other disorders. Interviewers were trained mental health professionals who completed 20 hours of KSADS-PL training at study onset and 8-hour booster sessions at one-year intervals. Subsequent to these sessions, each interviewer scored a series of five (range = 3 – 8) taped and/or live interviews to establish inter-rater reliability. The mean agreement on presence/absence of primary diagnostic categories was 82%. Adolescents' diagnoses included: depressive disorder, 87.9%; posttraumatic stress disorder (PTSD) or acute stress disorder, 25.2%; other anxiety disorder, 28.7%; disruptive behavior disorder, 41.5%; alcohol or substance use disorder, 20.8%.

The institutional review board approved the study. Parent/guardian written informed consent and youth written informed assent were obtained. Forty-three percent of study-eligible adolescents were recruited. The primary reasons for refusal were recorded at the university hospital site and included: no interest in research (n = 81, 60%); too busy/overwhelmed at this time (n = 28, 21%); stigma of involving others in intervention (n = 9; 7%); other reason (n = 17, 13%). Chi-square analyses indicated no significant demographic differences by consent status.

Randomization of Participants

Participants were assigned to TAU or TAU+YST-II groups using a computerized balanced allocation strategy to insure balanced assignments at each site with respect to sex, age (< 15, ≥ 15 years), and history of multiple suicide attempts (yes/no). Group assignments were unknown until the project manager generated them at the randomization website following the consent process (sequence unknown). There were no significant differences between groups in age, gender, racial/ethnic group, or parents' education. The mean ages of

adolescents in TAU and TAU+YST-II groups were 15.61 (*SD* = 1.37) and 15.56 (*SD* = 1.24), respectively. Each group was 71% girls. The racial/ethnic distribution of each group was as follows: The TAU group was 84% Caucasian, 7% African-American, 2% Hispanic, and 4% other. The TAU+YST-II group was 83% Caucasian, 6% African-American, 2% Hispanic, and 5% other.

Measures

Adolescent self-report measures included the 15-item Suicidal Ideation Questionnaire-Junior (SIQ-JR) (Reynolds, 1988), which was used to assess severity of suicidal thoughts. It has demonstrated predictive validity for psychiatrically hospitalized adolescents (King, Hovey, Brand, & Ghaziuddin, 1997) and high internal consistency in this sample (.92). The 119-item Youth Self-Report (YSR) (Achenbach, 1991) was used to assess a broad range of behavior problems. Internal consistency was high for the Internalizing (.89) and Externalizing (.86) problem scores used in this study. The 20-item Beck Hopelessness Scale (BHS) (Beck & Steer, 1993) was administered to assess negative attitudes about the future and had an internal consistency of .91 in this sample. The 41-item Personal Experiences Screen Questionnaire (PESQ) (Winters, 1992) has demonstrated high levels of sensitivity and specificity in identifying alcohol and substance use disorders. Internal consistency for the Problem Severity Scale was .94.

Adolescents were administered the Children's Depression Rating Scale, Revised (CDRS-R) (Poznanski & Mokros, 1996), a semi-structured interview assessing depressive symptoms within the previous two weeks. Inter-interviewer reliability for total scores, established with multiple taped and live interviews prior to study onset and at subsequent one-year intervals (range = 3 – 10 interviews per assessment), was high (mean alpha across raters =.98). Parents were administered the Child and Adolescent Functional Assessment Scale (CAFAS) (Hodges, 1996) to assess their child's functional impairment. The CAFAS has demonstrated high test-retest reliability, construct validity, and predictive validity. Inter-rater reliabilities for CAFAS subscales (Moods/Emotions, School/Work, Home, Behavior Towards Others), based on different sets of publisher-provided reliability scoring vignettes completed during each year of the study (range = 5 – 9 vignettes per assessment), were high (alpha range = .83–.98); CAFAS total is a sum of these scores.

Parents were the primary informant for the Services Assessment Record Review (SARR) interview for over 95% of adolescents at each follow-up (95.3% – 99.1%). Adolescents also participated if they chose and time permitted (19.0% – 29.7% across follow-ups). The SARR was developed specifically for this study to assess treatment-as-usual (available from corresponding author). It is modeled after the Services Assessment for Children and Adolescents - Parent Interview (SCA-PI) (Jensen et al., 2004).

The presence or absence of one or more suicide attempts during each follow-up period was assessed with an item from the NIMH-DISC Mood Disorders module: “Have you tried to kill yourself?” The time frame was specified to capture data between assessments and was adjusted to cover any missed assessments. For example, the interviewer preceded the questions with “Since the last time we talked to you, which was in (month).”

Assessment Procedures

Baseline assessments occurred during or within one week of hospitalization. Seven percent of baseline evaluations (*n* = 33) were completed following hospital discharge. The mean SIQ-JR scores of those who completed the assessment during hospitalization (*M* = 46.07, *SD* = 21.02) did not differ from the scores of those who completed the assessment after hospitalization (*M* = 50.00, *SD* = 22.89). Independent evaluators were blinded to group

assignment. Adolescents were paid $30 and parents/guardians were paid $20 for participation in each assessment, and associated parking expenses were reimbursed. [Note: Adolescents were paid $20 per assessment initially; this was increased after 1st Year, with IRB approval, to facilitate retention.]

