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Observed Interaction in Families of Adolescent Suicide Attempters

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Attempted suicide during adolescence is disturbingly common. Prevention depends upon careful identification of factors that may contribute to its etiology and maintenance. Researchers have focused on a range of possible risk factors, including problems within the family. While promising, this research has suffered from a number of limitations, in particular an over-reliance on self-report methodology.

The current study investigated family interactions of adolescent suicide attempters, using observational methods and a longitudinal design. Participants included 71 families of hospitalized attempters and 29 families of psychiatric controls. Families completed a variety of self-report measures as well as a videotaped problem-solving interaction task. Interactions were coded for a range of behaviors, including emotional validation and invalidation, problem-solving constructiveness, and problem-solving progress. It was expected that families of adolescent suicide attempters would display more negative behavior than families of hospitalized non-attempters, and that negative behavior within the suicide group would be related to individual factors such as psychopathology and beliefs

about problem-solving. It was further expected that negative behavior at baseline would predict suicidal ideation and reattempted suicide during an 18-month follow-up period.

There was at least partial support for each of the primary hypotheses. There were no significant differences in observed parent behaviors. However, adolescent attempters displayed significantly more emotional invalidation than psychiatric controls. Within the suicide group, negative beliefs about family conflict and problem-solving predicted observed negativity, for both parents and adolescents. In several cases, higher levels of adolescent psychopathology predicted more negative behavior as well. Finally, while parent behavior was not a significant predictor for subsequent adolescent suicidality, certain aspects of adolescent negativity predicted both reattempts and future suicidal ideation.

Findings demonstrated that it is possible to observe distinct patterns of interaction in families of adolescent suicide attempters, and emphasized the value of a focus on adolescent, not just parent, behavior. Results suggested that adolescent attempters may have particular difficulty coping with affectively charged parent-adolescent conflict, and indicated that negative behavior (for both parents and adolescents) may be maintained by pessimistic cognitions. Results thus suggested important directions for future research, as well as possibly fruitful avenues for treatment and prevention.

This dissertation by Christine S. Aiken fulfills the dissertation requirement for the doctoral degree in Clinical Psychology approved by Barry M. Wagner, Ph.D., as Director and David A. Jobes, Ph.D., and Bonnie Klimes-Dougan, Ph.D. as readers.

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CHAPTER I: INTRODUCTION

Suicide attempts among adolescents are disturbingly common. In a national survey of high school students, 8.8% of students surveyed reported having made an attempt at some time during the past year. Nineteen percent had seriously considered one (Centers for Disease Control and Prevention, 2002). Suicide attempts are often repeated (Brent, Kolko, et al., 1993), and not surprisingly, they are also associated with an increased risk for suicide completion (Kotila & Loennqvist, 1989). Although there are an estimated 100 to 200 attempts for every completed youth suicide (American Association of Suicidology, 2002), as many as half of those young people who do kill themselves have made a prior attempt (Holinger, Offer, Barter, & Bell, 1994). Indeed, a prior attempt is one of the primary risk factors for eventual completion (Shafii, Carrigan, Whittinghill, & Derrick, 1985).

Prevention of adolescent suicidal behavior depends upon careful identification of factors that may contribute to its etiology and maintenance. Researchers have focused on a range of possible risk factors, including those related to psychopathology, personality traits, stressful life events, and problem-solving and coping skills (see Berman & Jobes, 1991, for review). Another major area of focus has been the family. Interpersonal and family dimensions play a key role in many theoretical accounts of adolescent suicidal behavior (e.g., Orbach, 1988; Pfeffer, 1986) and have received a great deal of empirical attention (see Wagner, 1997, for review). However, the yield of this research has been modest, in part due to methodological shortcomings of existing studies (Wagner, Silverman, & Martin, 2003). Reviewers have documented a lack of prospective studies, as

well as a failure of many studies to adequately control for youth psychopathology (e.g., by the use of psychiatric control groups) (Berman & Carroll, 1984; Spirito, Brown, Overholser, & Fritz, 1989; Wagner et al., 2003).

Importantly, with only two promising exceptions (Kaslow, Wamboldt, Wamboldt, Anderson, & Benjamin, 1989; Williams & Lyons, 1976), there have been no studies of families of adolescent suicide attempters using observational methods. Self-report methodology has prevailed, with most studies relying heavily on youth self-report (i.e., adolescents' reports of family relationships) (Wagner, 1997). While self-reports may be useful, particularly as they assess the suicidal adolescent's perceptions of his or her family, they may not tell the whole story (Sullaway & Christensen, 1983). Many would endorse the use of observational methods for a more complete and objective rendering of family interaction (e.g., Markman & Notarius, 1987).

The current study reflects an attempt to address the above-noted limitations in existing research. Observations of parent-adolescent interaction, along with a prospective design may allow for new insights into the role of the family in adolescent suicidal behavior. Further, the inclusion of a psychiatric control group, matched on diagnostic and demographic characteristics, allows for comparison of families of attempters to families of other distressed youth. Clues about specificity of family dysfunction (i.e., dysfunction specific to families of attempters) are much needed and would greatly facilitate the development of effective interventions (Spirito et al., 1989). Observation-based research may prove especially useful in this regard, as direct observation of families has led to impressive gains in the study of many other pathologies (e.g., Doane, Falloon, Goldstein,

& Mintz, 1985; Humphrey, Apple, & Kirschenbaum, 1986; Patterson, Reid, & Dishion, 1992).

To provide a context for the current work, the following areas will be reviewed: (a) characteristics of adolescent suicide attempters, (b) theory and research concerning the role of family environment, and (c) limitations of existing family factor research. The first area reviewed, characteristics of adolescent suicide attempters, identifies a range of person-centered factors associated with attempted suicide during adolescence (e.g., psychiatric disorder, deficits in problem-solving). It is likely that these individual factors have some bearing on family interaction, in addition to suicidal behavior. Just as the family is believed to affect individual adjustment, characteristics of the individual impact the family, including family interaction. In such a “transactional” model, individual and contextual factors work together to produce behavioral and developmental outcomes (Sameroff, 1989). Accordingly, both individual and family factor research provide a foundation for the current study. A single focus on either the individual or the family would be misleading (Sameroff, 1987).

Characteristics of Adolescent Suicide Attempters

Psychiatric Disorder

Although many regard attempted suicide as an indicator of severe psychopathology, suicidal adolescents clearly do not form a coherent diagnostic group (Khan, 1987; Taylor & Stansfeld 1984). Not all attempters have a diagnosable disorder, and those who do vary considerably. Even so, rates of psychiatric disorder are quite high among adolescent attempters, and several disorders predominate. In a large community

sample, for instance, 80% of adolescents reporting a history of a suicide attempt also met criteria for a previous *DSM-III-R* (American Psychiatric Association, 1987) diagnosis (Andrews & Lewinsohn, 1992). Like in other studies (e.g., Kienhorst et al., 1990), attempts were most strongly associated with major depression, disruptive behavior disorders, and substance abuse and dependence disorders. Each of these disorders, along with personality disorder, which has also been linked to suicidal behavior (e.g., Brent, Johnson, et al., 1993), will be considered in turn.

Affective Disorders

Affective disorders, including major depression, dysthymia, adjustment disorder with depressed mood, and bipolar disorder, have been consistently associated with adolescent suicidal behavior (Friedman, Corn, Aronoff, Hurt & Clarkin, 1984; Kovacs, Goldston, & Gastonis, 1993). They represent the most common diagnoses assigned to this population (Shaffer et al., 1996), with reported rates among attempters ranging from 26% to 96% (DeWilde et al., 1993).

While there is a well-documented association between depression and suicidality, the relationship is far from clear-cut. Many, if not most, adolescent attempters are depressed, but the great majority of depressed adolescents do not make attempts. Those who do make attempts are not necessarily more depressed than those who do not. However, multiple attempters tend to be more severely depressed than one-time attempters (Rudd, Joiner, & Rajab, 1996), and severity of depression has been positively correlated with severity and extent of suicidal ideation (Carlson & Cantwell, 1982).

Questions about similarities and differences between suicidal and nonsuicidal depressed adolescents are among the more challenging in the field. In general, researchers have found far more similarities than differences (e.g., DeWilde et al., 1993; Lewinsohn, Rohde, & Seeley, 1994), although differences have been reported. Most notably, it appears that some depressive symptoms may be more strongly associated with suicidal behavior than others, especially hopelessness, low self-esteem, and a tendency to withdraw from people and activities (Esposito & Clum, 1999; Kienhorst et al., 1992; Topol & Reznikoff, 1982).

Substance Abuse

Substance abuse is another frequent characteristic of the adolescent suicide attempter. Reports of drug and alcohol abuse range from 9% in a sample of outpatients with a prior attempt (Kosky, Silburn, & Zubrick, 1990) to 43% in a sample of emergency room attempters (McHenry, Tishler, & Kelley, 1983). In the large community sample noted above, 16% of prior attempters met diagnostic criteria for alcohol abuse/dependence and 17% had a history of drug abuse or dependence (Andrews & Lewinsohn, 1992).

Importantly, rates of substance abuse do not consistently differentiate suicide attempters from other distressed youth (e.g., Spirito et al., 1987). However, substance abuse-related differences may nonetheless exist. In one recent study, attempters reported more problems due to alcohol abuse (e.g., “passing out,” having regrets the next day, problems with parents, friends, and teachers) than suicide ideators who drank at similar levels (Windle & Windle, 1997). Further, males who had made a suicide attempt reported greater use of alcohol to cope with stressors. The theme of coping runs across discussions

of substance abuse and suicidality. Many have suggested that substance abuse is a maladaptive form of coping that some suicidal adolescents use as a way to alleviate negative affect or to escape from serious interpersonal problems (e.g., Adams & Overholser, 1992; McHenry et al., 1983; Spirito et al., 1989; Windle & Windle, 1997). Issues related to coping will receive further attention below.

Disruptive Behavior Disorder

As in the case of substance abuse, adolescent suicide attempters often have a history of disruptive behavior disorder, with a rate of approximately 17% among community adolescents (Andrews & Lewinsohn, 1992). Within the disruptive behavior disorder spectrum, conduct disorder appears most strongly related to suicidal behavior (Renaud, Brent, Birmaher, Chiappetta, & Bridge, 1999). Moreover, adolescents with aggressive conduct disorder may be especially at risk. In a study of highly aggressive youth (the majority of whom had a primary diagnosis of conduct disorder), the incidence of suicide attempts ranged as high as 39% in one subsample (Cairns, Peterson, & Neckerman, 1988).

Apart from studies of behavior disorder per se, research suggests that suicidal adolescents vary with respect to aggressive, antisocial behavior (Pfeffer, Plutchik, & Mizruchi, 1983; Shaffer, 1974). Similarly, it appears that poor impulse control, another feature of the disruptive behavior disorders, may characterize some, but not all attempters (Spirito et al., 1989). Aggression and impulsivity are discussed more fully below. However, it should be noted that researchers commonly suggest that deficits in impulse control underlie both the aggressive and suicidal behavior of behavior-disordered youth

(e.g., Apter, Bleich, Plutchik, Mendelsohn, & Tyano, 1988). In other words, behavior-disordered youth may be less able to inhibit and thus more likely to act upon both aggressive and self-destructive impulses (Cairns et. al, 1988).

Personality Disorder

While there has been controversy over the diagnosis of personality disorders in adolescence (Becker, Grilo, Edell, & McGlashan, 2001), research indicates that symptoms of these disorders may be relatively frequent among adolescent suicide attempters. Compared to psychiatric controls, adolescent attempters exhibit more symptoms of avoidant and dependent disorders and display greater borderline tendencies, over and above the tendency for individuals with borderline personality disorder to exhibit suicidal behavior (Brent, Johnson, et al., 1993; Crumley, 1979; Friedman et al., 1984; Marton, Korenblum, Kutcher, Stein, Kennedy, & Pakes, 1989). Adolescents with personality disorder may comprise an important subgroup of adolescent attempters. For example, these attempters may be particularly likely to exhibit recurrent suicidal behavior (e.g., Brent, Johnson, et al., 1993). Brent and colleagues (1993) suggest that the relationship between personality disorder and suicidal behavior may be explained by shared risk factors such as impaired problem solving, impulsivity, affect dysregulation, and early trauma. Hopelessness, discussed below, has also been associated with personality dysfunction among teen suicide attempters (Fritsch, Donaldson, Spirito, & Plummer, 2000).

Comorbidity

As indicated by the preceding review, adolescent suicide attempters often suffer from psychiatric disorder. Furthermore, many adolescent attempters have not just one, but

two or more disorders. Indeed, research suggests that comorbidity of disorders is substantial among suicide attempters and that comorbidity generally heightens the risk for suicidal behavior (Lewinsohn, Rohde, & Seeley, 1995; Wagner, Cole, & Schwartzman, 1996).

More specifically, it appears that affective illness may be the primary diagnostic risk factor for attempted suicide, while conduct, substance abuse, and personality disorders operate as risk factors mostly in the presence of depression (Kovacs, Goldston, & Gastonis, 1993; Marton et al., 1989). Beyond this, the literature is somewhat contradictory. Lewinsohn et al. (1995) suggested that depression and disruptive behavior disorder are an especially “lethal mix,” but others have emphasized the dangers of comorbid depression and substance abuse (e.g., Robbins & Alessi, 1985), or comorbid depression and personality disorder (e.g., Brent, Johnson, et al., 1993). Alternatively, Wagner et al. (1996) found no evidence for a “lethal mix” of any specific disorders.

Personality Traits and Cognitive Styles

In addition to psychiatric disorder, researchers have focused on a range of personality traits and cognitive styles that may characterize adolescent attempters. These personality and cognitive variables correspond to patterns of feeling, behaving, and thinking displayed by the teen. Undoubtedly, they bear a close relationship to psychiatric disorder, discussed above. However, this review will focus more narrowly on characteristics associated with adolescent attempters irrespective of diagnosis. Such factors play a key role in the attempter’s response to stress, but issues related to stress and coping will be explored more broadly below. This review is not intended to be exhaustive,

but instead highlights major findings in the following domains: (a) anger and aggression, (b) problems with impulse control, (c) negative beliefs about the self and the future and (d) cognitive rigidity.

Anger and Aggression

Anger and aggression are found in a substantial proportion of suicide attempters (Spirito et al., 1989). A chart review at a pediatric hospital suggested that many attempters experience intense anger just prior to their attempts (Withers & Kaplan, 1987), while another study found high levels of trait anger among attempters, with attempters becoming angry more often and experiencing anger more intensely than their non-distressed peers (Lehnert, Overholser, & Spirito, 1994). Suicidal youth are not necessarily angrier than other psychiatrically disturbed adolescents, but angry feelings and/or homicidal thoughts have been reported to predict subsequent suicidality among youth with major depression (Myers, McCauley, Calderon, & Treder, 1991). Findings such as these suggest that angry feelings and thoughts may be closely related to suicidal behavior, at least for some young people.

Studies of adolescent suicide attempters have also focused on modes of anger expression. Lehnert et al. (1994) found that attempters, compared to high school students, were more likely to hold anger in *and* more likely to externalize anger in the form of hostility and aggression toward others. Notably, the tendency to hold anger in appears closely related to depression and hopelessness (Lehnert et al., 1994), especially among adolescents who make premeditated attempts (Brown, Overholser, Spirito, & Fritz, 1991).

This finding is consistent with theoretical accounts of suicidal behavior that emphasize the role of anger turned inward, or “retroflexed rage” (e.g., Freud, 1917/1955).

Although anger turned inward may play an important role for some suicidal youth, it is also clear that many attempters are characterized by significant expressions of outward hostility as well. Adolescent attempters are not necessarily more aggressive than psychiatric controls (Brent, Johnson, et al., 1993; Cairns et al., 1988). However, many attempters do exhibit aggressive behavior (Spirito et al., 1989). Consequently, some researchers have delineated two suicidal types: those prone to defiant, assaultive behavior and those more overtly withdrawn, self-blaming, and depressed (Borst & Noam, 1993; Pfeffer et al., 1983; Shaffer, 1974). As suggested by Myers et al. (1991), it may be that *all* samples of suicidal youth are angry, but only differ in modes of anger expression. In any case, it seems likely that a range of factors (e.g., context, the adolescent’s mood) help to determine when and whether destructive impulses are self- or other-directed (Cairns et al., 1988).

Problems with Impulse Control

Related to anger and aggression, impulsivity is another frequently cited characteristic of the adolescent suicide attempter (Arffa, 1983; Spirito et al., 1989). Adolescent attempts are often impulsive (i.e., unplanned) (Brown et al., 1991) and many attempters have generally poor impulse control (Pfeffer, Hurt, Peskin, & Siefker, 1995). Across a range of studies, adolescent attempters have been found to be more impulsive than high school students (Kashden, Fremouw, Callahan & Franzen, 1993), medically ill adolescents (Slap, Vorters, Chaudhuri, & Centor, 1988, as cited in Spirito et al., 1989) and

psychiatric controls (Corder, Shorr, & Corder, 1974; Kashden et al., 1993; Horesh, Gothelf, Ofek, Weizman, & Apter, 1999).

Even so, research suggests that attempters are not uniformly characterized by poor impulse control (e.g., Patsiokas, Clum, & Luscomb, 1979). Instead, impulsivity may help define various subgroups of attempters (Spirito et al., 1989). For example, impulsive attempters may be less hopeless and less depressed than nonimpulsive attempters (Brown et al., 1991), but more likely to make another attempt (Spirito et al., 1989). Also, impulsivity may be more strongly related to suicidality among male adolescents than among females (Horesh et al., 1999).

Negative Beliefs about the Self and the Future

Low self-esteem and hopelessness have consistently been linked to suicidal behavior (Yang & Clum, 1996). More specifically with regard to low-self esteem, it appears that adolescent attempters often view themselves as worthless and incompetent, a tendency demonstrated in both clinical (Overholser, Adams, Lehnert, & Brinkman, 1995) and non-clinical (Kienhorst et al., 1990) samples. Further, it appears that these negative self-views may be related to seriousness of suicidal intent, number of self-destructive behaviors, and lethality of attempt (Robbins & Alessi, 1985). Thus, it has been suggested that painful self-awareness may propel an individual toward self-destructive behavior, with suicide representing an escape from the negative self (e.g., Baumeister, 1990).

Related to low-self esteem and feelings of incompetence, research also indicates that suicidal adolescents may have distorted beliefs about personal control and responsibility. In general, attempters report a more external locus of control than

nondistressed youth (e.g., Beautrais, Joyce, & Mulder, 1999), although not more so than depressed, nonsuicidal adolescents (Kienhorst et al., 1992). Recent work suggests that this tendency may reflect an underestimation, or at least a misjudgment, of personal control, compared to objective raters (Piquet & Wagner, in press; Wilson et al., 1995). At the same time, studies of attributional style suggest that depressed suicide attempters may overly blame themselves for negative life events (Joiner & Wagner, 1995; Rotheram-Borus, Trautman, Dopkins & Shrout, 1990). Thus, adolescent attempters may tend to accept responsibility for situations over which they have no control, but at the same time feel victimized by stressors they have had a role in causing (Wilson et al., 1995). Distorted beliefs about responsibility and control may in turn contribute to hopelessness and despair (Abramson, Metalsky, & Alloy, 1989).

Pessimistic beliefs about the future, and especially hopelessness, are a regular feature of suicidal adults (e.g., Beck, Steer, Kovacs, & Garrison, 1985). For adolescents, the findings are less consistent (Yang & Clum, 1996), but nonetheless suggestive. Several studies have found no evidence for a relationship between hopelessness and adolescent attempts (e.g., Rotheram-Borus & Trautman, 1988), but the majority of studies indicate that hopelessness may indeed be an important correlate of youth suicidal behavior, especially among females (Cole, 1989; Spirito, Overholser, & Hart, 1991). In a range of studies, adolescent attempters have described themselves as more hopeless than depressed, nonsuicidal youth (Kienhorst et al., 1992) suicide ideators (Negron, Piacentini, Graae, Davies & Shaffer, 1997) and community controls (Beautrais et al., 1999). Moreover, it appears that symptoms of hopelessness (along with low self-esteem, discussed above) may

specifically account for the oft-cited relationship between suicidality and depression (Esposito & Clum, 1999).

Cognitive Rigidity

Finally, it should be noted that discussions of suicide make frequent reference to the cognitive rigidity of many suicidal individuals (Schotte & Clum, 1987). Clinical accounts of inflexibility are supported by studies of adults (e.g., Patsiokas et al., 1979; Schotte & Clum, 1987), adolescents (e.g., Levenson & Neuringer, 1971), and children (e.g., Orbach, Rosenheim, & Hary, 1987) alike. Together, the findings imply that attempters may be limited in their capacity for divergent thinking. In other words, they may be dogmatic and inflexible, with some difficulty even perceiving a new and different approach (Arffa, 1983; Orbach et al., 1987). Although many studies have relied on simple cognitive tests (e.g., map reading, Levenson & Neuringer, 1971), others have found evidence for rigidity in tasks more clearly relevant to daily life and distress (e.g., interpersonal problem-solving, Priester & Clum, 1993). Inflexibility in problem-solving will be considered more fully below.

Maladaptive Responses to Stress

Many view suicide attempts as a sign of failed coping, a maladaptive response to overwhelming life stress (e.g., Simonds, McMahon, & Armstrong, 1991). This understanding is supported by research indicating that adolescent attempts are often preceded by high and increasing levels of stress (e.g., Gispert, Wheeler, Marsh, & Davis, 1985) and usually precipitated by undesirable life events (e.g., Beautrais, Joyce, & Mulder, 1997).

Not surprisingly then, investigators have studied a wide range of coping-related phenomena in suicidal adolescents. They have identified a number of unhealthy patterns that may be apparent in these youngsters' responses to stress, often incorporating research on psychiatric disorder and personality and/or cognitive factors. Major findings are grouped and reviewed as follows: (a) deficits in problem-solving, (b) avoidant and noneffortful coping, and (c) maladaptive emotion regulation.

Deficits in Problem-Solving

Empirical research has demonstrated clear linkages between problem-solving deficits and adolescent suicidal behavior (Spirito et al., 1989; Yang & Clum, 1996). Deficits have been observed across the problem-solving process, beginning with the generalized "set" attempters bring to various problem situations. Based on research comparing attempters to nonsuicidal, distressed controls, it appears that attempters may tend to think about problems in a less accurate manner, respond more emotionally to dilemmas, and begin the process with a generally more avoidant stance (Sadowski & Kelley, 1993). In addition, they may arrive at problems with low confidence in their ability to solve them (Clum & Febraro, 1994).

