

2003

Factors associated with adolescent suicidal gestures

Heidi Jennifer Liss
University of South Florida

Follow this and additional works at: <http://scholarcommons.usf.edu/etd>

 Part of the [American Studies Commons](#)

Scholar Commons Citation

Liss, Heidi Jennifer, "Factors associated with adolescent suicidal gestures" (2003). *Graduate Theses and Dissertations*.
<http://scholarcommons.usf.edu/etd/2952>

This Dissertation is brought to you for free and open access by the Graduate School at Scholar Commons. It has been accepted for inclusion in Graduate Theses and Dissertations by an authorized administrator of Scholar Commons. For more information, please contact scholarcommons@usf.edu.

FACTORS ASSOCIATED WITH ADOLESCENT SUICIDAL GESTURES

by

HEIDI JENNIFER LISS

A dissertation submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy
Department of Psychology
College of Arts and Sciences
University of South Florida

Major Professor: Vicky Phares, Ph.D.
Karen Brandon, Ph.D.
Judy Bryant, Ph.D.
Melinda Forthofer, Ph.D.
Carnot Nelson, Ph.D.

Date of Approval:
April 2, 2003

Keywords: suicide, hopeless, impulsive, children, inpatient

© Copyright 2003, Heidi Jennifer Liss

Table of Contents

List of Tables	iii
Abstract	iv
Chapter 1 Introduction	1
Demographic Correlates	3
Family Factors	9
Cognitive Factors Associated with Suicide Attempt	10
Impulsivity and Developmental Level	30
Models of Suicidal Behavior	36
Developmental Explanations	39
Summary	40
Hypotheses	43
Chapter 2 Method	46
Participants	46
Assessment Measures	47
Adolescent Behavior Checklist (ABC)	47
Children's Depression Inventory (CDI)	48
Hopelessness Scale for Children (HSC)	49
Pediatric Anger Expression Scale (PAES)	50
Suicide Intent Scale (SIS)	50
Demographics	51
Procedure	51
Chapter 3 Results	55
Site Comparisons	55
Item Analyses	56
Descriptive Statistics	57
Correlations	59
Hypothesis 1: Hopelessness, depression, and impulsivity In older and younger participants	63
Hypothesis 2: Gender differences in depression and Impulsivity	66
Hypothesis 3: Anger and impulsivity in suicidal gestures	67
Hypothesis 4: Family composition and suicidal gesture	68
Hypothesis 5: Socio-economic status and suicidal gesture	68
Hypothesis 6: Ethnicity and suicidal gesture	69

Chapter 4	Discussion	71
	Hypothesis 1	71
	Hypothesis 2	75
	Hypothesis 3	76
	Hypothesis 4	77
	Hypothesis 5	77
	Hypothesis 6	78
	Overall Results	79
	Study Limitations	80
	Future Directions	85
References		88
Appendix A	Demographic Information Sheet	94
Appendix B	Adolescent Behavior Checklist	96
Appendix C	Children's Depression Inventory	98
Appendix D	Hopelessness Scale for Children	102
Appendix E	Pediatric Anger Expression Scale	104
Appendix F	Suicide Intent Scale	106
Appendix G	Consent Forms	108
About the Author		End Page

List of Tables

Table 1	Chi-Square Comparisons Between Sites	56
Table 2	Internal Reliability of Measures	57
Table 3	Variable Means and Standard Deviations for all Variables by Group	58
Table 4	Chi-Square Analyses for Gesturers vs. Non-gesturers	60
Table 5	Overall Correlation Matrix	61
Table 6	Correlations for Non-gesturers	62
Table 7	Correlations for Gesturers	63
Table 8	ANOVA Results Comparing Suicidal Gesturers to Non-gesturers by Age Group	65
Table 9	Ethnicity and Suicidal Gesture	70

Factors Associated with Adolescent Suicidal Gesture

Heidi Jennifer Liss

ABSTRACT

Incidence of suicide has been shown to increase dramatically during adolescence. Despite an established pattern of depression and hopelessness leading to suicide in adults, no such pattern emerges in the adolescent literature. Recent investigations suggest that impulsivity may play a key role in adolescent suicide attempts. This study examined the role of impulsivity in adolescent suicidal gestures, as well as the relationships among demographic variables, anger expression, impulsivity, and suicidal behavior. A total of 100 participants (ages 11-17; 71 females and 29 males) were recruited from 2 inpatient crisis centers for children. The Children's Depression Inventory, Hopelessness Scale for Children, Adolescent Behavior Checklist, Pediatric Anger Expression Scale, and Suicide Intent Scale were administered to inpatients, and demographic information was obtained (age, gender, ethnicity, income, and structure of family). It was hypothesized that patterns of depression, anger, hopelessness, and impulsivity would vary by age, gender, ethnicity, and suicidality (e.g., suicidal gesture vs. no gesture). The large majority of hypotheses were not supported. Results are explained in terms of alternative theories for the role of impulsivity in adolescent suicidal gestures.

Chapter 1

Introduction

Although there are many causes of death, the most tragic causes are those that are viewed as preventable. Suicide, or the taking of one's own life, is certainly viewed as a preventable cause of death. Although the rate of suicide is small for the general population, suicide regularly falls in the top three causes of death for the age group of 15-24, often vying with homicide and accidents for place as the leading cause of death for this age group (Kalafat, 1990; Center for Disease Control, 1999). Rate of suicide is low for children, however, at around the age of puberty, the rate of suicide skyrockets (Fremouw, de Perczel, & Ellis, 1990; Center for Disease Control, 1999).

Incidence of adolescent suicide has increased dramatically over the last several decades (Wagner, 1997). According to Kids Count (Annie E. Casey Foundation, 2002), approximately 1,615 people ages 15-19 died of suicide in the United States in 1999. It is possible, however, that this rate may be an underestimate. Society generally does not approve of suicide, and some religious groups deny burial to those who have committed suicide. It is possible that some deaths by suicide may be misreported due to familial concerns (Sheras, 1992). Additionally, some suicides may appear to be due to natural causes (Sheras, 1992). For example, what appears to be a car accident, or an unintended overdose, may actually be the result of a conscious suicide attempt.

The inability to determine intent of the victim can cause underestimation of suicide rates. Regardless, there is strong evidence that many teens seriously consider suicide. Approximately 20% of high school students in the U.S. reported serious levels of suicide ideation in 1999, and 8% actually attempted suicide (American Foundation for Suicide Prevention, 2002).

According to Husain and Vandiver (1984), there are a large number of factors that have been associated with adolescent suicide attempts. These associated factors fall into four broad categories: family factors, social or environmental characteristics, child characteristics, and precipitating reasons. Family factors associated with adolescent suicide attempts may include loss of a family member, divorce, parental dysfunction, birth order, or poor parenting skills. Social or environmental issues correlated with suicide attempts include social isolation, societal factors, lack of mobility, achievement pressures, powerlessness, school problems, religious issues, crime, or socio-economic status. Characteristics of adolescent suicide attempters are suggestibility, hypersensitivity, pathology, low IQ, delayed developmental advancement, gender, low stress tolerance, poor impulse control, affective factors (depression, low self-esteem, magical thinking, loneliness, hopelessness), and behavioral factors (aggression, hyperactivity, withdrawal). In addition to these factors, there may be other underlying problems or precipitating events that cause increased risk for suicide, such as loss, accident, pregnancy, disease, or imprisonment that may have an impact on suicide risk. Many of these factors, however, do not fall neatly within categories. For instance, family factors and environmental

characteristics can have an impact on measured IQ. Poor coping skills may not put a child at risk for suicide until a catastrophic event occurs. To complicate categorization further, studies conducted on adolescent suicide tend to examine a variety of factors simultaneously. This review of the literature will examine the demographic correlates, family factors, and cognitive factors associated with suicidal thought and behavior. Additionally, the variables of impulsivity and developmental level will be examined as possible correlates of suicidal ideation and behavior. Finally, a discussion of theoretical models of suicide attempt will be provided.

Demographic Correlates

The main demographic correlates examined in this section are gender, age, socioeconomic status, and school variables. Other references to demographic variables may be made in other sections. As noted earlier, many studies examine multiple potential correlates simultaneously, which leads to difficulty in classification.

Gender differences in a high school population were examined by Rich, Kirkpatrick-Smith, Bonner, and Jans (1992). Eighth through twelfth graders (ages 14-19) were recruited from an upper middle class school district in Pennsylvania for participation in the study. Participants were 328 girls and 285 boys, and 97% were of Caucasian ethnicity. Measures administered were the Scale for Suicide Intent, Life Stress Scale, Hopelessness Scale, Reasons for

Living Inventory, UCLA Loneliness Scale, Self-Rating Depression Scale, and Alcohol and Drug Survey.

A MANOVA was performed to determine if an interaction between gender and grade existed. Although a main effect was found for gender, no effect was found for grade, and no interaction effect was found. Girls reported significantly higher levels of depression and suicidal thoughts, while boys reported a significantly higher level of loneliness, and greater (but not significantly greater) amount of substance abuse. Gender differences were examined for each of the five subscales of the Reasons for Living Inventory. Findings were that girls were significantly more likely to indicate that fear of death and injury kept them from attempting suicide, while boys reported that fear of social disapproval was a significant discourager. The authors suggested that this is consistent with Rosenthal's (1981) explanation of the higher rate of suicide attempts for girls, but higher rate of completed suicide for boys. Boys fear the stigma of not being successful, so may make special efforts to ensure success. Girls report more depression and suicidal thoughts, so may be more likely to attempt suicide, but fear of death and injury may lead to the use of less lethal means of suicide. No gender differences were found for hopelessness, life stress, social drinking, or parental substance abuse. Certain properties of this sample may lead to difficulty in replication and generalization. Firstly, participants were taken from a community sample, so it is unclear whether results of this study would generalize to a clinical population. Secondly, the participants in this study came from families of high socioeconomic status, so responses may vary in moderate and

lower socio-economic groups. Finally, the participants were predominantly Caucasian, and it is unclear whether ethnic differences could be a factor in response patterns.

Age and gender differences in suicidal ideation and attitudes toward schoolwork were examined by Butler, Novy, Kagan, and Gates (1994). Participants were recruited from a public school system. Forty high school (25 girls, 15 boys), 46 middle school (33 girls, 13 boys), and 18 elementary school (7 girls, 11 boys) children had been referred to see guidance counselors, and were found to have suicidal ideations. A matched group (by gender and race) of randomly selected non-ideators was used for comparison. The sample was approximately 85% Caucasian, 8% Hispanic, 6% African-American, and 1% Asian-American. The only measure administered was the Student Attitude Measure (SAM), which has five scales that tap into desire to perform well in school, confidence in academic ability, beliefs of others' appraisals of their academic potential, perceptions of ability to control their performance, and ability to evaluate their own work. The SAM was completed by children of different grade levels throughout the entire school system.

Suicide ideators were found to differ from non-ideators in that the average scores on all five scales of the SAM were significantly lower for suicide ideators than for their non-ideating peers. This suggests that they have poorer perceptions of their academic abilities, lower motivation to perform well in school, and feel less control over their school performance. Elementary school children showed significantly higher SAM scores than their middle school and high school

counterparts on three of the scales, which tapped into motivation, control over performance, and ability to evaluate work. No significant differences were found between middle school and high school students on the SAM. This lack of difference may indicate that younger students have not yet formed negative attitudes toward school that seem to develop among middle school students and persist into high school. Female participants showed higher scores than males on two of the SAM scales, including one which tapped into motivation to perform well in school and another which tapped into perceptions of control over performance. No interaction effects were found. One problem with this study is that it did not examine actual suicide attempters, who may differ from those who are simply suicide ideators. Another problem is that there was no actual measure of suicide ideation. This means that suicide ideation may not have been occurring at the time that the SAM was completed. Additionally, there was no measure of the level of suicidal ideation, which may vary significantly across those identified as ideators. There is also no way to know whether or not participants in the control group had suicidal thoughts (e.g., they may be unidentified ideators). One result that the authors did not comment on was the higher number of identified male ideators in the elementary school sample. Both middle school and high school samples had higher numbers of female ideators than male ideators. This provides some evidence that girls change as they reach adolescence, a phenomenon that has been found in other literature.

School achievement, socioeconomic status, educational goals, and depression were examined for 26 suicide attempting youngsters ages 9-18, and

compared with results for 725 non-attempters (Lewis, Johnson, Cohen, Garcia, & Velez, 1988). Participants were part of a longitudinal study of child psychopathology. Parents (generally maternal figures) were initially interviewed in 1975, when participants were 1-10 years of age. This study was conducted in 1983-1984, when participants were 9-18 years old. Fifty-four participants were added during this time period, in order to partially counterbalance the 252 participants who were not available for follow-up. During this phase of the study, both parent and child were interviewed. In the majority of cases, it was the mother, or maternal caretaker, who was interviewed (98.4% of the sample). Both child and parent were queried about whether the child had made any suicide attempts, about the child's level of school achievement, and about the child's academic aspirations. Additionally, both child and parent completed a version of the Diagnostic Interview Schedule for Children (DISC for children and DISC-P for parent) in order to tap into the child's level of depressive symptoms. Finally, the reporting parent was asked about the family income, both parents' education, and parental employment.