Follow-up assessments were conducted at 6-weeks, 3-months, 6-months, and 12-months at either an outpatient office adjacent to the hospital or in the participant's home. The mean intervals from baseline to each follow up assessment were as follows: 6-week *M* = 6.4 weeks (*SD* = 1.24 weeks), 3-month *M* = 14.5 weeks (*SD* = 2.21 weeks), 6-month *M* = 27.3 weeks (*SD* = 4.86 weeks), and 12-month *M* = 53.6 weeks (*SD* = 6.77 weeks). The study had a comprehensive Risk Management Protocol, which was reviewed and approved by a Data Safety and Monitoring Board. The project director or a senior clinician was available by page or telephone during assessments in case an adolescent met the protocol's defined “high risk” criteria.

YST-II Intervention

Nomination process—Adolescent assigned to TAU+YST-II were asked to nominate caring adults -- from family, school, and neighborhood or other community settings – with whom they would like to have regular supportive contact following their hospitalization. YST-II intervention specialists facilitated the nomination process. Intervention specialists were mental health professionals (doctoral level psychologists, masters' level social workers, psychiatric nurses) who had a minimum of three years of professional service with adolescents and families. They clarified that 1) only a subset of nominated persons would likely be available to participate, and 2) parent/guardian approval would be required for each person's involvement. A plan was developed with the family for contacting the support persons and inviting them to participate.

Informed consent of support persons—YST-II intervention specialists obtained written informed consent for participation from 656 (83%) of 791 nominated adults. They described the project to them and clarified that the support person role is that of a caring individual rather than a mental health professional or someone who is responsible for the adolescent's behavior.

Psychoeducation session and Telephone Check-Ins—YST-II intervention specialists conducted psychoeducation sessions with support persons. These were scheduled as individual sessions (*n* = 281, 65.7%) or group sessions (*n* = 147, 34.3%) in keeping with family preference and feasibility. Group sessions involved multiple support persons for one adolescent (support persons were not grouped across different adolescents). The mean length of sessions was 63.6 minutes (*SD* = 22.6 minutes). Sessions involved discussion of information about: (a) the adolescent's psychiatric disorder(s) and psychosocial problems; (b) the adolescent's treatment plan, rationale for recommended treatments; (c) risk factors for suicidal behavior and warning signs of possible imminent risk; (d) the availability of emergency services; and (e) strategies for communicating with adolescents. In addition, a collaborative plan for weekly telephone contact with the Intervention Specialist was developed. These mental health professionals had weekly telephone contacts with support persons.

Support persons, in turn, were encouraged to have weekly contacts with the adolescents. During their contacts, they were encouraged to: 1) talk with youths about their recent activities and support involvement in healthy activities; 2) inquire about and listen to adolescent's concerns; engage in collaborative problem-solving; 3) support treatment adherence and convey hopefulness about the possibility of positive change. The length of

these contacts was not specifically recorded and flexibility was emphasized. They reportedly varied from a brief telephone conversation to a several hour outing together.

Intervention Fidelity

Multiple procedures were used to enhance intervention fidelity. The YST-II intervention manual (available upon request) provides explicit guidelines for psychoeducation sessions and telephone check-ins with nominated persons. Intervention specialists completed 12 hours of YST-specific training and successfully completed a certification exam (developed by 1st author) that assessed knowledge of YST-II components and intervention competencies (via role-plays of psychoeducation session units and telephone check-ins). Following intensive training all intervention specialists passed the certification exam. Weekly individual supervision was provided with quarterly cross-site group supervision/ booster meetings. All intervention sessions were audiotaped and intervention specialists completed intervention checklists following each psychoeducation session. These were reviewed and co-signed by the support person. Review of audiotapes during the course of the study indicated that one intervention specialist fell below standards and additional intensive supervision was provided.

A YST-II Intervention Fidelity Checklist included the eight primary and 18 specific YST-II Psychoeducation Session topics. A randomly selected 25% of audiotaped sessions (n = 40) were reviewed by a psychologist who coded whether or not each topic was covered in sessions (Yes/No). Then, the primary author independently coded a randomly selected 25% of these sessions. The mean inter-rater percentage agreement for sessions was 98.4% (range = 75% – 100%) for the eight primary categories and 93.3% (range = 72% to 100%) for the 18 specific categories. Telephone Check-Ins with support persons were not audiotaped; however, live supervision was provided for at least 1 check-in for 7–12% of each specialist's participants.

Data Analyses

The baseline demographic and clinical characteristics of TAU+YST-II and TAU groups were compared using chi-square analyses and *t*-tests. Analyses were conducted to determine if there was differential participant retention across groups and to identify predictors of retention.

