

Enhancing Treatment Adherence with a Specialized Emergency Room Program for Adolescent Suicide Attempters

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ABSTRACT

Objective: The evaluation of outpatient treatment adherence among 140 Latina adolescent suicide attempters and their families.

Method: Sequentially, 75 attempters received standard emergency room care and 65 attempters received a specialized emergency room program including (1) training workshops for emergency room staff, (2) a videotape aimed at modifying families' treatment expectations, and (3) an on-call family therapist.

Results: Attempters receiving the specialized program were more likely to attend one treatment session (95.4% versus 82.7%) and were somewhat more likely to attend more sessions (5.7 versus 4.7) than those receiving standard emergency room care; however, their mothers were less likely to complete treatment. In addition, participants receiving the specialized program reported reduced psychiatric symptoms, and mothers reported more positive attitudes toward treatment and perceptions of family interactions.

Conclusions: Adherence was significantly improved by receiving the specialized care program in the emergency room. Adherence was also associated with increased suicidal ideation, more cohesive family relations, and lower self-esteem at baseline. *J. Am. Acad. Child Adolesc. Psychiatry*, 1996, 35(5):654-663.

Key Words: suicide attempters, adolescents, cognitive-behavioral treatment, treatment outcome, adherence.

Suicide attempts among adolescents are a significant health problem in the United States. The Centers for Disease Control and Prevention (1991) [5] reported that in 1990 more than 8% of high school students had made a suicide attempt, and 2% had made an attempt that required medical attention. Adolescent attempters are at increased risk for a variety of negative outcomes including repeated attempts, long-term psychiatric symptoms, and academic, social, and behavioral problems (Shaffer and Piacentini, 1994) [31]. The high rates of associated disturbance indicate a real need for psychiatric intervention for adolescent attempters. Studies with adults suggest treatment may reduce repeated attempts and enhance social adjustment (see Shaffer and Piacentini, 1994, for a review) [31]. In spite of their need for mental health intervention, fewer than 50% of adolescent attempters are referred for psychotherapy following their emergency room visit, and a large proportion of these are nonadherent to treatment (Piacentini et al., 1995b; Spirito et al., 1989) [24,32]. The goal of this project was to evaluate the efficacy of a program to enhance treatment adherence among attempters and their families.

Adherence to therapeutic interventions by adolescent attempters is likely to be influenced by both (1) structural characteristics of the emergency room and the emergency room staff's attitudes and behaviors, and (2) the adolescent's and the family's preconceptions of suicidal behavior, their expectations about therapy, and attitudes toward the medical setting. Therefore, interventions to increase treatment adherence must be multifaceted and delivered as soon as possible after the initial treatment contact. For example, repetitive evaluations, lengthy waiting periods, bureaucratic registration procedures, and poor communication may lead patients to develop negative associations with the health care delivery system (Haynes, 1979; Hazzard et al., 1990) [14,15].

Differences in the cultural and economic backgrounds between patients and health care providers have also been associated with differing social expectations and assumptions about mental health care (Bent et al., 1975; Haley, 1980; Phinney and Rotheram, 1987) [3,10,22]. African-American and Latino families are more likely to expect significant change in their problems immediately after the start of treatment (Butcher and Koss, 1978) [4]. In contrast, mental health providers may not expect significant change for several months. Conflicting expectations may lead to misunderstandings, antagonism, and a loss of faith in the medical service provider and the therapeutic interventions. Care providers may misinterpret differences in expectations as reflecting low motivation for treatment (Trautman et al., 1993) [34]. A series of focus groups held by the authors with both adherent and nonadherent adolescent suicide attempters and their mothers confirmed many of these observations. The attempters and their mothers described several negative experiences regarding their emergency room care that they believed influenced their attitudes toward and adherence to follow-up treatment. These negative experiences included, among others: (1) feeling confused about what was happening in the emergency room, why it was happening, and what to expect over the course of the evaluation; (2) mothers feeling blamed by emergency room staff as responsible for their child's suicide attempt and labeled by staff as being "bad" parents; (3) feeling skeptical about what therapy could accomplish, confused about what therapy entailed, and irritated by the assumption that going to therapy meant they were "crazy"; and (4) feeling angry about being asked to make time for treatment visits in the face of often inflexible work

schedules and burdensome domestic responsibilities (Rotheram-Borus et al., 1996) [29]. Only by modifying such structural factors in the emergency room or by changing families' understanding of the need for treatment will the family be likely to return (Shaffer et al., 1988) [30].