Only 3.5% of the participants (26 cases) were classified as having attempted suicide (18 girls, 8 boys). Those participants who had attempted suicide reported significantly lower school achievement, reported themselves as significantly more depressed, and tended to come from a lower income household. Although level of academic aspirations was approximately the same for both suicide attempting and non-attempting participants, parents of suicide attempting participants reported significantly lower academic aspirations for their

children when compared with parents of non-attempting children. Depression was found to mediate the relationship between school achievement and suicide attempt, whereas socioeconomic status and academic aspirations (of both parent and child) were not found to be mediators of this relationship.

Results of these studies provide preliminary support for some differences based on gender, age, socioeconomic status, and school performance. Research suggests that adolescent girls show higher levels of depression and suicidal thought, than do boys, however this gender difference does not exist in younger samples (elementary school age). Adolescent boys are more likely to report loneliness. Adolescent girls and boys also report differing reasons for not attempting suicide, with girls showing more fear of injury or death, and boys reporting fear of social disapproval. No gender differences were noted for hopelessness or life stress. Suicide ideators were more likely to come from lower income homes, show poorer perceptions of their academic abilities, lower motivation to perform well in school, feel less control over their school performance, have lower school achievement, and have parents who have lower academic aspirations for their children. Results should be considered preliminary, as the number of studies reviewed were limited, and those reviewed may not necessarily generalize to the whole population, due to methodological concerns.

Family Factors

Wagner (1997) reviewed the current literature on family factors related to suicidal behavior in children and adolescents. Because this was a very thorough review that included over 150 journal articles, no other articles will be included in this section.

Wagner found that the family factors examined in the literature fell into five categories. The major family issues cited in the literature as being associated with youth suicide are problems with communication and problem solving, scapegoating, problems with parent-child attachment, marital problems, and parental maladjustment.

The literature shows some support for an association between poor family communication or problem solving with increased risk for suicidal behavior. The strongest evidence was for the association between poor parent-child relationships and suicidal behavior. Preliminary evidence is available that supports the notion that a child who is scapegoated, or made to feel unwanted, is more likely to attempt suicide. Most of the evidence, however, comes from studies of abuse, and it may be that it is the abuse, rather than the familial rejection, which leads to suicidal behavior. There is little support for the hypothesis that parental loss (due to death or divorce) is associated with suicide attempts. There is some evidence that suicide attempters recollect poorer attachment with parents than do control participants, and suicide attempters were more likely to have lived without both of their biological parents (i.e., with a single parent or with neither parent). Evidence for a link between marital dysfunction

and suicide attempts is very weak. There is some evidence that suicide attempters are more likely to have a family history of psychopathology, or psychopathology in the immediate family, compared with normal controls. There seems to be no difference, however, between suicide attempters and other psychiatric controls in family psychopathology. The main criticisms of studies on family factors are the use of correlational designs and the reliance on retrospective measures. Very few studies used prospective designs, so conclusions about causality are unable to be made.

Cognitive Factors Associated With Suicide Attempt

Research conducted to determine correlates of suicidal behavior in adults has shown a relatively consistent pattern of cognitive factors. It appears that depression (Fremouw, de Perczel, & Ellis, 1990) and hopelessness (Glanz, Haas, & Sweeney, 1995) are strongly associated with suicidal thought and behavior in adults. Research on adult suicide suggests that there is a progression from depression, to hopelessness, to suicidal thought (Dyer & Kreitman, 1984; Whisman, Miller, Norman, & Keitner, 1995), which likely leads to suicidal behavior. Does this occur in the adolescent population, and if not, what cognitive factors are associated with suicidal thoughts and behaviors in adolescence?

Harris and Lennings (1993) examined predictors of suicidal behavior in imprisoned juvenile delinquents. Participants were Australian boys aged 15-19. All were incarcerated at the time of their participation in the study. Groups of

participants completed three self-report measures: The Adolescent Family Inventory of Life Events, Beck Depression Inventory (BDI), and Hopelessness Scale (HS). A structured interview that tapped into the issues of family background, prior suicide attempts, suicidal thoughts, and consumption of substances was conducted individually for each participant.

Forty percent of the sample reported previous suicide attempts. Scores on the BDI and HS were found to correlate significantly. The relationship between depression, hopelessness, substance use, and family background on suicide attempts and suicidal thoughts were compared by use of ANOVA design, and multiple regressions were used to examine variable interactions. Results suggest that depression is a predictor of suicide attempt for this population. Hopelessness, however, did not mediate the relationship between depression and suicide, as found in the adult literature. Family dysfunction did not predict suicidal behavior. The authors suggested that this finding may have occurred due to the high level of family dysfunction found within the entire sample. Overall, the study provides evidence for the relationship between depression and suicide in adolescents, whereas no evidence was found for the mediational effects of hopelessness. The role of family dysfunction in suicide attempts remains unclear.

Another examination of the cognitive characteristics of adolescents who attempt suicide was conducted by Spirito, Overholser, and Hart (1991). Participants were 69 adolescents (55 female, 14 male, mean age = 15.3) who had attempted suicide, and 40 adolescents (23 female, 17 male, mean age

=14.7) who were non-attempters. The suicide-attempting participants were recruited from the pediatrics floor of a single, large hospital, while non-attempting controls were admitted to a children's psychiatric hospital. The non-attempters had not been admitted for a suicide attempt, and had no history of suicide attempts. Those who were intellectually limited (IQ less than 85) or actively psychotic were excluded from the study. Dependent measures administered included the Children's Depression Inventory (CDI), the Hopelessness Scale for Children (HSC), and Children's Attributional Style Questionnaire (CASQ).

Analyses were conducted in order to compare the dependent variables of the two groups. Additionally, comparisons were made to compare economic status in the two groups. More of the psychiatric controls were found to be on welfare. The only difference found based on economic status, however, was on the Bad Global subscale of the CASQ, with lower income participants showing a higher average score on this subscale. This finding indicates that lower income participants tended to attribute bad events to global causes to a greater degree than did higher income participants. Female suicide attempters showed the highest levels of hopelessness, while male suicide attempters and female psychiatric controls reported the lowest levels of hopelessness. The only significant difference in attributional style found on the CASQ was that suicide attempters were more likely than non-attempters to attribute good events to global, rather than specific causes. Depression and hopelessness were found to be linked with attributing good events to external factors, while attribution of good outcome to unstable or specific factors did not predict depression or

hopelessness. Overall, there was no specific attributional style found for suicide attempters. The inequality of gender distribution among the 2 groups (i.e., large number of female participants in the suicidal group), and unequal sample sizes may have had an impact on the results. The authors suggested that issues such as lethality of the suicide attempt, intention of the suicide attempt, and history of a suicide attempt, which were not examined in this study, might have revealed attributional patterns in adolescent suicide attempters.

How are hopelessness and suicide risk related to family functioning?

Mitchell and Rosenthal (1992) examined the relationships between family dynamics and adolescent suicide attempt, as well as the role of hopelessness and the degree of dangerousness in the suicide attempt. Forty-nine adolescents were included in the study. Thirty-four participants were suicidal, while 15 were non-suicidal psychiatric controls. The criteria used to determine symptomatology, and the sorts of symptomatology targeted were not provided by the authors. Only adolescents who were living at home at the time of their hospitalization were included in the study. Several measures were administered to the adolescents and their family members. The Structural Family Interaction Scale (SFIS) was used to tap into the issues of overprotection, enmeshment, rigidity, and conflict avoidance, and was administered to all family members ages 10 and above. The Marital Satisfaction Inventory is a self-report measure that was administered to participants' parents. The adolescent inpatients completed the Hopelessness Scale, and researchers used a chart review to determine a rating of lethality of suicide attempt.

A series of t-tests were used to determine group differences. Families of suicidal and non-suicidal adolescents did not differ significantly on the SFIS scales. The family incongruity score, however, significantly differentiated between the two groups. Parents of suicidal participants showed significant elevations on a number of variables. Mothers showed a significant elevation on the variable of "Mother-Child Conflict Without Resolution", and fathers showed elevation on the variable of "Role Orientation". The Hopelessness Scale did not show significant differences between suicidal and non-suicidal inpatient adolescents, which suggests that hopelessness is not related to suicidal behavior. Marital conflict was found to be higher in the families of suicidal adolescents. One problem with this study is that a very small sample was used. This was further complicated by the fact that not all participants had two-parent families, and not all families had complete data sets. Some families had single parents, and some had family members who did not complete the inventories. Comparisons between groups for marital conflict, therefore, were based on a very small sample size. Another problem was that the authors did not relay much information about the exact procedures used in the study, and much of the information that was provided by the authors was unclear. Results should be viewed as preliminary, at best. Results were, however, consistent with those found by Wagner (1997).

Pinto and Whisman (1996) examined negative affect and cognitive biases based on gender and suicidal behavior. Participants were adolescents ages 13-18, and were recruited from a psychiatric inpatient unit at a general hospital.

Sixty eight of the participants were admitted due to thoughts of suicide (41 girls, 27 boys), 90 were admitted due to a suicide attempt (69 girls, 21 boys), and 70 were admitted for other reasons (31 girls, 39 boys), including aggressive behavior, impulsivity, eating disorders, school refusal, truancy, and depression without suicidal thoughts. The mean age of each group was approximately 15 (suicidal ideators=15.07, suicide attempters=15.39, non-suicidal=15.00), and ethnic composition was similar for each group (88.8% Caucasian, 8.4% African American, and 2.2% Hispanic for the total sample). Those children who had psychotic symptoms, low IQ (less than 70), or had English as a second language were excluded from the study. Self-report measures were administered to tap into suicidal thoughts (Suicidal Ideation Questionnaire), depressive symptoms (Beck Depression Inventory excluding items 2 and 9, which tap into pessimism and suicidal feelings, respectively), hopelessness (Hopelessness Scale for Children), anxiety (Children's Manifest Anxiety Scale), anger (State-Trait Anger Expression Inventory), and self-concept (Piers-Harris Children's Self-Concept Scale). Psychiatric diagnosis was determined by the discharge diagnoses made by consensus of the psychiatrist and individual therapist.

Those participants who were admitted due to suicidal thoughts showed significantly higher levels of hopelessness and poor self-concept than did nonsuicidal controls, but did not differ from the other groups on the other measures (depression, anger, and anxiety). Those who were admitted for a suicide attempt did not differ from the other groups on any measure. It was also found that the variables of suicidal ideation, negative affect, and cognitive bias

were all correlated with each other, but only anxiety and depression were directly related to suicidal thoughts, so hopelessness, poor self-concept, and anger were only related to suicidal thought through anxiety and depression. This study supports the relationship between hopelessness and poor self-concept with suicidal thoughts. Interestingly, those participants who actually attempted suicide showed no significant difference on any measure, which may indicate a difference between suicide ideators and suicide attempters, because suicide ideators did show elevations on measures of hopelessness and poor self-concept. The authors suggested that this finding may be due to a temporary catharsis which the suicide attempters might experience after attempting suicide. It is also notable, however, that all of the participants in this study reported a high degree of distress, and it may be that differences would be more evident if normal controls, rather than psychiatric controls, were used. On the other hand, the high level of distress reported by all groups of participants suggested that these factors may not be related exclusively to suicidal thoughts and behaviors, but may be linked generally to psychiatric disturbances in adolescence.

The role of self-esteem in adolescent suicide has also been studied (Overholser, Adams, Lehnert, & Brinkman, 1995). A group of 254 adolescent inpatients (146 girls, 108 boys, mean age=15.19) was recruited from a psychiatric hospital, and a control group of 288 high school students (175 girls, 113 boys, mean age=15.15) was recruited from 3 local high schools. There were similar racial distributions for both groups. Measures administered were the Rosenberg Self-Esteem Scale, Children's Depression Inventory (CDI), and

Hopelessness Scale for Children (HSC). Psychiatric diagnosis for the inpatient group was determined by the attending psychiatrist at the time of discharge from the hospital. Psychiatric inpatients with psychotic disorders were excluded from the study.

Participants in both groups were assessed for level of self-esteem, using a cut-off score of 30 on the Rosenberg Self-Esteem Scale. Boys showed significantly higher self-esteem than did girls. Low self-esteem predicted significantly higher scores on the CDI and the HSC, for both the inpatient and control participants. When self-esteem was high, there was no difference in reported level of depression between the inpatient and control groups, however reported depression was higher for the inpatient, low self-esteem group than for the control, low self-esteem group. Low self-esteem also predicted current suicidal ideation and previous suicide attempts for both inpatient and control participants, although both current suicidal ideation and previous suicide attempts showed lower self-esteem than did the control participants. This study lends much support to the notion that low self-esteem is related to depression, hopelessness, and suicidal thoughts and behaviors. It also provided evidence that adolescent girls showed much lower self-esteem than did adolescent boys.

Another study was conducted that examined self-esteem, depression, hopelessness, and suicide among adolescents (Marciano & Kazdin, 1994). One hundred twenty three participants (79 boys, 44 girls; mean age=10.6), ages 6-13, were recruited from an inpatient psychiatric facility. Children with psychotic symptoms, uncontrollable seizures, or IQ less than 85 were excluded from the

study. Approximately 25% of the sample was of African American ethnicity, and the remaining participants were classified as Caucasian. The Suicide Assessment Battery was completed by both guardian and child, and responses were used to classify participants as suicide attempters (n=42), suicide ideators (n=39), or non-attempting/non-ideating control group (n=42). It is notable that the control participants were selected to match other participants in gender and level of depressive symptoms. Participants completed the Children's Depression Inventory (CDI), Hopelessness Scale for Children, and the Self-Esteem Inventory.