The efficacy of YST-II was tested with intent-to-treat analyses. The primary outcome variable was SIQ-JR total scores; secondary outcomes included CDRS-R, BHS, CAFAS Moods/Emotions, and CAFAS Total scores (Moods/Emotions and Total scores are not independent). Each outcome variable was modeled using linear mixed models. [The mixed model was chosen in lieu of a repeated measures ANOVA model to minimize the loss of entire cases due to missing observations across time points.] An unstructured residual covariance matrix was shown to be the best fit when compared to other residual covariance structures using the likelihood ratio test. Time was treated as a factor, with four levels for SIQ-JR, CDRS-R and BHS (6 weeks, 3 months, 6 months and 12 months), and two levels for CAFAS (3 months and 12 months). Intervention levels were TAU and TAU+YST-II.

The initial model for each outcome variable consisted of the baseline outcome score, the baseline CDRS-R score (a predictor of missing data), baseline PESQ problem severity score (a variable with baseline group differences), time, intervention, and the time by intervention interaction. A second and larger mixed model was then constructed for the SIQ-JR using a forward selection approach to consider possible moderators of treatment effects. Using the initial model as a starting point, gender, site, and lifetime multiple attempt status were added individually, with their respective interactions with time and intervention. Gender and site

did not yield significant results; however, multiple attempt status did moderate treatment effects and was included in the final model. The larger model developed with the SIQ-JR was extended to each of the secondary outcome variables. Effect sizes were calculated using Cohen's *d*.

Additional analyses used the same models to compare participants who received the full YST-II intervention (Actually Treated) to the TAU group. The Actually Treated (AT) group was defined by at least two support people who maintained contact with the youth for the 12-week intervention (n = 165). The mean total number of support person contacts per adolescent in this group was 33.73 (SD = 10.87).

Results

Baseline Measures

The baseline clinical characteristics of participants in TAU and TAU+YST-II groups are presented in Table 1. Participants in both groups scored well above the published clinical cutpoints of 31 on the SIQ-JR (Reynolds, 1988) and a raw score of 40 on the CDRS-R (Poznanski, 1984). There was no significant difference between treatment groups in the rates of multiple attempts ($\chi 2$ = .892, p = .640): twenty-five percent of adolescents reported no lifetime suicide attempts (28% TAU, 24% TAU+YST-II), 33% reported a single attempt (34% TAU, 35% TAU+YST-II), and 38% reported multiple attempts (38% TAU, 41% TAU +YST-II). TAU+YST-II participants reported a greater baseline severity of alcohol or drug use on the PESQ (t (433) = 2.36, p = .02).

Participant Retention

Figure 1 displays the flow of participants through study phases. Retention at each time point was as follows: 334 (75%) at 6-weeks, 342 (76%) at 3-months, 314 (70%) at 6-months, and 346 (77%) at 12-months. Participants with and without data at each time point did not differ on gender, age, race, intervention group, or baseline SIQ-JR scores. Adolescents who did not complete the 6-week assessment had higher baseline CDRS-R scores (t (434) = 2.26, p = .02). Baseline CDRS-R scores were included as a covariate in the outcome models. Only one adolescent chose to discontinue the YST-II intervention after it began.

Treatment-As-Usual

The cumulative numbers of psychotherapy sessions, psychoactive medications, and medication follow-up sessions reported for participants at each assessment are shown in Table 2. The percentages of adolescents who obtained alcohol/drug treatment, psychiatric hospitalization, and residential treatment are also reported. There were no significant differences between groups in treatments obtained during the follow up period.

YST-II Process Data

Adolescents assigned to YST-II nominated an average of 3.55 support persons (SD = 1.43) and had an average of 3.43 (SD = .83) support persons consent to participation. Eighty-seven percent had three or more consenting support persons. An average of 3.39 (SD = .85) support persons attended a psychoeducation session for each adolescent. Support people were predominantly Caucasian (80.3%) and female (70.2%), with an average age of 41.5 years (SD = 12.3 years). Figure 2 illustrates the relationships of support persons to adolescents. Support persons contacted the youth an average of 9.51(SD = 3.93) times. The mean number of face-to-face contacts was 7.62 (SD = 4.70); mean number of telephone contacts was 1.86 (SD = 3.05).

YST-II Efficacy and Clinical Outcomes

Intervention effects based on the initial linear mixed model results for each outcome variable are shown in Table 3. Intervention effects based on the larger set of mixed models, including the moderating effects of lifetime multiple attempt status, are shown in Table 4.

SIQ-JR Outcomes—The initial linear mixed model indicated a significant main effect for intervention at 6 weeks. The main effect of treatment indicates that the TAU+YST-II participants showed a larger drop in SIQ-JR scores at the 6 week time point than those in the TAU group, with TAU+YST-II participants having SIQ-JR scores an average of 4.2 points lower than those in the TAU group, adjusted for baseline scores ($p = .04$). This is a small effect ($d = .21$). The time-by-treatment interaction terms suggest that the pattern of decline in SIQ-JR scores was different for the TAU+YST-II group as compared to the TAU group; however, there were no significant differences between the TAU+YST-II and TAU groups beyond 6 weeks. Comparison of TAU+YST-II Actually Treated (YST-AT) and TAU groups yielded similar results, with a somewhat stronger effect at 6 weeks. At 6 weeks, the TAU +YST-AT youths scored 6.0 points lower than TAU ($p < .01$, d=.31).