Moving beyond problem orientation, suicide attempters frequently display a number of specific skill deficits. It should be noted, however, that these deficits generally do not distinguish adolescent attempters from psychiatric controls. Indeed, such deficits may be more reflective of general psychopathology (Negron et al., 1997). Even so, adolescent attempters may have difficulty generating, deciding upon, and implementing problem solutions, particularly when the problems are interpersonal in nature (e.g.,

Rotheram-Borus et al., 1990; Sadowski & Kelley, 1993; Wilson et al., 1995). Moreover, the solutions they do propose may be maladaptive, i.e., inappropriate and/or likely to exacerbate the given stress (Wilson et al., 1995).

Finally, research on adult and college-aged samples suggests that suicide attempters may tend to rigidly focus on “cons,” or reasons against possible solutions (Priester & Clum, 1993; Schotte & Clum, 1987). As suggested by Spirito and colleagues (1989), the tendency to perceive negative consequences may discourage implementation of the few solutions adolescent attempters do actually generate. Interestingly, Priester and Clum (1993) found this focus on cons to be a consistently important diathesis in their short-term longitudinal test of the diathesis-stress model of suicidal behavior (Schotte & Clum, 1982, 1987). In other words, focusing on cons during problem-solving may be an important predictor of suicidal ideation and/or attempts, especially under conditions of high life stress.

Avoidant and Non-Effortful Coping

In addition to problem-solving deficits, researchers have examined more general types of coping associated with adolescent suicidal behavior. One such broad-band construct, approach/avoidance, reflects the extent to which coping efforts tend to be oriented either toward or away from stress (Herman-Stahl, Stemmler & Petersen, 1995). Avoidant strategies, including cognitive and behavioral efforts to avoid/escape from stressors or to deny their existence, have been linked to a range of psychopathologies (e.g., Ebata & Moos, 1991). However, there is reason to believe that suicide attempters may be even more avoidant than otherwise distressed adolescents (Curry, Miller, Waugh &

Anderson, 1992). As noted above, this difference was reported by Sadowski and Kelley (1993) in their study of “problem orientation.” Similarly, Piquet (1998) found attempters to be more avoidant copers than a sample of matched psychiatric controls. Such findings are consistent with research indicating that attempters are more likely than nonsuicidal, distressed adolescents to self-isolate (Kienhorst et al., 1992; Negron et al., 1997) and to run away from home (Rotheram-Borus, Walker & Ferns, 1996). They are also supported by Windle and Windle’s (1997) finding that attempters report greater use of alcohol for the purpose of coping. Further, research indicates that adolescent attempters are likely to underutilize appropriately assertive, active, socially engaged strategies to manage life stress, compared with matched psychiatric controls (Wagner & Piquet, in press).

Related to avoidant coping, non-effortful (or automatic) coping has also been linked to adolescent suicidal behavior. Non-effortful strategies refer to cognitive and behavioral responses to stressors that are automatic and reflexive, whereas effortful strategies are those that require willful focus and concentration (Hartlage, Alloy, Vazquez, & Dykman, 1993). So, for example, yelling in anger would be a noneffortful response.

Although many researchers have failed to distinguish effortful from noneffortful responses, it appears to be an important distinction. Indeed, one of the few studies to examine this dimension among suicidal adolescents classified attempters and distressed controls along dimensions of both effortful/automatic and approach/avoidance coping (Wagner & Piquet, in press). Wagner and Piquet found that attempters were significantly less likely than psychiatric controls to make effortful/approach coping responses (e.g., communication aimed at problem-solving), and were significantly more likely to make

automatic-approach coping responses (e.g., impulsive and aggressive behavior such as venting negative emotion and destructive action).

Maladaptive Emotion Regulation

The term emotion regulation generally refers to processes involved in coping with heightened levels of emotion (Kopp, 1989). Under certain conditions, patterns of emotion regulation may impair functioning and thus play a role in the development of psychopathology (Cole, Michel, & Teti, 1994). For example, an inability to regulate negative affective states may lead to depression, or an inability to regulate anger and impulsive desires may lead to conduct disorder (Dodge & Garber, 1991). Similarly then, patterns of emotion regulation may play a role in the development of suicidal behavior (Zlotnick, Donaldson, Spirito, & Pearlstein 1997).

Studies of adolescent suicide attempters provide support for the notion that these youth often have difficulty coping with negative, especially angry and sad, feelings (Khan, 1987). While this may be true for adolescents with a range of psychopathologies, one study comparing inpatient suicide attempters to suicide ideators did find evidence for greater affect dysregulation among suicide attempters (Zlotnick et al., 1997). Attempters' responses on self-report measure suggested that they were significantly less able to modulate negative emotional states. Constrained by such deficits, attempters may be less able to channel negative emotions into productive coping activities (Khan, 1987; Wagner & Piquet, in press). As described above, negative emotions may instead be directed at others, in the form of aggressive behavior, or at the self.

Finally, a number of writers have proposed that suicidal behavior can itself be a strategy for dealing with negative emotion, a means of catharsis (e.g., Van Praag & Plutchik, 1985) and/or escape (e.g., Baumeister, 1990). Kienhorst and colleagues found that three-quarters of adolescent attempters reported that one reason for their attempt was to “stop feeling pain” (Kienhorst, DeWilde, Diekstra, & Wolters, 1995). Similarly, the most frequently reported trigger for moving from just thinking about to attempting suicide was an escalation of frustration and tension. Notably, several studies of the acute suicidal episode suggest that negative emotions may be temporarily reduced by suicidal behavior (Goldston et al., 1996; Negron et al., 1997). This could help to explain why attempts are often repeated (Goldston et al., 1996), as well as the high occurrence of self-mutilation among adolescent attempters (Suyemoto, 1998; Zlotnick et al., 1997). As suggested by several writers, it may be that attempters engage in a range of increasingly lethal self-destructive behaviors, in search of an effective method to reduce or escape from intolerable emotion (Lennings, 1994; Zlotnick et al., 1997).

Summary: Characteristics of Adolescent Suicide Attempters

The preceding discussion provides a broad overview of research on individual characteristics associated with adolescent suicide attempters. To summarize, adolescent attempters do not form a coherent diagnostic group, but frequently do have a history of one or more psychiatric disorders, most commonly a depressive disorder, disruptive behavior disorder, substance abuse/dependence disorder, personality disorder, or some combination thereof. Irrespective of diagnosis, they may be characterized by certain personality traits and/or cognitive styles, including high levels of anger and aggression, problems with

impulse control, negative beliefs about the self and the future, and cognitive rigidity. These personality and cognitive variables, in conjunction with the symptoms and consequences of psychiatric disorder, often find maladaptive expression in the attempter's characteristic responses to stress. Specifically, the adolescent suicide attempter tends to be deficient in problem-solving, and in general may rely upon avoidant and noneffortful strategies to cope with life stress. Such maladaptive responses may be particularly evident as the attempter struggles to manage his or her own negative emotions, or as he or she responds to emotionally charged interpersonal conflict.

While not derived from family or observation-based research, the above noted findings clearly help lay a foundation for the current work. Any attempt to understand the role of family relationships in adolescent suicidal behavior must be informed by research with an individual focus.

The Role of Family Environment: Theory and Findings

Adolescence and the Family

Before reviewing theory and research related to the family's role in adolescent suicidal behavior, it is necessary to place the discussion in context with a consideration of the family's role in adolescent development. Studies of psychopathology and normal development alike point to the importance of family dynamics during adolescence (Hauser, 1991). In general, it appears that families who provide a close, supportive environment for adolescents, while at the same time encouraging autonomy and independence, produce adolescents with the best psychosocial outcomes (Baumrind, 1991; Grotevant & Cooper, 1986; Noller, 1995).

Adolescence is a time of enormous physiological, cognitive, emotional and behavioral change. One of the major developmental tasks of this period involves becoming independent from parents. Indeed, many theorists consider this to be the primary developmental task of adolescence (e.g., Blos, 1962). To permit individuation, family boundaries are challenged and parent-child relationships must be redefined (Robin & Foster, 1989). Parent-adolescent conflict around independence-related issues is normal (Laursen, 1995), and it appears that such conflict typically increases in early adolescence, remains high for several years, and declines in late adolescence (Arnett, 1999). For most families, this conflict occurs against a backdrop of connectedness and relational continuity. However, a small percentage of families are characterized by chronic and escalating levels of conflict, with repeated arguments and serious relationship difficulties (Holmbeck, 1996).

As described by Robin and Foster (1989), parents' and adolescents' responses to independence-related conflict largely determine whether the normal "crises" of adolescence are resolved or whether they escalate to clinically significant levels. Democratic approaches to problem-solving and constructive communication promote orderly, rational discussion of issues, while authoritarian or excessively negative communication sidetrack resolution and provoke anger and reciprocated negativity (Alexander, 1973; Baumrind, 1991; Robin & Foster, 1989).

More broadly, research indicates that the quality of family communication is critical to adolescent adjustment. Adolescents fare best when communication is such that they can (a) negotiate rules, roles, and relationships towards a greater balance of power; (b)

explore alternative identities through discussion in a climate of acceptance; (c) establish realistic self-concepts that are not distorted through continual criticism, conflict, abuse, or overprotection; (d) learn communication, problem-solving, and affect-management skills through appropriate modeling and practice; and (e) receive encouragement and support to make life decisions and take increasing responsibility (Noller, 1995). In the absence of these conditions, both individual and relational outcomes may suffer. The following two sections explore this possibility with respect to the families of adolescent suicide attempters.

Theory: Families of Adolescent Suicide Attempters

Since the 1960s, there has been growing consensus that the suicidal behavior of young people cannot fully be understood without the careful consideration of family relationships (Williams & Lyon, 1976). An emphasis on family context implies that suicidal behavior is primarily a social, interpersonal phenomenon, rather than solely an individual one (Aldridge, 1984; Richman, 1986). Theories emphasizing individual as well as broader sociological factors have been advanced, and offer important perspectives (see Berman & Jobes, 1991 for a review); however, given the current interest, this review will be limited to theories most concerned with the family.

Problems with Developmental Transition, Separation and Loss

A number of writers have suggested that young people may exhibit suicidal behavior when the family is unable to accept or cope with developmental change (e.g., Pfeffer, 1981, 1986; Richman, 1986; Wade, 1987; Zimmerman, 1991). As noted above, preparation for leaving home, a push for greater autonomy, and formation of an identity

apart from the family are all believed to be important characteristics of the adolescent phase of normal development (e.g., Erikson, 1968). To be negotiated successfully, the transitions of adolescence require considerable flexibility on the part of the family, including an ability to redefine roles and accept the loss of earlier ways of relating (Gerson, 1995). It has been suggested that these transitions are perceived as highly threatening in the suicidal family, particularly when parents or adolescents are sensitized to loss, due to a history of traumatic loss or painful separation (Richman, 1986; Wade, 1987). Change, especially that involving separation, is viewed as a threat to the survival of the entire family. Thus, the system operates to keep its members from leaving, leading to symbiotic attachments, cross generational alliances, role failures, and secretive, disturbed communication (Pfeffer, 1981; Richman, 1986).

According to this model, suicidal behavior emerges as part of an escalating process of family distress, a process set in motion by the family's inability to cope with separation and loss (Aldridge, 1984). In this context, a suicide attempt may be a statement of autonomy, but at the same time force contact through surveillance and worry (Zimmerman, 1991). It may represent feelings of aggression toward a symbiotic parent, which cannot be otherwise expressed, or be a means of escape (Pfeffer, 1981). Regardless, it is believed that a suicide attempt often reflects family members' fundamental anxieties about separation and change.

Scapegoating and Rejection

Another proposed hallmark of the suicidal family system is scapegoating (Richman, 1986). This occurs when one family member is blamed for the entire family's

problems. The scapegoat is repeatedly charged with wrong-doing and given no opportunity to defend him or herself or to receive support. This type of dynamic may be especially likely in families whose parents have a history of psychopathology or other major problems.

According to Richman (1986), families may use scapegoating and expressions of anger to avoid underlying problems or impede separation and change. With constant blaming of one family member, the family cannot engage in constructive problem-solving and thereby preserves the status quo. He further describes scapegoating in terms of family introjects, with the suicidal family member becoming the bad object for the entire family. Along with scapegoating, then, comes the message that the targeted person must either do away with him or herself to ensure the survival of others, or must play the role of failure to ensure the success of others. By conveying these messages, either directly or indirectly, the family is seen as participating in the suicidal act.

Sabbath's (1969) account of the "expendable child" is a widely known description of scapegoating. The parent either consciously or unconsciously wishes to be rid of the child, who is in some way experienced as a threat to the parent's well-being. The child perceives the rejection, and in turn believes that the family would be better off without him or her. Or, believing that he or she deserves severe punishment, the adolescent punishes him or herself with self-destructive acts (Pfeffer, 1986).

A number of theorists describe how abuse and/or strong parental messages of rejection, including hidden "death wishes," may lead to suicidal behavior (e.g., Hendin, 1975; Rosenbaum & Richman, 1970). Pfeffer (1986) suggests that as a child perceives

hostility and rejection, the perceptions are introjected and felt as self-hatred. Suicidal behavior emerges as the pain evoked when negative perceptions of self and others becomes unbearable. Alternatively, abusive or neglectful parenting may give rise to maladaptive working models of attachment, hindering the child's ability to later develop positive relationships with friends, family, and romantic partners (Bowlby, 1969). Unable to sustain close relationships or manage attendant feelings, the adolescent may turn to suicidal behavior as a means of coping and/or escape (Wagner, 1997).

Insolvable Problems

Orbach (1986) proposes that risk for suicidal behavior may increase as a child is faced with insolvable problems in the family milieu. The child feels trapped and incapacitated as he or she is pressured to solve a problem concerning the entire family system, far beyond his or her ability to resolve. In such a scenario, the family problem, which is longstanding and multidetermined, is disguised, but there is constant pressure on the child to do something. The parents limit the child's alternatives for action, offering only undesirable alternatives or encouraging the child to act, but then blocking his or her efforts. Finally, every seeming resolution creates a new problem, so the child may only anticipate further problems. Outlining possible links between these family patterns and suicidal behavior, Orbach reasons that constant pressure to solve an insolvable problem and accumulated failures in trying may lead the child to feel worthless, hopeless, and finally suicidal. Or, the child may internalize the parents' rigid, limited approach to problem solving and then be poorly equipped to cope with future problems, and thus more vulnerable to viewing suicide as the only possible solution.

Negative Learning

A number of writers have suggested that suicidal behavior may, in some cases, be viewed as an operant that is reinforced and maintained by its social contingencies (e.g., Bachman, 1972; Bostock & Williams, 1974, 1975; Frederick & Resnik, 1971; Lukianowicz, 1972; Zich, 1984). According to this perspective, when suicidal behavior leads to a positive interpersonal response or a desirable change in the environment, the behavior may be reinforced as a method of coping. Importantly, this reinforcement is believed to occur even if the suicidal behavior was not originally intended to elicit a positive response (Sifneos, 1966). Bostock and Williams (1975) note that suicidal behavior is a very powerful operant which almost always invokes some type of environmental response. Likewise, common responses to suicidal behavior, such as care, concern and attention, may be very powerful reinforcers.

As described by several writers (e.g., Wagner, 1997; Zich, 1984), the work of Patterson and colleagues (1970, 1992) may provide a useful model for understanding the way in which some children learn to manage adversity through suicidal behavior. Patterson and colleagues have identified a “coercive cycle” through which parent-child interaction may influence the development of child antisocial behavior. Applying this model to suicidal behavior in the family, Wagner (1997) hypothesizes that in some families of suicidal youth, children may learn that one way to produce a desired interpersonal effect - e.g., to reduce irritable, hostile behavior of family members, or to increase the concern and attention of family members who are typically unavailable - is to

talk about, threaten, or display self-destructive behavior. Thus, over time, self-destructive behavior may become a well-established interpersonal coping mechanism.

Suicidal Behavior as Language

Among theories that focus on the family context of suicidal behavior, an important theme appears to be that of suicidal behavior as a form of language or communication (Aldridge, 1984). For example, it has been suggested that a suicide attempt may represent a “cry for help” (e.g., Farberow & Schneidman, 1961), or be an attempt to signal distress and appeal for caregiving from key figures in the environment (Bowlby, 1980). Alternatively, a suicide attempt may represent a statement of anger and punishment, an attempt to hurt others the same way that one has been hurt (Adam, 1990).

Kreitman, Smith and Tan (1970) suggest that there are certain subcultures in which the communicative functions of self-aggression and attempted suicide are particularly well-defined. Applying this concept to the family, Aldridge (1984) refers to a family subculture of distress management, in which suicidal behavior serves a particular communicative function, especially during times of transition and stress. Along this line, parents who themselves have been suicidal may tend to model self-destructive behavior as a form of communication and/or coping.

How Specific are the Family Theories?

For the most part, the theories described above refer to processes that are not specific to families of suicide attempters. Indeed, problems with separation and change, scapegoating, abuse, negative learning, and disturbed communication are prominently featured in theoretical accounts of a range of child and family disorders. In general, it

appears that suicide theorists recognize this lack of specificity, but offer little direct guidance as to the circumstances under which suicidal behavior may occur. Rosenbaum and Richman (1970) suggest that suicidal behavior is most likely when the individual is the recipient of hostility and death wishes from the family, has no means of retaliation, and external support is unavailable or has been withdrawn. Pfeffer (1981) implies that suicidal behavior may emerge when family disturbances are particularly intense and longstanding. Similarly, Aldridge (1984) refers to persistency and escalation of family problems, arguing that suicidal behavior may represent an 'end' process in an escalation of family distress. Orbach (1986) proposes that the presence of an insolvable problem may help explain why some children become suicidal and others do not, but at the same time, is clear in stating that the identified family mechanisms are not unique to families of suicidal youth.

Regardless of specificity (or lack thereof), it should be underscored that family communication, conceptualized broadly, plays a major role across the various family theories of adolescent suicidal behavior. Resistance to change, parent hostility, dysfunctional problem-solving, coercive cycles and negative modeling all find expression in the day to day communication patterns experienced by suicidal adolescents and their families. For this reason, there is a strong theoretical basis for the current study of family interaction. The following section provides additional support, with a review of empirical research on family risk factors for adolescent suicidal behavior.

Empirical Findings: Families of Adolescent Suicide Attempters

Researchers have identified a range of family factors that appear to be associated with an increased vulnerability for adolescent suicide attempts. Studies focusing on

communication and problem-solving, as well as other aspects of the parent-child relationship are emphasized in this review. However, studies of family stress and parent psychopathology are also included, because these factors may reflect problems in the family system, or may contribute to family dysfunction. Findings are grouped as follows: (a) family stress, (b) parent psychopathology, (c) dimensions of family functioning, (d) hostility, scapegoating and abuse; and (e) attachment to caregiver.

Family Stress

Despite a mixed pattern of results, research suggests some degree of relationship between adolescent suicidal behavior and family stress (e.g., stressful family events and chronic family stressors) (Wagner, 1997). Stressful events may have different effects on a family, depending upon the coping resources of family members. Research suggests that these effects are mediated, in part, by parents' psychological well-being (Webster-Stratton, 1990). Parent psychopathology is discussed in the next section.

Families of adolescent attempters are often characterized by high levels of stress, resulting from both sudden, specific events as well as chronic family stressors (e.g., unemployment, illness, marital conflict) (Brent, Kolko, et al., 1993; DeWilde, Kienhorst, Diekstra, & Wolters, 1992; Kienhorst et al., 1990; Keinhorst et al., 1992; Kosky, 1983; Topol & Reznikoff, 1982; Wagner, Cole & Schwartzman, 1995). Compared to non-psychiatric controls, adolescent attempters report a greater number of recent (past-year) family stressors (DeWilde et al., 1992; Garfinkel & Golombek, 1983). However, recent stressors do not differentiate adolescent attempters from clinical controls (Paluszny, Davenport & Kim, 1991; Taylor & Stansfeld, 1984). Similarly, family problems often

precipitate adolescent attempts (e.g., Tishler, McKenry, & Morgan, 1981), but probably occur at similar rates among non-suicidal, distressed adolescents (Spirito, Overholser, & Stark, 1989).

Given theoretical speculation about links between suicidal behavior and problems with separation and loss, research on family stressors involving loss should be noted. In general, there is no evidence that loss due to death operates as a risk factor for adolescent suicidal behavior (e.g., Brent, Kolko, et al., 1993; Kienhorst, et al., 1990; Lewinsohn et al., 1994). Further, there is only inconsistent evidence with regard to loss due to separation and divorce (e.g., DeWilde et al., 1992; Kovacs et al., 1993). Even so, as discussed by Wagner (1997), there is considerable evidence that a combination of losses due to mixed causes (e.g., death, parental separation, child placement outside the home) may be a risk factor for adolescent suicide attempts. Thus, research provides some support for the argument that suicide attempts occur in response to numerous chaotic and disruptive family events, especially those resulting in separations from important people (Cohen-Sandler, Berman, & King, 1982).

Parent Psychopathology

A number of studies suggest that there is a high incidence of psychopathology among parents of adolescent suicide attempters. Depression, alcohol and substance abuse, antisocial personality, and family history of violent and suicidal behavior have all been reported (e.g., Pfeffer, Normandin & Kakuma, 1998; Tishler & McKenry, 1982). Both maternal and paternal psychopathology have been linked to teen suicidal behavior. However, the relative importance of mother and father psychopathology, which may vary

by type of disorder, is unclear. A recent meta-analysis comparing associations between maternal and paternal psychopathology and various child outcomes suggested that father psychopathology may be more important for some adolescents: Paternal psychopathology was more closely related than maternal psychopathology to emotional and behavioral problems among older children (Connell & Goodman, 2002). Interestingly, there is tentative evidence that a positive father-teen relationship may serve to protect adolescents from becoming suicidal in cases of maternal depression (King, Segal, Naylor, & Evans, 1993).

Many studies have found higher rates of parent psychopathology when comparing adolescent suicide attempters to normal controls (e.g., Garfinkel, Froese, & Hood, 1982; Rubenstein, Halton, Kasten, Rubin, & Stechler, 1998). However, the evidence is less consistent when attempters are compared to clinical controls (e.g., King, et al., 1993; Pfeffer, Normandin, & Kakuma, 1994). For this reason, it does not appear that parent psychopathology is a *specific* risk factor for adolescent suicidal behavior, as parent psychopathology may be associated with any number of negative child outcomes.