It was found that both suicide ideators and attempters reported significantly more depressive symptoms than did the control group, and suicide attempters reported significantly less hope and self-esteem than did the control participants. Overall, report of self-esteem showed high, negative correlations with reports of depression and hopelessness, while reports of depression and hopelessness were positively correlated. Unfortunately, it was found that report of depressive symptoms showed almost no relationship with DSM-III diagnosis of depression in the participants, particularly with the suicidal participants. Reports of depressive symptoms, however, were the best group discriminators, and hopelessness and self-esteem did not enhance discrimination. There was a significant, negative relationship found between hopelessness and self-esteem, but this relationship was high only for the suicidal children. This finding suggests that low self-esteem may be related to hopelessness, and could be a factor contributing to suicidality, but adequate self-esteem may not be associated with

hopelessness, and could even be a buffering factor. Ability to predict suicidality based on reports of depression and self-esteem varied by age, but report of depression, hopelessness, and self-esteem did not vary by gender. This study differed from most of the other studies in this area due to the use of younger children, rather than adolescents. Interestingly, in this study the ability to predict suicidality varied by age, hence, results found may not necessarily be applicable to an older population of adolescents. Support was found for a relationship between self-esteem and hopelessness. There was also evidence that suicidal children showed more depression and hopelessness, and showed lower self-esteem than other psychiatric inpatient children.

Cole (1989) reported on two studies of adolescent suicide. In the first study, 281 adolescents were recruited from a public high school (167 girls, mean age = 17.2; 114 boys, mean age = 17.0). The majority of students were of Caucasian ethnicity (92%). Several measures tapping into depression (Children's Depression Inventory [CDI], Children's Depression Rating Scale, and the Center for Epidemiological Studies Depression Scale), hopelessness (Hopelessness Scale for Children [HSC], Hope Index Scale, and a 5 item questionnaire), and suicidal thoughts and behavior (Suicidal Behaviors Questionnaire [SBQ] and Zung Index of Potential Suicide) were administered to all participants. Girls reported significantly higher levels of depressive symptoms than boys on all three measures of depression. Girls also reported significantly higher likelihood of threatening and attempting suicide. The relationships among depression, hopelessness, and suicide were examined by path analysis, using

the Lisrel-VI program. For boys, a relationship was found between hopelessness and depression, and between depression and suicide, however no relationship was found between hopelessness and suicide. Girls displayed similar relationships between hopelessness and depression, and between depression and suicide, but showed a relationship between hopelessness and suicide.

The second study was conducted using 53 male, juvenile delinquents, ages 12-18 (mean age = 15.7) who were recruited from two state residential probation facilities. Thirty six percent of participants reported that they were members of a minority group. Participants completed the CDI, HSC, MMPI K scale (MMPI-K), Reasons for Living Inventory (Survival/Coping Beliefs and Fear of Social Disapproval scales), and an updated version of the SBQ (Parasuicidal Behavior Questionnaire;PBQ). Approximately 19% of the sample reported having made at least one suicide attempt, a pattern that was verified through their records. Multiple regression was used to determine the relationship between CDI, HSC, MMPI-K, and Reasons for Living scales, predicting to the PBQ. Hopelessness was found to be related significantly to suicidal thoughts, but to no other aspects of suicide, while depression was found to be related significantly only to prior suicide attempts. The Survival/Coping Beliefs scale of the Reasons for Living Inventory significantly predicted 3 of the 7 regressions: suicidal thoughts, prior suicide attempt, and probability of committing suicide in the future. The MMPI-K scale was able to predict prior suicidal threats. Overall, hopelessness could not predict suicidal behavior, but could predict suicidal thoughts, whereas level of depressive symptoms was associated with prior

suicide attempts. Report of low levels of survival and coping beliefs predicted suicidal thoughts, prior suicide attempts, and probability of committing suicide in the future, suggesting that these beliefs may be important in lowering the probability of suicide in the juvenile delinquent population. Results are preliminary, however, because they are based only on one scale. Also, the sample used for this study was not large, so further investigation should be conducted in this area. Finally, it is unclear whether the results would be similar for a non-delinquent population.

Predictors of adolescent suicide attempts were examined by Morano, Cisler, and Lemerond (1993). Twenty adolescent suicide attempters (10 girls, 10 boys) and 20 non-attempters (8 females, 12 males) were recruited from an inpatient psychiatric treatment center. After the initial 20 suicide attempters were recruited, the non-attempters were obtained by matching for gender and report of depressive symptoms. All participants were Caucasian adolescents, ages 13-18, with a mean age of 15.10 for suicide attempters, and 15.05 for non-attempters. Children with psychotic symptoms were not included in this study. The Beck Depression Inventory, Beck Hopelessness Scale, and Sarason Social Support Questionnaire, Suicidal Ideation Questionnaire, and Exit Events Question, which tapped into experience of loss prior to admission, were administered to all participants. Additionally, participants who had attempted suicide completed the Suicide Intent Scale. It was found that suicide attempters were more likely than non-attempters to experience loss prior to their attempt. They also reported less family support than did non-attempters. Finally, suicide attempters reported

higher levels of hopelessness than did the non-attempters. Although there is some support for relationships between loss and suicide attempt, and between family support and suicide attempt, results are preliminary, as they are based on a small, non-diverse sample.

A study of factors that differentiate between suicide attempters and non-attempters was conducted using the variables of depression, hopelessness, conduct problems, and substance abuse for a juvenile delinquent population (Kempton & Forehand, 1992). Fifty-one inmates from a juvenile prison were recruited for participation in the study. The participants were adolescent boys ages 11 to 18 (mean age = 15.75). Fifteen participants were of Caucasian ethnicity, and the remainder (36) were of African American ethnicity. The Diagnostic Interview Schedule for Children - 2 and the Hopelessness Scale for Children were administered to all participants. It was found that Caucasian delinquents were 3.5 times more likely to attempt suicide than their African American counterparts, and level of depressive symptoms was correlated with suicide attempts for the Caucasian group only. The number of conduct disorder symptoms, report of hopelessness, and number of substance abuse symptoms were not predictive of suicide attempt. This result was unexpected, because the literature had shown these variables to be predictive of suicide for other populations. The authors suggested that dynamics related to race and gender may have affected the report of African American participants, because the interviewers were Caucasian women. They also stated that reliance on self-

report may have led to inaccurate measurement, and if a second informant had been utilized, results might have varied.

The relationships among depression, anxiety, hopelessness and suicide were examined in an inpatient, adolescent sample (Steer, Kumar, & Beck, 1993). Participants were 108 children (70 girls, 38 boys; mean age = 15.08), ages 12-17, who were recruited from a psychiatric unit at a general hospital. Approximately 66% of the sample was classified as Caucasian, 20% as African American, and 14% as Hispanic. Patients were broadly classified into two categories based on DSM-III-R diagnosis: mood disorders (55.6%) and other disorders (44.4%). All participants completed the Beck Depression Inventory, Beck Hopelessness Scale, Beck Anxiety Inventory, and Beck Scale for Suicide Ideation. Report of hopelessness was found to be the best predictor of suicidal ideation. An inverse relationship was found between age and suicidal ideation, suggesting that younger adolescents may show more suicidal thoughts than older adolescents. Analyses suggested that report of anxiety does not relate directly to suicidal ideation, but contributes to this variable through depression and hopelessness. In addition to these findings, this study also helped to validate the Beck Scale for Suicide Ideation. This measure was originally developed for use with adults, but results from this study suggest that it is a reliable and valid measure of suicidal ideation for adolescents.

Reifman and Windle (1995) conducted a longitudinal study of the predictors of suicide attempts in adolescents. Depression, hopelessness, alcohol use, social support, and gender were the potential predictors examined.

Participants were high school students from two school districts. Students from each district were grouped together as a cohort. One cohort consisted of 662 students (322 girls, 340 boys), while the other was made up of 311 students (189 girls, 122 boys). The authors described the sample as almost completely Caucasian. Information was obtained from both parent (or primary caregiver) and student. Measures administered were the Hopelessness Scale for Children (HSC), the Center for Epidemiological Studies-Depression Scale (CES-D), Perceived Social Support from Family and Friends scales (PSS), and a quantity-frequency index (QFI) which tapped into alcohol consumption. Additionally, three questions were asked regarding suicidal behavior, which tapped into suicide ideation, report to others of suicidal intentions, and actual suicide attempt. Measures were readministered six months later.

Structural equation models were developed, and path analyses were performed. Initial report of depression and alcohol consumption predicted later report of some suicidal behaviors, however, hopelessness did not predict later suicidal intentions. Mixed support was found for suicidal thought leading to later verbalization of suicidal intentions to others, with some results supporting this hypothesis, and other results providing evidence to the contrary. There was evidence that high social support from friends (not from family) may act as a buffer against suicidal behavior in depressed youngsters, but was associated with suicidal behavior in non-depressed or mildly depressed children. Alcohol use had only a low correlation with depression, and no interaction between alcohol and depression was found. Although some indication of predictors of

suicidal intentions could be established, the more immediate triggers of suicidal behaviors in adolescents were not examined.

The use of cognitive and behavioral coping strategies to deal with parental conflict was examined for adolescents (Spirito, Francis, Overholser, & Frank, 1996). Participants were suicide attempters (hospital sample= 31 girls, 9 boys, mean age=15.5; psychiatric inpatient=74 girls, 34 boys, mean age=14.8), suicide ideators (16 girls, 16 boys, mean age=14.6), non-suicidal psychiatric inpatients (14 girls, 8 boys, mean age=15.2), or non-suicidal high school students (30 girls, 26 boys, mean age=15.4). Participants who were suicide attempters were recruited from both a general hospital and a psychiatric hospital. The Beck Depression Inventory (BDI) was administered to the psychiatrically hospitalized adolescents, but all participants completed the Kidcope checklist, which taps into children's coping strategies. A scenario was introduced to participants detailing a conflict with a parent. The Kidcope was then administered to determine coping strategies that would be utilized for this scenario. This scenario was chosen because previous studies indicated that conflict with parents often preceded adolescent suicide attempts.

Due to the high number of female participants, gender was used as a blocking variable in statistical analyses. Previous literature suggested that suicide attempters would be more likely to use social isolation as a coping strategy than would normal controls. In this study, however, high use of social isolation was found for all psychiatrically hospitalized participants, not just suicide attempters. Medically hospitalized attempters showed lower use of social

isolation than the psychiatric samples. Apparently those suicide attempters who were not required to transfer to a psychiatric hospital for treatment were somehow different from those attempters who required inpatient psychiatric treatment. The results did not support findings from prior studies, which suggested that suicidal children use fewer active cognitive coping strategies, and are less effective problem solvers. In this study, the method of determining use of coping strategies was the Kidcope, which is a screening device. An in-depth measure may yield greater information. On the other hand, the results of this study are consistent with those found in the adult literature. The authors reported that adult suicide attempters have not shown differences in problem solving or coping skills compared with control groups.

Another hypothesis is that suicide is due to irrational beliefs. Woods, Silverman, Gentilini, Cunningham, and Grieger (1991) conducted three studies to examine the impact of irrational beliefs on suicidality. The first study utilized undergraduate college students. Participants were 273 psychology students (230 women, 43 men) recruited from two universities. Age and demographic characteristics of the sample were not reported by the authors. Participants completed the Trait Scale from the State-Trait Anxiety Inventory (STAI), Beck Depression Inventory (BDI), Hopelessness Scale (HS), and Jones Irrational Belief Test (IBT). Item 9 on the BDI was used to determine level of suicidal ideation. Suicidal thought was reported by approximately 21% of the sample. Of those who reported suicidal thoughts only one participant reported that he would like to kill himself, and the remainder indicated that they have thoughts about

suicide, but would not kill themselves. Results suggested that those participants who reported contemplation of suicide also reported significantly higher levels of emotional distress as measured by the BDI, HS, and STAI. All IBT scales were significantly higher for students with suicidal thoughts, with the exception of the Demand for Approval scale. This finding suggested that those participants who reported suicidal thoughts also had more irrational beliefs, and these irrational beliefs may be the cause of the suicidal thoughts. It is unclear, however, whether the use of a single item, with 3 possible responses, to determine suicidality is sufficient. This concern is particularly relevant because only one participant reported a desire to kill himself, whereas the others simply reported having some suicidal thoughts. It is also unclear whether results would be similar if a clinical sample had been used.

Participants in the second study were 167 high school students (96 girls, 57 boys, 14 unknown gender) who were enrolled in an introductory psychology course. Mean age was not reported, but participants were in their sophomore through senior years in high school. Ethnic break-down of the sample was not reported. The same instruments were administered (BDI, HS, STAI, IBT), with the addition of the Suicide Probability Scale (SPS). Approximately 35% of participants reported some suicidal thoughts (according to item 9 on the BDI), which is a larger number than that found for the college sample (approximately 21%). Reports of anxiety, depression, and hopelessness were again significantly higher for those participants who reported suicidal thoughts. Although authors did not comment on this phenomenon, it appears that the high school sample

reported higher levels of distress than did the college sample. Using the SPS to categorize participants as low, medium, high, or very high risk for suicide, it was found that IBT scale scores increased as risk for suicide increased.