In the second, larger mixed model for SIQ-JR, the intervention effect described above was found to vary significantly by history of multiple suicide attempts. While multiple attempters in the TAU group scored significantly higher than their non-multiple attempter counterparts at 6 weeks, no difference was found between multiple attempters and non-multiple attempters within the TAU+YST-II group at 6 weeks. Among multiple attempters, the TAU+YST-II intervention group had SIQ-JR scores an average of 9.4 points lower than the TAU group at 6 weeks ($p <.01$). That is, the TAU+YST-II intervention was most beneficial for those with a history of multiple attempts, and in fact, reduced their scores to levels similar to non-multiple attempters. This finding reflects a small to medium effect size ($d = .39$) and is shown in Figure 3. It accounts for approximately 27% of non-overlap in outcomes between groups. There were no significant intervention by multiple attempt status interaction effects on SIQ-JR scores beyond 6 weeks. The comparison between TAU and TAU+YST-AT groups resulted in similar, albeit somewhat stronger findings. Among multiple attempters, the TAU+YST-AT intervention group scored an average of 11.6 points lower than the TAU group at 6 weeks ($p <.01$, d=.50; medium effect size), demonstrating again that the intervention was effective enough to reduce their scores to levels similar to those of non-multiple attempters. [Note: Examination of models for the SIQ-JR outcome with three groups (TAU, YST-II-Parent Nominated, YST-II-No Parent Nominated) revealed the same pattern of findings whether or not a parent had been nominated.]

CDRS-R Outcomes—As shown in Table 3, the initial linear mixed model showed no main effects for TAU+YST-II on CDRS-R scores. Participants in both groups showed improvements in CDRS-R scores through 6 months. When the effect of lifetime multiple attempt status was included in the model, as shown in Table 4, no significant interactions were found. Likewise, no significant effects other than time to 6 months were found in TAU +YST-AT models.

BHS Outcomes—The initial linear mixed model showed no main effects for TAU+YST-II on BHS scores (see Table 3). When multiple attempt status was added to the model, there was no significant interaction between treatment and multiple attempt status (see Table 4). Similarly, there were no significant main or interaction effects in TAU+YST-AT models.

CAFAS Outcomes—The initial CAFAS models were run using the Moods/Emotions subscale. These are shown in Tables 3 and 4. While all participants showed improvement over time, no significant main or interaction effects were found for intervention in either the

TAU+YST-II or the TAU+YST-AT models. Overall functional impairment was then examined using the CAFAS summary score. Participants all improved over time, with no main effects for intervention. However, when considering interactions with multiple attempt status, the non-multiple attempters showed less functional impairment than multiple attempters overall and showed significantly more improvement with the TAU+YST-II intervention (3 months: TAU group scored 11.5 points higher TAU+YST-II group, n average, $p = .02$; 12 months: TAU group scored 10.9 points higher TAU+YST-II group, on average, $p < .01$). This reflects small effect sizes ($d = .22$ and $d = .26$ for 3 and 12 months, respectively). For the multiple attempters, there were no differences in scores across intervention groups. In the TAU+YST-AT models, a treatment effect for the non-multiple attempters was also found, with non-multiple attempters in the TAU group scoring 10.8 points ($p=.03$, $d=.21$) and 8.7 points higher ($p=.11$, $d=.21$) at 3 and 12 months respectively, when compared to the TAU+YST-AT group.

Suicide Attempt Outcomes—Sixty-four adolescents made a suicide attempt (parent or adolescent reported) in the twelve month follow-up period. There were no differences in frequency of suicide attempts by intervention group in either the intent-to-treat (χ^2 (1, n = 379)= .44, p = .51) or actually treated analyses (χ^2 (1, n = 354)= .66, p = .42). There were 29 suicide attempts in the TAU+YST-II group and 35 suicide attempts in the TAU group. When lifetime multiple attempter status subgroups were examined separately, there was also no difference in the suicide attempt rate by intervention group within attempter subgroups. There was one suicide death within the TAU group; this occurred between 11 and 12 months post-hospitalization.

Discussion

Based on social support and health behavior education models, the YST-II intervention was designed to supplement usual treatments for suicidal adolescents post-hospitalization. The intervention provides psychoeducation and consultative support to youth-nominated adults for three months who, in turn, are asked to have regular supportive contact with adolescents. In this large-scale efficacy trial, the positive effects were small in size, evident for only select outcomes, and moderated by whether or not the adolescent had a history of multiple suicide attempts. For the primary outcome of suicidal ideation, results indicate that YST-II was somewhat helpful in reducing suicidal thoughts more rapidly following hospitalization for those adolescents with histories of multiple suicide attempts. This effect was time-limited, evident only at the 6-week follow-up. Results also indicate that YST-II was somewhat helpful in reducing adaptive impairment among suicidal adolescents without histories of multiple suicide attempts. The hypothesis that positive effects would be moderated by gender was not supported.