While not a specific risk factor, the role of parent psychopathology in the development of suicidal behavior cannot be overlooked. One of the ways that a parent's mental illness may impact child suicidality is through its effects on parenting and/or family interaction. This model was supported by one recent study in which the relation between maternal history of depression and youth suicidality was mediated by perceived family functioning (Garber, Little, Hilsman, & Weaver, 1998). A multitude of studies point to dysfunctional interaction and deficient parenting in families with depressed mothers

(Hammen, 1997; see also Downey & Coyne, 1990). Similar findings have been reported for families with other forms of parent psychopathology as well (e.g., Mayes & Truman, 2002; Zahn-Waxler, Duggal, & Gruber, 2002). In such families, negative parenting and family dysfunction increase the teen's risk for psychopathology, perhaps by threatening his or her emotional security (Cummings & Davies, 1999). Living with a disturbed parent, the adolescent may not receive needed guidance and support. Unhealthy emotional disengagement may result (Garber & Little, 2001), along with many other problems, including impaired problem-solving, low self-esteem, and hopelessness (Yang & Clum, 1996), all of which have been related to teen suicidality.

Communication, Problem-Solving, and Relationship Quality

Family problems, especially parent-teen conflict, are frequently cited as precipitants for adolescent suicidal behavior (e.g., Negron et al., 1997). Numerous studies have examined the quality of functioning in families of adolescent attempters, some focusing on the entire family, others on the parent-child dyad. Across these studies, researchers have investigated factors believed to play a role in the well-being of all families, including family support, cohesion, conflict, communication, adaptability, and emotional climate (Miller, King, Shain, Naylor, 1992). Despite inconsistencies in the literature, the research generally indicates that certain properties of the whole family system, in particular cohesion, family conflict and family support, do discriminate suicidal youth, even in comparison to disordered controls (e.g., Asarnow & Carlson, 1988; Miller et al., 1992; Kosky et al., 1990). Likewise, studies of parenting and parent-child relationships tend to suggest that negative parenting and poor relationships are associated

with suicidal symptoms, although the evidence is less consistent when suicidal adolescents are compared to other disturbed youth (Wagner et al., 2003). A study conducted by Adams, Overholser, and Lehnert (1994) exemplifies this pattern. The authors compared inpatient attempters to nonsuicidal inpatients, recently suicidal high school students (ideation only), and nonsuicidal students. Both suicide groups perceived more problems in family functioning than the nonsuicidal high school students. They characterized their families as having trouble adapting to change, poor problem-solving, ineffective communication, power struggles, proneness to crisis, and relationships that were either emotionally disengaged or enmeshed. Importantly, however, perceptions of family functioning did not distinguish either suicidal group from the nonsuicidal inpatients.

Among studies that have identified differences between suicidal teens and clinical controls, Miller and colleagues (1992) found that perceptions of low cohesion and family rigidity discriminated suicidal inpatients from both psychiatric and normal control groups. Notably, *both* suicidal and nonsuicidal inpatient groups perceived worse parent-teen communication, as well as lower warmth and empathy than the non-disordered controls. However, given suicidal adolescents' unique perceptions of family disengagement (low cohesion) and rigidity, the authors proposed that suicidal behavior may be especially likely as a teen experiences isolation within an inflexible or rigid family system. At least one study suggests that family rigidity may increase the likelihood of suicidal behavior through its adverse effects on adolescent problem-solving ability (Carris, Sheeber, & Howe, 1998). Similarly, other research suggests that the impact of family functioning on teen suicidal

behavior may be mediated by its impact on individual coping (Brinkman-Sull, Overholser, & Silverman, 2000).

Although the great majority of research on family functioning and adolescent suicidal behavior has been cross-sectional, a number of prospective studies have also been completed. Fergusson and Lynskey (1995) found that researchers' observations of maternal responsiveness (e.g., sensitivity, acceptance, availability) when the child was age three significantly discriminated attempters from non-attempters at age 15 or 16.

Lewinsohn, Rohde, and Seeley (1994) found that low levels of perceived family support predicted suicide attempts one year later in a sample of high school students. This association remained significant after the authors controlled for depression, but not after controlling for prior attempts. King and colleagues (1995) found that adolescent inpatients' reports of general family dysfunction predicted suicidality during the six months following hospital discharge. However, perceptions of dysfunction were not predictive within a subsample of adolescents diagnosed with affective disorders.

With the exception of a case study, described below in the section on "Hostility, scapegoating, and abuse," only one reported study of family functioning and adolescent suicidal behavior has employed observational methods. Williams and Lyons (1976) videotaped the interaction of twelve family tetrads, each family consisting of a mother, father, female adolescent and sibling over the age of 8. Six of the families included an adolescent who had recently taken a drug overdose. The remaining six were matched on various demographic variables. Members of these "normal" families had never received any psychiatric treatment. All participants completed a pre-discussion questionnaire about

hypothetical problem situations related to family relationships. Researchers then selected eight situations about which all but one family member agreed, and then instructed families to discuss the situations and decide on an alternative that best represented the family's opinion as a whole. Individual family member's opinions were not revealed and each had two turns as the isolate. Williams and Lyons identified significantly different patterns of functioning between the two family groups. Families with a suicidal member were less efficient in their communication (with fewer "constructive" statements), more conflictual (more likely to disagree with and interrupt one another), and less adaptable (with fewer changes of opinion in the direction of consensus). They also exhibited fewer positive contingent responses (i.e., warmth, approval, interest or empathy in response to one another) and more negative contingent responses (i.e., disapproval, disagreement, or rejection in response to one another).

Hostility, Scapegoating and Abuse

As previously discussed, families with a suicidal adolescent are thought to use expressions of rage and anger to prevent change (e.g., positive separation and individuation) or otherwise avoid a problem they feel incapable of handling (Richman, 1986; Rosenbaum & Richman, 1970). Furthermore, it has been suggested that the suicidal adolescent may be a unique target within the family, an expendable scapegoat, bearing the blame for every family problem (e.g., Sabbath, 1969). Preliminary evidence for the theory that suicidal children are singled out for harsh or negative treatment by family members was provided by the Williams and Lyons (1976) finding that statements made by suicidal

adolescents were more likely than those made by other family members to be followed by negative consequences.

Interestingly, it has been suggested that family attacks on a suicidal adolescent need not be overt or direct to contribute to suicidal behavior. Kaslow and colleagues (1989) conducted a microanalysis of parent-child interaction in one family with a suicide attempting daughter. Contrary to expectations generated by the scapegoating hypothesis, direct attacks were “conspicuously absent” from the parents’ behavior (p.200). Instead parents tended to send a variety of mixed messages, often expressing their affirmation or support for the daughter, but at the same time blaming or attempting to control her. Notably, the daughter did not reciprocate her parents’ warmth. Instead, she tended to Protest and Withdraw, Sulk and Appease, and Wall Off and Avoid. According to the authors, these responses indicate a perceived attack. The teen may have perceived her parents’ hostile, blaming control (along with other negative messages) as covertly attacking, even as the parents also displayed significant warmth. Thus, parental attack may take different forms and even covert or indirect forms may be related to suicidal behavior. Of course, these patterns are not necessarily unique to families with an adolescent suicide attempter, a possibility the authors readily acknowledged.

Researchers have not systematically assessed whether suicidal adolescents feel more expendable than other youth, although this notion is often represented in suicide symptom scales (e.g., “My family would be better off without me”) (Wagner, 1997). Woznica and Shapiro (1990) compared psychotherapists’ ratings of expendability on an original scale designed to assess the extent to which their adolescent clients felt unwanted

by or burdensome to their families. Suicidal adolescents (with either a history of attempts and/or a high degree of suicidal ideation) were rated significantly higher on 11 of the 12 expendability items. In another study, adolescent sibling differences in suicidal symptoms were associated with differences in youth reports of maternal warmth and harsh discipline. Wagner and Cohen (1994) found that teens who perceived less warmth and greater harshness, in comparison to their siblings, also reported higher levels of suicidal ideation. Wagner (1997) suggests that the strongest evidence that suicidal adolescents may be considered expendable by their parents comes from research on abuse. Studies have consistently found that physical and sexual abuse is a risk factor for both attempted suicide and suicidal ideation (e.g., Shaunesey, Cohen, Plummer, & Berman, 1993).

Attachment to Caregiver

Abuse and other family trauma may threaten a child's security and contribute to unhealthy patterns of attachment-related behavior. Attachment is a biologically based system, activated in times of distress, which functions to keep a child close to his or her caregiver for the purpose of protection and survival (Bowlby, 1969). A number of researchers have considered links between adolescent suicidal behavior and attachment-related factors. Indeed, suicidal behavior has been conceptualized as an extreme form of attachment behavior, an attempt to signal distress or anger or to elicit a caregiving response (Adam, 1994). Among studies investigating the quality of parent-child attachment in families with a suicidal adolescent, most have relied upon self-report questionnaires such as the Parental Bonding Index (Parker, Tupling, and Brown, 1979). These studies provide some evidence for a pattern of "affectionless control" in families of adolescent attempters,

with parent-child relationships characterized by both low care and intrusive overprotection (e.g., Adam, Keller, West, Larose, & Goszer, 1994; Martin & Waite, 1994).

Other research using the Adult Attachment Interview (AAI; George, Kaplan, & Main, 1985) has provided further insight into the attachment organization of suicidal adolescents. The AAI requires teens to describe their early attachment relationships, including experiences of abuse, separation and loss. Responses are coded along several scales and also assessed for lack of resolution with respect to attachment-related trauma. Interestingly, this research suggests that it is unresolved attachment-related trauma, not trauma per se, that distinguishes suicidal adolescents (Adam, Sheldon-Keller, & West, 1996). Adam and colleagues (1996) found no difference in exposure to such trauma, when comparing suicidal adolescents to clinical controls. However, suicidal adolescents were more likely to describe past trauma in an illogical, disorganized fashion. In view of this finding, the authors suggested that a similar cognitive disorganization may emerge in circumstances that draw attention to or repeat earlier traumatic experiences. As they describe, loss, rejection or other interpersonal crises may serve as triggers for acute cognitive disorganization, which in turn may contribute to suicidal behavior.

Summary: Families of Adolescent Suicide Attempters

As demonstrated by the preceding reviews, family context is of critical importance to any understanding of adolescent suicidal behavior. The developing adolescent requires support and guidance, but also thrives in an environment that promotes healthy individuation and positive management of both conflict and change. Taking a developmental perspective, many theorists have suggested that suicidal behavior emerges

when families are unable to accept or provide for adolescents' developmental needs. Others have focused on negative family processes such as scapegoating, rigid and irrational problem-solving, coercion, and disturbed communication. Conceptualized broadly, interaction is central to all the family theories. The processes in question all find expression in the day to day interactions of attempters' families. Thus, we find a strong theoretical basis for the current study of parent-child interaction.

Similarly, we find a strong empirical underpinning for this study. Research on risk factors for adolescent suicidal behavior has clearly established a prominent role for family-related factors. In particular, studies of parent psychopathology and family functioning regularly associate parental and other family dysfunction with adolescent suicidal behavior. The fact that many of these associations are not unique to attempters' families makes them no less important, particularly as they may guide intervention and treatment. Research indicates that parents of adolescent attempters frequently suffer from psychiatric disorder. Family interactional difficulties are common, including negative parenting, poor communication, and rigid, ineffective problem-solving. Problems tend to escalate, with relatively high levels of abuse and an emotional climate that does not promote the healthy resolution of typical parent-teen conflict, much less serious trauma. A number of researchers have attempted to identify pathways by which various family problems may eventually lead to suicidal behavior. One likely path is that family dysfunction increases the risk for adolescent suicidal behavior by increasing the risk for adolescent psychopathology and problems of individual adjustment, including coping and emotion regulation (Fergusson & Lynskey, 1995). This again raises the question of specificity, not

yet fully explored or fully answered by family factor research, as will be discussed below, as part of a broader consideration of limitations in the family factor research.

Limitations of Family Factor Research

While promising, research on family risk factors for adolescent suicidal behavior has been limited in several important ways. Reviewers have identified five primary limitations (e.g., Berman & Jobes, 1991; Wagner, 1997; Wagner et al., 2003). These include (a) an over-reliance on teen self-report measures, (b) a lack of attention to the temporal ordering of supposed risk factors and suicidal behavior, (c) inadequate recognition of within-group differences (i.e., recognition that different family risk factors may be more or less important for different youth), (d) a lack of studies with adequate controls for teen psychopathology, and (e) a failure to develop and test models of the interplay among various risk factors, both individual and family. Each of these limitations will be considered in turn.

Over-Reliance on Adolescent Self-Report

Studies of the family's role in adolescent suicidal behavior have relied largely on self-report measures of various family factors, sometimes completed by parents, but usually completed by teens. While self-reports may be useful, many would argue that they do not tell the whole story (e.g., Sullaway & Christensen, 1983). Self-reports may be biased by an informant's psychopathology, or an informant simply may not remember or be able to accurately report on family interaction. It is not possible to gain a full understanding of family process without assessing multiple family members, using multiple methods. Observational methodologies may be particularly useful for

investigating complex phenomena such as family interaction (Markman & Notarius, 1987). However, with only two small but promising exceptions, there have been no studies of families of adolescent suicide attempters using observational methods.

Temporal Sequencing

Another limitation of existing research has been a lack of attention to the temporal ordering of supposed family risk factors and suicidal behavior. The majority of family factor research has been cross-sectional in design, thereby limiting inferences regarding the causal direction of variables. In many cases, it is entirely possible that suicidal behavior preceded and even contributed to negative family function. As discussed by Wagner (1997), researchers of child and adolescent suicidal behavior have tended to ignore the issue of prior suicidality and its possible influence on family risk factors. In recent years, there has been an increase in prospective research, but as with cross-sectional studies, researchers have not always obtained a history of past suicidal behavior or taken this information into account when analyzing and interpreting data. In either case, future research must address the issue of past suicidal behavior.

Within-Group Differences

Adolescent suicide attempters and their families comprise a heterogeneous group. This fact is made abundantly clear by the preceding reviews of individual and family characteristics. Nevertheless, most research has failed to recognize or explore within-group differences. Analyses have tended to follow a one-size-fits-all model, as if a single set of variables or predictions could explain all suicidal behavior within a given sample (Wagner et al., 2003). In contrast, it is very likely that different family risk factors may be

more or less important for different youth (Wagner, 1997). As a result, there may be subgroups within a sample for whom different causal models apply. This suggestion is based upon the concept of equifinality, the idea that multiple causal pathways probably exist for any given psychopathology (Cicchetti & Toth, 1995).

Control for Adolescent Psychopathology

The reverse of equifinality, multifinality refers to the idea that the same risk factor may result in many psychopathologies (Cicchetti & Toth, 1995). This is particularly relevant to our consideration of family-related risk because they have been implicated in a host of negative youth outcomes. Despite its importance, many researchers have failed to address the issue of multifinality, claiming to identify risk factors for teen suicide attempts, without acknowledging that the same family problems may be just as likely (or perhaps more likely) to lead to other forms of adolescent disturbance. Although it is probable that most family risk factors do not relate uniquely to suicidal behavior, the search for specific risk factors remains a worthwhile goal. Certainly, the identification of specific factors would facilitate both treatment and prevention. One way to identify specific risk factors is to control for youth psychopathology, either through statistical means or the use of psychiatric control groups. Suicide researchers have frequently compared attempters to “normal” youths. However, fewer studies have compared attempters to matched clinical controls. As indicated by the review of findings above, studies that have made more stringent comparisons have tended not to find differences. Even so, certain types of family dysfunction may specifically contribute to suicidal behavior, but not yet be identified (Wagner et al., 2003).

Interplay Among Risk Factors

In addition to the co-occurrence of family risk factors, risk factors of all types (e.g., individual, situational) likely combine with and relate to one another in significant ways. Studies of adolescent suicide attempters have often ignored this likelihood, thus we know relatively little about the interplay among risk factors and between risk factors and suicidal behavior. Important advances in understanding may occur as researchers develop and test models that incorporate a range of risk conditions (e.g., both intra- and interpersonal factors). In particular, these types of investigations will help researchers answer questions related to specificity. For example, family deficits may lead to suicidal behavior under certain circumstances or in combination with certain other risk variables (Wagner, 1997). In general, researchers are encouraged to examine mediators such as cognitions and coping, as well as moderators such as child characteristics and environmental context (McMahon, Grant, Compas, Thurm & Ey, 2003).

Current Study

The current study reflects an attempt to address, at least in part, the above-noted limitations in existing research. The study investigates parent-adolescent interaction in a sample of hospitalized adolescent suicide attempters, using an observational design. It includes a matched psychiatric control group, incorporates individual as well as family factors, and explores relations between observed interaction and suicidal ideation and behavior over time.

Existing research and theory support several broad goals: (a) to describe interaction in families of attempters, with a focus on both emotional and problem-solving

communication, (b) to compare interactions in families of attempters to interactions in families of disordered controls, (c) to consider how various individual factors (e.g., psychopathology and cognition) may relate to patterns of interaction for attempters and their parents, and (d) to determine whether parent and adolescent behavior relate to future suicidal behavior and/or ideation on the part of adolescents. Specific hypotheses are listed below. They are grouped according to focus and based generally on research and theory pointing to disturbed communication and poor parent-child relationships in families of attempters. The first three groups of hypotheses explore differences between families of attempters and families of controls. Past research using self-report methodology and stringent control groups has yielded few significant results. However, the use of observational methods may provide new answers to questions about specificity of dysfunction. Remaining hypotheses explore various within-suicide group differences, including recurrences of adolescent suicidal ideation and attempts over time.

Comparison of Parents of Attempters and Parents of Controls

It is expected that parents of attempters will report higher levels of parent-adolescent conflict and lower expectations for problem-solving than parents of psychiatric controls. In parent-adolescent interactions, parents of attempters will be more likely to display emotionally undermining behavior and less likely to display emotionally supportive behavior than parents of clinical controls. Their problem-solving behavior will tend to be less constructive as well.

Comparison of Suicide Attempters and Adolescent Controls

Adolescent suicide attempters are expected to report higher levels of parent-adolescent conflict and lower expectations for problem-solving than psychiatric controls. In interactions with their parents, adolescent attempters will be more likely to display emotionally undermining behavior and less likely to display emotionally supportive behavior than psychiatric controls. Their problem-solving behavior will tend to be less constructive as well.

Comparison of Suicide and Control Group Dyads

Relative to controls, the suicide group will contain a greater proportion of mutually negative dyads (dyads in which both interactants display a high degree of negative behavior). Additionally, attempters and their parents are expected to be less likely to make significant progress in problem-solving.

Understanding Within-Suicide Group Differences.

Differences in interactional behavior among attempters and among parents of attempters may be explained by several individual factors, including psychopathology and history of abuse, perceptions of conflict and other relational cognitions. First, it is expected that high levels of parent and adolescent psychopathology (and adolescent history of abuse) will be associated with more frequent displays of emotional invalidation and unconstructive behavior. Second, it is expected that high ratings of current conflict and low expectations for problem-solving will be related to negative behavior for individual interactants, as well as lack of observed progress for the dyad.

Recurrences of Suicidal Ideation and Behavior

Finally, it is expected that negative interactional behavior (on the part of both parents and adolescents) as well as lack of dyadic progress will be associated with a higher risk of subsequent adolescent suicide ideation, and a greater likelihood of repeated suicide attempts, across an 18-month follow-up period.

CHAPTER II: METHOD

Participants

Participants were 85 adolescent suicide attempters and their parents and 39 comparison youth and their parents, with adolescents matched on age, sex, ethnicity, and psychiatric diagnosis. Families of attempters included 62 girls, 23 boys, 82 mothers, and 53 fathers. Families of comparison youth included 23 girls, 16 boys, 36 mothers, and 22 fathers. Seventy-one families of attempters (84%) and 29 families of comparison youth (74%) provided usable observational data. In most cases, families without observational data refused to participate in the videotaped portion of the assessment. Additionally, there were seven parent-teen interactions from the suicide group and one from the comparison group that could not be included for technical reasons (e.g., inaudible dialogue). Various comparisons of the full sample and participants for whom a videotape was available (i.e., videotape sample) indicated no differences with respect to age of the adolescent, sex of the adolescent, SES, or suicide attempt lethality ratings.

Families were recruited from consecutive adolescent admissions to four private psychiatric hospitals in the mid-Atlantic region. Families were excluded from the study if no parent or legal guardian resided in the metropolitan area, if there was evidence that the adolescent was mentally retarded or neurologically impaired, or if the adolescent was psychotic at the time of recruitment and judged to be incapable of participating in the interview.

Suicide Group

Families were eligible for inclusion in the suicide group if the adolescent had attempted suicide during the week prior to hospital admission and the attempt rated a

minimum of 2.0 on the Smith, Conroy, and Ehler (1984) Lethality of Attempt Scale. Suicide attempts were defined as non-accidental, self-injurious behavior. Two raters evaluated each attempt using objective criteria (e.g., toxicity of overdose), drawing on the best available information about the attempt. The intraclass reliability coefficient for pairs of ratings was .88. The modal suicide attempt rated a 2.0 on the 11-point scale ($M = 4.27$, $SD = 2.07$). However, scores ranged as high as 8.0, at which level the attempt might well have resulted in death, had the adolescent not been discovered. The 2.0 minimum rating indicates that medical attention was at least warranted by an attempt, but might not have been necessary for survival.

Forty-six percent of the families contacted for participation in the suicide group enrolled in the study. Of those families, 71 provided usable observational data. Adolescents in the suicide group included 51 females and 20 males. The mean age of attempters was 15.67 years ($SD = 1.38$), with ages ranging from 13.2 to 18.9. Fifty-five percent of suicide attempters were diagnosed with an affective disorder at the time of hospital admission. The remaining 45% were diagnosed with an affective disorder and at least one other disorder (e.g., 17% affective disorder and substance-related disorder, 11% affective disorder and disruptive disorder).

Parents in the suicide group included 66 mothers and 39 fathers. Mothers ranged in age from 31 to 52 years ($M = 42.21$, $SD = 5.40$); the mean age of fathers was 45.37 years ($SD = 6.01$), with ages ranging from 33 to 59. Most were biological parents, but there were also 7 stepfathers, 2 stepmothers, 4 adoptive fathers, and 6 adoptive mothers. Two parents were interviewed in each of 40 families; four of those families

included divorced parents, interviewed separately. One parent was interviewed in 31 families; 24 of those families were single-parent households and 7 were two-parent households in which one parent refused to participate.

The majority of families in the suicide group were Caucasian ($n = 63$); there were also 4 African American families, 2 Hispanic families, and 2 families of Asian descent. The average Hollingshead (1975) socioeconomic status score for the suicide group was 52.87 ($SD = 12.78$). Socioeconomic levels for the highest scoring parent in each household were distributed as follows: professional (59%), technical (31%), craftsmen/clerical (3%), semiskilled (3%), and unskilled (4%).