In the final study, junior and senior high school students (202 girls, 166 boys) were administered the measures from the second study, with the addition of the Anger Expression Scale (AX), Physical Symptoms Checklist (SYM), and Attitudes and Beliefs Scale - II (A&B-II). Age and ethnicity of the participants were not reported by the authors. As found in the two earlier studies, the participants who reported suicidal thoughts showed significantly higher scores on the measures of anxiety, depression and hopelessness. They also showed significantly higher scores on the measures of anger and physical symptoms. It is notable that level of distress reported is higher for this sample than for the college sample, although the authors did not comment on this phenomenon. The SPS categorizations of low, medium, high, and very high probability for committing suicide again predicted scores on the IBT, which gives further evidence that suicidality is linked with irrational beliefs. It is not clear whether these results would generalize to a clinical population.

Do adolescents expect to be rescued when they attempt suicide? Forty Indian South African adolescents (26 girls, 14 boys; mean age=17.3) were queried about their expectations of rescue after attempting suicide (Pillay & Wassenaar, 1991). The Beck Hopelessness Scale, and a semi-structured interview that tapped into rescue expectations, were administered to participants shortly after their admission to a general hospital following a suicide attempt.

This was the first suicide attempt for nearly all participants (39 out of 40), and all participants had ingested medicine or pesticides. Only 18 participants reported that they had expected to be rescued. Half of the girls (13) reported that they expected to be rescued, while only 5 boys reported that they expected to be rescued. Those participants who did not expect to be rescued reported higher levels of hopelessness than those who anticipated rescue, however, this difference was not significant. Unfortunately the sample used for this study is particularly small, and is composed of an ethnic group of low incidence in United States. It is unclear whether results may generalize to a North American population. The study does suggest that anticipation of rescue may be of importance in the prediction of suicide, and warrants further investigation.

Overall, the articles reviewed showed inconsistent results. The inconsistent results may partly be due to differences in sample and methodology. Some studies examined suicidal thoughts, whereas others examined suicidal intentions or behavior. Samples were diverse, showing different ethnic compositions. Inpatient, outpatient, incarcerated juvenile delinquent, and normal samples were utilized. The variability in sample composition and type of measure used made comparisons somewhat difficult. Another problem was a tendency toward small sample sizes.

Despite the inconsistencies, some trends were evident. Girls were more likely to be depressed, and also more likely to be hospitalized for suicide attempts. Juvenile delinquents were more likely to be boys. There is evidence for correlations among the variables of hopelessness, depression, and self-esteem.

The studies, however, indicated inconsistent relationships between these variables and suicidal thoughts and behaviors. Certainly there is not the clear pattern of depression leading to hopelessness, leading to suicide, as is found with adults. There is some evidence that suicide ideators, attempters, and completers may show differing characteristics. Coping and survival beliefs, irrational beliefs, and social support also may have an impact on suicidal thoughts or behaviors, but the exact nature of these relationships is not clear.

Impulsivity and Developmental Level

Many researchers who have examined suicidal thoughts and behavior in adolescents have focused on issues of depression, hopelessness, and self-esteem. This is likely due to the associations found between these sorts of variables and suicidal thought and behavior in the adult population. The current literature, however, does not show a clear relationship between these variables and suicidality in adolescents. In fact there may be some factors that are unique to the adolescent population, and may be even more important contributors to suicidal thought and behavior than depression or hopelessness. The variables of impulsivity and developmental level seem pertinent to our understanding of adolescent suicide, and pertinent literature will be reviewed.

A study of female adolescents who had attempted suicide was conducted by Borst and Noam (1993). Participants were 139 adolescent girls (ages 13-16) who were admitted to an inpatient psychiatric hospital. Measures of developmental level and suicidal behavior were administered. The Diagnostic

Interview Schedule for Children (DISC-C) was used to differentiate those who had attempted suicide from those who had not attempted suicide. Loevinger's measure of ego development differentiated between the developmental levels of preconformist (least mature ego development) and conformist (moderate ego development). Participants were placed in one of four categories (affective disorder, conduct disorder, mixed conduct and affective disorders, and neither affective nor conduct disordered). Other measures were completed in order to compare the groups based on different criteria, including the Washington University Sentence Completion Test, Youth Self-Report, Defense Mechanism Inventory, and DSM-III diagnosis (based on both the DISC-C and clinician ratings).

It was found that female suicide attempters who were more developmentally advanced differed from those less developmentally advanced in diagnosis, symptomatology, and defense mechanisms. Those suicide attempters who were less developmentally advanced showed more anger and impulsiveness, and lesser ability to self-reflect. They showed aggression both towards themselves and others. More developmentally advanced attempters showed marked depression, and their defenses were more sophisticated. They showed little aggression, and were prone to self-blame. Interestingly, the Youth Self-Report showed evidence of depression and internalizing symptoms at all developmental levels, however clinicians only diagnosed depression in those attempters who showed the self-blame type of depression. Diagnoses related to aggressive behavior and conduct problems were given to those girls who showed

the impulsive type of behavior. This is meaningful, in that clinicians may be overlooking the depressed nature of less developmentally advanced youngsters who show angry and impulsive behavior. Yet both types of girls made suicide attempts. It is notable that the majority of participants in this study are Caucasian, and came from middle class homes. All participants were female. It is unclear whether socioeconomic status, gender, or ethnicity could have an impact on the relationship between developmental level and display of symptomatology. The authors did note that developmental advancement was generally predicted by level of intelligence.

Another study that examined the role of impulsivity in suicide attempts was conducted by Brown, Overholser, Spirito, and Fritz (1991). Participants were 86 adolescents (the majority of whom were female), ages 12-17. All participants were admitted to the pediatric unit of a general hospital after making a suicide attempt. Measures of depression, hopelessness, anger, and suicidal thoughts, as well as a semi-structured interview, were administered to all participants within 24 hours of medical clearance. Measures included the Suicide Intent Scale, Suicide Ideation Questionnaire, Reynolds Adolescent Depression Scale, Children's Depression Inventory, Children's Depression Rating Scale - Revised, Hopelessness Scale for Children, and Anger Expression Scale. Degree of suicide premeditation was determined by the Suicide Intent Scale, and 57 attempts were classified as impulsive, whereas only 29 were deemed premeditated. The authors reported that no gender or racial differences were found, however the number of male participants was small, and information on

participant ethnicity was not provided. It is notable that participants from lower socioeconomic backgrounds were more likely to display an impulsive suicide attempt. Participants whose suicide attempts were premeditated showed more depression and hopelessness than those whose attempts were impulsive. A relationship between suppressed anger and hopelessness was found in the premeditating group.

Trends in suicidal behavior were examined for a female population (Rotheram-Borus & Trautman, 1988). Participants were 44 adolescent girls, ages 12-17, who were recruited from a hospital emergency room after making a suicide attempt. Additionally, two control groups were used. The first was composed of 35 psychiatrically disturbed youngsters who had no history of suicide attempts. The second was made up of 23 girls recruited from local junior and senior high schools, who had no psychiatric history, or history of suicide attempts. The majority of the total participants belonged to an ethnic minority group (57% Hispanic, 36% African American, 5% Caucasian, 2% other). Self-report measures of depression, hopelessness, and suicidal intent were administered. All participants completed the Beck Depression Inventory (BDI) and the Beck Hopelessness Inventory (BHI), and suicide attempters also completed the Pierce Suicidal Intent Scale. Attempters participated in a clinical interview that focused on the suicide attempt.

The trends in suicide attempts of participants were sought. Seventy eight percent of the attempts occurred after a fight with a family member, and pill overdose was used in 83% of the attempts. In the majority of cases (76%), the

attempter could not have died, and in the rest of cases, it was unlikely that the attempter would have died. The scores of the suicide attempters on the BDI and BHI did not differ significantly from the scores of psychiatric controls, however non-psychiatric controls had BDI and BHI scores that were significantly lower than both attempters and psychiatric controls. The correlations between the BDI and suicidal intent, and the BHI and suicidal intent were not significant ($r=0.16$ and 0.17 , respectively). The correlations between scores on the BDI and BHI were significant for all three groups, and ranged from $0.75-0.88$. Overall this study suggests that hopelessness and depression are not good predictors of suicidal behavior for adolescents. In fact, the majority of the suicide-attempting participants (70%) admitted that their attempt was done impulsively, often after a fight with a family member (78%). In addition, 55% sought help immediately after the attempt. The study is limited, however, given that the number of suicide-attempting participants was small, and all participants were girls. Though girls seem to compose the majority of suicide attempters, results should not be generalized to the entire population of suicide attempters, as boys may show some different patterns. Additionally, the majority of participants belonged to an ethnic minority, and results may not generalize to the non-minority population.

Suicidal inpatients, non-suicidal inpatients, and a community sample of high school students were compared based on measures of impulsivity, problem solving ability, hopelessness, and depression (Kashden, Fremouw, Callahan, & Franzen, 1993). Participants were 63 adolescents ages 13-18. Participants placed in the suicidal group were 13 girls and 10 boys (mean age = 15.1), who

had been hospitalized due to suicidal thoughts or behaviors. The non-suicidal inpatient group was made up of 7 girls and 13 boys (mean age = 15.2) who had no suicidal thoughts or behaviors for the preceding 4 weeks. The community control group was composed of 11 girls and 9 boys (mean age = 15.4), who were recruited from a local high school. Measures of depressive symptoms (Children's Depression Inventory), hopelessness (Hopelessness Scale), interpersonal problem-solving (Means-Ends Problem-Solving Procedure), suicidal behaviors (Suicidal Behaviors Questionnaire), and impulsivity (Gordon Diagnostic System) were administered to all participants. No age or gender effects were found for the variables of hopelessness, depression, or impulsivity, however the authors noted some age and gender differences in problem solving, and these variables were appropriately used as covariates in the analyses of problem-solving. Significant differences were found between suicidal and non-suicidal inpatients, and between suicidal and high school participants on the variable of impulsivity, with suicidal participants displaying more impulsivity than either of the other two groups. Suicidal inpatients also reported significantly more depression and hopelessness than did the non-suicidal inpatient or high school groups. Nonsuicidal inpatients reported significantly more depression than did high school students, however, reported levels of hopelessness did not vary significantly. Support was found for the notion that suicidal adolescents show more depression and hopelessness than non-clinical children or inpatient, non-suicidal children. It is notable, however, that this pattern was based solely on

self-report measures of depression and hopelessness. There was also evidence that suicidal adolescents were more impulsive than their non-suicidal peers.

These studies show some evidence for the role of impulsivity in adolescent suicide attempts. There is preliminary evidence that impulsivity may vary with developmental level, with more developmentally advanced youngsters showing more adult-like patterns of symptoms, and less developmentally advanced youngsters showing more aggressive and impulsive behavior. It is notable that most participants in these studies were female, so results may not necessarily generalize to males. Again, hopelessness and depression showed a high correlation with each other, but the relationships between these variables and suicidal behavior are at best unclear for the adolescent population. Further investigation of the roles of developmental level and impulsivity in suicidal behavior is warranted.

Models of Suicidal Behavior

The tragedy of suicide has led to the proposition of several models of suicide in an attempt to both explain this behavior and allow for better prediction for purposes of prevention. Models tend to fall into two categories: those that focus on single issues, such as a particular trait or circumstance, and those that are more comprehensive in nature, integrating several factors. A sampling of available models will be examined.

According to Fisher and Shaffer (1984), there are three ways of conceptualizing models of suicide: the psychological model, sociological model,

and disease model. In the psychological model, suicidal behavior occurs because of internal emotional issues. The sociological model suggests that suicide occurs as a result of a person's current life situation, which may feel unbearable. Finally, the disease model views suicide as occurring due to a psychiatric illness. These models do not preclude one another, yet there is no indication of how the models may work with one another.

Shaffer et al. (1988) review risk factors associated with teen suicide and present a more comprehensive model of suicidal behavior based on a review of psychological autopsies. In this model it is assumed that only particular people are vulnerable to suicidal behavior, and that given the right circumstances, and trigger factors these people will attempt suicide. Individual predisposing factors might include psychiatric illness and personality characteristics. Factors related to the social milieu (e.g., media, community functioning, societal norms) may inhibit or facilitate suicidal behavior, but ultimately there will need to be some sort of triggering event that leads to the actual suicide attempt.

An even more encompassing model is presented by Rickelman and Houfek (1995). This model takes into account epidemiological factors, personological factors, and environmental factors. Epidemiological factors include known risk factors, such as age, gender, history of attempt, etc. Personological factors include cognitive factors (rigidity, poor problem-solving, having a suicide plan, etc.), affective factors (depression, hopelessness, etc.) and neurobiological/genetic factors. Finally, environmental factors including life stress or a negative life event contributes to likelihood of suicidal behavior.

Recently Van Heeringen (2001) presented a diathesis-stress type model of suicidal behavior. The diathesis consists of trait-dependent and state-dependent characteristics, which lead to suicidal behavior under the right threshold factors. Trait-dependent characteristics might include neurological functioning, personality development and cognitive development. However, it is notable that these are characteristics that do not change. On the other hand, state-dependent characteristics are generally transient and changeable. These characteristics denote the current mindset or functioning of the person. Finally, threshold factors refer to immediate factors that may remediate or enhance likelihood of suicidal behavior, such as access to methods of suicide or social support.