To improve follow-up outpatient treatment adherence, a specialized program was designed to address problematic attitudes, expectations, and behaviors of both staff and families regarding adolescent suicide attempters and their treatment. Specific targets for intervention were selected from the relevant literature in this area, from the family focus groups discussed earlier, and from a series of interviews with staff from each discipline designed to clarify their interactions, responsibilities, and difficulties with attempters and family members. A more detailed description of the rationale for the development of the intervention can be found in Rotheram-Borus et al. (1996) [29]. Specifically, we aimed to enhance positive interactions among family members and emergency room staff, to provide the attempters and their families with realistic expectations about outpatient treatment, and to contract with the families to return for follow-up outpatient treatment. The program had three components: (1) a series of staff training workshops for all emergency room staff that was designed to impact the expectations and behavior of service care providers serving adolescent suicide attempters and their families in the emergency room; (2) a "soap opera" videotape shown to attempters and their families in the emergency room to provide families with a better understanding of adolescent suicidality and the course of outpatient therapy; and (3) a brief family treatment session conducted by a crisis therapist in the emergency room. The crisis therapist contracted with the family for outpatient treatment and served as a liaison among the family, emergency room staff, and the mental health staff at the follow-up outpatient clinic.

It was anticipated that these structural interventions involving the emergency room staff would increase follow-up outpatient treatment adherence among adolescent attempters. Treatment adherence was examined from multiple perspectives, including returning for at least one visit, completing the 6-week treatment program, and the total number of sessions attended. Adherence was monitored from the initial referral to case closure among a consecutive series of suicide attempters and their families. Finally, factors that have been associated with nonadherence, including level of psychiatric symptomatology, family rigidity, and attitudes toward treatment (Shaffer and Piacentini, 1994) [31], were examined for their ability to predict treatment adherence, and the extent to which these characteristics were directly impacted by the presence of the specialized program was also measured.

METHOD

PARTICIPANTS

A consecutive series of 140 female adolescents presenting to the emergency room after a suicide attempt from March 1991 to February 1994 were recruited at the Columbia Presbyterian Medical Center (CPMC) in New York City. CPMC is a busy inner-city hospital serving a predominantly disadvantaged, Latino population. During this time, a

total of 468 adolescents presented to the emergency room and were evaluated for possible suicidal behavior. Among the 468 youths, 87 (18.6%) were males, 124 (26.5%) were females who were identified as suicidal ideators or as having psychiatric problems other than suicidality, and 41 (8.8%) were females who were admitted to a psychiatric unit after their attempt, and as such were unavailable for outpatient treatment. Female adolescent suicide attempters who were hospitalized on a medical unit for less than 1 week at CPMC were included in the study. Among the remaining 216 female attempters, 25 were referred to treatment programs closer to their residence, and 24 were ineligible for other reasons (low IQ, wrong age, no parent or family, moved out of area). This yielded 167 eligible female attempters, of whom 150 (90%) were successfully recruited, 9 were released from the emergency room before the study recruiter could approach them and follow-up contact was unsuccessful, and 8 (5%) refused to participate in the study. Of the 150 who agreed to participate in the study, 140 families were successfully assessed at baseline. The mean age of participants was 15 years (SD = 2) with an age range of 12 to 18 years. The majority of adolescents were Latina (88%). All participants were of low socioeconomic status.

STUDY DESIGN

There were two emergency room conditions in this study: standard care and a specialized care program. Because the entire emergency room staff was influenced by the intervention, it was not possible to randomly assign families to standard or specialized care. Sequentially, a total of 75 attempters and their families presenting to the emergency room from March 1991 to August 1992 received the standard emergency room care; 65 attempters and their families received the specialized emergency room program from September 1992 to February 1994. After receiving emergency room treatment, both groups were then referred to the Adolescent Suicidal Disorders Clinic, a specialized outpatient clinic providing follow-up treatment for suicidal adolescents at CPMC. The Adolescent Suicidal Disorders Clinic provided a six-session, standardized, outpatient treatment program developed especially for the project (Successful Negotiation/Acting Positively [SNAP]) (Rotheram-Borus et al., 1994) [28].