Comparison Group

Families were eligible for inclusion in the comparison group if the adolescent inpatient had no known history of suicidal behavior. Thirty-eight percent of the families contacted for participation in the comparison group enrolled in the study. Of those families, 29 provided usable observational data. Comparison adolescents included 17 females and 12 males, with ages ranging from 13.19 to 18.36 ($M = 15.73$, $SD = 1.26$). Forty-five percent of comparison adolescents were diagnosed with an affective disorder at the time of hospital admission. The remaining 55% were diagnosed with an affective disorder and at least one other disorder (e.g., 24% affective disorder and substance-related disorder, 21% affective disorder and disruptive disorder).

Parents in the comparison group included 28 mothers and 16 fathers. Mothers ranged in age from 34 to 52 years ($M = 44.32$, $SD = 5.00$); the mean age of fathers was 47.00 years ($SD = 7.36$), with ages ranging from 33 to 64. Most were biological parents,

but there were also 3 stepfathers, 1 grandfather in the father role, 1 foster father and 1 foster mother. Two parents were interviewed in each of 16 families; one of those families included divorced parents, interviewed separately. One parent was interviewed in 13 families; 12 of those families were single-parent households, and 1 was a two-parent household in which one parent refused to participate.

Almost all ($n = 28$) of the comparison families were Caucasian; there was one African American family in the comparison group. The average Hollingshead (1975) socioeconomic status score for the comparison group was 48.77 ($SD = 10.86$). Socioeconomic levels for the highest scoring parent in each household were distributed as follows: professional (41%), technical (38%), and craftsmen/clerical (21%).

Procedures

Recruitment

Hospital admissions staff presented all parents of new patients with a brief form, asking their permission to be contacted by the researcher regarding participation in the study. Another staff member, acting as Recruitment Coordinator, screened the records of new admissions to assess eligibility, identifying families who appeared to meet inclusion/exclusion criteria. As potentially eligible families were identified, the Primary Investigator telephoned those parents who had given permission for contact. The investigator described the research, answering questions as necessary. If an eligible family was not interested in participating and refused permission, either in the admissions office or on the telephone, the family was considered a “refusal.” For interested families, the investigator confirmed eligibility and assigned the case to interviewers. Interviewers then

contacted the parents and made arrangements to meet with the family, answer further questions about the study, and obtain written consent. Adolescents completed their own consent forms.

Every effort was made to recruit two parents if they both lived in the home, including caretakers in the home who had assumed a parent role (e.g., a boyfriend or grandmother). In cases where parents were separated or divorced and the second parent lived in the geographic area, an attempt was made to recruit that parent if he or she had at least weekly contact with the adolescent. Additional information, specific to the recruitment of the two research groups, is described below.

Suicide Group

Recruitment of participants in the suicide group required the Recruitment Coordinator (RC) to determine whether new patients had exhibited self-injurious behavior in the week just prior to hospital admission. If so, the RC contacted the investigator to describe the self-destructive behavior, protecting identifying information. The investigator then evaluated the lethality of any suicidal behavior and determined whether the patient met criteria for suicide lethality, as well as other criteria, described above.

Comparison Group

Each hospital's Recruitment Coordinator (RC) further tracked new admissions to identify matched comparison adolescents. The RC identified adolescents who matched participating suicide attempters on five variables including hospital site, age (within one year either direction), sex, race, and broadband *DSM-IV* (American Psychiatric Association, 1994) diagnosis (e.g., affective disorder, disruptive behavior disorder, etc.).

Adolescents with current or past suicidal ideation were not excluded from the comparison group. However, adolescents with a known history of suicidal behavior of any lethality were considered ineligible. To confirm eligibility at the time of initial contact with an interested family, the primary investigator took care to inquire about past suicidal behavior.

Family Interviews

Parent and adolescent interviews were conducted by a psychologist or psychology graduate student, with parents usually interviewed at home and adolescents interviewed either at home or in the hospital. Parents and adolescents were interviewed separately. Each interview lasted approximately 4 hours and involved extensive assessments not reported here. Families in the comparison group were interviewed at the initial time point only, as soon as possible after the adolescent's hospital admission. Families in the suicide group were interviewed a total of five times, once after admission and then at six month intervals for two years following the index suicide attempt. The six- and eighteen-month follow-ups were conducted by telephone and lasted approximately one hour. The one- and two-year follow-ups were conducted in person and lasted approximately four hours. The only follow-up data reported in this study are those pertaining to subsequent suicidal ideation and behavior. Participants in both groups received \$20 for the initial interview and family observation (described below). Suicide attempters and their parents also received \$20 for the one- and two-year follow-ups, and \$5 at six and eighteen months.

Family Observation

In addition to being interviewed, parents and adolescents also completed a videotaped interaction task. Just prior to this task, mothers, fathers, and adolescents privately completed the two scales of The Family Agenda Profile (FAP; Notarius, Pellegrini, & Martin, 1991): Severity of Conflict and Relational Efficacy. The form lists 14 common problem areas in parent-teen relationships, with space to write in two more. For Conflict ratings, participants independently rated (on a scale from 0 to 100; 0 = no problem, 100 = severe problem) the degree to which each area was a current problem in the adolescent's relationship with one or both parents. The Efficacy ratings assessed participants' beliefs about their ability to solve parent-adolescent problems successfully. For each problem area rated on the FAP, respondents entered a number from 0 to 10 to indicate how often a disagreement in that area was typically resolved to both parties' mutual satisfaction, for every 10 times the problem occurred (0 = never resolved, 10 = always resolved). Using these ratings, interviewers assisted parent-adolescent dyads in selecting a topic for discussion. Beginning with the adolescent, the interviewer asked each participant to describe two or three of his or her most highly rated issues. Other family members were then given the opportunity to respond. In this way, an interviewer gained a sense of which topic would generate the most active and emotionally meaningful discussion. Interviewers were free to choose different topics for mothers and fathers, if this was appropriate.

Upon selection of a topic, dyads were instructed to take 12 minutes to discuss their feelings about the issue and to work towards forward progress. Dyads were videotaped in

random order (i.e., mother-adolescent first or father-adolescent first). The interviewer did not participate in the videotaped discussion and other family members were required to leave the area. However, the interviewer did listen from a nearby room and intervened if the conversation drifted to a topic with no interpersonal meaning. The interviewer also alerted the dyad when there were two minutes remaining. Following the interaction task, interviewers debriefed all participants, ensuring that any negative emotions were brought under control. Families of suicide attempters repeated the interaction task at one- and two-year follow-ups. This study focuses only on the initial observation.

Measures

Severity of Parent-Child Conflict

As noted in the previous section, severity of parent-child conflict was assessed using a self-report measure completed by participants just prior to videotaping. A mean conflict score (possible range from 0 to 100) was computed for each respondent by averaging the ratings across the 14 items.

Problem Solving Beliefs

As noted, the Family Agenda Profile (FAP; Notarius, et al., 1991) provided ratings ranging from 1-10 to indicate how frequently conflicts in each of 14 problem areas were typically resolved to both parties' mutual satisfaction. These ratings assessed participants' beliefs about their ability to solve parent-adolescent problems successfully. A mean relational efficacy rating was computed for each respondent, across the 14 items.

A second, more specific, measure of efficacy beliefs was completed after the discussion topic was chosen, and immediately prior to videotaping. Each participant

received a form with the question, “How likely is it that you will make forward progress on this issue that you are about to discuss?” Responses were recorded along a 5-point scale (1 = very unlikely we will make progress, 5 = very likely we will make forward progress).

Observed Behavior

Overview of Coding Process

All videotapes were transcribed, producing a verbatim transcript to aid coders. Interactions were randomly assigned to two trained coders who independently observed the videotapes and coded the interactions, assessing several aspects of parent and adolescent behavior, described below. In coding a typical interaction, the coder first watched the entire interaction, to become familiar with the participants and the issues being discussed. Next, the coder focused on the middle six minutes of interaction, evaluating each “turn” (or uninterrupted block) of speech for behaviors of interest. After completing the turn-based coding, the coder again evaluated the interaction more globally to make specific ratings described below. Coders entered their responses directly into an Excel spreadsheet.

Overview of Coding Manual

A coding manual was adapted from sections of the Codebook for Marital and Family Interaction (COMFI; Notarius et al., 1991), a microanalytic coding system that assesses emotional validation and invalidation, problem-solving facilitation and inhibition, depressive statements and self-disclosure. The COMFI system assigns specific codes to individual “thought units” (i.e., clauses). However, the current system assigned summary codes (integrating various specific codes) to individual speech turns. The manual included guidelines for assessing emotional validation (EMV) and emotional invalidation (EMI), for

evaluating the overall intensity of EMI and EMV behavior, and for rating problem-solving constructiveness and forward progress. Observed behavior measures are described more fully below.

Emotional Validation (EMV) and Invalidation (EMI)

Each uninterrupted block of speech (or “turn”) occurring during the middle six minutes of interaction was coded for the presence or absence of both EMV and EMI. Thus, a turn could receive a positive code for both validating and invalidating behavior. A turn was coded EMI-positive if it contained any statement that undermined the other interactant. To identify such statements, coders searched for evidence of disagreement, direct and indirect criticism, mindreading, guilt induction, sarcasm, and attempts to constrain the other’s expression. EMI statements could be delivered with any affect, but generally affect was negative or neutral. Common types of emotional invalidation are summarized in Table 1.

Table 1
Common Types of Emotional Invalidation

Disagreements after a statement of fact or opinion.	“No, that’s not true.”
Guilt inducing statements implying that the speaker is bothered/suffering because of the other.	“Your rules are driving me crazy.”
Statements containing direct criticism.	“That is a stupid looking haircut.”
Statements containing indirect criticism.	“Just look at those terrible grades.”
“Should” statements with a moralistic, disapproving quality.	“You really should be careful.”
Mindreading statements including a negative assumption about the other’s thoughts or feelings.	“You don’t have any idea what I’m going through.”

In contrast, turns coded positive for EMV included statements conveying support or concern. Interactants received credit for emotional validation when they displayed

agreement, understanding, praise, interest in the other's feelings, and direct expressions of support. These statements needed to be delivered with positive or neutral affect to receive the EMV code. Common types of emotional validation are summarized in Table 2.

Table 2

Common Types of Emotional Validation

Statements indicating simple assent.	"OK." "Um-hmm." "Yeah."
Non-critical attempts to summarize the other.	"So you're saying I haven't been home enough."
Compliments.	"I like the way you handled that."
Open-ended questions with a focus on the other's needs or feelings.	"Was there something else you needed to say?"
Mindreading statements conveying empathy or support.	"I know you really cared about Bob. I'm sorry he moved."
Direct expressions of support.	"I want to help you any way I can."

For each turn, coders simply rated "yes" or "no" for both EMI and EMV behavior. Final EMI and EMV scores were calculated as a proportion of each person's total number of turns.

Intensity of EMV and EMI Behavior

Following the turn-based coding, coders rated the intensity of validating and invalidating behavior, considering the entire interaction. This was a global rating, with coders required to respond to two statements about each interactant: "This person could be described as 'very nice'" (no = 0, yes = 1) and "This person could be described as 'very mean'" (no = 0, yes = 1). The "very nice" interactant was defined as "clearly and repeatedly supportive, accepting, and/or appreciative of the other interactant." The "very mean" interactant was defined as "clearly and repeatedly rejecting, disparaging, and/or contemptuous of the other interactant." Coders were instructed to code based on overall

style, using clinical judgment, but were also urged to pay special attention to certain subtypes of validating and invalidating behavior identified in the COMFI coding system. For example, “very nice” interactants might use a great deal of positive feedback and directly supportive statements, while “very mean” interactants might tend to use more harsh criticism and sarcasm.

Problem-Solving Constructiveness

Coders assessed each interactant’s constructiveness in problem-solving using a global rating, based on the entire interaction. Coders answered the following question about each person: “How constructively does the interactant work toward mutual understanding and/or a mutually satisfying solution? Does the (parent or teen) display *more unconstructive* than constructive behavior OR *more constructive* than unconstructive behavior?” Coders were provided with a set of descriptors for “more unconstructive” and “more constructive” interactants and advised to rely upon clinical judgment, as well as specific COMFI indicators of problem-solving inhibition and facilitation within the discussion. In cases where there appeared to be roughly equal amounts of significant constructive and unconstructive behavior, coders gave greater weight to the unconstructive behavior, coding “more unconstructive than constructive.” At the same time, coders did not consider the absence of obvious constructive behavior to be sufficient evidence for a “more unconstructive” code. Descriptions of the “more unconstructive” and “more constructive” interactants are presented in Tables 3 and 4.

Table 3

Characteristics of the “More Unconstructive” Interactant

Tends to be inflexible. Is closed to change and/or unwilling to bend.
Refuses to explain him/herself as needed and/or tends to explain self in a negative (complaining, defensive, and/or argumentative) manner.
Makes little effort to understand the other’s point of view. May allow the other to speak, but does not seem to listen. Does not encourage other’s expression, e.g., cuts other off, doesn’t ask questions, or asks questions, but follows with an immediate defense.
Refuses to consider proposed solutions and/or tends to propose negative solutions.
Actively denies responsibility, shifts responsibility to other(s), and/or avoids responsibility by obviously changing the subject.
Tries to derail the discussion and/or is <i>clearly</i> uninterested in using the discussion for progress, e.g., keeps asking when the discussion will end, behaves in a distracting manner.

Table 4

Characteristics of the “More Constructive” Interactant

Tends to be flexible. Is open to change and/or willing to bend.
Explains him/herself as needed. Usually does so in a neutral manner (not complaining, defensive or argumentative).
Makes an effort to understand the other’s point of view. Encourages other’s expression. Asks neutral and/or positive questions, listens to response.
Generates viable solutions (as appropriate to discussion), considers proposed solutions.
Actively accepts responsibility.
Tries to keep the discussion on track and/or is <i>clearly</i> interested in using the discussion for progress, e.g., brings up a new topic once the first has “run out,” makes comments revealing a clear positive investment in the discussion task.

Forward Progress

After rating interactants for problem-solving constructiveness, coders considered the amount of forward progress actually achieved during the interaction. Coders rated the amount of significant forward progress, with possible responses “none” (0), “some” (1), or “a lot” (2) of progress. This was a dyadic rating, based on the entire interaction. Forward progress was defined as “progress towards mutual understanding and/or a mutually

satisfying solution.” A mutually satisfying solution was defined as “one that each party can live with,” not necessarily the ideal for both parties, but “at least acceptable to both.” This was the most clinically oriented rating of the interaction task, and did not rely upon COMFI per se. For example, significant progress towards mutual understanding was expected to involve both expression of thoughts and feelings as well as evidence that the listener had “heard.” In the case of progress towards a solution, coders checked for productive discussion of alternatives, movement towards a compromise, or at minimum a clear expression of willingness to “work things out.”

Coder Training and Reliability

Coders were two clinical psychology doctoral students, both of whom had prior training of approximately 100 hours in the COMFI coding system, including memorization of coding guidelines as well as extensive practice coding, reliability checks, and feedback. In preparation for this study, coders first met for a total of approximately eight hours to review relevant COMFI guidelines and discuss newly developed codes. Weekly follow-up meetings, continuing for one month, were devoted to further clarifying the manual, practice coding, and discussing responses to ensure reliability.

Throughout the coding process, approximately 20% of each coder’s assigned interactions were checked for reliability. This was accomplished via a blocking system in which coding was checked frequently (after every 4-6 videotapes). After coding a block, coders met to discuss the reliability interaction and resolve coding discrepancies. Reliability was assessed using Cohen’s kappa. The average kappa across all codes was .69. The average kappa for each type of code was .71 (EMI), .77 (EMV), .59 (adolescent

“very mean”), .54 (parent constructiveness)¹, 1.00 (adolescent constructiveness), and .55 (forward progress). Reliability for the forward progress rating was assessed using a weighted kappa, with coders receiving more credit for agreeing that there was at least some level of progress (i.e., “some” or “a lot”) than agreements concerning the degree of progress (i.e., “some” vs. “a lot”). Because there were only 2 “Mean” parents, 1 “Nice” parent, and 0 “Nice” adolescents (across groups), these variables are excluded from analysis (and reliabilities not presented).

Child Psychopathology and Abuse

Child Psychopathology

DSM-III-R (American Psychiatric Association, 1987) diagnoses and symptom counts were obtained using the Diagnostic Interview Schedule for Children, 2.3, Child and Parent Forms (DISC-2.3; Shaffer, Fisher, Piacentini, Schwab-Stone, & Wicks, 1992), a structured interview with good sensitivity to various child disorders (Fisher et al., 1993). Parents and adolescents were interviewed separately, with the parent version of the interview closely paralleling that administered to teens. Questions covered the past six-month time period, except for conduct disorder questions, which covered the past year. The current study used average symptom counts for four broadband disorders: affective disorders, disruptive behavior disorders, substance-related disorders, and anxiety disorders. Adolescent reports of symptoms were used for all but the disruptive behavior disorders; research suggests that parents may be more accurate reporters of problems within the disruptive behavior spectrum (Edelbrock, Costello, Dulcan, Conover, & Kalas, 1986).

¹ Coders achieved 81.25% percent agreement for parent constructiveness.

History of Abuse

History of sexual and physical abuse was assessed during the adolescent interview, with adolescents assigned to one of three abuse history groups: 1) no abuse, 2) sexual or physical abuse, and 3) both sexual and physical abuse. Sexual abuse was assessed with an item created for this study, “Someone did something sexual with you against your will.” If the adolescent responded “yes” to this statement, then he or she also briefly described what had happened. Adolescents were considered victims of physical abuse if they gave at least one affirmative response to a physical abuse item, including (a) two items created for this study, “Being hit by a parent” and “Has (your parent) ever hit you so hard it caused welts or other marks on your body that remained for a day or longer?”; (b) the item “When punishing me, (my parent) hits me with a belt, paddle, or something else” (Simons, Whitbeck, Conger, & Wu, 1991); and (c) seven items from the violence subscale of the Conflict Tactics Scale (e.g., “Hit or tried to hit with something”), a self-report measure assessing typical parental behavior during parent-teen conflict (Straus, 1979).

Parent Psychopathology

Parents’ lifetime history of psychopathology was assessed in a conjoint interview using the Family History Interview (Cohen, 1990). This is a structured interview, yielding symptom counts and diagnoses for various *DSM-III-R* (American Psychiatric Association, 1987) disorders. Analyses for this study included symptom counts for major depression, mania, general anxiety, drug and alcohol abuse, and antisocial personality.

Recurrences of Suicidal Ideation and Behavior

Suicidal ideation and behavior were re-assessed at the 6, 12, 18, and 24 month follow-up interviews. However, due to a sizeable drop in participants between the 18 month and 24 month follow-ups, analyses examining recurrences of suicidal ideation included only the first three follow-ups.

Suicidal Ideation

Adolescent suicidal ideation was evaluated at baseline and follow-ups with three items from the DISC-1 (Costello, Edelbrock, & Costello, 1985) and seven items from the DISC-2.3 (Shaffer et al., 1992), all assessing suicidal ideation over the past six months. For example, “At any time during the past six months, did you wish that you were dead?” (responses scored 0 = no, 1 = sometimes/somewhat, and 2 = yes).

Suicide Attempts and Self-Injury

Adolescent reports of suicide attempts and self-injury were assessed with the Suicide Attempts and Self-Injury – Past Six Months form, a series of items developed for this study. All adolescents were asked two primary questions, “In the past six months, have you tried to kill yourself?” and “During the past six months, have you done anything to hurt yourself, even though you weren’t trying to kill yourself?” Responses were scored 0 = no, 2 = yes. Whenever an adolescent responded in the affirmative, the interviewer probed for additional information. Behaviors that resulted in no injury were excluded. Follow-up questions assessed the methods used, the circumstances, as well as the number of times such an event occurred.

CHAPTER III: RESULTS

Results for major questions of interest include those pertaining to (a) between-group comparisons, (b) within-suicide group analyses, and (c) prospective analyses of subsequent adolescent suicidality. Within each category, parent and adolescent findings are presented separately. Prior to the formal evaluation of hypotheses, preliminary tests examined two demographic variables, adolescent age and family SES. When age and SES were significantly related to a given dependent variable, they were included as statistical covariates in analyses for that dependent variable. When not related to the dependent variable, they were excluded from the statistical model.

Because research on family communication suggests there may be important sex differences in parent-adolescent interaction (e.g., Noller, 1995), mothers and fathers were examined separately. Furthermore, sex of the adolescent was included as an independent variable in all models with observed behavior as the dependent variable. This strategy allowed for tests of main effects for sex as well as group by sex interactions.

Group Comparisons: Perceptions of Conflict and Problem-Solving

Parent Comparisons

It was hypothesized that parents of attempters would report more severe parent-adolescent conflict, as well as more pessimistic beliefs about problem-solving than parents of psychiatric controls. Parents were compared on three variables: (a) severity ratings of current parent-adolescent conflict; (b) ratings of relational efficacy (i.e., the extent to which parent-adolescent problems were typically resolved); and (c) expectations for the videotaped interaction (i.e., their likelihood of making forward progress while discussing

the selected problem). Means and standard deviations for these variables are presented in Table 5. In addition to overall group means, Table 5 provides separate means for parents' ratings with daughters and sons.

Table 5
Parent Ratings of Conflict and Problem-Solving

	Case	Control
Mothers		
Severity – Total	40.60 (17.75)	40.79 (15.01)
Severity (D)	38.84 (17.05)	42.42 (17.08)
Severity (S)	45.21 (19.18)	38.57 (12.05)
Efficacy – Total	5.92 (2.01)	5.65 (2.18)
Efficacy (D)	6.24 (1.82)	5.96 (2.42)
Efficacy (S)	5.12 (2.27)	5.25 (1.86)
Expectancy – Total	2.85 (0.95)	3.27 (0.87)
Expectancy (D)	2.90 (0.97)	3.60 (0.63)
Expectancy (S)	2.72 (0.89)	2.82 (0.98)
Fathers		
Severity – Total	39.00 (15.73)	46.35 (23.77)
Severity (D)	36.58 (15.55)	51.43 (29.85)
Severity (S)	42.13 (15.88)	41.27 (16.52)
Efficacy – Total	5.84 (1.91)	6.13 (1.93)
Efficacy (D)	6.08 (1.65)	6.14 (1.92)
Efficacy (S)	5.53 (2.21)	6.12 (2.10)
Expectancy – Total	3.17 (0.93)	2.69 (1.25)
Expectancy (D)	3.34 (0.78)	3.67 (1.03)
Expectancy (S)	2.94 (1.09)	1.86 (0.69)

Note. Values represent mean (*SD*).