Overall, models seem to suggest that suicidal behavior is not simplistic. Rather than just a simple incident or state of being which leads to suicidal behavior there are probably predisposing factors which might be inherent to the person or part of his/her environment, as well as some sort of triggering event which could potentially be mediated or moderated by other factors, such as social support and availability of suicide methods. Does our finding that adults tend to show a clear pattern of suicidality based on hopelessness and depression fit within this model? It appears that this finding may be explained by this model. However, why would children and adolescents vary? It might be that there is a greater flux in the development of characteristics occurring during childhood which may make the model more complicated for youth, as compared to adults whose physiological development has stabilized and whose personality

characteristics are more solidly formed. Finally, adults may have greater emotional and financial resources, as well as more control over their environment. In the next section developmental factors that may impact processes in the model of suicide will be examined.

Developmental Explanations

Given the differing pattern of suicidal activity and factors found with adolescents, as compared with younger individuals and adults, we must ask what is happening during this age period to increase suicide risk and muddy the pattern of suicidal behavior. Reasons seem to be associated with developmental changes occurring during this age group. Areas of change include physiological development, including hormonal and neurological changes, as well as social development.

During puberty, hormonal changes signal growth, with expected changes in height, weight, and sexual development. These same hormones can lead to other issues evident for this age group: acne, emotional dysregulation, and increased sexual desire. In addition to hormonal and physical changes, this is a time of neurological changes, including changes in the prefrontal cortex, and limbic brain regions (Spear, 2000), which may be related to adolescent impulsivity and sensation-seeking behavior.

Furthering the difficulties of this age are changes in social expectations (Neinstein, Juliani, & Shapiro, 1996). At the crossroads between childhood and adulthood, adolescents must learn to become independent, while at the same

time remain dependent on their parents and are expected to comply with parental wishes. Adolescents are expected to take on more responsibilities at home, and are often given greater freedom, including spending time at home or with friends without parental supervision, and greater access to transportation (i.e. a driver's license). It is expected that strong relationships will develop with peers, allowing for less emotional dependence on parents. These can be stressful changes for both parents and teens, often leading to familial conflict.

Another defining trait of the teen years is extreme self-consciousness, accompanying a strong desire to impress peers and "fit in." This is a time of figuring out who one is, and what one wants to do, often with a lot of experimentation. Teenagers tend to engage in more risk-taking behavior probably due to an increased access to these activities, a desire to "fit in", and the common notion among teens of immortality. The newness of freedom and information about the world, a desire to find one's place in the world, increased social pressure and familial strife, and the physiological changes occurring during adolescence all contribute to a greater likelihood of suicide attempts than in childhood, as well as differences from adults in the pattern of suicidal behavior.

Summary

During adolescence, there is a dramatic increase in the number of attempted and completed suicides. In fact, suicide is one of the top three leading causes of death for the adolescent age group. In an attempt to better understand

the precipitation of suicidal behavior in adolescents, the roles of demographic trends, family issues, cognitive factors, and impulsivity have been examined.

There is evidence for gender differences in adolescent suicidal behavior, although results should be considered preliminary. Adolescent girls show higher levels of depression and suicidal thought than do boys, and are more likely to be hospitalized for a suicide attempt, whereas boys report more loneliness, and are more likely to engage in delinquent behavior. This gender difference does not exist in younger samples (elementary school age). Adolescent girls and boys also report differing reasons for not attempting suicide. No evidence of gender differences was found for hopelessness or life stress. Additionally, poor school performance, low confidence in academic abilities, and low socioeconomic status were associated with suicidal thought for both boys and girls. Finally, although girls are more likely to attempt suicide, boys are more likely to succeed when attempting suicide.

Preliminary evidence also indicates an association between poor family relationships and suicidal thought and behavior. Poor family communication and problem solving, and poor parent-child relationships, have been associated with increased risk for suicidal behavior. Abuse by a family member is associated with increased risk for suicidal behavior, however this may be related to the abuse, rather than to the family dynamics. Although adolescent suicide attempters are more likely to reside in a non-intact family, there is little evidence that loss of a parent (due to death or divorce) increases suicide risk. There is also little evidence that parental conflict increases risk for suicidal behavior.

Family history of psychopathology seems to increase the risk for adolescent psychopathology in general, including suicidal behavior.

An examination of cognitive variables suggests that there are correlations among hopelessness, depression, and self-esteem in adolescents. No clear relationship between these variables and suicidal thought and behavior has been established. There is some evidence that adolescent suicide ideators, attempters, and completers may differ from one another in cognitive characteristics.

There is some evidence for the role of impulsivity in adolescent suicide attempts. Preliminary evidence suggests that impulsivity may vary with developmental level, such that more developmentally advanced youngsters would be expected to show more adult-like patterns of behavior, and less developmentally advanced youngsters would be expected to show more aggressive and impulsive behavior. Developmental level, anger, and impulsivity seem pertinent to adolescent suicidal behavior, but the relationships remain unclear, and require further investigation.

Overall, the articles reviewed showed inconsistent results. The inconsistent results may partly be due to differences in the samples and the methodology. Samples were diverse, showing different ethnic and age compositions, as well as different levels of psychopathology. Some studies examined suicidal thoughts, while others examined suicidal intentions or behavior. The variability made it difficult to compare results of different studies. Another problem was a tendency toward small sample sizes.

Although results are preliminary, some trends are evident. Adults show a clear progression from depression to hopelessness, which leads to heightened risk for suicidal behavior. This pattern has not emerged in the child and adolescent population. In fact, there is some evidence that other factors, such as impulsivity, may play a larger role in child and adolescent suicidal behavior. The literature also suggests that there could be demographic differences, including gender, age, ethnic, and socioeconomic differences in patterns of adolescent suicidal behavior. The current study examined levels of depression, hopelessness, impulsivity, and demographic characteristics in adolescents in relation to suicidal behavior in an ethnically diverse inpatient sample.

Hypotheses

1. Age differences were expected, such that older adolescents (ages 15-17) should show the adult pattern of depression and hopelessness related to suicidal behavior, while impulsivity should play a larger role in suicidal behavior for younger adolescents (ages 11-14). More specifically, suicidal older adolescents were expected to show significantly higher levels of depression and hopelessness than non-suicidal older adolescents. Suicidal younger adolescents were not expected to show differences in levels of depression and hopelessness when compared with nonsuicidal younger adolescents from a clinical sample. However, they were expected to show higher rates of impulsivity than the nonsuicidal younger adolescents, and

were predicted to be more likely to have made a suicide attempt as an impulsive act.

2. Gender differences were expected. The literature suggests that gender differences in level of depression occur for the adolescent population, but not for the child population. It was expected that girls would show more depression than boys in this adolescent sample. It was further predicted that suicidal boys would show more impulsivity related to their suicidal behavior than would suicidal girls.
3. There is some evidence in the literature that adolescents who show premeditated suicide attempts have suppressed anger, while those who show impulsive suicide attempts do so as an outward expression of anger. In this study, it was expected that adolescents who showed impulsive suicide attempts would report lower anger suppression than adolescents who premeditated their suicide attempt.
4. Nonsuicidal psychiatric control participants were expected to be more likely to live with at least one biological parent, whereas suicidal participants were expected to be more likely to reside in non-traditional settings (i.e., with grandparents, in foster care, etc.).

5. Although it was expected that socioeconomic status would generally be low for participants in this study, it was expected that lower income would be more evident for families in the suicidal group than in the nonsuicidal group.

6. Little research has been done in the area of ethnic differences. Exploratory analyses were conducted to determine whether ethnic differences exist in patterns of characteristics related to suicidal behavior.

Chapter 2

Method

Participants

Participants were recruited from two inpatient facilities: Children's Crisis Stabilization Unit of Tampa (CCSU), and Shands Vista Child Inpatient Unit (SVCIU) in Gainesville. Children and adolescents are referred to these facilities due to severe depression, suicidal or homicidal behavior, severe family conflicts, and/or presentation of psychotic features. Both are short-term, inpatient facilities for children (ages 3-17) who are in crisis. Most stays are from 3-5 days. The purpose of the admission is to stabilize the child regarding the crisis, and not to provide long-term treatment.

At the time of signing consent for participation in this study, guardians provided information about child's gender, age, ethnicity, status of residence (at home, with a family member, etc.), and family income on a demographic data sheet (See Appendix A). Because these facilities are public, the crisis units tend to admit children who come from lower socioeconomic households. Seventy-five percent of families who participated in this study reported an annual income of less than \$50,000. Eighty-five percent of the children who participated lived with at least one biological parent. The majority of the sample was Caucasian (72%), with only 13% of the sample Hispanic, 6% African-American, 5% Asian, and 4% of other ethnicities.

A total of 100 participants were recruited (71 female, 29 male) from both facilities combined, with 75 recruited from the CCSU, and 25 from the SVCIU. Participants ranged in age from 11-17, and the mean age for the sample was 14.6 ($SD=1.67$). No notable differences were found between participants recruited from the two different facilities in terms of gender (chi-square (df=1, $n=100$) = .405, $p > .05$), age ($t(98) = -.693$, $p > .05$), ethnicity (chi-square (df=4, $n=100$) = 4.063, $p > .05$), or income (chi-square (df=5, $n=90$) = 2.243, $p > .05$).

At both data collection sites, two groups of participants were recruited for this study. The first group consisted of adolescents who had made or seriously threatened a suicide attempt at the time of admission, and reported that their intention at the time of this incident was to end their life. The second group consisted of psychiatric inpatients who were hospitalized due to a reason other than a suicide attempt or gesture. This second group served as a comparison group for purposes of this study. Children who were reported to be psychotic or mentally retarded were not recruited for this study due to concerns that they would be unable to complete study measures accurately.

Assessment Measures

Adolescent Behavior Checklist (ABC). The ABC was developed as a self-report measure for adolescents with mental disability (Demb, Brier, Huron, & Tomor, 1994), but standardization has also been done with an Attention-Deficit Hyperactivity disordered population (Adams, Kelley, & McCarthy, 1997). Items are written at a fourth grade reading level, and it is intended for use with children

ages 11-17. The measure consists of 44 items, which tap into six factors: conduct problems, impulsivity/hyperactivity, poor work habits, inattention, emotional lability, and social problems. Items are scored on a 4-point Likert scale (0-3) based on a rating of how much a stated behavior describes the adolescent (“not at all” to “very much”). Although this measure is relatively new, there is evidence that internal consistency, test-retest reliability, convergent validity, divergent validity, and discriminant validity are adequate for this measure, and specifically for the Impulsivity subscale (Adams, Kelley & McCarthy, 1997). The alpha coefficient for the entire measure was .94, while for the Impulsivity subscale it was found to be .85. Over a two week period, the test-retest reliability for the whole test was found to be $r = 0.79$, while for the Impulsivity subscale it was $r = 0.70$. Convergent and divergent validity were examined by comparing the results of this test to three other widely used measures (Child Behavior Checklist, Youth Self Report, and Conners Parent Rating Scale – 48). The Impulsivity subscale showed significant correlation with other relevant scales (e.g., hyperactivity, impulsivity, conduct problems) on these measures, ranging from .20 - .69. The Impulsivity subscale was not significantly correlated with scales of Withdrawal, Somatic Complaints, or Thought problems. For purposes of this study, only the 10-item impulsivity subscale was used (see Appendix B), and had an alpha coefficient of .84.

Children's Depression Inventory (CDI). The CDI (Kovacs, 1992; see Appendix C) was created as a downward extension of the Beck Depression Inventory for children ages 7-17, and is one of the most commonly used self-

report measures of depressive symptoms in children. It consists of 27 items, which are rated from 0 (no symptom) to 2 (severe symptom). The CDI has been shown to have good internal consistency ($\alpha = 0.86$), and adequate test-retest reliability. Test-retest reliability of the CDI varies, particularly when calculated over long periods time, but reports range from .38-.87. This variability is likely due to the unstable nature of depressive symptoms over time. Tests of discriminant and convergent validity have been conducted in various settings by multiple investigators. Overall, the CDI appears to be a valid measure of depressive symptomatology for children (Kovacs, 1992), showing the ability to correlate significantly with other measures of depressive symptoms, and also to reliably discriminate depressive patients from non-depressed controls. Although t -scores are available for this measure, t -scores were not available for other measures used in this study, so for purposes of consistency raw scores were used for all analyses. In this study, the alpha coefficient for the CDI was .90.

Hopelessness Scale for Children (HSC). The HSC (Kazdin, Rogers, & Colbus, 1986; see Appendix D) was developed as a downward extension of Beck's Hopelessness Scale, and is used for children ages 5-18. This self-report measure is widely used to determine feeling of hopelessness and pessimism in children. It consists of 17 items that are rated as true or false. The HSC has been shown to have good internal consistency ($\alpha = 0.97$) and construct validity (.58), and adequate test-retest reliability over a six week interval ($r = 0.52$). It has been found to be positively correlated with a measure of depression ($r = 0.58$), and negatively correlated with measures of self-esteem ($r = -0.61$) and

social skills ($r = -0.39$). In this study, the HSC was found to have a coefficient alpha of .87.