Participants completed a brief demographic assessment and mental health status examination during their emergency room evaluation. After discharge from the emergency room, attempters and their primary caretaker, usually the mother, completed a comprehensive psychological and psychosocial battery of assessment measures before entering outpatient treatment. The complete study design is depicted in [Figure 1](#).

[\[Help with image viewing\]](#) [\[Email Jumpstart\]](#) Figure 1. Design of emergency room-based intervention study. ER = emergency room; SNAP = Successful Negotiation/Acting Positively.

Standard Emergency Room Care

Adolescent attempters and their families who presented to the emergency room from March 1991 to August 1992 received standard emergency room care. These procedures included a medical evaluation by a pediatrician to determine whether the attempt was serious enough for a medical hospitalization and to prescribe appropriate medical procedures to be administered by attending nurses (e.g., gastric lavage). Each adolescent was then evaluated by a child psychiatric fellow or adult psychiatric resident to assess the need for psychiatric hospitalization. If the adolescent was not hospitalized and lived within the catchment area, the adolescent and her family were referred to the Adolescent Suicidal Disorders Clinic for outpatient treatment.

Specialized Emergency Room Program

From September 1992 to February 1994, three systematic changes were introduced into the emergency room process.

1. **Staff Training Workshops.** Individual training workshops were developed for each of the six primary staff groups working with adolescent attempters in the emergency room and administered according to a detailed training manual (Miller et al., 1992a) [18], which is available from the authors. The staff groups were as follows: child psychiatry fellows, adult psychiatry residents, pediatricians, nurses, security guards, and admitting clerks. The workshops were highly participatory, using techniques such as scripted and unscripted role-plays, value cards, and modeling. Common goals for all disciplines included providing interpersonal support to families and not blaming the family for the suicidal episode, increasing families' knowledge of emergency room procedures, providing positive reinforcement to attempters and their families, and making treatment adherence an explicit goal of all family-staff interactions. In addition, specific objectives were developed for each discipline as determined by the role of the particular staff group in the emergency room evaluation, the nature of the staff-family interactions, and the level of staff training (Rotheram-Borus et al., 1996) [29].

2. **"Soap Opera" Videotape: Setting Realistic Treatment Expectations.** A 20-minute videotape portraying the emergency room experiences of two adolescent attempters was developed. The video used a soap opera format to explain emergency room procedures, to provide a context for emergency room staff behaviors, to demonstrate adaptive coping strategies to the attempter and her family, and to provide a strong rationale for follow-up treatment. The tape was filmed in Spanish and dubbed in English; the adolescent patients and their families viewed the tape in the emergency room in their primary language.

3. **Family Therapy Session.** A bilingual crisis therapist met with the attempter and her family as soon as possible following admission to the emergency room. This therapist

was on call 24 hours per day. The therapist showed and discussed the videotape and conducted a structured therapy session. During the session, the family identified and planned for any possible suicide-eliciting situations over the next week, set goals for follow-up outpatient treatment, and made a written contract to meet these goals. In addition, the therapist served as a liaison among the family, the emergency room staff, and the outpatient follow-up clinic staff.

Follow-up Outpatient Treatment

After discharge from the emergency room, all attempters were referred to the Adolescent Suicidal Disorders Clinic at CPMC for a standardized, outpatient, family treatment program. The SNAP treatment program is a six-session, highly structured treatment protocol for suicidal adolescents and their families (Rotheram-Borus et al., 1994) [28]. Through the use of both behavioral and cognitive techniques, including behavioral contracting, cognitive restructuring, therapist modeling, structured role-playing, and reframing, SNAP focuses the family's attention on troublesome situations rather than difficult individuals and presents a systematic model to the attempter and her family for learning how to solve family problems in a positive way. Treatment was administered according to a detailed training manual (Miller et al., 1992b) [19], which is available from the authors.