The standardized effect sizes associated with YST-II's beneficial and disparate effects for subgroups defined by multiple suicide attempt history were small. The absolute size of these effects, however, is not the primary issue. A supplemental intervention, layered on top of primary treatments for both experimental and control conditions (generally combination treatment), would not be expected to have moderate to large additive effects. One could argue that a relatively small incremental benefit in the lives of youth at elevated risk for suicidal behavior and suicide is clinically meaningful; it may suggest the intervention is indicated if feasibility and costs are manageable. In fact, when considering clinical significance, Kendall et al. note that it is critical to determine whether or not a normative level of symptoms is a realistic goal (Kendall, Marrs-Garcia, Nath, & Sheldrick, 1999). Because many suicidal adolescents struggle with multiple, longstanding psychiatric disorders and psychosocial impairment, a clinically meaningful reduction in functional impairment or suicidal thinking is a more realistic goal. However, the fact that the positive

effects for YST-II were not apparent across related outcomes, including depression severity and hopelessness, suggests a lack of robustness and a need for caution in interpreting positive effects.

That stated, the fact that YST-II was modestly effective initially for the highest risk group of suicidal adolescents, those who have engaged in multiple suicide attempts, is noteworthy. This group is at particularly elevated risk for repetitive suicidal behavior (Goldston et al., 1998) and is characterized by emotion dysregulation and elevated interpersonal problems (Esposito et al., 2003). It is possible that YST-II, with the professional support that it offers to the caring adults in suicidal adolescents' lives, had a role in helping these caring adults support and manage the adolescent's transition from the hospital to the community environment. YST-II also had modest positive effects for non-multiple attempters in reducing impairment across a one-year period. This somewhat healthier group, on average, may have been in a better position to benefit from socially supported problem-solving, and to realize gains from such problem-solving over time.

The results of this study differ somewhat from those for YST-I, despite the fact that YST-I also emphasized social support and made use of a TAU comparison group. Although YST-I was a feasibility study and less rigorous scientifically, preliminary findings suggested that it may have been associated with reductions in mood-related functional impairment and suicidal ideation for girls only. However, contrary to study hypotheses, gender did not moderate the modest positive effects in the present study. Interestingly, both studies identified a small main effect of YST in reducing suicidal ideation, which, upon further examination, was a moderated effect. The inconsistency in findings may be due to changes in the intervention, such as the change in duration from six months to three months. It is also possible that an effect for multiple attempter status was not identified in YST-I due to a smaller proportion of multiple attempters in that study. Finally, the preliminary YST-I study was characterized by differential retention across intervention groups, which presented a challenge to the interpretation of findings.

Understanding the Limited Efficacy of YST-II

As with any new treatment or intervention, the first goal is to “do no harm.” Although there were no negative effects associated with YST-II for any primary or secondary outcome variable, there were also no moderate to large or pervasive positive effects. It is possible that the intervention was too “lightweight” in its intensity to overcome or divert the developmental trajectories of these adolescents who were psychiatrically hospitalized for acute suicidality. Interventions consisting only of unconditional postcard or letter contacts have demonstrated positive effects in adult samples (Carter, Clover, Whyte, Dawson, & D'Este, 2007; Motto & Bostrom, 2001); however, it is possible that adolescents are at a developmental stage requiring more frequent or intense support to impact mental health than is needed for adults. It is also possible that the supportive involvement of caring persons in YST-II may not have been as unconditional as the support in these studies. The modest findings may also be associated with dysfunctional support systems that could not be sufficiently overcome with this intervention.

Finally, the concept of perceived burdensomeness warrants discussion (Joiner, 2006). Research suggests that social support, under certain conditions, may increase suicidality through a feeling of burdensomeness on the support person which, in turn, could lead to a diminished sense of self-worth. In support of this conceptualization, Brown, Dahlen, Mills, Rick, and Bilbarz (1999) found a link between feelings of burdensomeness on one's relatives and increased suicidality. It is possible that an increase in perceived burdensomeness occurred among some YST-II participants; however, data are unavailable to examine this empirically.

Study Limitations

The generalizability of findings is limited. The parent/guardian informed consent and adolescent assent rate was only 43%. Given the acuity of adolescents' illnesses on an inpatient unit and the complexity of informed consent documents for a randomized intervention study involving a “vulnerable” population at elevated risk for suicide (King & Kramer, 2008) (with no knowledge of condition when consenting), this is not unexpected. The consent rate is consistent with other studies evaluating interventions for youth that were not being sought after as primary treatments (e.g., Asarnow et al., 2005) as well as with the consent rate in the YST-I study (King et al., 2006). However, it is unfortunate that information is unavailable concerning possible differences in the clinical characteristics and support system characteristics of those who did and did not consent to participate. Despite the absence of demographic differences between those who did and did not consent, the generalizability of findings must be assumed to be limited because of this and the fact that the sample was predominantly Caucasian.