Pediatric Anger Expression Scale (PAES). The PAES is a 15 item, self-report measure for youngsters that taps into three facets of anger: expression, reflection, and suppression (Jacobs, Phelps, & Rohrs, 1989; see Appendix E). Each of these facets is measured by a 5 item subscale, with items rated on a 3 point Likert scale. Although this is not a heavily researched measure, internal consistency (alpha coefficient) ranges from .63-.74. There is some evidence that one scale of this measure (Anger Reflection) may not be psychometrically sound when used with a Native American population (Jacobs & Mehlhaff, 1992). However, due to the location of data collection, no Native American adolescents participated in the current study. Further information on validity and age range of use is not available at this time. When used in this study, alpha coefficients found for the PAES subscales were .68 (Reflection), .72 (Expression), and .70 (Suppression).

Suicide Intent Scale (SIS). The SIS (Beck, et al., 1974; see Appendix F) is a 15 item, interview-based measure that is widely used to determine the intention of a suicide attempt. Items are scored by examiners on a Likert scale, with scores ranging from 0 (none) to 2 (completely). This measure has been shown to have adequate interrater reliability (alpha = 0.95). Internal consistency was found to be adequate, with an alpha of .82. This measure has been shown to discriminate between suicide attempters and completers (Beck, Morris, & Beck, 1974). Several researchers have demonstrated its usefulness with an

adolescent population (Brent, 1987; Brown, Overholser, Spirito, & Fritz, 1991; Hawton, 1986). In the current study, 2 items from this measure were used to determine whether a suicide attempt was premeditated or impulsive, as defined by Brown, Overholser, Spirito, and Fritz (1991). Either the principle investigator or a trained research assistant conducted an oral interview with the participant who had made a suicide attempt/gesture, and then the 2 items used from this measure were completed by the examiner. The measure was only completed when adolescents had made a suicide attempt or gesture. A total score of 0 on the 2 items combined indicated an impulsive attempt, and a total score of 2-4 indicated a premeditated attempt. In this study, the coefficient alpha for the 2-item subset of the SIS was .62.

Demographics. Information about age, gender, ethnicity, family composition, and socioeconomic status (i.e. annual income) were obtained from the parents or guardians at the time when consent was provided (see Appendix A).

Procedure

Due to the nature of the facilities used and the resources available, there was some difficulty in obtaining participants for this study. Parent consent was required for participation (along with child assent; see Appendix G), and parents are infrequently at the crisis units. At times parents will accompany children to the unit upon admission, but this did not happen regularly: often consent for treatment at the facility was obtained via telephone, and many parents did not

come to the unit in-person until visitation or discharge from the unit. Because stays on the unit were so short, often families did not attend visitation, or did so infrequently. Furthermore, due to the short stays and lack of opportunities to approach guardians to provide consent, participation in this study occurred at varying times throughout the stay. Participation occurred when consent was given, and consent was given when guardians were able to be approached.

In order to recruit most participants, the principal investigator or a trained research assistant attended many unit visitations, and based on information given by unit staff members, approached guardians of children who were of the appropriate age range (11-17). Children who were diagnosed with psychosis or mental retardation (by history, or upon admission), or appeared to suffer from such conditions (as judged by the examiner or staff members), were not approached for participation in this study. Due to difficulties with obtaining contact with guardians (few parents coming to visitation sessions, unable to obtain phone consent for this study), a psychiatrist at the SVCIU agreed to assist in obtaining consent by explaining the study to families during his meetings with parents/guardians. After obtaining parental consent, children were approached for assent. Participation in this study occurred only after both parental consent and child assent were obtained.

At the CCSU, financial compensation was offered in the form of a drawing for Walmart gift certificates, and five certificates were randomly awarded to participants at that site in order to encourage participation in the study. Due to organization rules, it was not possible to offer this type of compensation at

Shands Vista, so participants were uncompensated for their participation at this site. However, it is notable that the refusal rate was extremely low at both sites, with only one family refusing at the CCSU, and one refusing at the SVCIU. Reason for refusal at both sites reportedly was linked to general dissatisfaction with the facilities, rather than to concerns about the current study.

After obtaining parental consent and child assent, participants completed the above-listed measures, were briefly interviewed by the investigator or a trained research assistant regarding the suicidal gesture/attempt if one was made prior to admission, and parents completed the demographic data sheet. It took approximately 5-10 minutes to participate in the study. Questionnaires were administered orally to any adolescent who reported difficulty reading or who was unable to read aloud a practice item on the CDI. The investigator or trained research assistant was available to answer any questions that the participant had regarding the measures throughout the participation process.

If a suicide attempt/gesture was made at the time of admission (as determined by intake notes), a brief interview was conducted in which it was determined whether the incident was truly an attempt/gesture (e.g., whether the intent of this incident was to cause self-death (an attempt/gesture) or was simply a means of self-injury or attention-seeking (not an attempt/gesture), and if so, information about the amount of preparation and planning prior to the attempt/gesture was elicited. Interview information was used by the investigator or trained research assistant to complete the SIS items. No information about the specific reasons for admission, nor the specifics about the suicide

attempt/gesture were recorded for this study. Information regarding the incidence of prior suicide attempts was not gathered for this study.

It had been anticipated that a total of 128 participants would be needed in order to have enough power to show an effect. Due to difficulties in obtaining participants, analyses were conducted after the collection of 100 participants in order to determine whether the collection of additional participant data would assist in showing an effect. For the comparisons that appeared to be closest to showing an effect (impulsivity by age group and anger expression by gender), power analyses were conducted using the effect sizes generated by the data. For 1- β (alpha .05, two-tailed), it was estimated that a sample of 140 participants per group would be necessary in order to show a significant effect for impulsivity by age group (total sample of 280), and a sample of 76 participants per group would be necessary in order to show a significant effect for anger expression by gender (total sample of 156). Overall, the effect sizes found were significantly lower than anticipated prior to the study, and a much larger sample would have been needed to find significant results. Therefore, it was determined that the collection of additional data from 28 participants would not significantly impact results, so no further data were collected.

Chapter 3

Results

In this section, study results will be presented. First, comparisons between the two data collection sites will be made. Second, item analyses will be presented. Third, descriptive statistics will be provided. Fourth correlations will be described. Finally, hypothesis testing will be conducted. Tables will be integrated within the text.

Site Comparisons

Two sites were used for data collection (CCSU in Tampa and SVCIU in Gainesville), so comparisons were made to determine whether there were significant differences between the two groups. A *t*-test comparing the two groups on the variable of age was not significant ($t(96) = -.693; p > .05$). Chi-square tests comparing the two groups on gender, ethnicity, living arrangement, and income also were not significant (see Table 1). No significant differences were found between the two groups on the measures of depression ($t(97) = 1.13, p > .05$), hopelessness ($t(98) = 0.83, p > .05$), impulsivity ($t(98) = 0.675, p > .05$), and anger expression ($t(98) = 1.17, p > .05$). However, the two groups were found to be significantly different on the measures of anger reflection ($t(98) = -4.50, p < .001$) and anger suppression ($t(98) = 3.79, p < .001$). Specifically,

children at the SVCIU reported more anger reflection than the children at the CCSU, and children at the CCSU reported more anger suppression than children at the SVCIU. Overall, the two groups were not found to be significantly different on demographic characteristics, and therefore the following analyses were conducted using combined data from the two groups.

Table 1

Chi-Square Comparisons Between Sites

Gender: Chi-square (1, N=100) = .405, $p > .05$

	CCSU	SVCIU
Male	23	6
Female	52	19

Ethnicity: Chi-square (1, N=100) = .265, $p > .05$

	CCSU	SVCIU
Caucasian	55	17
Other Ethnicities	20	8

Living Arrangement: Chi-square (1, N=100) = .872, $p > .05$

	CCSU	SVCIU
Any biological parents	64	21
Not with parents	11	4

Income: Chi-square (1, N=90) = 2.688, $p > .05$

	CCSU	SVCIU
<\$50,000	57	10
\$50,000+	16	7

Item Analyses

Internal consistency of study measures was determined using coefficient alpha. Alphas ranged from .62 to .90, and results are displayed in Table 2. The lowest alpha was for the 2-item subset from the Suicide Intent Scale, which was

surprisingly high for such a brief measure. Overall, internal reliability of measures were adequate and are consistent with published reports of internal consistencies from the normative data.

Table 2

Internal Reliability of Measures

	<u>SIS</u> <u>Items</u>	<u>CDI</u>	<u>HSC</u>	<u>ABC –</u> <u>Impulsivity</u> <u>Subscale</u>	<u>Anger –</u> <u>Reflection</u>	<u>Anger -</u> <u>Expression</u>	<u>Anger -</u> <u>Suppression</u>
N	43	97	97	95	99	99	99
#items	2	27	17	10	5	5	5
Alpha	.62	.90	.87	.84	.68	.72	.70

Descriptive Statistics

Means and standard deviations, as well as frequency distributions, are shown in Table 3. Scores are presented for suicide attempters (N=43) and non-attempters (N=57) by age group (older N=52; younger N=48; age split based on age 15+ as older based on prior research) and gender (male N=29; female N=71). Mean score on the CDI for the total sample was 22.01 (SD=10.14). Means found for this sample on the CDI are noticeably higher than normative data (mean ranges from 9.8-10.5 based on age and gender) and fall within the clinically significant range for both genders and age groups. Overall, these results are suggestive of the high level of distress being experienced by participants as a whole.

Table 3

Variable Means and Standard Deviations for all Variables by Group

		Total Sample (N=100)	Females (n=71)	Males (n=29)	Suicidal Gesturers (n=43)	Non- Gesturers (n=57)	Older (n=52)	Younger (n=48)
Age								
	M	14.64	14.61	14.72	14.81	14.51	16.00	13.17
	SD	1.66	1.70	1.58	1.65	1.67	0.79	0.93
Gender								
	Female	71	71	0	33	38	34	37
	Male	29	0	29	10	19	18	11
CDI								
	M	22.01	22.40	21.07	24.14	20.44	22.00	22.02
	SD	10.14	10.50	9.30	10.64	9.54	10.76	9.54
HSC								
	M	6.28	6.05	6.83	7.09	5.67	6.33	6.23
	SD	4.44	4.35	4.70	4.39	4.42	4.99	3.82
Impulsivity								
	M	12.77	13.03	12.14	13.37	12.31	11.75	13.87
	SD	6.56	6.43	6.95	7.05	6.20	6.87	6.10
Anger Suppress								
	M	11.96	11.73	12.52	12.46	11.58	12.29	11.60
	SD	3.51	3.55	3.39	3.47	3.52	3.41	3.61
Anger Refl								
	M	7.46	7.28	7.90	7.19	7.67	7.67	7.23
	SD	2.77	2.64	3.10	2.51	2.97	2.63	2.93
Anger Express								
	M	10.55	10.87	9.76	10.60	10.51	10.48	10.62
	SD	2.53	2.40	2.71	2.48	2.58	2.62	2.45

Means on other measures further suggest differences between the population examined in this study and the population at large. Means on the anger measures show somewhat higher levels on scales of anger suppression ($M=11.96$, $SD= 3.51$) and anger expression ($M=10.55$, $SD=2.53$), and lower levels on a scale of anger reflection ($M=7.46$, $SD=2.78$) compared with normative data (Jacobs, Phelps, & Rohrs, 1989). Furthermore, reported level of impulsivity ($M=12.77$, $SD=6.57$) is in the range expected for children with ADHD (Adams, Kelley & McCarthy, 1997).

Comparisons were made on demographic characteristics for gesturers and non-gesturers. A series of chi-square analyses was conducted to examine differences between gesturers and non-gesturers on the variables of gender, ethnicity, living arrangement, and income. No significant differences were found between the two groups on these characteristics (see Table 4). Furthermore, no significant differences were noted between the two groups on the variable of age ($t(98) = .91$; $p > .05$).

Correlations

An examination of the correlations among study measures for the entire population (see Table 5) suggests that the CDI is very highly correlated with the HSC and significantly correlated with the Impulsivity subscale of the ABC and

Table 4

Chi-Square Analyses for Gesturers vs. Non-gesturers

Gender: Chi-square (1, N = 100) = 1.21, $p > .05$

	Gesturers	Non-gesturers
Male	10	19
Female	33	38

Ethnicity: Chi-square (1, N = 100) = .187, $p > .05$

	Gesturers	Non-gesturers
Caucasian	30	42
Other Ethnicities	13	15

Living Arrangement: Chi-square (1, N = 100) = .769, $p > .05$

	Gesturers	Non-gesturers
Any biological parents	35	50
No biological parents	8	7

Income: Chi-square (1, N=90) = .02, $p > .05$

	Gesturers	Non-gesturers
<\$50,000	28	39
\$50,000+	10	13

Table 5

Overall Correlation Matrix

	CDI	HSC	ABC - IMPULS	ANGER - Suppress	ANGER - Reflect
HSC	.65***				
ABC - IMPULS	.37***	.12			
ANGER - Supp	-.03	.09	-.02		
ANGER - Reflect	-.34**	-.24*	-.36***	-.20*	
ANGER - Expres	.34**	.15	.43***	-.39***	-.39***

*** $p < 0.001$ (2-tailed)

** $p < 0.01$ (2-tailed)

* $p < 0.05$ (2-tailed)

the Anger Expression subscale of the PAES. It is significantly but negatively correlated with the Anger Reflection subscale of the PAES. Therefore, for the overall sample, depressive symptoms are associated with hopelessness, impulsivity, and display of anger, while dealing maturely with anger (anger reflection) is associated with a lack of depressive symptoms.