ASSESSMENTS

Initial Emergency Room Assessment

As soon as medically possible and prior to any psychological intervention (i.e., video or therapy session) a semistructured interview, incorporating the Pierce Suicidal Intent Scale (Pierce, 1977) [25] and the Hamilton Rating Scale for Depression (Hamilton, 1960) [11], was completed in the emergency room by the evaluating psychiatrist. This interview was used to assess demographic status, history of suicidality, characteristics surrounding the index attempt, and current mental status. The Pierce Suicidal Intent Scale was used to measure the adolescent's suicidal intent in regard to her most recent attempt. Based on a clinical interview, this scale is composed of clinical ratings of 12 items: the circumstances surrounding the attempt (isolation, timing, precautions against discovery, seeking help, final acts, notes), medical lethality (predictable outcome and probability of death), the patient's expectations of lethality, and statements of intention to die (lethality, premeditation, reaction to the act). Each item was rated on a 0 to 2 scale, with a score of 2 indicating high suicidal intent. Items were summed to yield a single intent score ($\alpha = .68$). The 17-item version of the Hamilton Rating Scale for Depression was used to measure the degree of adolescent depressive symptoms at initial presentation in the emergency room. The Hamilton Rating Scale for Depression has been demonstrated to have good reliability and validity (Hedlund and Vieweg, 1979) [16]. Internal consistency was good in the present sample ($\alpha = .72$). Additional demographic information was obtained by a structured questionnaire administered at the time of recruitment and was

used to supplement the information gathered in the emergency room and facilitate contacting and tracking the families throughout the study.

Postdischarge Assessment

Adolescent Self-Reports. Current depression was measured using the Beck Depression Inventory (BDI) (Beck et al., 1961) [2]. Extensive reliability and validity information for use of the BDI with adolescents has been documented (Beck et al., 1988) [1]. Internal consistency was excellent in the present scale ($\alpha = .90$). The Harkavy Asnis Suicide Survey (HASS), a 21-item questionnaire that uses a 5-point Likert scale, was used to assess current suicidal ideation (Harkavy-Friedman et al., 1985) [13]. The HASS yields three factors: suicidal ideation (12 items; $\alpha = .94$); suicidal behaviors (5 items; $\alpha = .72$); and substance use (4 items; $\alpha = .53$) (J.M. Harkavy-Friedman, personal communication, 1994; Harkavy-Friedman and Asnis, 1989) [12]. The 23-item Impulsiveness Scale ($\alpha = .78$) of the Junior Eysenck Questionnaire (Junior I₆) was used to assess impulsivity (Eysenck et al., 1984) [9]. Norms are available from a community sample of 1,505 youths. Adolescents also completed the 10-item Rosenberg Self-Esteem Scale (Rosenberg, 1965) [27]. Responses were recorded on a 4-point Likert response scale ranging from "strongly agree" to "strongly disagree," with a higher score indicating higher self-esteem ($\alpha = .69$).

Maternal Self-Reports. Maternal symptoms were assessed with the BDI ($\alpha = .88$) (Beck et al., 1961) [2] and the Brief Symptom Inventory (BSI) (Derogatis, 1975) [7]. The BSI, a shortened version of the Symptom Checklist 90 (Derogatis, 1974) [6], is a multidimensional symptom inventory designed to assess symptomatic psychological distress. It measures psychopathology in terms of nine primary symptom dimensions and global indices of distress: somatization, obsessive-compulsive behavior, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism. The General Severity Index, which consists of the average score, was used in this analysis with excellent internal consistency ($\alpha = .96$).

Family Relationships. Family relationships were rated by both mother and child using the Family Adaptability and Cohesion Evaluation Scales (FACES III) (Olson et al., 1985) [21,25]. FACES III is 20-item scale with good reliability and validity (Olson, 1986; Rodick et al., 1986) [20,26]. Families are categorized on the basis of two primary dimensions: (1) adaptability: a family's ability to change its power structure, role relationships, and rules in response to situational and developmental stress; and (2) cohesion: a family's emotional attachment. FACES III generates scores on both perceived (maternal $\alpha = .82$; adolescent $\alpha = .80$) and ideal (maternal $\alpha = .86$; adolescent $\alpha = .83$) family functioning, both of which were used in the present analysis. Olson et al. (1985) [25] hypothesized a curvilinear relationship between FACES III scores and child and family functioning. Subsequent research, however, has demonstrated this relationship to be linear, with higher scores reflecting more adaptive functioning (Henggeler et al., 1993) [17].

Attitudes toward Treatment. Maternal and adolescent attitudes toward treatment were assessed using a 25-item rating scale developed specifically for this project. Subsequent factor analysis yielded a primary factor consisting of seven items, which possesses moderate to good internal consistency (maternal alpha = .73; adolescent alpha = .59). Higher scores indicate more negative attitudes toward treatment.