Methodological limitations include the lack of assessment of suicidal intent. Given the few cases in which parent and adolescent reports of suicidal ideation differed, there may have been errors in reporting. Another limitation is the absence of fidelity assessments for telephone check-ins with youth-nominated supportive adults. These check-ins were not audiotaped or rated. In addition, the extent to which the nominated support persons' contacts with the adolescents were actually perceived by the adolescents as being supportive was not assessed.

Implications for YST-II and Directions for Further Research

YST-II was not associated with a sufficiently clear or pervasive pattern of positive effects to warrant a recommendation for clinical application. However, findings certainly suggest or hint at some positive benefits for this relatively “light” intervention. It is possible that components could be further developed and integrated into more targeted and/or multi-faceted intervention strategies. For example, research could examine a YST intervention redesigned specifically to facilitate and support treatment adherence and family reintegration post-hospitalization. It could be targeted specifically to the needs of multiple suicide attempters with modifications to the psychoeducational content and guidelines for staff consultations with support persons. Alternatively, it could be redesigned as one component of a multi-faceted intervention that includes psychoeducation, safety planning with parent and adolescent (with follow-up check-ins to support and provide guidance to responsible adults), and case management to facilitate treatment adherence. Another research direction would be to study the impact of YST-II on the support persons themselves. It may reduce parental anxiety and improve quality of life for those who have daily responsibility for suicidal adolescents following hospitalization.

Given the limited positive effects for YST-II, other types of social support or social integration interventions may warrant research with adolescents, such as the “unconditional” postcard intervention (Carter et al., 2007; Motto & Bostrom, 2001). In addition, it is recommended that future research begin to study combinations of primary treatments and supplemental interventions as such a “strong arm approach” may be indicated. Multiple evidence-based interventions – in combination or in sequence – will likely be necessary to achieve substantial positive outcomes for adolescents who present with severe suicidal thoughts or suicide attempts.

Summary

This large-scale randomized controlled intervention trial demonstrated that YST-II, which provides psychoeducation to youth-nominated adults and aims to facilitate their supportive

role with adolescents, had positive effects that were small in size, evident for only select outcomes, and moderated by whether or not the adolescent had a history of multiple suicide attempts. That is, there was no evidence of robust or pervasive positive effects. Specifically, YST-II plus treatment-as-usual, relative to treatment-as-usual only, was associated with more rapid reductions in suicidal thoughts for those had had made multiple suicide attempts. In addition, for those who had not made multiple suicide attempts, YST-II was associated with modestly greater reductions in psychosocial impairment over time. Despite the fact that YST-II is a non-intensive and relatively low cost supplemental intervention, the effect sizes for these benefits were small and inconsistent with a recommendation for widespread clinical application. It is recommended that further research with YST-II or related approaches target the intervention more specifically to a subset of the highly heterogeneous population of suicidal adolescents and consider carefully the importance of a multi-faceted approach.

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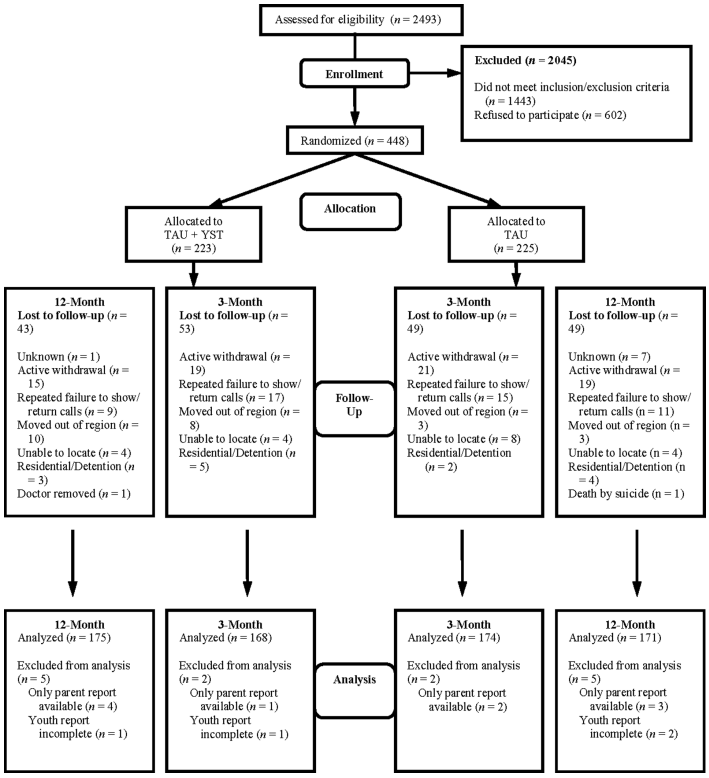

Figure 1.
Flow diagram of participants through the study.