D = with daughters; S = with sons.

Parents' ratings were compared using 2-way (sex by attempt/non-attempt) univariate analyses of variance and covariance. There were no significant group differences. However, there were two main effects for sex. Across groups, mothers of daughters had more optimistic expectations for problem-solving ($M = 3.06$, $SD = 0.95$) than mothers of sons ($M = 2.75$, $SD = 0.91$), covarying SES, $F(1, 87) = 4.00$, $p < .05$. Similarly, fathers of daughters had more optimistic expectations for problem solving ($M =$

3.41, $SD = 0.83$) than fathers of sons ($M = 2.62$, $SD = 1.10$), $F(1, 48) = 14.22$, $p < .001$.

There was also a significant group by sex interaction for fathers' expectations, $F(1, 48) = 5.79$, $p < .05$. Examination of means (see Table 5) reveals that fathers were most pessimistic regarding their interactions with non-attempting sons.

Adolescent Comparisons

Perceptions of conflict and beliefs about problem-solving were also compared for adolescent suicide attempters and psychiatric controls. For adolescents, relevant variables included conflict severity and relational efficacy ratings, as well as two expectation ratings, one for each parent. Means and standard deviations are presented in Table 6.

Table 6
Adolescent Ratings of Conflict and Problem-Solving

	Case	Control
Severity – Total	29.75 (16.87)	29.41 (15.79)
Girls	30.23 (16.40)	28.74 (14.15)
Boys	28.58 (18.38)	30.25 (18.24)
Efficacy – Total	6.43 (2.51)	6.71 (2.27)
Girls	6.66 (2.46)	7.18 (1.26)
Boys	5.84 (2.61)	6.13 (3.08)
Expectancy (M) - Total	2.77 (1.20)	2.81 (1.24)
Girls	2.92 (1.15)	3.00 (1.00)
Boys	2.39 (1.29)	2.58 (1.51)
Expectancy (F) – Total	2.62 (1.08)	2.50 (1.00)
Girls	2.74 (1.01)	2.67 (1.03)
Boys	2.47 (1.18)	2.33 (1.03)

Note. Values represent mean (SD).

M = interaction with mothers; F = interaction with fathers.

Adolescent ratings were compared using 2-way (sex by attempt/non-attempt) univariate analyses of variance. There were no significant results and no statistical trends.

Group Comparisons: Measures of Observed Behavior

Parent Comparisons

Emotional Validation and Invalidation

It was expected that parents of adolescent suicide attempters would display less frequent emotional validation (EMV) and more frequent emotional invalidation (EMI), compared to parents of clinical controls. EMV and EMI scores were calculated as ratios of the number of speaking turns with EMV and EMI to a parent's total number of turns. Means and standard deviations for mother and father proportion scores are presented in Table 7. In addition to overall means, Table 7 provides separate means for parents' EMV and EMI with daughters and sons.

Table 7
Parent EMV and EMI Proportion Scores

	<u>Mothers</u>		<u>Fathers</u>	
	Case	Control	Case	Control
EMV – Total	.19 (.14)	.17 (.15)	.22 (.14)	.16 (.10)
EMV (D)	.21 (.14)	.20 (.17)	.24 (.16)	.14 (.06)
EMV (S)	.13 (.11)	.13 (.10)	.19 (.08)	.19 (.14)
EMI – Total	.39 (.15)	.38 (.15)	.40 (.18)	.36 (.22)
EMI (D)	.37 (.14)	.39 (.16)	.40 (.17)	.35 (.18)
EMI (S)	.45 (.14)	.35 (.15)	.40 (.19)	.36 (.27)

Note. Values represent mean (*SD*).

D = with daughters; S = with sons.

Parents EMV and EMI scores were compared using 2-way (sex by attempt/non-attempt) univariate analyses of variance. For fathers, there were no significant findings. For mothers, there were no main effects for group, but one significant finding for sex. Across groups, mothers of daughters displayed more EMV ($M = .21$, $SD = .15$) than mothers of sons ($M = .13$, $SD = .11$), $F(1, 90) = 6.25$, $p < .05$. Tests for group by sex

interactions yielded no significant results. However, there was a tendency for mothers of suicide attempters to display greater EMI with sons, while daughter and son EMI levels for comparison mothers were similar (see Table 7 for means), $F(1, 90) = 3.24, p = .075$.

Intensity of EMV and EMI Behavior

Because there were only two “Mean” parents and one “Nice” parent (across groups), ratings of parent meanness and niceness were not analyzed.

Problem-Solving Constructiveness

It was expected that parents of adolescent suicide attempters would receive a greater number of “More Unconstructive” ratings and fewer “More Constructive” ratings than parents of psychiatric controls. Frequency counts and percentages are presented in Table 8.

Table 8
*Parent Constructiveness:
Frequency counts and percentages by group*

	Case	Control
Mothers ($n = 94$)	66 (70%)	28 (30%)
More Constructive ($n = 65$)	44 (68%)	21 (32%)
with daughters ($n = 47$)	34 (72%)	13 (28%)
with sons ($n = 18$)	10 (56%)	8 (44%)
More Unconstructive ($n = 29$)	22 (76%)	7 (24%)
with daughters ($n = 18$)	14 (78%)	4 (22%)
with sons ($n = 11$)	8 (73%)	3 (27%)
Fathers ($n = 55$)	39 (71%)	16 (29%)
More Constructive ($n = 40$)	29 (73%)	11 (27%)
with daughters ($n = 23$)	16 (70%)	7 (30%)
with sons ($n = 17$)	13 (77%)	4 (23%)
More Unconstructive ($n = 15$)	10 (67%)	5 (33%)
with daughters ($n = 8$)	6 (75%)	2 (25%)
with sons ($n = 7$)	4 (57%)	3 (43%)

Mother and father constructiveness ratings were evaluated using chi-square analyses crossing group with constructiveness (more unconstructive/more constructive), as well as constructiveness with sex (daughter/son). There were no significant findings for mothers or fathers for either group or sex. Logistic regressions were also performed, including group, sex, and the group by sex interaction, with no significant results.

Invalidating Unconstructive Behavior

A combined variable, “Invalidating Unconstructive” (IU) was created to identify parents displaying both high levels of emotional invalidation and unconstructive problem-solving. It was expected that parents of attempters would display more IU behavior than parents of clinical controls. Parents were classified IU if they were rated More Unconstructive and their EMI proportion score fell within the top quartile of the parent EMI score distribution. For both mothers and fathers, this translated to a .50 cut-off for EMI behavior. Thus, in addition to More Unconstructive problem-solving, IU parents displayed invalidating behavior in at least one-half of their coded speaking turns. Frequency counts and percentages for parent IU ratings are presented in Table 9.

Table 9

Parent IU: Frequency counts and percentages by group

	Case	Control
Mothers ($n = 94$)	66 (70%)	28 (30%)
Invalidating Unconstructive ($n = 16$)	14 (87.5%)	2 (12.5%)
with daughters ($n = 8$)	7 (87.5%)	1 (12.5%)
with sons ($n = 8$)	7 (87.5%)	1 (12.5%)
Fathers ($n = 55$)	39 (71%)	16 (29%)
Invalidating Unconstructive ($n = 7$)	4 (57%)	3 (43%)
with daughters ($n = 3$)	2 (67%)	1 (33%)
with sons ($n = 4$)	2 (50%)	2 (50%)

Parent IU status was first evaluated using chi-square analyses crossing group with IU (IU/not IU), as well as IU with sex (daughter/son). There were no statistically significant findings for either mothers or fathers. However, for mothers there were several statistical trends: Mothers of suicide attempters tended to have a greater than expected likelihood of being classified IU than mothers of comparison adolescents, $\chi^2 (1) = 2.76, p = .097$. Also, across groups, mothers of sons were somewhat more likely to be rated IU than mothers of daughters, $\chi^2 (1) = 3.31, p = .069$. Because mothers were more likely to be Invalidating Unconstructive with older children ($r = .22, p < .05$), a logistic regression, covarying age, was also performed. Logistic regressions examining group, sex, and group by sex interactions for both mothers and fathers yielded no significant results.

Adolescent Comparisons

Emotional Validation and Invalidation

As with parents, adolescents in the attempter group were expected to display less frequent emotional validation (EMV) and more frequent emotional invalidation (EMI) than clinical controls. EMV and EMI scores were calculated as a ratio of the number of speaking turns coded positive for EMV and EMI to an adolescent's total number of turns. Scores were calculated separately for interactions with mothers and interactions with fathers. Means and standard deviations for adolescent proportion scores are presented in Table 10.

Adolescent EMV and EMI scores were compared using 2-way (sex by attempt/non-attempt) univariate analyses of variance. Findings for EMI and EMV are addressed separately. Most notably, there was a main effect for group for adolescent EMI with

mothers: Suicide attempters displayed more EMI towards mothers than psychiatric controls, $F(1, 90) = 5.92, p < .05$. While not statistically significant, there was a similar tendency for suicide attempters to display more EMI with fathers, $F(1, 51) = 3.68, p = .061$. For EMI with fathers there was also a main effect for sex. Across groups, females were more invalidating towards fathers than were males, $F(1, 51) = 4.30, p < .05$. Though not statistically significant, there was an opposite trend for EMI with mothers: Males tended to display more invalidation toward mothers than did females, $F(1, 90) = 3.39, p = .069$.

Table 10
Adolescent EMV and EMI Proportion Scores

	EMV (M)	EMV (F)	EMI (M)	EMI (F)
Overall				
Case	.13 (.12)	.17 (.14)	.31 (.20)	.32 (.23)
Control	.16 (.13)	.14 (.10)	.23 (.16)	.20 (.13)
Girls				
Case	.14 (.12)	.13 (.14)	.29 (.19)	.41 (.27)
Control	.17 (.14)	.16 (.11)	.20 (.15)	.21 (.13)
Total	.15 (.12)	.14 (.13)	.26 (.18)	.35 (.25)
Boys				
Case	.11 (.14)	.21 (.14)	.39 (.20)	.20 (.09)
Control	.14 (.11)	.11 (.08)	.26 (.18)	.19 (.13)
Total	.12 (.13)	.18 (.13)	.34 (.20)	.19 (.10)

Note. Values represent mean (SD).

M = with mothers; F = with fathers.

There were no significant group by sex interactions for adolescent EMI. However, for adolescents with fathers, there was a statistical trend; females in the suicide group displayed the highest levels of emotional invalidation, while levels for males in both groups, along with comparison females, were roughly equivalent, $F(1, 51) = 2.89, p = .095$.

Finally, with regard to adolescent EMV, there were no significant effects for group, sex, or group by sex interaction. However, for adolescents with fathers, there was a group by sex trend, $F(1, 51) = 2.85, p = .098$. Male suicide attempters displayed the highest levels of emotional validation to fathers, followed by female comparison teens, female attempters, and male controls.

Intensity of EMV and EMI Behavior

Because there were no “Nice” adolescents (in either group), ratings of adolescent niceness were not analyzed. Similarly, there were only two adolescents who were mean to fathers; thus, meanness to father was not analyzed. There were ten adolescents who were mean to their mothers, a sufficient number to allow for statistical testing (see Table 11).

Adolescent meanness to mother was tested using chi-square analyses crossing group with meanness (mean/not mean), as well as meanness with sex. Despite the low number of mean adolescents, the chi-square yielded a significant effect for group, $\chi^2(1) = 4.75, p < .05$. All ten of the adolescents who were mean to their mothers had attempted suicide. Notably, the two adolescents who were mean to their fathers were suicide attempters as well. Thus, 100% of mean adolescents were suicide attempters. There were no detectable sex differences in meanness to mothers. Due to the small number of mean adolescents, a logistic regression was not performed.

Table 11
“Mean” Adolescents: Frequency counts and percentages by group

	Case	Control
With Mothers ($n = 94$)	66 (70%)	28 (30%)
“Mean” ($n = 10$)	10 (100%)	0
Girls ($n = 7$)	7 (100%)	0
Boys ($n = 3$)	3 (100%)	0

Problem-Solving Constructiveness

It was expected that adolescent suicide attempters would receive a greater number of “More Unconstructive” ratings and fewer “More Constructive” ratings than psychiatric controls. Frequency counts and percentages are presented in Table 12.

Adolescent constructiveness ratings were first evaluated using chi-square analyses crossing group with constructiveness (more unconstructive/more constructive), as well as constructiveness with sex. There were no significant findings for group. However, there was one significant finding for sex: Although males and females were both more likely to be unconstructive with mothers, males were more likely than females to be unconstructive (76% vs. 54%), $\chi^2(1) = 4.07, p < .05$. Logistic regressions found no evidence for group by sex interactions.

Table 12
Adolescent Constructiveness: Frequency counts and percentages by group

	Case	Control
With Mothers ($n = 94$)	66 (70%)	28 (30%)
More Constructive ($n = 37$)	29 (78%)	8 (22%)
Girls ($n = 30$)	24 (80%)	6 (20%)
Boys ($n = 7$)	5 (71%)	2 (29%)
More Unconstructive ($n = 57$)	37 (65%)	20 (35%)
Girls ($n = 35$)	24 (69%)	11 (31%)
Boys ($n = 22$)	13 (59%)	9 (41%)
With Fathers ($n = 55$)	39 (71%)	16 (29%)
More Constructive ($n = 28$)	20 (71%)	8 (29%)
Girls ($n = 16$)	11 (69%)	5 (31%)
Boys ($n = 12$)	9 (75%)	3 (25%)
More Unconstructive ($n = 27$)	19 (70%)	8 (30%)
Girls ($n = 15$)	11 (73%)	4 (27%)
Boys ($n = 12$)	8 (67%)	4 (33%)

Invalidating Unconstructive Behavior

Like parents, adolescents were further compared with regard to their display of Invalidating Unconstructive (IU) behavior. Again, this variable represented a combination of both high EMI and unconstructive problem-solving. It was expected that adolescent attempters would be more likely to display IU behavior than clinical controls. Adolescents were classified IU if they received a More Unconstructive rating for problem-solving and their EMI proportion score fell within the top quartile of the adolescent EMI score distribution. For adolescents, this translated to a .43 cut-off for EMI behavior, slightly lower than the cut-off for parents (.50). Adolescent IU frequency counts and percentages are presented in Table 13.

Table 13
Adolescent IU: Frequency counts and percentages by group

	Case	Control
With Mothers ($n = 94$)	66 (70%)	28 (30%)
Invalidating Unconstructive ($n = 16$)	13 (81%)	3 (19%)
Girls ($n = 9$)	8 (89%)	1 (11%)
Boys ($n = 7$)	5 (71%)	2 (29%)
With Fathers ($n = 55$)	39 (71%)	16 (29%)
Invalidating Unconstructive ($n = 7$)	7 (100%)	0
Girls ($n = 7$)	7 (100%)	0
Boys ($n = 0$)	0	0

Adolescent IU status was first evaluated using chi-square analyses crossing group with IU (IU/not IU), as well as IU with sex. There were no significant findings for group, although results suggest a noteworthy statistical trend: Suicide attempters were more likely than comparison adolescents to be classified IU with fathers, $\chi^2(1) = 3.29, p = .070$. Indeed, 100% of the adolescents who were Invalidating Unconstructive with fathers were

suicide attempters. Moreover, 100% of those adolescents were females (see Table 13). Not surprisingly, there was a significant main effect for sex for adolescent IU status with father: Females were significantly more likely than males to be Invalidating Unconstructive with fathers, $\chi^2(1) = 6.21, p < .05$. A logistic regression, examining teen/mother IU, was performed, with no evidence for group by sex interaction. Because there were no comparison adolescents rated IU with fathers, the group by sex interaction for teen/father IU was not examined.

Dyadic Comparisons

In addition to separate ratings of parent and adolescent behavior (e.g., EMI, constructiveness), analyses compared the suicide and comparison groups on two dyadic variables in which raters considered parents and adolescents together: mutual negativity and problem-solving progress. A preliminary analysis examined the bivariate correlations between parent and adolescent behavior. Though not dyad specific, these correlations may provide clues about patterns within the sample (and groups), e.g., a tendency for negativity in parents to be associated with negativity in adolescents.

Correlations: Parent and Adolescent Behavior

In general, it was expected that parent and adolescent EMI, as well as parent and adolescent EMV, would tend to co-occur. A positive relationship was similarly expected for parent/teen constructiveness and parent/teen IU status. Correlations for these variables are summarized in Table 14. Results are provided for the entire sample as well as the suicide and comparison groups.

Table 14

Correlations: Parent and adolescent observed behavior

	Overall	Case	Control
Mother/Teen			
EMI	.52***	.49***	.63***
EMV	.42***	.47***	.36 ^a
Constructiveness	.49***	.56***	.37 ^a
IU	.47***	.40***	.80***
Father/Teen			
EMI	.35**	.32*	.51*
EMV	.01	-.10	.39
Constructiveness	.22	.02	.67**
IU	.02	.06	(n/a)

^a Correlation approached significance ($p < .06$, 2-tailed).

* $p \leq .05$ (2-tailed); ** $p \leq .01$ (2-tailed); *** $p \leq .001$ (2-tailed).

Most notably, correlations revealed a pattern of strong linkages for mother and adolescent behavior, but not such a strong pattern for adolescents and fathers. Across groups, and within the suicide group, mother/teen EMI, EMV, constructiveness and IU were all significantly related. Within the comparison group, mother/teen EMI and IU were also clearly associated, with a statistical trend for mother/teen EMV and constructiveness. Father and adolescent behaviors were much less consistently linked. Across groups, and within the suicide group, only father and adolescent EMI were significantly related. For fathers and comparison adolescents, there were significant correlations for just EMI and constructiveness.

Mutual Negativity

Taken together, the above correlational findings suggest frequent co-occurrence of parent and adolescent negativity. Mutual negativity was examined more directly through identification of mutually negative (MN) dyads. In MN dyads, both interactants displayed a high degree of negativity. A dyad was considered mutually negative if both parent and

adolescent were rated “Invalidating Unconstructive” (IU, see above). It was expected that suicide group dyads would be more likely to display mutual negativity than control group dyads. Frequency counts and percentages are presented in Table 15.

Table 15

Mutually negative dyads: Frequency counts and percentages by group

	Case	Control
Mother/Teen Dyads ($n = 94$)	66 (70%)	28 (30%)
Mutually Negative ($n = 9$)	7 (78%)	2 (22%)
mother/daughter ($n = 5$)	4 (80%)	1 (20%)
mother/son ($n = 4$)	3 (75%)	1 (25%)
Fathers/Teen Dyads ($n = 55$)	39 (71%)	16 (29%)
Mutually Negative ($n = 1$)	1 (100%)	0
father/daughter ($n = 1$)	1 (100%)	0
father/son ($n = 0$)	0	0

Mutual negativity was evaluated using chi-square analyses crossing group with MN status (MN/not MN), as well as mutual negativity with sex (parent with daughter/parent with son). Because there was just one MN father/teen dyad, only mother/teen dyads were analyzed. There were no significant results and no statistical trends. Due the small number of mutually negative dyads, a logistic regression was not performed.¹

Progress

Finally, suicide and control group dyads were compared on a measure of problem-solving progress. It was expected that attempters and their parents would be less likely to make significant progress in problem-solving than clinical controls. Progress was initially

¹ Because of the low number of “mutually negative” dyads, analyses were re-run (for both mother and father dyads) on the basis of high EMI only. In this model, a dyad was considered mutually negative if the parent and teen fell within the top quartile of their respective EMI distributions. This definition of mutual negativity increased the number of father/teen negative dyads to five (4 suicide, 1 comparison), and the number of mother/teen negative dyads to 10 (8 suicide, 2 comparison). Again, there were no significant results and no statistical trends.

coded “none” (0), “some” (1), and “a lot” (2), but for these analyses, a dichotomous variable was created by collapsing “some” and “a lot.” Frequency counts and percentages are presented in Table 16.

Table 16

Dyadic Progress: Frequency counts and percentages by group

	Case	Control
Mother/Teen Dyads ($n = 94$)	66 (70%)	28 (30%)
Yes Progress ($n = 60$)	40 (67%)	20 (33%)
Girls ($n = 46$)	32 (70%)	14 (30%)
Boys ($n = 14$)	8 (57%)	6 (43%)
No Progress ($n = 34$)	26 (76.5%)	8 (23.5%)
Girls ($n = 19$)	16 (84%)	3 (16%)
Boys ($n = 15$)	10 (67%)	5 (33%)
Father/Teen Dyads ($n = 55$)	39 (71%)	16 (29%)
Yes Progress ($n = 30$)	19 (63%)	11 (37%)
Girls ($n = 17$)	11 (65%)	6 (35%)
Boys ($n = 13$)	8 (61.5%)	5 (38.5%)
No Progress ($n = 25$)	20 (80%)	5 (20%)
Girls ($n = 14$)	11 (79%)	3 (21%)
Boys ($n = 11$)	9 (82%)	2 (18%)

Parent-adolescent progress was evaluated using chi-square analyses crossing group with progress (progress yes/no), as well as progress with sex (parent with daughter/parent with son). There were no significant group differences. However, there was a significant finding for sex: Mothers and sons tended to make No Progress at a greater than expected rate, $\chi^2(1) = 4.40, p < .05$. Logistic regressions found no evidence for group by sex interactions.

Within Suicide Group Analyses: Understanding Parent and Adolescent Behavior

Differences in interactional behavior among attempters and parents of attempters may be explained by individual factors such as psychopathology, perceptions of parent-

adolescent conflict, and other relational cognitions. These individual factors, and their relationships to parents' and adolescents' observed behavior, are considered in turn.

Parent Factors and Observed Parent Behavior

Parent Psychopathology

It was expected that high levels of parent psychopathology would be associated with frequent parental EMI, infrequent EMV, more unconstructive problem-solving, invalidating unconstructiveness, and lack of dyadic progress. Analyses examined lifetime history symptom counts for major depression, mania, general anxiety, drug and alcohol abuse, conduct disorder, and antisocial personality. Means, ranges, and standard deviations for each of these symptom areas are provided in Table 17.