Treatment Adherence

Standardized rules were followed for tracking clinic attendance and closing cases. Therapists filled out weekly logs detailing all scheduled, kept, and missed visits for each patient as well as the specific family members attending each session. These logs were regularly entered into a computerized tracking database. Three measures of treatment adherence were used for this study: (1) attendance at at least one treatment session; (2) completion of SNAP treatment (attendance at six or more treatment sessions); and (3) the total number of treatment sessions attended. These measures were calculated separately for adolescents and their mothers.

RESULTS

Adolescent and Maternal Demographic

Status of Participants

Because the participants were recruited sequentially and were not randomly assigned to conditions, to assess comparability we performed independent group t tests and chi squared tests comparing the standard care and specialized emergency room care conditions on adolescent and maternal background factors and characteristics of the adolescents' index attempts. Adolescent and maternal demographic characteristics are presented in [Table 1](#). No significant differences between the participants in the standard program and those in the specialized care programs were found at the time of recruitment in terms of maternal marital status, primary language, age at adolescent's birth, level of education, and employment status. There were no significant differences found between the adolescents in terms of age, ethnicity, and enrollment in remedial classes.

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Table 1. Adolescent and Maternal Demographic Status of Participants Receiving Standard Care and Those Receiving the Specialized Program

Adolescents tended to be approximately 15 years old. The mothers had an average of 9.5 years of schooling; 33% of the mothers were currently employed. Of the 140 adolescents, 31% had a history of one or more previous suicide attempts. The most common method of attempt for the current episode was ingestion (87%). Youths in the standard and specialized care programs exhibited similar levels of suicidal intent as rated by the Pierce Suicidal Intent Scale and depressive symptoms as rated by the Hamilton Rating Scale for Depression upon initial presentation in the emergency room. The characteristics of the youths' index suicide attempts are summarized in [Table 2](#).

[\[Help with image viewing\]](#) [\[Email Jumpstart To Image\]](#) Table 2. Comparison of Youths Enrolled in the Standard Care and Those Enrolled in the Specialized Programs on Index Attempt Characteristics

Impact of the Specialized Emergency Room Program on Maternal and Adolescent Perceptions and Psychiatric Symptomatology

Independent sample t tests (two-tailed) were used to assess the impact of the specialized emergency room program on adolescent and maternal symptomatology and perceptions. Adolescents in the specialized emergency room program reported lower levels of depression on the BDI and less suicidal ideation on the HASS scale when assessed after the emergency room intervention (postdischarge assessment) than did those who received standard care. Similarly, mothers in the specialized program reported lower levels of depression on the BDI and less overall psychopathology on the BSI. In addition, mothers receiving the specialized program reported more positive attitudes toward treatment and described their "ideal" family to be more adaptive and cohesive than did mothers receiving standard care as measured by the FACES III. These results are summarized in [Table 3](#).

[\[Help with image viewing\]](#) [\[Email Jumpstart To Image\]](#) Table 3. Impact of the Emergency Room Condition on Maternal and Adolescent Perceptions and Psychiatric Symptomatology

Impact of the Specialized Program on Treatment Adherence

The impact of the intervention on treatment adherence was assessed using independent sample t tests and chi squared analyses (two-tailed). Adolescents receiving the specialized program were significantly more likely than youngsters in the standard care condition to return to the clinic for any outpatient treatment following their discharge from the emergency room (95.4% versus 82.7%, chi squared = 5.56, df = 1, p = .018). In addition, adolescents in the specialized program attended a marginally greater number of treatment sessions (5.73 +/- 3.40 versus 4.67 +/- 3.71, t = 1.77, df = 138, p = .079) than did those in standard care. Slightly more than half (52.3%) of attempters in the specialized program and 38.7% of attempters receiving standard care completed the six-session SNAP treatment (chi squared = 2.61, df = 1, p = .11). Survival analyses were used to compare the dropout patterns for adolescents in the two emergency room programs. The terminal event was defined as the last treatment session attended. The median number of sessions attended by the adolescents in the standard care and specialized program groups was 5.2 sessions and 6.3 sessions, respectively. Overall, the survival analysis indicates that the difference in attendance before "drop out" between the two groups was marginally significant (Wilcoxon 3.37 with 1 df, p = .07). This difference is exhibited mainly in attendance at the early sessions. Adolescents in the specialized program were less likely to drop out in the early stages of treatment than those in the standard care program, but a convergence of the two groups can be observed later in the survival curve at about the third session ([Figure 2](#)).