In addition to a strong correlation with the CDI, the HSC is significantly negatively correlated with the Anger Reflection subscale of the PAES, suggesting that dealing with anger maturely is associated with a lack of hopelessness. The anger subscales of the PAES correlated significantly and negatively with one

another, indicating that these methods of dealing with anger are separate entities from one another. The Impulsivity subscale was correlated with the Anger Expression subscale, and not surprisingly, was negatively correlated with the Anger Reflection subscale. The Suicide Intent Scale subitems were not significantly correlated with other study measures. Note that these subitems were given only to suicide gesturers, because the items ask about the suicide attempt/gesture.

Table 6 gives correlations among measures for non-gesturers only. A similar pattern emerges, with CDI again correlated with all measures with the exception of Anger Suppression. The Anger subscales were negatively correlated with one another, although the correlation between Suppression and Reflection is not significant for the non-gesturer group. Again, Impulsivity was positively correlated with Anger Expression and negatively correlated with Anger Reflection.

Table 6

Correlations for Non-gesturers

	CDI	HSC	IMPULSIV	ANGER SUPPRESS	ANGER REFL
HSC	.56***				
IMPULSIV	.36**	.02			
ANGER SUPPRESS	-.03	.18	-.02		
ANGER REFL	-.36**	-.17	-.43**	-.21	
ANGER EXPR	.50***	.17	.48***	-.38**	-.42**

*** $p < 0.001$ (2-tailed)

** $p < 0.01$ (2-tailed)

* $p < 0.05$ (2-tailed)

Fewer significant correlations were evident for suicide gesturers (see Table 7). The CDI was correlated only with HSC and Impulsivity. As was seen in the other groups, Anger Expression was positively correlated with Impulsivity. It is notable that a significant correlation was found between HSC and Anger Reflection for this group but not for the non-gesturing group.

Table 7

Correlations for Gesturers

	CDI	HSC	IMPULSIV	ANGER SUPP	ANGER REFL	ANGER EXPRES
HSC	.755***					
IMPULSIV	.354*	.221				
ANG SUPPRESS	-.079	-.080	-.050			
ANG REFL	-.298	-.326*	-.272	-.150		
ANG EXPR	.134	.117	.376*	-.418**	-.325*	
SIS	.180	.127	-.019	-.007	-.144	-.130

*** $p < 0.001$ (2-tailed)

** $p < 0.01$ (2-tailed)

* $p < 0.05$ (2-tailed)

Hypothesis 1: Hopelessness, depression, and impulsivity in older and younger participants

Age differences were expected, such that older adolescents (ages 15-17) were expected to show the adult pattern of depression and hopelessness related to suicidal behavior (higher levels of depression and hopelessness than non-suicidal adolescents), while suicidal younger adolescents (ages 11-14) were not expected to differ from their non-suicidal peers on the measures of depression

and hopelessness, but were expected to show higher levels impulsivity than their non-suicidal peers.

The variables of depression and hopelessness were found to be significantly correlated with one another ($r = .65$, $p < .001$), but only depression was found to be significantly correlated with impulsivity ($r = .37$, $p < .001$), whereas hopelessness was not significantly correlated with impulsivity ($r = .12$; see Table 5). A MANOVA including all of these variables was not conducted because all three variables were not significantly intercorrelated. Instead, the analyses were conducted using separate ANOVAs.

In order to examine the relationship between gesturers and non-gesturers on the dependent variables for each age group, separate ANOVAs were conducted for each age group. For both the older and younger group, ANOVAs comparing differences between gesturers and non-gesturers on each of the relevant dependent variables (depression, hopelessness, and impulsivity) were conducted (see Table 8). None of these ANOVAs were significant for the older group; however, for the younger group a significant difference was found on the variable of hopelessness ($F(6.03)$, $p < .05$), and approached significance for the variable of depression ($F(3.28)$, $p < .1$). No differences on the variable of impulsivity were found for the younger participants.

Overall, results do not support Hypothesis 1. In fact, there is support for just the opposite: instead of older participants, it was found that younger participants who attempted suicide showed higher levels of depression and

hopelessness than their non-attempting peers. Impulsivity was found to be unrelated to suicide attempt for both younger and older participants.

Table 8

ANOVA Results Comparing Suicidal Gesturers to Non-gesturers by Age Group

		Sum of Squares	df	Mean Square	F	Sig.	Mean for Gesturers	Mean for Non-Gesturers
Older Group							N=25	N=27
	CDI	85.71	1	85.71	0.74	0.39	23.37 SD=11.47	20.78 SD=10.15
	HSC	1.79	1	1.79	0.07	0.79	6.52 SD=5.13	6.15 SD=4.95
	Impulsive	49.12	1	49.12	1.04	0.31	12.76 SD=7.65	10.81 SD=6.05
Younger Group							N=18	N=30
	CDI	285.01	1	285.01	3.28	0.08	25.17 SD=9.65	20.13 SD=9.12
	HSC	79.33	1	79.33	6.03	.02*	7.89 SD=3.05	5.23 SD=3.93
	Impulsive	3.47	1	3.47	0.09	0.76	14.22 SD=6.23	13.67 SD=6.12

* Significant (p< .05)

Hypothesis 2: Gender differences in depression and impulsivity

- a. It was expected that gender differences in level of depression would occur for the older group, such that older girls would show more depression than older boys, whereas no gender differences in level of depression was expected for the younger group.

This part of the hypothesis was tested using t -tests. A separate t -test was performed for the younger group and for the older group. For each age group, the t -test examined gender differences in reported level of depression. No significant gender differences were found in reported level of depression for either the younger group or the older group ($t(46)=-.222$ and $t(50)=-.568$, respectively; see Table 3).

- b. It was predicted that suicidal boys would show more impulsivity related to their suicidal behavior than would suicidal girls.

This part of the hypothesis also was tested using a t -test. No significant gender differences were found in reported level of impulsivity among suicide attempters ($t(41)=.727$). Note, however, that the number of male suicide attempters was particularly small ($N=10$) when compared with the number of female suicide attempters ($N=33$; see Table 3). Overall, there do not appear to be significant gender differences in this study based on outcome measures.

Hypothesis 3: Anger and impulsivity in suicidal gestures

- a. It was expected that adolescents who showed impulsive suicide attempts would report lower anger suppression than adolescents who had premeditated suicide attempts.
- b. It was expected that impulsive attempters would be more expressive of their anger.

Suicide attempts were classified as being impulsive or not impulsive based on 2 items from the SIS, which tapped into impulsivity of attempt. Classification was based on previous work done by Brown, Overholser, Spirito and Fritz (1991). With a score of 0, an attempt was classified as impulsive, whereas with a score of 2-4 an attempt was classified as not impulsive. Using a t -test, no significant differences were found between impulsive attempters and non-impulsive attempters on the dependent variables of anger suppression ($t(30)=-.058$), anger reflection ($t(30)=1.122$), or anger expression ($t(30)=.910$). However, it is notable that significant differences were not found between impulsive and non-impulsive attempters on the dependent variable of impulsivity ($t(30)=-.337$), which leads to doubt about whether the impulsivity seen in the attempt is related to a trait or a state.

Although no association was found between impulsivity of attempt and anger expression, anger was examined as a function of general impulsivity for the sample at large (See Table 5). Impulsivity had a significant, negative correlation with anger reflection ($r=-.36$, $p<.001$), and a significant, positive

correlation with anger out ($r=.43$, $p<.001$). No significant correlation was found between impulsivity and anger suppression, although a significant, negative correlation was found between anger suppression and anger out ($r=-.39$, $p<.001$).

Hypothesis 4: Family composition and suicidal gesture

It was expected that nonsuicidal psychiatric control participants would be more likely to live with at least one biological parent, whereas suicidal participants would be more likely to reside in non-traditional settings (e.g., with grandparents, in foster care). A chi-square analysis comparing gesturers to non-gesturers on the variable of living arrangement showed no differences between the two groups on this variable (see Table 4). This is contrary to the proposed hypothesis.

Hypothesis 5: Socio-economic status and suicidal gesture

Although it was expected that socioeconomic status would generally be low for participants in this study, it was expected that lower income would be more evident for the gesturers than for the non-gesturers. It is notable that this item was unavailable for 10% of the sample. Data were obtained categorically, that is, parents indicated in which category their total annual income fell. Approximately 25% of the sample had an income of \$50,000 or higher. A chi-square analysis comparing gesturers with non-gesturers on the variable of

income was not significant (see Table 4). Overall the results do not support the proposed hypothesis.

Hypothesis 6: Ethnicity and suicidal gesture

Exploratory analyses were conducted to determine whether ethnic differences existed in patterns of suicidal behavior. Examining a table of the means of outcome variables broken down by ethnicity and suicidality (see Table 9), few patterns emerge. A chi-square analysis comparing Caucasian participants to non-Caucasian participants on having a suicide gesture was conducted (see Table 4), but no significant differences were found for this analysis. Given the low number of ethnic participants, it is likely that cell sizes would be too small to determine reliable differences using other methods of comparison. Therefore, comparing different ethnic groups would not be practical. Taking age and gender into account would further shrink the cell sizes. Further analyses were not conducted in this area.

Table 9

Ethnicity and Suicidal Gesture

		CDI	HSC	Impulsive	Anger Suppress	Anger Reflect	Anger Express
Caucasian							
	Gesture (N=30)	24.20 SD=11.27	6.60 SD=4.50	12.93 SD=6.73	12.60 SD=3.59	7.30 SD=2.47	10.30 SD=2.57
	Non-Gesture (N=42)	19.64 SD=8.88	5.36 SD=4.28	12.09 SD=5.80	11.74 SD=3.79	7.79 SD=2.81	10.50 SD=2.37
African-American							
	Gesture (N=2)	15.00 SD=12.73	6.00 SD=2.83	12.00 SD=14.14	11.50 SD=0.71	10.00 SD=4.24	12.00 SD=1.41
	Non-Gesture (N=3)	21.00 SD=6.56	7.00 SD=7.00	12.67 SD=7.77	9.67 SD=2.08	8.00 SD=3.61	11.33 SD=1.53
Hispanic							
	Gesture (N=7)	22.67 SD=8.91	8.71 SD=5.38	11.57 SD=6.83	12.71 SD=3.35	6.71 SD=2.43	11.14 SD=1.77
	Non-Gesture (N=6)	24.67 SD=14.71	8.00 SD=5.76	13.00 SD=9.10	10.67 SD=2.34	7.83 SD=4.07	10.67 SD=4.37
Other							
	Gesture (N=4)	30.50 SD=4.36	8.50 SD=1.29	20.50 SD=4.43	11.50 SD=4.36	5.75 SD=1.71	11.25 SD=3.40
	Non-Gesture (N=6)	21.50 SD=10.52	4.83 SD=2.64	13.00 SD=6.78	12.33 SD=3.08	6.50 SD=3.21	10.00 SD=2.83

Chapter 4

Discussion

This study examined variables that have been associated with adolescent suicide attempts: anger expression, impulsivity, depression, and hopelessness. Adolescents who were admitted to inpatient clinical units for suicide attempts were contrasted with a control group of adolescents who were admitted to the inpatient clinical units for other reasons. Overall, results of this study did not support hypotheses generated from previous research. In this section, results of each hypothesis will be discussed, then study limitations will be presented, and finally, future directions for research will be suggested.

Hypothesis 1

Based on previous research (Dyer & Kreitman, 1984; Whisman, Miller, Norman, & Keitner, 1995) it was predicted that a pattern would emerge in the endorsement of hopelessness, depression and impulsivity such that suicide attempting older adolescents would show the more adult-like pattern of high levels of depression and hopelessness compared with non-attempting peers, whereas younger attempters would show similar levels of depression and

hopelessness as their non-attempting peers, but would show higher levels of impulsivity. Surprisingly, no significant differences were found between older attempters and older non-attempters on any of these variables; however, younger attempters reported significantly more hopelessness than younger non-attempters, and levels of depression were higher for the attempters, although not significantly higher.

One possible reason why results found were not consistent with predictions is that the control group used for this study may not have been ideal. Two types of inpatients were compared, and it was assumed that there would be sufficient differences between the two groups to warrant comparison. However, the non-attempting control group probably had sufficient distress to warrant hospitalization, and there were likely overlaps in issues experienced by the two groups. For example, a distressed adolescent might lash out at a parent or sibling rather than at him- or herself, but might also experience suicidal thoughts. It is possible, then, that the lack of difference found between the older groups might be a result of overlap between groups. It is possible that for the younger age groups there was a greater difference between the two groups as far as reasons for admission, allowing for a more accurate comparison. Suicidal behavior was less prevalent for the younger group as a whole, so perhaps those who were displaying such behavior at a young age were significantly different from their peers who were hospitalized for more aggressive/uncontrolled behavior.