Table 17
Descriptive data: Parent symptom counts

Symptom Area	Mother Range	Mother Mean (SD)	Father Range	Father Mean (SD)
Major Depression	0-12	5.89 (4.33)	0-9	2.56 (3.09)
Mania	0-8	1.70 (2.20)	0-6	0.87 (1.70)
General Anxiety	0-4	1.79 (1.44)	0-4	1.21 (1.30)
Antisocial Personality	0-7	1.14 (1.64)	0-11	1.41 (2.11)
Conduct	0-5	0.82 (1.26)	0-5	1.00 (1.41)
Alcohol Abuse ^a	0-4	0.20 (0.66)	0-5	0.21 (0.86)
Drug Abuse ^a	0-4	0.11 (0.62)	0-6	0.39 (1.23)

^a Substance abuse values represent level of functioning impairment.

A preliminary analysis examined the bivariate correlations between parent psychopathology and observed parent behavior. Table 18 summarizes these correlations. There were no significant correlations for the majority of parent disorders. Only depression, paternal anxiety, and maternal alcohol and drug abuse were significantly correlated with observed parent behavior. Regression analyses further examined whether

relationships between significantly correlated variables could be accounted for by sex of the adolescent. Findings are grouped by dependent variable (observed parent behavior).

Table 18

Correlations: Parent psychopathology and observed parent behavior

	EMI	EMV	CONS	IU	Progress
Mothers					
Major Depression	-.26*	.25*	.24	-.27*	.39**
Mania	-.03	.08	-.02	.09	.03
General Anxiety	-.19	.07	.01	-.13	.05
Antisocial Personality	-.19	.08	-.10	-.11	.16
Conduct	-.15	.14	-.05	-.07	.11
Alcohol Abuse	-.06	-.05	-.28*	-.10	.01
Drug Abuse	-.18	-.01	-.25*	-.09	.14
Fathers					
Major Depression	.10	.12	.38*	-.28	.04
Mania	-.17	.07	.27	-.13	.26
General Anxiety	.04	.12	-.27	.21	-.36*
Antisocial Personality	.08	.01	.17	-.23	.20
Conduct	.05	.09	.04	-.24	.18
Alcohol Abuse	.23	-.16	.07	-.08	.07
Drug Abuse	.19	-.11	.20	-.11	.09

Note. CONS = constructiveness.

* $p < .05$ (2-tailed); ** $p < .01$ (2-tailed).

Parent psychopathology and EMI. For EMI, there was only one significantly related parent symptom area, maternal depression. The finding was unexpected; higher maternal symptom counts were associated with lower maternal EMI. In a linear regression controlling for sex, maternal depression was not a significant predictor ($\Delta R^2 = .04$, $\beta = -0.21$, $t(62) = -1.62$, ns). The analysis indicated that mothers of suicide attempters displayed more EMI towards sons than daughters ($R^2 = .07$, $\beta = 0.25$, $t(63) = 2.09$, $p < .05$).

Parent psychopathology and EMV. As was the case for EMI, maternal depression was the only significantly correlated symptom area for EMV. Similarly, the finding was

unexpected: greater depressive symptomology was associated with more frequent EMV. Here again, after controlling for sex, maternal depression was not a significant predictor ($\Delta R^2 = .04$, $\beta = 0.19$, $t(62) = 1.55$, *ns*); mothers displayed more EMV towards daughters than sons ($R^2 = .07$, $\beta = -0.26$, $t(63) = -2.13$, $p < .05$).

Parent psychopathology and constructiveness. Three parent symptom areas were significantly correlated with parent constructiveness: paternal depression, maternal alcohol abuse, and maternal drug abuse. Beginning with mother variables, high levels of impairment from maternal drug and alcohol abuse were associated with More Unconstructive mother behavior. In a logistic regression analysis, controlling for sex of adolescent, only alcohol abuse was significantly related to maternal constructiveness (Wald $\chi^2(1) = 4.13$, $p < .05$, OR = 0.30). With every unit increase in alcohol-related impairment, mothers were approximately three times less likely to be rated More Constructive. When both alcohol and drug abuse were entered together, neither was a significant predictor for maternal constructiveness, not surprising given the high correlation between substance-related scores ($r = .79$, $p < .001$). Drug abuse was not a significant predictor for constructiveness when the order of entry was reversed.

Turning to father constructiveness, high levels of paternal depression were unexpectedly associated with More Constructive father behavior. Paternal depression remained significantly related to father constructiveness in a logistic regression controlling for sex (Wald $\chi^2(1) = 4.00$, $p < .05$, OR = 1.55). For every unit increase in depressive symptomology, fathers were 1.5 times more likely to be rated constructive. Because this was an unexpected finding, follow-up analyses were conducted to determine whether there

was a relationship between recent (past year) depression and father constructiveness. After controlling for sex of the adolescent, recent paternal depression (presence or absence) was not a predictor for father constructiveness (Wald $\chi^2 (1) = 0.05$, *ns*).

Parent psychopathology and IU. Increases in parent depression were also associated with a *lower* likelihood of maternal IU. However, after controlling for sex in a logistic regression, maternal depression was not a significant predictor for mother IU (Wald $\chi^2 (1) = 3.20$, *ns*). The regression indicated that mothers of attempters were roughly 3.5 times more likely to be Invalidating Unconstructive with males than with females (Wald $\chi^2 (1) = 4.15$, $p < .05$, OR = 3.63).

Parent psychopathology and progress. Regarding parent/adolescent problem-solving progress, history of maternal depression was associated with a greater likelihood of mother/adolescent progress. This relationship remained significant in a logistic regression controlling for sex (Wald $\chi^2 (1) = 7.74$, $p < .01$, OR = 1.21). Here again, follow-up analyses were conducted to determine whether there was a relationship between recent (past year) depression and observed behavior. After controlling for sex of the adolescent, recent maternal depression (presence or absence) was not a predictor for mother/adolescent progress (Wald $\chi^2 (1) = 2.03$, *ns*).

Paternal anxiety, also correlated with progress, was a significant predictor for progress after controlling for sex (Wald $\chi^2 (1) = 5.11$, $p < .05$, OR = 0.50); for every unit increase in paternal anxiety, fathers and adolescents were half as likely to make forward progress.

Perceptions of Conflict and Problem-Solving

It was expected that negative beliefs and expectations about parent-adolescent conflict and problem-solving would be associated with frequent parental EMI, infrequent EMV, more unconstructive problem-solving, invalidating unconstructiveness, and lack of dyadic progress. The variables analyzed included (a) parents' severity ratings of parent-adolescent conflict, (b) their ratings of relational efficacy (i.e., the extent to which parent-teen problems were typically resolved); and (c) their expectations for the videotaped interaction (i.e., the likelihood of making forward progress while discussing the selected problem). Means and standard deviations for these variables are presented in Table 5 (see "Case" group results).

A preliminary analysis examined the bivariate correlations between parents' conflict-related beliefs and observed parent behavior. Results are presented in Table 19. Correlational findings present a pattern of mixed results. Mother ratings were moderately related to EMV, constructiveness, IU and progress, but not significantly related to EMI. Ratings of conflict severity and relational efficacy were the only ratings associated with mother behavior; expectations for the videotaped interaction were not significantly correlated with mother behavior. Father results were mixed as well, although there was a consistent relationship between father ratings and observed father/adolescent progress. Also, unlike with mothers, there was a fairly strong relationship between father expectancy and observed behavior, specifically father EMI and father/teen progress. In all instances, the significant correlations indicated that more positive expectations/beliefs were associated with more positive and constructive parental behavior.

Table 19

Correlations: Parents' conflict-related beliefs and observed parent behavior

	EMI	EMV	CONS	IU	Progress
Mother Ratings					
Conflict Severity	.20	-.25*	-.31*	.14	-.23
Relational Efficacy	-.24	.13	.37**	-.31*	.31*
Expectancy	-.01	.06	.02	.01	.10
Father Ratings					
Conflict Severity	.01	-.34*	-.26	-.17	-.37*
Relational Efficacy	-.16	.09	.36*	-.04	.48**
Expectancy	-.47**	.12	.11	-.24	.46**

Note. CONS = Constructiveness.* $p < .05$ (2-tailed); ** $p < .01$ (2-tailed).

Regression analyses further examined whether relationships between significantly correlated variables were accounted for by sex of the adolescent. Findings are grouped by dependent variable (observed parent behavior).

Parent conflict ratings and EMI. Regarding EMI, there was only one significantly correlated parent rating, father expectancy. A linear regression indicated that fathers who expected to make more progress exhibited lower levels of EMI, after controlling for sex ($\Delta R^2 = .23$, $\beta = -0.49$, $t(36) = -3.23$, $p < .01$).

Parent conflict ratings and EMV. Although correlational analyses indicated that parents perceiving more severe conflict with the adolescent had lower EMV, the effect for mothers was not significant after controlling for sex ($\Delta R^2 = .05$, $\beta = -0.21$, $t(62) = -1.78$, ns); mothers of attempters were more validating with daughters than sons ($R^2 = .07$, $\beta = -0.27$, $t(63) = -2.25$, $p < .05$). The effect for fathers narrowly missed significance ($p = .052$). After controlling for sex of the adolescent, fathers displayed less EMV as they perceived more severe parent-adolescent conflict ($\Delta R^2 = .10$, $\beta = -0.32$, $t(36) = -2.01$, $p = .052$).

Parent conflict ratings and constructiveness. Three parent conflict ratings were significantly correlated with parent constructiveness: mother conflict severity and mother and father relational efficacy. Logistic regression analyses indicated that maternal reports of more severe parent-adolescent conflict and poorer relational efficacy were associated with More Unconstructive maternal problem-solving after controlling for sex: for conflict severity, Wald $\chi^2(1) = 5.12, p < .05$, OR = 0.96; for efficacy, Wald $\chi^2(1) = 6.58, p < .05$, OR = 1.53. Neither was a significant predictor when all three variables (sex, severity, and efficacy) were entered together, although maternal efficacy did closely approach significance (Wald $\chi^2(1) = 3.20, p = .07$, OR = 1.40). Maternal severity ratings and efficacy were highly correlated ($r = -.60, p < .001$); as mothers perceived greater severity of conflict, their reports of relational efficacy were more pessimistic.

Father relational efficacy remained a significant predictor for father constructiveness after controlling for sex of the adolescent (Wald $\chi^2(1) = 4.70, p < .05$, OR = 1.61); for every unit increase in reported efficacy, the odds of being rated More Constructive increased more than 1.5 times.

Parent conflict ratings and IU. Only one parent rating was associated with parent IU status, maternal reports of relational efficacy. Controlling for sex in a logistic regression, maternal efficacy was a near significant predictor for mother IU status. Decreases in mothers' ratings were associated with a greater likelihood of maternal IU behavior (Wald $\chi^2(1) = 3.75, p = .053$, OR = 0.71). The effect for sex also narrowly missed significance; as previously noted, mothers of attempters were more likely to display IU behavior with males (Wald $\chi^2(1) = 3.81, p = .051$, OR = 3.45).

Parent conflict ratings and progress. Finally, there were four parent ratings significantly correlated with observed parent/teen progress: mother and father relational efficacy, father conflict severity, and father expectancy. In a logistic regression, higher maternal efficacy ratings predicted a greater likelihood of observed mother/teen progress, after controlling for sex (Wald χ^2 (1) = 4.27, $p < .05$, OR = 1.37). The three father ratings (lower conflict severity, greater relational efficacy, greater expectancy) were significant predictors of forward progress as well: conflict severity (Wald χ^2 (1) = 4.64, $p < .05$, OR = 0.94); efficacy (Wald χ^2 (1) = 6.88, $p < .01$, OR = 1.92); expectancy (Wald χ^2 (1) = 6.45, $p < .05$, OR = 3.98). Not one was a significant predictor when the three father ratings were entered in a single regression together; perhaps because the three ratings were strongly interrelated. Lower father efficacy ratings were associated both with higher conflict severity ($r = -.62$, $p < .001$) and more negative expectations for the videotaped interaction ($r = .48$, $p < .01$). Even so, after controlling for sex, conflict severity, and efficacy, father expectancy did approach significance as a predictor for father/teen progress (Wald χ^2 (1) = 3.38, $p = .07$, OR = 2.97). For every unit increase in fathers' expectancy ratings, fathers and adolescents were almost three times more likely to make forward progress.

Adolescent Factors and Observed Adolescent Behavior

Adolescent Psychopathology

As with parents, it was expected that high levels of psychopathology would be associated with frequent EMI, infrequent EMV, more unconstructive problem-solving, invalidating unconstructiveness, and lack of progress for the dyad. It was also expected that high levels of psychopathology would be related to meanness to mother. (Meanness to

father could not be analyzed due to insufficient numbers.) Adolescent psychopathology variables included average symptom counts for four broadband disorders: mood disorders, anxiety disorders, disruptive behavior disorders, and substance-related disorders.

Symptoms were experienced at some time during the past six months, except for conduct disorder symptoms, which were experienced at any time during the past year. Means, ranges, and standard deviations for specific disorders comprising each broadband area are provided in Table 20. Specific counts were standardized prior to averaging to obtain broadband scores.

Table 20
Descriptive data: Adolescent symptom counts

Symptom Area	Possible Range	Mean (SD)
Mood Disorders		
Depression	0-9	5.06 (3.45)
Dysthymia	0-7	4.20 (2.80)
Mania	0-8	0.89 (2.07)
Anxiety Disorders		
Generalized Anxiety	0-7	2.34 (2.00)
Obsessive- Compulsive	0-7	0.92 (1.48)
Panic	0-16	2.64 (4.87)
Disruptive Behavior Disorders		
Conduct Disorder	0-11	1.73 (1.91)
Attention Deficit	0-13	3.29 (3.88)
Oppositional Defiant	0-9	3.52 (2.83)
Substance- Related Disorders		
Substance Dependence	0-8	1.73 (2.64)
Substance Abuse	0-2	0.49 (0.76)
Marijuana Dependence	0-2	0.60 (0.82)
Alcohol Dependence	0-8	2.15 (2.76)
Alcohol Abuse	0-2	0.59 (0.74)

A preliminary analysis examined the bivariate correlations between adolescent psychopathology and observed adolescent behavior. These correlations are presented in Table 21.

Table 21

Correlations: Adolescent psychopathology and observed behavior

	Mood	Anxiety	Disruptive	Substance
Teen with Mother				
EMI	-.09	-.06	.21	.13
Meanness	.19	.02	.24*	.09
EMV	.07	.10	-.05	-.02
Constructiveness	-.03	.16	-.13	-.09
IU	.07	.06	.23	.01
Progress	-.06	-.02	-.20	-.19
Teen with Father				
EMI	.22	.34*	-.02	.13
EMV	-.19	-.10	-.11	-.22
Constructiveness	.08	-.21	-.08	.02
IU	.13	.42**	.10	.10
Progress	-.22	-.21	-.41*	-.27

* $p < .05$ (2-tailed); ** $p < .01$ (2-tailed).

In general, there were few significant correlations between adolescent psychopathology and observed adolescent behavior. Psychopathology variables were unrelated to EMV and constructiveness, and there were no significant correlations for mood and substance-related disorders. Disruptive symptoms were significantly related to two adolescent behaviors: greater likelihood of meanness to mother and lower likelihood of adolescent progress with father. Adolescent anxiety was related to two adolescent behaviors as well: more frequent EMI with father and greater likelihood of adolescent IU with father. Significantly correlated variables were further examined in regressions controlling for sex of the adolescent. Findings are grouped by dependent variable (observed adolescent behavior).

Adolescent psychopathology and EMI. Increases in adolescent anxiety were associated with increases in invalidating behavior toward fathers. This relationship was no longer significant in a linear regression controlling for sex ($\Delta R^2 = .06$, $\beta = 0.25$, $t = 1.72$,

ns); the effect for sex indicated that females were more invalidating towards fathers than males ($R^2 = .23$, $\beta = -0.48$, $t = -3.27$, $p < .01$).

Adolescent psychopathology and meanness to mother. Disruptive symptoms were related to meanness to mother in a logistic regression controlling for sex, although the effect narrowly missed significance (Wald $\chi^2 (1) = 3.55$, $p < .06$, OR = 2.19). Adolescents were more than twice as likely to be mean to their mothers with every standard deviation increase in disruptive symptomology.

Adolescent psychopathology and IU. After controlling for sex in a logistic regression, the association of greater adolescent anxiety with a higher likelihood of IU behavior with fathers narrowly missed significance (Wald $\chi^2 = 3.24$, $p = .07$, OR = 4.08). For every standard deviation increase in anxiety symptoms, adolescents were four times more likely to be rated IU with fathers. The regression indicated a significant effect for sex (Block $\chi^2 (1) = 9.57$, $p < .01$); 100% of attempters rated IU with fathers ($n = 7$) were females.

Adolescent psychopathology and progress. Disruptive symptomology was a significant predictor for adolescent/father progress in a logistic regression controlling for sex (Wald $\chi^2 (1) = 5.41$, $p < .05$, OR = 0.32); the odds of achieving progress with fathers decreased over threefold for every standard deviation increase in adolescent disruptive symptoms.

History of Abuse

It was expected that prior abuse would be associated with high levels of adolescent EMI, low levels of EMV, unconstructive problem-solving, invalidating

unconstructiveness, meanness to mothers and failure to achieve progress. For these analyses, adolescents were grouped according to abuse history: no abuse (34%); one form of abuse (physical *or* sexual) (47%), or both forms of abuse (physical *and* sexual) (20%). EMI and EMV were examined using 2-way (sex by abuse) univariate analyses of variance. There were no significant findings for adolescent EMV (to mothers or fathers), or for adolescent EMI to mothers. In the case of EMI to fathers, there was a significant effect for sex; females ($M = .41$, $SD = .27$) displayed more EMI than males ($M = .20$, $SD = .09$), $F(1, 34) = 6.02$, $p < .05$. There was also a statistical trend for the effect of abuse, $F(2, 34) = 2.56$, $p = .09$. Bonferroni post hoc comparisons indicated sexually and physically abused adolescents displayed significantly more EMI to fathers than adolescents with no abuse history (mean difference = .32, $p < .05$).

Logistic regression analyses, examining categorical observed behavior variables and controlling for sex, yielded one significant result, and several notable trends. Compared to adolescents with no abuse history, adolescents with a history of both physical and sexual abuse were over 11 times more likely to be invalidating unconstructive with mothers (Wald $\chi^2(1) = 3.87$, $p < .05$, OR = 11.64). Contrasts also indicated near significant effects for constructiveness with fathers, progress with fathers, and meanness to mothers, all comparing victims of both sexual and physical abuse to adolescents with no abuse history. Adolescents with a history of both types of abuse were roughly 10 times more likely to be More Unconstructive with fathers (Wald $\chi^2(1) = 3.59$, $p = .058$, OR = 0.08), 10 times less likely to achieve progress in problem solving with fathers (Wald $\chi^2(1)$

= 3.13, $p = .077$, OR = 0.10) and almost 10 times more likely to be “Very Mean” to mothers (Wald $\chi^2 (1) = 3.43$, $p = .064$, OR = 9.95).

Prior Suicide Attempts

It was expected that adolescents’ history of multiple suicide attempts would be associated with higher levels of adolescent EMI, lower EMV, more unconstructive problem-solving, invalidating unconstructiveness, meanness to mothers, and failure to achieve progress. Approximately 50% of adolescents had made a prior attempt; the number of prior attempts ranged from zero to eight ($M = 1.16$, $SD = 1.75$). A preliminary analysis examined the bivariate correlations between adolescent prior attempts and observed adolescent behavior. There were no significant results and no further analyses.

Perceptions of Conflict and Problem-Solving

It was expected that negative beliefs and expectations about parent-adolescent conflict and problem-solving would be associated with frequent adolescent EMI, infrequent EMV, meanness to mothers, more unconstructive problem-solving, invalidating unconstructiveness, and lack of dyadic progress. Analyses included (a) adolescents’ severity ratings of parent-adolescent conflict; (b) their ratings of relational efficacy (i.e., the extent to which parent-adolescent problems were typically resolved); and (c) their expectations for the videotaped interaction (i.e., the likelihood of making forward progress while discussing the selected problem), rated separately for interactions with mothers and fathers. Means and standard deviations for these variables are presented in Table 6 (see “Case” group results).

A preliminary analysis examined the bivariate correlations between adolescents' conflict-related beliefs and their observed behavior (Table 22). A preliminary analysis also examined the intercorrelations among adolescent conflict-related ratings. These correlations are presented in Table 23.

Table 22

Correlations: Adolescent conflict ratings and observed adolescent behavior

	Conflict Severity	Relational Efficacy	Expectancy (Mother)	Expectancy (Father)
Teen with Mother				
EMI	.33**	-.38**	-.41**	-
Meanness	.26*	-.35**	-.45***	-
EMV	-.15	.15	.25*	-
Constructiveness	-.12	.20	.40**	-
IU	.39**	-.36**	-.35**	-
Progress	-.30*	.45***	.47***	-
Teen with Father				
EMI	.30	.02	-	-.20
EMV	-.01	.06	-	.33*
Constructiveness	-.00	.10	-	.32*
IU	.17	-.02	-	-.08
Progress	-.34*	.34*	-	.44**

* $p < .05$ (2-tailed); ** $p < .01$ (2-tailed); *** $p < .001$ (2-tailed).

Table 23

Intercorrelations: Adolescent conflict ratings

	Conflict Severity	Relational Efficacy	Expectancy (Mother)	Expectancy (Father)
Conflict Severity	-			
Relational Efficacy	-.51**	-		
Expectancy (Mother)	-.29*	.45**	-	
Expectancy (Father)	-.20	.42*	.70**	-

* $p < .05$ (2-tailed); ** $p < .001$ (2-tailed).

As indicated by the correlational findings, adolescents' beliefs about conflict and problem-solving were frequently related to their observed behavior, especially their behavior with mothers. All significant correlations were in the expected directions;

negative beliefs were associated with negative behavior. Furthermore, reported perceptions of conflict were related to one another. For example, high conflict severity ratings were associated with low efficacy ratings and pessimistic expectations for problem-solving. Regression analyses further examined the relationships among significantly correlated variables, controlling for sex of the adolescent. Findings are grouped according to dependent variable (observed adolescent behavior).

Adolescent conflict ratings and EMI. All three conflict ratings (conflict severity, efficacy, and expectancy) were significantly correlated with adolescent EMI to mothers. After controlling for sex in linear regressions, each of these variables added significantly to the prediction of adolescent/mother EMI: conflict severity ($\Delta R^2 = .11$, $\beta = .32$, $t(63) = 2.82$, $p < .01$); efficacy ($\Delta R^2 = .12$, $\beta = -.35$, $t(63) = -2.93$, $p < .01$); and expectancy ($\Delta R^2 = .14$, $\beta = -.38$, $t(63) = -3.27$, $p < .01$). Perhaps due to the overlap among adolescent conflict ratings, not one was a significant predictor when all three ratings were considered together, although the effect for adolescent expectancy very closely approached significance ($\beta = .26$, $t(58) = -1.99$, $p = .051$); lower expectations for interactions with mothers predicted higher levels of observed EMI. The effect for sex indicated that male attempters tended to display more EMI with mothers than females ($R^2 = .05$, $\beta = .23$, $t(64) = 1.91$, $p = .06$).