[\[Help with image viewing\]](#) Figure 2. Plot of survival analysis showing percentage of adolescent attempters continuing treatment by the number of sessions attended.
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Maternal adherence was similar across the standard and specialized program conditions and considerably lower than that for adolescents. The mean attendance rates for mothers in the specialized and standard conditions were 3.09 +/- 2.91 and 3.56 +/- 3.58, respectively (t = 0.85, df = 138, p = .41). Survival analysis indicated that mothers in both emergency room programs attended a median of 2.9 sessions before dropping out, and the Wilcoxon statistic for comparing the two conditions was nonsignificant (0.15, df = 1, p = .70). More than 27% of the mothers never came to a session, and only 23% attended six sessions or more. The mothers in the intervention condition were significantly less likely to attend all six sessions of the intervention (15.4%) compared with those who did not attend the intervention (29.3%, chi squared = 3.84, df = 1, p < .05).

Predictors of Adherence

Separate logistic regressions were used to examine the relative contribution of intervention status and other variables in predicting whether the adolescents and their mothers failed to return to the clinic at all after the emergency room evaluation. The predictor variables included in the equation were household type, age, emergency room program condition, adolescent depression, impulsivity, the three HASS scale factors (suicidal ideation, substance abuse, and suicidal behavior), self-esteem, maternal psychopathology, maternal attitudes toward treatment, and both mother- and child-reported family relations.

The goodness of fit for the analysis of adolescent adherence was chi squared ($N = 107$) = 37.09, $p < .001$. Adolescents with higher HASS suicidal behavior scores were significantly less likely to be lost to treatment (odds ratio = 0.00, 95% confidence interval [CI] 0.00 to 0.46, $p < .05$); higher suicidal ideation scores were marginally associated with greater nonattendance (odds ratio = 1.30, 95% CI 0.96 to 1.76, $p < .10$). Those with higher self-esteem were also more likely to be nonattenders (odds ratio = 1.98, 95% CI 0.99 to 3.95, $p < .05$). Adolescents' perceptions of more cohesive and adaptive family interactions were significantly associated with less nonattendance (odds ratio = 0.73, 95% CI 0.55 to 0.97, $p < .05$). Receiving the specialized emergency room program was significantly associated with less nonattendance (odds ratio = 0.00, 95% CI 0.00 to 0.50, $p < .01$).

Goodness of fit for the analysis of maternal attendance was chi squared (14, $N = 107$) = 20.07, $p < .11$. Single parents were slightly less likely to be lost to treatment (odds ratio = 0.41, 95% CI 0.16 to 1.07, $p < .10$); similarly, when adolescents reported more positive family relations, their parents were significantly less likely to be nonattenders (odds ratio = 0.95, 95% CI 0.91 to 1.00, $p < .05$). Mothers of highly impulsive adolescents were also less likely to be lost to treatment (odds ratio = 0.83, 95% CI 0.71 to 0.97, $p < .05$). Similar to the earlier analysis, the specialized emergency room program was not associated with the mother's treatment attendance.

Logistic regression was also used to assess the relative influence of the intervention and the predictor variables listed above on whether or not adolescents completed treatment (defined as attending at least six therapy sessions). The goodness of fit for this analysis, chi squared (14, $N = 107$) = 16.40, $p < .29$, indicates that the model tested fits the data. Intervention status emerged as a significant predictor of completing treatment (odds ratio = 3.11, 95% CI 1.20 to 16.98, $p < .02$); those in specialized care were three times more likely to complete treatment than youths in the standard care condition. The only other variable associated with completing treatment was baseline suicidal ideation (odds ratio = 1.09, 95% CI 1.00 to 7.43, $p < .05$); the more ideation adolescents reported, the more likely they were to complete treatment. A similar analysis using the same predictor variables was conducted comparing mothers who completed treatment and mothers who did not. None of the individual factors examined emerged as significant predictors.