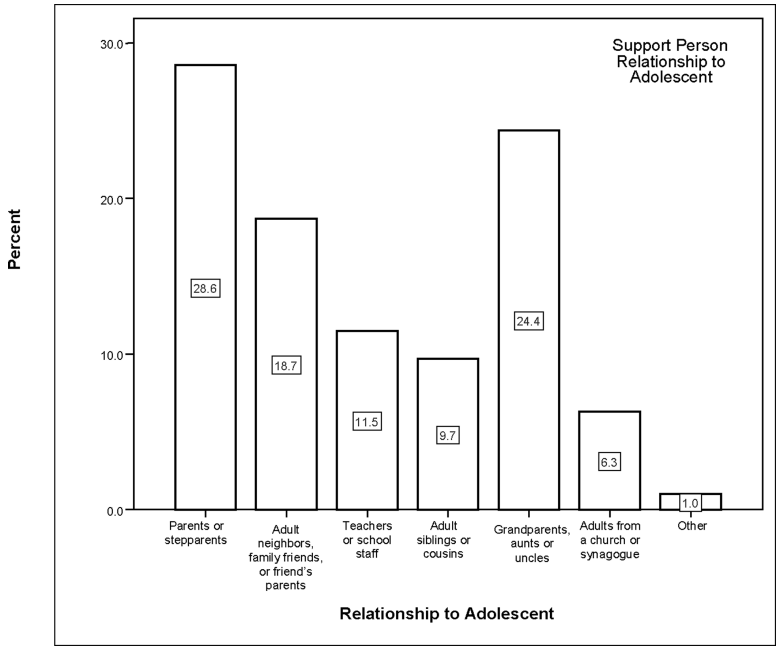

Figure 2.
Percentage of Youth-Nominated Support Persons in Varying Relationships with Youth

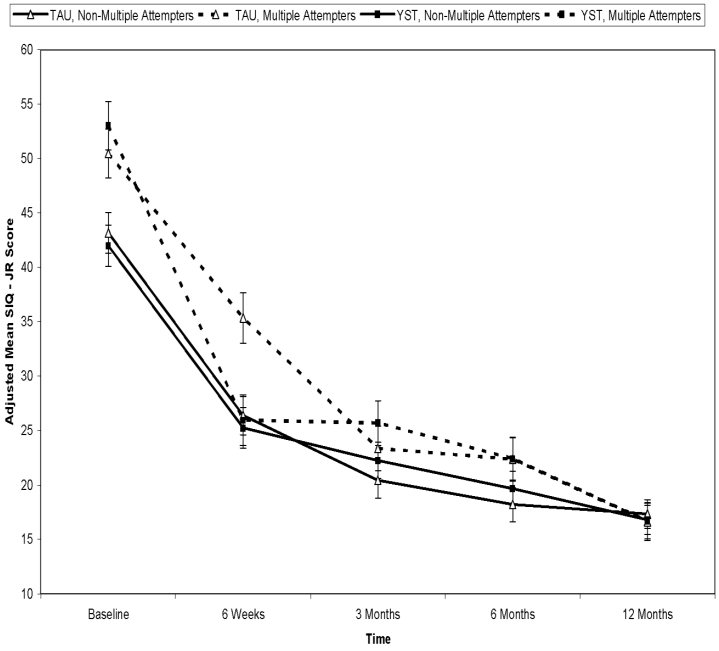

Figure 3.
Changes in SIQ-JR for TAU+YST-II and TAU Only Conditions based on baseline multiple attempt status

Table 1

Baseline Clinical Characteristics of TAU and TAU + YST Groups

	M (SD) TAU	M (SD) TAU+YST-II
SIQ-JR	45.83 (21.21)	46.60 (21.67)
CDRS-R	60.95 (12.56)	60.84 (13.81)
CAFAS Moods/Emotions	22.18 (7.74)	21.97 (7.58)
CAFAS Total	105.74 (34.46)	106.78 (35.15)
BHS Total	8.46 (5.90)	9.09 (5.73)
PESQ- Problem Severity	26.99 (11.21)*	29.62 (12.10)*
YSR- Internalizing	28.17 (10.78)	28.63 (10.94)
YSR- Externalizing	21.11 (8.90)	21.87 (10.04)

Note. Ranges for *n*'s in the TAU group were 202 (CAFAS) to 220 (SIQ-JR). Ranges for *n*'s in the TAU + YST-II group were 208 (CAFAS) to 219 (SIQ-JR).

* significantly different by treatment group at $p < .05$

Table 2

Types of Treatment Received by Study Participants in TAU and TAU + YST-II Groups

Type of Treatment	TAU				TAU +YST-II			
	Baseline – 6 weeks	6 weeks – 3 months	3 – 6 months	6 – 12 months	Baseline – 6 weeks	6 weeks – 3 months	3 – 6 months	6 – 12 months
Psychotherapy sessions[1] (cumulative number)	4.68 (3.29)	9.00 (6.39)	13.88 (10.20)	22.47 (18.22)	4.79 (3.51)	9.39 (5.43)	14.71 (9.41)	24.43 (19.49)
Psychoactive medication[1] (# of different medications)	2.01 (1.59)	1.90 (1.63)	1.72 (1.71)	1.66 (1.83)	1.87 (1.62)	1.94 (1.65)	1.81 (1.69)	1.86 (1.77)
Medication follow-up[1] (cumulative number)	2.39 (3.67)	4.08 (6.01)	5.88 (7.30)	8.47 (9.79)	2.22 (3.42)	3.98 (4.68)	6.18 (7.34)	9.44 (10.53)
Alcohol/drug treatment[2]	3%	3%	3%*	4%	4%	8%	8%*	5%
Psychiatric hospitalization[2]	15%	11%	10%	13%	14%	12%	9%	17%
Residential treatment[2]	1%	2%	2%	6%	1%	2%	4%	8%

Note. TAU = Treatment as Usual, YST-II = Youth-Nominated Support Team intervention.