Adolescent conflict ratings and meanness to mother. As with EMI, all three conflict ratings were significantly correlated with meanness to mothers. Logistic regressions indicated that these relationships were significant after controlling for sex: severity (Wald $\chi^2(1) = 3.84$, $p = .05$, OR = 1.04); efficacy (Wald $\chi^2(1) = 6.30$, $p < .05$, OR

= .68); expectancy (Wald $\chi^2(1) = 10.28, p < .01$, OR = .16). However, when all three conflict ratings were entered together with sex, only adolescent expectancy remained a significant predictor for meanness (Wald $\chi^2(1) = 7.58, p < .01$, OR = .19). For every unit increase on the 5-point expectations scale, the odds of mean behavior decreased over fivefold.

Adolescent conflict ratings and EMV. Only expectancy ratings were associated with adolescent displays of EMV: Lower expectations for the videotaped interaction were associated with less frequent EMV. For adolescent/mother EMV, this relationship was nearly significant in a linear regression controlling for sex ($\Delta R^2 = .06, \beta = .24, t = 1.93, p = .058$). For adolescent/father EMV, teen expectations significantly predicted EMV after controlling for sex ($\Delta R^2 = .14, \beta = .37, t = 2.52, p < .05$). The effect for sex indicated that males tended to display more EMV towards fathers than females ($R^2 = .08, \beta = .29, t = 1.83, p = .075$).

Adolescent conflict ratings and constructiveness. As with EMV, only expectancy ratings were related to adolescent constructiveness. Expectations for interactions with mothers significantly predicted adolescent constructiveness with mothers in a logistic regression controlling for sex (Wald $\chi^2(1) = 8.17, p < .01$, OR = 2.08); adolescents were more than twice as likely to be rated More Constructive for every unit increase on the 5-point expectations scale. There was a similar finding for constructiveness with fathers, although adolescent/father results only approached statistical significance (Wald $\chi^2(1) = 3.72, p = .054$, OR = 1.97).

Adolescent conflict ratings and IU. All three adolescent conflict ratings were related to IU behavior with mothers. A series of logistic regressions indicated that adolescent ratings of conflict severity, relational efficacy, and expectations for progress with mothers each significantly predicted adolescent IU behavior with mothers, after controlling for sex: conflict severity (Wald $\chi^2(1) = 7.89, p < .01, OR = 1.06$); efficacy (Wald $\chi^2(1) = 6.54, p < .05, OR = 0.70$); expectancy (Wald $\chi^2(1) = 6.58, p < .05, OR = .40$). While not one was a significant predictor when all three ratings were entered together, conflict severity closely approached significance (Wald $\chi^2(1) = 3.67, p = .055, OR = 0.85$), and there was a trend for expectancy as well (Wald $\chi^2(1) = 2.88, p = .090, OR = 0.51$).

Adolescent conflict ratings and progress. In the case of adolescent/mother progress, logistic regressions indicated that adolescent ratings of conflict severity, relational efficacy, and expectations for problem-solving progress with mothers were each significant predictors after controlling for sex: conflict severity (Wald $\chi^2(1) = 5.52, p < .05, OR = 0.96$); efficacy (Wald $\chi^2(1) = 9.93, p < .01, OR = 1.53$); expectancy (Wald $\chi^2(1) = 10.73, p < .01, OR = 2.68$). However, when all three conflict ratings were entered together with sex, only expectancy remained a significant predictor (Wald $\chi^2(1) = 5.89, p < .05, OR = 2.17$). For every unit increase on the 5-point expectations scale, adolescents were more than twice as likely to achieve progress with mothers. The effect for sex indicated a tendency for mother/son dyads to have a lower likelihood of achieving forward progress (Wald $\chi^2(1) = 2.87, p = .09, OR = 0.37$).

Continuing with adolescent/father results, logistic regressions indicated that each conflict rating was a significant (or near significant) predictor for progress, controlling for sex alone: conflict severity (Wald χ^2 (1) = 4.04, $p < .05$, OR = .95); relational efficacy (Wald χ^2 (1) = 3.82, $p = .051$, OR = 1.37); expectancy (Wald χ^2 (1) = 6.12, $p < .05$, OR = 2.81). However, similar to teen/mother results, when all three ratings were entered together with sex, only expectancy approached significance (Wald χ^2 (1) = 2.73, $p < .098$, OR = 2.13); every unit increase in adolescent expectations more than doubled the likelihood of achieving progress with fathers.

Prospective Analyses: Observed Behavior and Subsequent Adolescent Suicidality

It was expected that negative interactional behavior (on the part of both parents and adolescents), as well as lack of dyadic progress, would be associated with recurrences of adolescent suicidal ideation as well as a greater likelihood of repeated adolescent suicide attempts. Recurrences of suicidal ideation and behavior were assessed at the 6-, 12-, 18-, and 24-month follow-up interviews. Nineteen percent of adolescents ($n = 13$) reattempted suicide at least once during the follow-up period. Descriptive data for reattempts are presented in Table 24. Suicidal ideation recurred more frequently. As a result, ideation scores were calculated separately for each time point. Mean ideation scores for each assessment are presented in Table 25. Due to a sizeable drop in participants between the 18- and 24-month follow-ups, 24-month ideation scores were excluded from analyses.

Table 24

Reattempted Suicide: Frequency counts and percentages

	Overall ($N = 70$)	Girls ($n = 51$)	Boys ($n = 19$)
No Reattempt	57 (81%)	41 (80%)	16 (84%)
Yes Reattempt	13 (19%)	10 (20%)	3 (16%)

Table 25
Suicidal Ideation Across Time Points

Time	<i>N</i>	Overall	Girls	Boys
Baseline	71	1.30 (0.56)	1.27 (0.60)	1.37 (0.46)
6 months	60	0.52 (0.58)	0.60 (0.63)	0.33 (0.39)
12 months	53	0.36 (0.46)	0.38 (0.47)	0.32 (0.44)
18 months	53	0.38 (0.54)	0.42 (0.56)	0.28 (0.50)

Note. Values represent item means (*SD*).

Preliminary analyses examined whether demographic variables, including sex and age of the adolescent and family SES were associated with the dependent variables of interest, reattempted suicide and suicidal ideation. There were no significant age, sex, or SES differences comparing adolescents who reattempted to those who did not. In the case of suicidal ideation, there were no significant findings for SES. However, adolescent age at baseline was significantly related to ideation at the one year (T3) assessment ($r = -.27$, $p < .05$), with younger adolescents reporting more suicidal ideation. Additionally, females ($M = 0.60$, $SD = 0.63$) reported significantly more ideation than males ($M = 0.32$, $SD = 0.39$) at the six month (T2) assessment, $t(53) = 2.07$, $p < .05$. Given these preliminary findings, sex of adolescent was controlled in analyses predicting T2 ideation, and age was controlled in analyses predicting T3 ideation.

Observed Behavior and Reattempts

It was expected that reattempters and their parents, compared to families of non-reattempters, would be characterized by more negativity and less positivity at the baseline assessment. Independent samples t-tests comparing reattempters to non-reattempters on adolescent EMI and EMV, as well as mothers' and fathers' EMI and EMV, yielded no significant findings. Table 26 includes means and standard deviations for these variables.

Table 26
EMI and EMV by Reattempt Status

Observed Behavior	No Reattempt	Yes Reattempt
Adolescent		
<i>With Mother</i>		
EMI	.32 (.20)	.27 (.16)
EMV	.13 (.13)	.14 (.11)
<i>With Father</i>		
EMI	.31 (.24)	.30 (.22)
EMV	.17 (.15)	.14 (.12)
Mother		
EMI	.40 (.15)	.34 (.09)
EMV	.19 (.14)	.21 (.12)
Father		
EMI	.38 (.17)	.47 (.22)
EMV	.23 (.14)	.19 (.12)

Note: Values represent mean (*SD*).

Categorical observed behavior variables were evaluated using chi-square analyses, crossing observed behavior with reattempt (yes/no) status. There was only one significant result: Adolescent unconstructiveness with father significantly predicted an increased likelihood of reattempt during the follow-up period, $\chi^2(1) = 6.55, p < .05$. Thirty-nine percent of adolescents rated unconstructive with fathers ($n = 7$) reattempted, compared to only 5 % of adolescents rated more constructive ($n = 1$). Although not statistically significant, the meanness to mother results should be noted as well. One third ($n = 3$) of adolescents who were mean to their mothers reattempted, compared to one sixth ($n = 9$) of those who were not mean ($\chi^2(1) = 1.54, ns$). Finally, though not included in formal analyses, the one mutually negative (MN) father-teen dyad included an adolescent who made a subsequent attempt.

Because reattempts during the follow-up period were positively related to level of adolescent depression assessed at time one ($r = .24, p = .051$), teen/father constructiveness

and reattempt status were further examined, controlling for baseline depression. A logistic regression indicated that adolescent constructiveness with father remained a significant predictor for reattempt, beyond the effect of depression (Wald χ^2 (1) = 4.76, $p < .05$, OR = 0.08).

Observed Behavior and Suicidal Ideation

A preliminary analysis examined the bivariate correlations between the various observed behavior measures and suicidal ideation across time points. These correlations are presented in Table 27. Adolescent, mother, and father, as well as dyadic (e.g., progress) correlations are presented separately.

As indicated by the correlational findings, observed adolescent behavior was associated with suicidal ideation during the follow-up period, especially ideation reported at six months and one year. All significant correlations were in expected directions; negative adolescent behavior at baseline was associated with increased suicidal ideation in the follow-up period. Observed parent behavior was much less frequently related to ideation; there were no significant relationships for parent EMI, EMV, or IU. Mother and father constructiveness were both related to ideation. However, in the case of father constructiveness, the relationship was not as expected; more constructive father behavior at baseline was associated with higher levels of adolescent ideation at the initial assessment. Finally, there were two significant correlations for dyadic variables: mother/adolescent mutual negativity and progress were both related to ideation in hypothesized directions.

Table 27

Correlations: Observed behavior and suicidal ideation

Observed Behavior	Baseline Ideation	6-Month Ideation	12-Month Ideation	18-Month Ideation
Adolescent				
<i>With Mother</i>				
EMI	.03	-.06	.37**	.17
Meanness	.24*	.25*	.50***	.10
EMV	.01	.06	-.15	-.04
Constructiveness	-.12	-.09	-.18	-.17
IU	.12	.14	.52***	.26*
<i>With Father</i>				
EMI	.20	.45**	.40*	-.02
EMV	-.15	-.31*	-.34*	-.10
Constructiveness	-.04	-.33*	-.32*	-.05
IU	-.09	.50**	.38*	-.02
Mother				
EMI	.18	-.14	.20	.21
EMV	-.09	-.06	-.12	-.08
Constructiveness	-.06	.04	-.17	-.29*
IU	.05	-.14	.14	.24
Father				
EMI	.05	.18	.27	-.01
EMV	.11	-.02	-.02	.10
Constructiveness	.39**	.16	.14	.19
IU	.03	.02	.05	-.01
Dyad				
<i>With Mother</i>				
MN	.05	-.06	.34**	.26*
Progress	-.10	.09	-.29*	-.19
<i>With Father</i>				
Progress	-.10	-.25	-.20	.23

* $p < .05$ (1-tailed); ** $p < .01$ (1-tailed); *** $p < .001$ (1-tailed).

Regression analyses further examined relationships between significantly correlated observed behavior variables and suicidal ideation reported during the follow-up period. Findings are grouped by dependent variable (suicidal ideation at each time point). As previously discussed, analyses included sex and age of the adolescent as statistical covariates whenever these variables were related to ideation at the zero-order level. Given

significant associations between earlier and later ideation scores, models also included control for suicidal ideation at all previous time points. Intercorrelations among suicidal ideation scores are provided in Table 28.

Table 28

Intercorrelations: Suicidal ideation scores

	Baseline Ideation	6-Month Ideation	12-Month Ideation	18-Month Ideation
Baseline Ideation	-	.38**	.34*	.37**
6-Month Ideation	-	-	.31*	.14
12-Month Ideation	-	-	-	.41**
18-Month Ideation	-	-	-	-

* $p < .05$; ** $p < .01$.

Observed Behavior and Six-Month Ideation

The first set of regressions examined relationships between observed behavior at baseline and suicidal ideation reported at six months; analyses controlled for sex and baseline ideation.

The only adolescent/mother behavior significantly associated with six-month ideation was meanness. Meanness to mothers did not add significantly to the prediction of six-month ideation after controlling for sex and prior ideation ($\Delta R^2 = .02$, $\beta = 0.14$, $t(51) = 1.03$, *ns*).

There were no significant results predicting 6-month suicidal ideation from adolescent/father EMI, EMV or constructiveness. However, after controlling for baseline ideation and sex, two effects closely approached significance: unconstructiveness with fathers ($\Delta R^2 = .07$, $\beta = -2.68$, $t(32) = -2.00$, $p = .054$) and high EMI with fathers ($\Delta R^2 = .06$, $\beta = .29$, $t(32) = 1.87$, $p = .071$); both were associated with greater ideation at six

months. When EMI, EMV, and constructiveness were entered simultaneously, not one was a significant predictor.

Because IU (Invalidating Unconstructive) behavior represented a combination of high EMI and unconstructiveness, it was evaluated in a separate regression. Controlling for sex and baseline ideation, adolescent IU behavior with fathers significantly predicted higher ideation at six months ($\Delta R^2 = .16$, $\beta = .45$, $t(32) = 3.27$, $p < .05$). This model accounted for 52% of the variance in six month ideation ($F(3, 32) = 11.76$, $p < .001$).

Observed Behavior and One-Year Ideation

A second set of regressions examined relationships between observed behavior at baseline and suicidal ideation reported at one year, controlling for age and suicidal ideation at baseline and six months.

Adolescent EMI with mother, meanness to mother, and IU with mother were all significant predictors for one-year suicidal ideation in separate linear regressions. (These variables were evaluated separately because meanness and IU were both subsets of EMI.) In every case, negative adolescent behavior with mother significantly predicted increased suicidal ideation at one year, even after control for prior suicidal ideation and age: EMI ($\Delta R^2 = .10$, $\beta = .32$, $t(38) = 2.37$, $p < .05$); meanness ($\Delta R^2 = .11$, $\beta = .35$, $t(38) = 2.48$, $p < .05$); IU ($\Delta R^2 = .20$, $\beta = .46$, $t(38) = 3.70$, $p < .01$). These models accounted for 34%, 35%, and 45% of the variance in suicidal ideation at one year, respectively.

None of the adolescent/father behaviors that were significant correlates of one-year suicidal ideation —EMI ($\Delta R^2 = .08$, $\beta = .30$, $t(22) = 1.70$, *ns*); EMV ($\Delta R^2 = .02$, $\beta = -.17$, $t(22) = -0.90$, *ns*), constructiveness ($\Delta R^2 = .06$, $\beta = -.28$, $t(22) = -1.51$, *ns*); and IU

($\Delta R^2 = .05$, $\beta = .29$, $t(22) = 1.39$, *ns*)—added significantly to the prediction of one-year ideation, after controlling for age and prior ideation. When EMI, EMV, and constructiveness were considered together, again controlling for age and prior ideation, not one was a significant predictor.

In the case of mother/adolescent negativity, MN status added significantly to the prediction of higher one-year suicidal ideation ($\Delta R^2 = .11$, $\beta = .34$, $t(38) = 2.58$, $p < .05$), after controlling for age and prior ideation. This model accounted for 36% of the variance in one-year ideation ($F(4, 38) = 5.32$, $p < .01$). By contrast, after controlling for the effects of age and prior ideation, mother/adolescent progress did not add significantly to the prediction of ideation reported at one year ($\Delta R^2 = .04$, $\beta = -.20$, $t(38) = -1.40$, *ns*).

Observed Behavior and 18-Month Ideation

A third and final set of regressions examined relationships between observed behavior at baseline and suicidal ideation reported at 18 months. After controlling for prior suicidal ideation (assessed at baseline, six months, and one year), not one of the variables investigated added significantly to the prediction of 18-month ideation: mother constructiveness ($\Delta R^2 = .05$, $\beta = -.24$, $t(33) = -1.48$, *ns*); adolescent IU with mothers ($\Delta R^2 = .01$, $\beta = .12$, $t(33) = 0.61$, *ns*); mother/adolescent mutual negativity ($\Delta R^2 = .01$, $\beta = .12$, $t(33) = 0.69$, *ns*).

CHAPTER IV: DISCUSSION

The current study investigated parent-adolescent communication in a sample of hospitalized adolescent suicide attempters, using a prospective, longitudinal design. It was expected that families of attempters would display more negative behavior than families of hospitalized non-attempters, and that negative behavior within the suicide group would be related to individual factors such as psychopathology and beliefs about problem-solving. It was also expected that negative behavior at baseline would be predictive of heightened suicidal ideation and attempted suicide during the follow-up period.

There was at least partial support for each of the primary hypotheses. With regard to group comparisons, there were no differences in observed parent behavior. However, comparisons of adolescents indicated that suicide attempters were generally more negative than psychiatric controls, especially in their display of emotional invalidation. Within the suicide group, negative ratings of conflict and pessimistic expectations for problem-solving predicted a variety of negative behaviors, for both parents and adolescents. In several cases, higher levels of psychopathology predicted more negative behavior as well. Adolescent history of both physical and sexual abuse was a predictor for adolescent negativity, although adolescent history of prior suicide attempts was not. Finally, parent behavior was unrelated to subsequent suicidality. However, adolescent negativity predicted both reattempts and future suicidal ideation.

Each of these sets of findings is discussed in more detail. Topics for discussion are grouped as follows: (a) parent findings, including group differences and prediction of parent behavior; (b) adolescent findings, including group differences and prediction of

adolescent behavior; (c) dyadic findings, including group differences and evidence for mutual negativity; (d) observed behavior and subsequent suicidality; (e) clinical implications; and (f) limitations of current research and future research directions.

Parent Findings

Parents of Attempters Compared to Parents of Psychiatric Controls

Generally, it was expected that parents of adolescent suicide attempters would display more negative, unconstructive behavior in parent-adolescent interaction than parents of clinical controls. It was also expected that parents of attempters would report more severe parent-adolescent conflict and lower expectations for problem-solving. These hypotheses were largely unsupported. Parents of attempters were not significantly different from comparison parents on measures of emotional validation (EMV), emotional invalidation (EMI), constructiveness, and invalidating unconstructiveness (IU). There were also no group differences with regard to reported conflict, relational efficacy, and expectations for problem-solving. The only near significant result indicated a possible group by sex interaction for mother EMI: Mothers of suicide attempters were more invalidating with sons, while mothers of comparison adolescents were not differentially invalidating on the basis of sex.

These findings are consistent with much of the existing self-report research identifying few differences between parents of attempters and parents of clinical controls (Wagner et al., 2003). Theoretical accounts of adolescent suicidal behavior describe high levels of parental hostility in families of attempters (e.g., Rosenbaum & Richman, 1970), and the near significant group by sex interaction for mother EMI suggests that hostility in

the mother-son relationship may represent a particular area of risk. Even so, research on child and adolescent psychopathology has established that hostile, unconstructive parenting is related to a variety of negative child outcomes (e.g., Doane et al., 1985; Patterson et al., 1992). This lack of specificity does not imply that negative parent behavior is unimportant as a predictor of adolescent suicide attempts. It may be that some forms of negative parent behavior relate specifically to attempted suicide under particular conditions that have yet to be identified, for some young people. Maternal invalidation of sons may be one such behavior.

Predicting Parent Behavior

Factors such as psychopathology and perceptions of conflict are believed to play an important role in the development and maintenance of negative interactional behavior. It was expected that high levels of psychopathology and negative beliefs about parent-adolescent conflict would predict negative parent behavior, within the suicide group.

Parent Psychopathology as a Predictor for Parent Behavior

Beginning with parent psychopathology, maternal alcohol abuse and paternal anxiety were associated with negative behavior in the expected directions. After controlling for sex of the adolescent, increases in mothers' alcohol-related impairment were associated with More Unconstructive maternal problem-solving, while increases in paternal anxiety were associated with a lower likelihood of father/teen progress. These findings are consistent with a wide body of research documenting relationships between parent psychopathology and dysfunctional parent-child interaction (e.g., Mayes & Truman, 2002; Zahn-Waxler et al., 2002).

Unexpectedly, increases in depressive symptomology were associated with more positive observed behavior. After controlling for sex of the adolescent, increases in father depression scores predicted More Constructive father behavior, while increases in maternal depression predicted mother/teen progress. These findings contradict a number of studies pointing to disturbed parent-child interaction in families with a depressed parent (e.g., Hammen, 1997). Because parent depression scores were based on lifetime history symptom counts, post hoc analyses examined relationships between recent (past year) depression and observed parent behavior. After controlling for sex of the adolescent, recent parental depression (presence or absence) was not related to observed parent behavior. The meaning of the initial finding remains unclear. It may be that parents with a history of greater depression behaved more positively because they were better able to understand their distressed adolescents' perspective. Or, parents who reported greater depressive symptomology may have been more willing to discuss their own feelings. This type of willingness may have been a factor in fathers' constructiveness, or a contributor to mother/teen progress.

Parent Cognitions as Predictors for Observed Parent Behavior

Another series of analyses examined relationships between parents' beliefs about parent-adolescent conflict and observed interactional behavior. Over the past two decades, there has been growing recognition of the pivotal role played by cognitions in family life, particularly as they relate to parenting and parent-child interaction (Bugental & Johnson, 2000). After controlling for sex of the adolescent, perceptions of more severe parent-teen conflict rated prior to the observed interaction predicted unconstructiveness in problem-

solving by mothers, less emotional validation by fathers, and a lower likelihood of father/adolescent progress. Research suggests that parent-reported conflict may be associated with negative attributions for adolescent behavior (e.g., a belief that adolescent behavior is selfish and blameworthy) (Grace, Kelley, & McCain, 1993). Parents who reported severe conflict in the current study may have attributed much of the blame for that conflict to adolescents. If so, negative attributions may have interfered with positive behavior. This process would be consistent with a number of other studies that have linked negative parent attributions to negative parent behavior (Miller, 1995).