DISCUSSION

Given the increasing incidence, and high individual and social costs, of adolescent suicide attempts, studies to evaluate the efficacy of therapeutic interventions for this problem are desperately needed. However, treatment adherence has been so low that implementation of efficacy trials has been extremely difficult. As a result, sample representativeness remains a serious question for the field. In this study, 90% of eligible families were recruited and followed over the course of treatment. It would have been desirable to have had the families randomly assigned to the specialized emergency room program or to the standard care program. However, the intervention involved every aspect of the emergency room including the structure of activities, staff attitudes and knowledge, and emergency room treatment procedures. Therefore, it was not possible to randomly assign to condition, as staff could not modify their actions to fit each family. Given that random assignment was not feasible, comparability between the standard care and specialized care conditions becomes a critical issue. There were no differences between the samples. The families' backgrounds, as well as the circumstances surrounding the adolescents' suicide attempts, were similar. Thus, even though sequential assignment to condition was not optimal, we were able to recruit representative samples, and they were similar across conditions.

Several aspects of the emergency room experience were altered. Members of six staff areas, which cover all aspects of the emergency room process, underwent training for the specialized care program: pediatricians, psychiatrists, security guards, receptionists, nurses, and child psychiatry fellows. Emergency room staff were retrained to increase treatment adherence by improving interactions between the families and themselves and by emphasizing the importance of follow-up treatment. A bilingual therapist was placed on 24-hour call in order to respond in a timely manner to the families' need for intervention, to secure a written contract for a 6-week therapy program, and to facilitate the transition between the emergency room and the outpatient service. A brief videotape was shown in the emergency room to provide a context to the family for the suicide attempt, change the family's expectations regarding therapy, and help the family recognize the consequences of suicidal behavior. These were the changes evaluated in this study.

Most important, this study indicates that a specialized intervention program based in the emergency room and focused on the family improved attendance at follow-up outpatient treatment among female adolescent suicide attempters. The introduction of these components into the emergency room influenced attempters' treatment adherence in the following ways: (1) female adolescent attempters were more likely to attend their initial treatment session; (2) they attended more treatment sessions overall; and (3) they were more likely to complete treatment. By following these adolescents over time, we will be able to evaluate the effectiveness of this enhanced treatment experience.

While the adolescents in the specialized care condition were significantly more likely to attend more sessions and to complete treatment, their mothers were not more likely to attend more treatment. Mothers in both the specialized and the standard care condition attended about three sessions each. In fact, the mothers in the standard care condition were more likely to complete all six sessions of treatment than were mothers in the

specialized care condition (29.3% versus 15.4%). These data are provocative; family therapists would typically advocate that having mothers complete treatment would be advantageous (Epstein and Bishop, 1981) [8]. The cognitive-behavioral treatment received by the families focuses on clarifying parents' and children's beliefs and norms regarding their roles, particularly around issues of independence (Piacentini et al., 1995a) [23]. By the therapist's reports on this project, parental involvement appeared central to increase adherence in the first session; however, ongoing parental involvement may or may not be advantageous. The impact of the parent's completion of treatment may be positive or negative; future evaluations must address this issue.

In addition to influencing treatment adherence, the specialized care program had a number of immediate effects on the family that lasted for at least a few days after they left the emergency room. Experiencing the specialized program in the emergency room directly influenced the adolescents and their mothers by reducing the adolescents' feelings of depression and suicidality, decreasing acute maternal psychiatric symptoms, increasing positive maternal attitudes toward treatment, and reshaping maternal perceptions of their ideal family as more adaptive and cohesive. Theories of therapeutic intervention (e.g., Stuart, 1980) [33] suggest that improving emotional states may enhance responsiveness to treatment. It is important to note, however, that the mothers' adherence to treatment did not increase in response to the specialized program, even though their symptoms significantly decreased and their evaluation of their families' cohesiveness increased.

In addition to providing evidence of our ability to positively increase treatment adherence, this study examined the predictors of adherence and the timing of dropping out of therapy. The findings were mixed for both adolescents' and mothers' attendance, i.e., in some ways those who attended appeared to have more resources than those who did not attend, and other characteristics indicated attenders were in greater need. For example, adolescent attenders had more active suicidal behavior, had lower self-esteem, and rated their families as less cohesive and adaptive. Mothers who attended were more likely to be single parents and to have impulsive daughters. Adolescents who rated their families as more cohesive and adaptive had mothers who were less likely to attend therapy.

Given that adolescent suicide attempts are a significant public health concern because of coexisting psychiatric symptoms, repeated attempts, increased risk for suicide completion, and economic impact, these findings are significant. As health care reform begins, it will become increasingly important to identify strategies for shifting organizations' norms regarding the training of staff and to set realistic expectations for patients. This intervention provides one example of the types of reform that will be necessary to streamline procedures for high-quality medical care.

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