[1]Mean number (Standard Deviation)

[2]Percentage of subjects utilizing treatment method

*Trend for difference by treatment group (p = .064)

Table 3

Main Effects Mixed Models (Intent to Treat) for SIQ-JR, CDRS-R, BHS, and CAFAS Moods

	Adjusted Means		Intervention Effects		
6 week	**TAU**	**TAU+YST-II**	**df**	**t**	**p**
SIQ-Jr	29.71	25.55	378	−2.04	.04[a]
CDRS-R	40.80	39.69	378	−.84	.40
BHS	7.80	6.82	377	−1.68	.09
3 month					
SIQ-Jr	21.57	23.62	378	1.13	.26
CDRS-R	38.55	38.27	378	−.21	.84
CAFAS	15.77	15.20	357	−.56	.58
BHS	6.53	6.72	377	−.02	.98
6 month					
SIQ-Jr	19.84	20.77	378	.53	.60
CDRS-R	34.02	34.78	378	.59	.55
BHS	5.38	5.09	377	−.58	.56
12 month					
SIQ-Jr	17.14	16.71	378	−.29	.77
CDRS-R	33.96	33.16	378	−.64	.52
CAFAS	12.70	12.43	357	−.26	.70
BHS	5.08	4.37	377	−1.47	.14

Note. TAU = Treatment as Usual, SIQ-JR = Suicidal Ideation Questionnaire- JR, CDRS-R = Children's Depression Rating Scale- Revised, BHS = Beck Hopelessness Scale, CAFAS = Child and Adolescent Functional Assessment Scale-Moods/Emotions. Means have been adjusted to account for baseline CDRS-R scores, Personal Experience Screening Questionnaire (alcohol and substance use) problem severity, and baseline scores of the outcome variable.

[a] $d = .21$.

Table 4

Mixed Models (Intent to Treat) Including Multiple Attempt Status Interactions for SIQ-JR, CDRS-R, BHS, and CAFAS Moods/Emotions

	Non-Multiple Attempters					Multiple Attempters				
	Adjusted Means		Intervention Effects			Adjusted Means		Intervention Effects		
6 week	**TAU**	**TAU+YST-II**	**df**	**t**	**p**	**TAU**	**TAU+YST-II**	**df**	**t**	**p**
SIQ-Jr	26.39	25.25	376	−.45	.65	35.34	25.96	376	−2.88	<01[a]
CDRS-R	40.10	39.19	376	−.54	.59	41.93	40.45	376	−.70	.48
BHS	7.58	6.81	375	−1.04	.30	8.20	6.84	375	−1.45	.15
3 month										
SIQ-Jr	20.43	22.26	376	.79	.43	23.37	25.70	376	.81	.42
CDRS-R	38.23	37.91	376	−.19	.85	39.01	38.78	376	−.11	.91
CAFAS	15.30	13.80	355	−1.15	.25	16.42	17.33	355	.57	.57
BHS	6.62	6.61	375	−.02	.99	6.40	6.36	375	−.04	.97
6 month										
SIQ-Jr	18.22	19.68	376	.65	.52	22.37	22.43	376	.02	.98
CDRS-R	33.72	33.23	376	−.30	.76	34.42	37.19	376	1.37	.17
BHS	5.25	4.93	375	−.50	.62	5.61	5.35	375	−.33	.74
12 month										
SIQ-Jr	17.34	16.78	376	−.30	.76	16.62	16.69	376	.03	.98
CDRS-R	34.72	32.43	376	−1.46	.15	32.57	34.26	376	.85	.39
CAFAS	13.17	11.80	355	−1.02	.31	11.85	13.37	355	.90	.37
BHS	5.47	4.55	375	−1.49	.14	4.38	4.08	375	−.37	.71

Note. TAU = Treatment as Usual, YST-II = Youth Nominated Support Team intervention, SIQ-JR = Suicidal Ideation Questionnaire- Junior, CDRS-R = Children's Depression Rating Scale- Revised, BHS = Beck Hopelessness Scale, CAFAS = Child and Adolescent Functional Assessment - Moods/Emotions Subscale. Means have been adjusted to account for baseline CDRS-R scores, Personal Experience Screening Questionnaire (alcohol and substance use) problem severity, and baseline scores of the outcome variable.

[a] $d = .39$.