Continuing with cognitive predictors, negative beliefs about parent-adolescent relational efficacy (i.e., the dyad's ability to solve problems successfully) were associated with both maternal and paternal unconstructiveness and failure to achieve progress in the interaction, again for both mothers and fathers. Like self-reported conflict, relational efficacy has been linked to attributional bias. Marital research indicates that spouses who report low relational efficacy are more likely to make attributions that maintain relationship problems (Vanzetti, Notarius, & NeeSmith, 1992). This could occur for parents as well; negative attributions could be a mediator between parents' relational efficacy and their unconstructive behavior. In any case, the association between parents' efficacy ratings and dyadic failure to progress suggests that parents' beliefs about relational efficacy may help maintain parent-adolescent conflict, in families of adolescent suicide attempters.

Relational efficacy involves generalized expectancies for problem-solving. Parents' specific expectancies for problem-solving were examined as well. Mothers'

expectations for making progress in the videotaped interaction were unrelated to their observed behavior. However, there was a significant relationship for fathers: Pessimistic expectations for problem-solving predicted more frequent displays of emotional invalidation by fathers and a lower likelihood of father/adolescent progress. Relative to the other cognitive variables (for mothers and fathers), father expectations were the strongest predictors of observed behavior. Even so, these relationships were moderate in strength, and it is likely that a range of other factors (e.g., child factors, contextual factors) also account for differences in parent behavior.

Adolescent Findings

Adolescent Suicide Attempters Compared to Psychiatric Controls

It was expected that adolescent suicide attempters would behave more negatively in parent-adolescent interaction than a comparison group of adolescent inpatients with no history of suicidal behavior. It was further expected that attempters would report more severe conflict with parents and more pessimistic beliefs about parent-adolescent problem-solving. There were no group differences in adolescents' reported conflict, relational efficacy, or expectations for the videotaped interaction. There were, however, several major differences in observed behavior. Compared to psychiatric controls, adolescent suicide attempters displayed significantly more emotional invalidation (EMI) towards mothers, including more "Very Mean" behavior, an extremely negative subtype of EMI. There were similar tendencies for attempters to behave more negatively with fathers; compared to psychiatric controls, adolescent suicide attempters tended to exhibit more

EMI with fathers. In father interactions, they were also somewhat more likely to be rated Invalidating Unconstructive (IU).

Taken together, these findings indicate that adolescent suicide attempters were particularly likely to interact with parents, especially mothers, in ways that undermined not just the problem-solving process, but the parent as well. Attempters were no different from psychiatric controls on measures of simple constructiveness. Instead, they differed in their display of behavior that was invalidating or undermining (e.g., criticism, disagreement, guilt induction). In the case of “Very Mean” adolescents (all of whom were suicide attempters), the undermining behavior was extreme; it involved clear and repeated rejection, disparagement and/or contempt.

These findings are consistent with a number of studies focusing on individual characteristics of adolescent suicide attempters. Research suggests that attempters may have particular difficulty in the context of affectively charged interpersonal conflict (e.g., Wilson et al., 1995). Responses may be angry and aggressive (Lehnert et al., 1994; Wagner & Piquet, in press), with attempters unable to regulate their heightened emotional arousal (Zlotnick et al., 1997). The capacity for effective management of emotions, including adaptive emotional expression, is essential to positive coping (Eisenberg, Fabes, & Guthrie, 1997). Likewise, it is necessary for productive parent-adolescent communication (Kobak & Ferenz-Gillies, 1995). In the current study, adolescent suicide attempters may have been unable to manage their negative emotions, perhaps especially their anger. Overwhelmed, they may have directed negative emotion outward, in the form of emotional invalidation towards parents. This pattern of behavior may be a form of

reactive aggression, i.e., interpersonal hostility occurring in response to real or perceived threat (Dodge, Price, Bachorowski & Newman, 1990; Shields & Cicchetti, 1998). Or, it may be the strategy of an insecurely attached child, an effort to signal the parent or gain the parent's attention (Cassidy, 1994).

Notably, other research has documented relationships between negative emotional behavior towards parents and psychological disturbance. For example, child criticism of parents has been linked to affective symptomology (e.g., Hamilton, Hammen, Minasian & Jones, 1993), while negative voice tone with parents has been linked to schizophrenia (Asarnow, Lewis, Doane, Goldstein, & Rodnick 1982). Emotional invalidation of parents is not unique to adolescent suicide attempters. However, the level and type of invalidation expressed by attempters may be relatively uncommon. As has been suggested (e.g., Aldridge, 1984), suicidal behavior may itself be a form of angry, invalidating language. At times this invalidation may be directed outward at others; at other times, tragically, it may be directed at the self.

Predicting Adolescent Behavior

Adolescent Psychopathology and Prior Abuse as Predictors of Adolescent Behavior

It was expected that certain individual factors would be related to negative adolescent behavior, within the suicide group. Beginning with psychopathology, it was expected that increases in adolescent symptomology would be associated with more negative observed behavior. Four broadband symptom areas were examined (mood, anxiety, disruptive behavior, and substance abuse), across the range of observed behaviors. After controlling for sex, only disruptive symptomology was a significant predictor for

adolescent behavior; as disruptive symptoms increased, adolescents were less likely to achieve progress with fathers. Research indicates that conduct-disordered children frequently exhibit aversive, angry behavior (Dadds, Sanders, Morrison & Rebgetz, 1992; Gardner, 1992). Such behavior could easily impede problem-solving progress. There was a trend for disruptive symptoms to predict meanness to mothers as well. This is not surprising. As with other forms of disruptive behavior, meanness may be an aggressive conflict tactic employed to bring an end to certain parent behavior perceived as aversive, and may be especially likely to be chosen if it has “worked” in the past (Snyder & Patterson, 1995). Finally, there was a trend for adolescent anxiety symptoms to predict Invalidating Unconstructive (IU) behavior with fathers. This possible relationship is more difficult to interpret. Uncertainty, worry, or fear may have caused adolescents to focus on negative aspects of the problem and/or parent, resulting in negative, undermining behavior. It is unclear why this would occur with fathers, but not mothers. However, because all adolescents who were rated IU with fathers were female, the link between adolescent anxiety and IU behavior may reflect some type of disturbance in the father-daughter relationship.

In addition to psychopathology, a series of analyses examined adolescent history of abuse as a predictor for interactional behavior. Compared to adolescents with no prior abuse, victims of both physical and sexual abuse were significantly more likely to be rated IU with mothers. In addition, there were several noteworthy trends: Victims of both types of abuse were somewhat more likely to be “Very Mean” to mothers, more emotionally invalidating with fathers, less constructive with fathers, and less likely to achieve

father/adolescent progress. Returning to the theme of emotion regulation, research indicates that abuse may foster emotion dysregulation (e.g., angry reactivity) which in turn leads to aggressive or otherwise unconstructive behavior (Shields & Cicchetti, 1998). Abuse is an established risk factor for adolescent suicide attempts (Wagner, 1997). It is likely that both the suicidal and negative interactional behavior of adolescent abuse victims relate to an underlying process of emotion dysregulation.

Adolescent Cognitions as Predictors for Adolescent Behavior

It was expected that adolescents' beliefs about conflict and problem-solving with their parents would predict observed adolescent behavior, within the suicide group. Like parent cognitions, child and adolescent cognitions are believed to relate in important ways to both emotion and action (Bugental & Johnston, 2000). There were a number of significant findings. Adolescent perceptions of severe conflict, low relational efficacy, and pessimistic expectations for the videotaped interaction each predicted a range of negative behaviors: high EMI, meanness, and IU with mothers as well as lack of dyadic progress with mothers and fathers. Low expectations for the videotaped interaction also predicted more unconstructive behavior by adolescents, with both mothers and fathers.

In a number of ways, these findings mirror those reported for parents. Similar processes may help explain the results. Like parents, adolescents who perceive high severity of conflict and poor relational efficacy may tend to make an array of negative attributions about parents and parent behavior (Grace et al., 1993). In turn, these negative attributions may promote unconstructive, invalidating behavior. With regard to expectations for problem-solving, it has been suggested that family-related expectancies

may have particular salience during adolescence; negative feelings as well as behaviors may arise when adolescents compare their families to idealized families and find their own to be lacking (Collins, 1990). Thus, in addition to low expectations per se, a sense of resentment or frustration related to violated expectancies may be another aspect of the generally negative “set” that adolescent suicide attempters bring to the problem-solving situation (Sadowski & Kelley, 1993). Here again, though, it is important to recognize that negative adolescent behavior is multidetermined, with cognitive variables accounting for only a low to moderate portion of the variance in observed adolescent behavior (Dodge et al., 1990).

Dyadic Findings and Evidence for Mutual Negativity

Progress

In addition to separate ratings of individual interactant’s behavior, the current study included two dyadic measures for which raters considered parents and adolescents together. One of these dyadic variables, progress, was examined in relation to the individual predictors, as described above. Progress was also examined for group differences. It was expected that adolescent suicide attempters and their parents would be less likely to make significant progress in problem-solving than non-attempters and their parents. This expectation was unsupported. As with many other studies of attempters (e.g., Adams et al., 1994), progress in problem-solving did not differentiate families of adolescent attempters from families of clinical controls.

Mutual Negativity

Research on families of children with a variety of problems has documented a relationship between mutual negativity in parent-child interaction and child maladjustment (e.g., Asarnow et al., 1982; Hamilton et al., 1993). In the current study, it was expected that parent and adolescent negativity would tend to co-occur. Correlations between parent and adolescent behavior supported this hypothesis, both for the entire sample and within the suicide group, especially for mothers and adolescents. These correlations revealed linkages across every type of mother and adolescent behavior (EMI, EMV, Constructiveness and IU). Father and adolescent EMI were also significantly related.

Mutual negativity was examined more directly through the identification of mutually negative (MN) dyads, i.e. dyads in which both interactants were rated invalidating unconstructive. It was expected that there would be a greater proportion of MN dyads in the suicide group, compared to psychiatric controls. Comparison of the two groups, however, revealed no significant differences. A more sensitive measure of mutual negativity (e.g., based on reciprocated negative statements, rather than overall scores) might have proven more effective in identifying group differences.

Sex Differences and Mutual Negativity

Because research on family communication suggests that parents and adolescents may communicate differently depending on sex of the child (Noller, 1995), sex was included as an independent variable in all models examining observed behavior. Results of these analyses provide clues about mutual negativity in families of adolescent suicide attempters. Within the suicide group, mothers of suicide attempters were less positive and

more negative with sons than with daughters. They displayed less EMV and more EMI with sons, and were more likely to be rated IU (invalidating unconstructive) with sons as well. Findings for adolescent behavior suggest a pattern of reciprocated negativity; male attempters tended to display more EMI with mothers. Perhaps not surprisingly, there was also a trend for mothers and male attempters to make less progress in problem-solving. Looking across groups, mothers were less positive and more negative with sons as well. Similarly, male adolescents were more negative with mothers than females; they tended to display more EMI and were more likely to be rated unconstructive. Here again, mothers and sons were less likely than mothers and daughters to achieve progress in problem-solving.

In contrast to these findings, a number of studies suggest that mother-daughter relationships are especially contentious (e.g., Smetana, Abernethy & Harris, 2000). Other research suggests that frequent, angry conflict with mothers may be particularly detrimental for males (Tesser, Forehand, Brody & Long, 1989). When mother-adolescent relationships are stressful, adolescents may turn to fathers for extra support (Montemayor, 1982). This may have happened to some extent in the current study. Male adolescents, especially suicide attempters (who received the highest levels of maternal EMI) were more positive with fathers than females. They were less invalidating with fathers and within the suicide group, tended to display more EMV as well. Invalidated by mothers, male adolescents may have been concerned about alienating their other source of parental support. Unlike mother behavior, father behavior was unrelated to sex of the adolescent.

In any case, this pattern of findings is consistent with research indicating that male adolescents tend to “yield” more to fathers than females (Collins, 1990).

Observed Behavior and Subsequent Adolescent Suicidality

It was expected that negative behavior (on the part of both parents and adolescents), as well as lack of dyadic progress, would be associated with suicidal ideation and reattempts during the 18-month follow-up period. Self-reported family dysfunction has been associated with later suicidality in prospective studies of adolescent suicidal behavior (e.g., King et al., 1995). However, there have been no reported prospective studies of family factors using observational methods. In the current study, each of the negative adolescent behaviors observed at baseline (emotional invalidation, unconstructiveness, and invalidating unconstructiveness) was a predictor, or near predictor, for suicidal ideation at some point during the follow-up period. Controlling for suicidal ideation at previous time points, negative behavior with fathers (IU, and a trend for EMI and unconstructiveness) predicted ideation at six months, while negative behavior with mothers (EMI, meanness, and IU) predicted ideation at one year. Parent behavior and dyadic progress were unrelated to adolescent suicidal ideation in the follow-up period, although mother/adolescent mutual negativity predicted ideation at one year.

To some extent, there was a similar pattern of results for reattempted suicide. Observed adolescent behavior significantly predicted reattempts during the follow-up period, while parent behavior and dyadic progress were not significant predictors. More specifically, unconstructiveness with fathers placed adolescents at greater risk for a repeated suicide attempt. After controlling for baseline depression, the odds of reattempted

suicide were over 12 times higher for adolescents rated More Unconstructive with fathers. It is unclear why unconstructiveness with fathers, but not mothers, would be predictive of reattempts. In general, adolescents tend to argue more with mothers than with fathers (e.g., Montemayor, 1982). As a result, unconstructive behavior with mothers may be more common, possibly less salient as a contributor to suicidal behavior. Research with non-disturbed samples suggests that adolescents are typically more restrained in their conflicts with fathers (e.g., Steinberg, 1981). Thus, it is also possible that unconstructive behavior with fathers is an indicator of broader problems with impulse control. Finally, it has been suggested that the father is a “lifeline” for suicidal adolescents, especially when relations with the mother are strained (King et al., 1993). Regardless of adolescent-mother relationships, positive father-adolescent relationships may be protective for suicidal adolescents. Unconstructive adolescents may have been unable to connect with fathers and receive needed support; this inability, in turn, may have placed them at greater risk.

The pattern of observed relationships between adolescent negativity and subsequent suicidality (both ideation and reattempts), along with the absence of such relationships for parent behavior, is perhaps the most striking result of the current study. Many theories of adolescent suicidal behavior, along with many research studies, have focused on parent factors (e.g., parent hostility, support, etc.). A focus on parent factors is certainly valuable and even necessary. However, the current results make it clear that adolescent factors play a central role as well. Future research will need to evaluate the relative contributions of parent and adolescent negativity and the interplay between the two. At this point it is apparent that adolescent negativity relates in important ways to subsequent suicidality.

As previously discussed, it is likely that many of the negative behaviors displayed by adolescent suicide attempters relate to an underlying process of dysregulated emotion. More specifically, they indicate problems in coping with a certain type of stress – the stress of conflict with parents about issues that typically revolve around parents’ perceived problems with the adolescents’ behavior (e.g., shirking responsibilities, not following rules, choice of friends, etc.). It seems likely that adolescent negativity in such conversations may be due, in part at least, to perceived pressure, criticism, lack of trust, etc. In the current study, conflict topics were similar to those experienced by most adolescents and parents (e.g., Laursen 1995). However, adolescents who behaved most negatively were those who perceived conflicts as especially severe and intractable. This sense of intractability, that problems could not be worked out, may have led adolescents to feel incompetent and hopeless. Low self-worth and hopelessness, in turn, may have contributed to suicidal ideation and even self-harm. It is worth noting that many of the thoughts associated with suicidal ideation (e.g., “My family would be better off without me,” “I am a hopeless person”) are in essence emotionally invalidating, an extreme version of the statements often directed at parents, instead directed at the self.

Clinical Implications

The transitions of adolescence are stressful for every family. Conflict is to be expected, and the ways parents and adolescents manage this conflict help determine whether problems are resolved or whether they escalate to clinically significant levels (Robin & Foster, 1989). Family conflict is frequently cited as a precipitant for adolescent

suicidal behavior (e.g., Negron et al., 1997). Results of the current study suggest two primary areas for improving conflict resolution in families of adolescent attempters.

The first suggested target involves the family's management of negative affect. Anger and other negative emotions are regularly experienced in parent-adolescent conflict. Adolescent suicide attempters, as well as mothers of male attempters, may find these emotions particularly difficult to manage. In the current study, they frequently displayed emotionally invalidating behavior including criticism, mindreading, and disagreement. A subset of suicide attempters was extremely hostile and rejecting.

As described by Calkins (1994), the development of emotion regulation is an interactive process – both parents and children contribute. By adolescence, emotional styles may be entrenched, but parents continue to impact emotional functioning (Zahn-Waxler, Klimes-Dougan, & Kendziora, 1998). Models for treatment of adolescent suicide attempters have recognized the value of targeting affect regulation (e.g., Brent, 2001). The current results emphasize the need for interventions designed to improve emotion regulation within the attempter's family, e.g., training in constructive expression of emotion, management of physiological arousal, and strategies for self- and other-soothing (Snyder, Schrepferman, & St. Peter, 1997). While not specific to families of suicide attempters, there is evidence that including anger management training in treatment with parents and adolescents may reduce the occurrence of negative, insulting behavior (Stern, 1999).

A second area for intervention is suggested by findings related to the prediction of parent and adolescent behavior. Parent and adolescent behaviors were related to several

cognitive factors, including perceptions of conflict, beliefs about relational efficacy (i.e., the ability to solve problems together), and specific expectations for the videotaped interaction. In every case, negative beliefs were related to negative behavior. Modifying these negative beliefs could help promote more positive behavior. Problems could be reframed and negative attributions could be relabeled (Alexander, Waldron, Barton, & Mas, 1989). Success within the therapy setting could be used to foster relational efficacy (Coleman & Karraker, 1997). Expectations and goals for interaction could be clarified as well. Hastings and Grusec (1998) suggest that parental goals for managing parent-child disagreement are important contributors to parent behavior: "Relationship-centered" goals (i.e., goals pertaining to fostering harmonious bonds among family members) are associated with warm, negotiating, and cooperative parenting. Establishing such goals could represent another valuable cognitive strategy.

Limitations of Current Research and Future Directions

Although the current study addressed many shortcomings of past research on families of adolescent suicide attempters, it was limited by several factors as well. Perhaps the greatest limitation was the comparison group sample size. The number of participating comparison fathers was especially low ($n = 16$). Reduced numbers in the comparison group reduced statistical power, and so likely hindered the ability to detect between group differences.

Several other limitations relate to sampling. Only psychiatric inpatients were assessed. Research indicates that these adolescents tend to have more psychopathology than attempters recruited from other settings (e.g., hospital medical units) (Spirito et al.,

1989). Thus, observed patterns of interaction may not generalize across treatment settings. Also, there were many refusals at the time of recruitment. This is perhaps not surprising because eligible families were experiencing a crisis. However, there are a number of ways that non-participating families may have differed from families who elected to participate (e.g., more severely disturbed families may have tended to refuse). Another major limitation was the lack of ethnic diversity. There were few minority participants in the current study. It is therefore not possible to generalize results to minority populations. Even with a greater representation of minority families, however, results may have been problematic. The coding system was not developed using minority families; recent observations of African American families, for example, suggest that evaluation of families from diverse cultural backgrounds may require adaptation of measures for specific cultural groups (Smetana et al., 2000).

Observational methods present unique challenges to the family researcher (Jacob, Tennenbaum, & Krahn, 1987). One of these challenges is behavioral sampling. The current study examined parent-adolescent communication in a staged, conflict-oriented interaction. While meaningful, this type of interaction probably does not resemble the “brief, unfocused, and variable encounters that dominate daily exchanges” (Sillars, 1991, p. 210). Patterns of observed behavior measured in a single, somewhat contrived setting, and at one point in time, cannot necessarily be assumed to represent more mundane, naturally occurring parent-adolescent interaction. Although the observational methods used in this study provided useful data regarding parent-adolescent interactions, a more

complete analysis would be facilitated by assessing adolescents and parents on repeated occasions and in multiple settings.

Another related concern involves reactivity – the extent to which participants may have behaved differently because they were being observed. Possible reactivity effects cannot be ignored. Even so, research indicates that family behavior is usually not dramatically changed when it is observed (Jacob et al., 1987). Parents' and adolescents' attempts to perform in socially desirable ways often seem to be quickly overcome by well-established patterns of family relating (Sillars, 1991).

Detecting family patterns of relating was a primary goal of the current study. However, given the level of measurement and analysis, conclusions are tentative at best. Future observational studies of families of adolescent suicide attempters would benefit from a more fine-grained examination of the behaviors in question. For example, the current study assigned codes for every speaker "turn" (uninterrupted block of speech). This ignores the likelihood of important "within turn" differences. Similarly, the use of summary codes (e.g., EMI for all emotionally invalidating statements) precluded examination of within category differences (e.g., different forms of EMI). Because adolescent attempters (and possibly mothers of male attempters) were distinguished from psychiatric controls on the basis of EMI, a closer focus on specific subtypes of EMI-related behaviors (e.g., criticism, guilt induction) would likely prove fruitful. Along this line, sequential analysis—which requires coding of much smaller behavioral units than turns—might uncover patterns of mutual negativity. In general, there is a need to more closely examine interrelationships between parent and adolescent behavior. More complicated,

but also important would be examination of patterns at the triadic level (for two-parent families). Research suggests that “adding a parent” has important implications for observed behavior; for example, in non-disturbed families, including the mother appears to reduce the quality of father-son interaction, while including the father is related to improved mother-son functioning (Gjerde, 1986). This type of examination could shed light on any possible protective role played by fathers.

Finally, because results suggest problems with emotion regulation in families of adolescent suicide attempters, as well as links between cognition and behavior, future research should include measures of both emotion and cognition. Better understanding of the ways these factors relate to observed behavior (and the interplay among the three) might facilitate the development of effective prevention and treatment interventions.

Conclusion

The current study investigated parent-adolescent communication in a sample of hospitalized adolescent suicide attempters, using a prospective longitudinal design. The inclusion of a psychiatric control group allowed for identification of interactional factors that differentiated families of attempters from families of other distressed youth. Although there was no indication that parents interacted with adolescent attempters in unique ways, adolescent attempters were more emotionally invalidating with their parents than were psychiatric controls, and certain aspects of adolescent negativity predicted both reattempts and future suicidal ideation. Further, negative beliefs about parent-adolescent conflict were linked to negative behaviors of adolescent attempters as well as their parents. The findings thus revealed that it is possible to observe distinct patterns of interactions in

families of suicide attempters that are consistent with relational characteristics that have long been discussed in the theoretical and empirical literatures. They also point to possibly fruitful avenues for intervention and prevention at both the behavioral and cognitive levels.

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