At the same time, our expectation is that younger suicidal children would not display the increased depression and hopelessness common to adult suicide attempters. It also may be that the range of age examined was not large enough to capture developmental differences (i.e., need to examine this phenomenon in even younger and older participants). Finally, a larger sample would have allowed for an examination of differences at each age year, rather than using the age of 15 or higher as the definition of “older”. Lumping together “older” and “younger” participants may have lead to the lack of significant findings.

The use of only self-report measures also may have contributed to the unexpected findings. Participants were not given information about the direction of results expected by the researchers, and desire to please the researchers probably was minimal given the researchers’ lack of involvement in the children’s care, and the fact that individual results were not shared with staff (due to confidentiality). Although participants had no motivation to provide inaccurate results, they may not have had a strong desire to provide accurate results, either. Inaccurate reporting on these self-report measures is difficult to detect, but no participant displayed obvious signs of “faking” data (e.g., appearing bored or hurried, clearly marking randomly). Furthermore, we can only assume that participants are capable of providing an accurate self-assessment. These measures have been shown to be reliable, even for children much younger than the age group tested, and previous research supports the use of self-assessment measures with children and adolescents (e.g., Kovacs, 1992). However, it is unclear how the high level of distress that warranted hospitalization affected

ability to clearly self-examine thoughts and emotions, particularly given the inconsistency in the timing of measure presentation. For example, there might have been a depression bias in reporting (e.g., Elliot, Rubinsztein, Sahakian & Dolan, 2002; Watkins, 2002). This would mean that participants who were severely depressed at the time that they completed measures might present a more negative picture of their feelings than they normally experience on a regular basis. Due to difficulty obtaining participants for the study, there was no real uniformity in the timing of the measure completion. Specifically, there might have been a difference between reports provided early in the hospitalization compared with those provided closer to discharge, assuming that a child's perception of the world and their feelings about themselves might change over the course of treatment. Due to the constraints associated with data collection, it was not possible to provide uniformity in the timing of data collection.

Finally, it is notable that some previous examinations of this area have been inconclusive (e.g., Harris & Lennings, 1993; Pinto & Whisman, 1996; Spirito, Overholser, & Hart, 1991). Therefore, failure to find the "expected" result is not entirely unexpected. It is possible that there are mediating or moderating factors that have not yet been detected that may influence results, or it is possible that the patterns are changing over time. For example, the age at which groups of children begin to show a more "adult-like" pattern of suicidality might vary across generations due to differences in lifestyle, historical events, etc.

Hypothesis 2

Gender differences were predicted such that older girls would report more depression than older boys, while there would be no variability in depression by gender for the younger group; it was further expected that suicidal boys would report more impulsivity than suicidal girls (Lewis, Johnson, Cohen, Garcia, & Velez, 1988; Rich, Kirkpatrick-Smith, Bonner, & Jans, 1992). No gender differences were found in report of depression for either age group, and no gender differences were found in report of impulsivity for suicidal participants.

These findings were unusual because these phenomena have been well-established in the literature (e.g., Cole, 1989; Rich, Kirkpatrick-Smith, Bonner, and Jans, 1992), however, typically non-clinical populations have been examined, rather than clinical populations. One possible explanation for the lack of gender differences in the report of depressive symptoms was that this was a particularly distressed sample, as evidenced by hospitalization, so gender differences normally evident for these age groups may have disappeared. There also were some sampling problems in relation to the suicide-attempting sample, such that there were relatively few male attempters, especially for the younger group. This is probably related to the general phenomenon of males attempting less frequently, but doing so more successfully (Rosenthal, 1981), which would lead us to expect fewer males hospitalized for suicide attempts. However, the accuracy of this result is questionable because a small number of participants were available for analysis. The differences between clinical and non-clinical samples are worthy of further explorations.

Hypothesis 3

Differences in expression of anger (e.g., suppression, reflection, outward expression) were expected for those who made impulsive attempts compared with those who made premeditated attempts, such that impulsive attempters were expected to be more expressive of their anger and show lower suppression of anger (Borst & Noam, 1993; Brown, Overholser, Spirito, & Fritz, 1991, Kashden, Fremouw, Callahan, & Franzen, 1993). No significant differences in suppression, reflection or outward expression were noted for attempters versus non-attempters. However, it is notable that no differences in impulsivity were found between impulsive and non-impulsive attempters, suggesting that impulsivity in a suicide attempt might not be reflective of impulsivity as a general personality trait.

Overall impulsivity was found to be positively correlated with outward expression of anger, and negatively correlated with anger reflection. Although a brief self-rating of impulsivity may not be the ideal measure, it is notable that the expected correlations were found between impulsivity and expressions of anger. Given that overall impulsivity was not related to impulsivity of attempt, we could infer that, although general impulsivity could be more trait-like, impulsivity of attempt might be more related to state. If this is true, then children who are generally impulsive might not be at greater risk for suicide attempt than children who show low levels of impulsivity.

Hypothesis 4

It was expected that non-suicidal participants would be more likely to live with at least one biological parent as compared with suicidal participants (Wagner, 1997). This result was not found, which may say something about the sample used. In general, participants came from families of lower income, which would be expected given the facilities used for data collection. Because single-parent homes are associated with lower income, we might expect a larger proportion of the hospitalized population to come from non-intact families. There were few participants, however, who lived in situations other than with at least one biological parent. These few participants were equally distributed across the suicidal and non-suicidal groups.

It is possible that those children who were hospitalized for reasons other than suicidality might have serious problems, which could be related to or exacerbated by their living situation. It also is possible that suicidality might be unrelated to family configuration, although a dysfunctional household or family relational problems probably present stressors that may compound other existing difficulties.

Hypothesis 5

It was expected that suicide attempters would be more likely to come from homes with lower income (Lewis, Johnson, Cohen, Garcia, & Velez, 1988). This result was not found, although it is notable that overall socio-economic status was low for study participants, as predicted. The family stress associated with

low income might enhance already existing problems, but this study provided no evidence for the hypothesis that lower income would put one at greater risk for a suicide attempt. However, to examine this result more thoroughly, a larger sample with more diversity of income should be examined, and comparisons should be made to the general population and not just to children hospitalized for other reasons.

Hypothesis 6

Limited exploratory analyses were conducted investigating ethnic differences in the dependent variables and their relationship to making a suicidal gesture. No differences were found between gesturers and non-gesturers, although due to small numbers of ethnic participants, only a comparison between Caucasian participants and non-Caucasian participants using chi-square analyses was done.

It is expected that minority groups would make up a smaller proportion of the total population than Caucasians, and the percentage of minority participants recruited for this study was representative of the percentages of ethnic participants within each inpatient unit. It is possible that ethnic differences in pattern of variables associated with suicide attempt do exist, but due to the low number of ethnic participants in this study this question could not be resolved satisfactorily. Most of the studies that have examined ethnic differences have examined reports of depressive symptoms in community samples, rather than actual gesturers in a clinical sample (Roberts & Chen, 1995; Roberts & Sobhan,

1992). A more diverse, larger group should be used in order to examine potential ethnic differences.

Overall Results

Results of this study did not support the hypotheses that were based on previous research. Expected gender and age-related differences were not observed, and hypothesized differences in income and family constellation were not found. Several reasons for these lack of findings have been described which may account for the discrepancies. It is possible that results from the literature reflect a population different from the one examined here. For example, results using a normal population may not generalize to a clinical sample. It is also possible that some of the hypotheses were inaccurate: perhaps family constellation and income level are not significant predictors of suicidality.

Two findings related to impulsivity are of note. First, as might be predicted, impulsivity was correlated positively with expression of anger and negatively associated with anger reflection. Therefore, those who deal more maturely with anger tend to be less impulsive, and impulsive adolescents are more likely to deal with anger by just letting it out. Second, impulsive suicide attempters were not more likely to be impulsive overall than non-impulsive attempters. These findings suggest that impulsivity of suicide attempt is not necessarily related to impulsivity in general.

As found in other studies, this sample as a whole did not display the adult pattern of depression and hopelessness associated with suicide attempt.

Although older adolescents would have been expected to show a more adult-like pattern, this was not found to be the case. What does this mean in relation to our understanding of suicidal behavior? Models predict that suicidal behavior is probably more complex than can be predicted by single factors such as hopelessness, depression or impulsivity. This should be even more true for adolescents, who have multiple physiological and social changes occurring simultaneously. Even more important than the individual traits or risk factors associated with suicidal behavior is the combination of these risk factors with environmental variables that may mitigate or enhance vulnerability to suicidal behavior, as well as exposure to precipitating stressful events.

Study Limitations

There were many limitations to this study. First, due to resources available, constraints set forth by the agencies and Internal Review Boards, and the practicalities of data collection, the overall number of participants was lower than optimal. A larger sample size, from a broader range of sites, would yield more generalizable results. Furthermore, although the number of ethnic participants was within the range expected for the general population and for this specific population, the small number of overall participants meant that there were an insufficient number of participants within each individual ethnic group to allow for comparisons between ethnic groups on the dependent variables. Therefore, in order to obtain information about differences in ethnic groups on the variables examined, a much larger sample would be ideal.

Second, the number of female participants was higher than expected for this population. At both the CCSU and SVCIU the mean number of males admitted to the units is slightly higher than the number of females admitted to the unit (CCSU: 54% male, 46% female; SVCIU: 52% male, 48% female). However, the number of female participants in this study was higher than the number of male participants at both units (CCSU: 31% male, 69% female; SVCIU: 24% male, 76% female). It is unclear why the number of female participants outweighed the number of male participants for this study. This finding might be related to data collection practices. There was a heavy reliance on the visitation process in order to obtain parental consent for participation in this study. The greater presence of girls in the sample may have been due to differences in visitation practices. It is possible that parents of female inpatients are more likely to visit their children, have longer visits, or visit more frequently. To date, no published studies have examined this phenomenon. Information on visitation is not gathered by either of the units utilized in this study, so this hypothesis could not be tested. Regardless of the reason for the unexpected gender distribution of the participants, it is clear that the population used in this study does not necessarily represent the populations of these particular units. Thus, generalizability of the findings is limited.

Third, recruitment was not done at a uniform time during the admission, which makes comparisons problematic. For example, data obtained at the beginning of the hospitalization, when the patient was most likely in crisis, might be different from data collected at discharge, when patients were more stable.

Due to previously described difficulties in obtaining participants, it was not possible to obtain patient data uniformly in regard to timing of the data collection. At the same time, average inpatient stay at both units is very short (3-5 days in most cases), and the focus of the hospitalization is on stabilizing the crisis, rather than providing significant treatment. Information on point in the stay at which data were collected was not obtained from study participants. Therefore, participant frame of mind might be similar both at intake and at discharge, but it is not possible to determine whether this was true in this study. In future studies it would be optimal to obtain data at a uniform point during the stay, such as at intake, in order to insure that comparisons made among and between participants are accurate.

Fourth, it is unclear whether the control group of inpatients at the same facilities who were not admitted for suicidality provided a good basis for comparison. It could have been useful to see how our suicide attempting patients vary from the general population. A comparison to age/gender matched normal control participants might have been useful in order to determine whether measures used are able to discriminate between those who were suicide gesturers and those who were not. However, it is notable that the use of a clinical control condition is common in the literature and is thought to be necessary for adequate comparisons (e.g., Marciano & Kazdin, 1994; Pinto & Whisman, 1996). Furthermore, it would be expected that normal control participants would perform similarly to participants in normative samples, and would show lower levels of distress on the measures used for this study.

Therefore, use of a non-clinical control condition might not be as informative as the use of a clinical control condition for the purposes of this study. However, the use of both a clinical and a non-clinical control group might have provided for interesting comparisons.

A fifth, and related limitation was the categorization of participants. For the purposes of this study, those participants who: (1) took some sort of action in an effort to endanger their lives, (2) had the intent to kill themselves, and (3) were admitted for hospitalization as a direct consequence of these events were deemed suicide attempters/gesturers. However, it is notable that no information was obtained about previous attempts or hospitalizations; only information about the current hospitalization and suicide gesture was collected for this study. Therefore, it is possible that participants who were hospitalized for reasons other than a suicide gesture might have been suicidal or may have made an attempt/gesture previously. It would have been helpful to obtain information about the number of previous suicide attempts and inpatient hospitalizations in order to make finer discriminations among the groups. For example, within the group of attempters, chronic attempters and first time attempters could have been compared, and within the group of non-attempters, those who made previous attempts could have been compared with those who had not made previous attempts.

Sixth, in general, additional information about the children would have allowed for a better understanding of this population. Information on school performance, height, weight, and pubertal status was not obtained for this study.

Such information could have helped to provide a richer understanding of issues related to suicidality. For example, the more adult-like pattern of suicidal behavior could be associated with physical development (i.e. pubertal development) or mental development (i.e., emotional maturity) rather than chronological age.

Seventh, measures used in this study were exclusively self-report measures. Only one measure of each variable (e.g., depression, hopelessness, anger, impulsivity) was obtained and only from one source. Obtaining data from other sources, such as parents, teachers, and/or unit staff might be beneficial, and finding a way to measure variables objectively could also be helpful in verifying the accuracy of data. Due to constraints of time, resources, and agency support it was not possible to obtain these alternate forms of data.

Eighth, there were differences in both the numbers of participants obtained at each agency, as well as exact methods of data collection at each facility. For example, participants in the Tampa sample were entered in a lottery as an incentive for participation, whereas, due to differences in rules, the Gainesville participants could not be entered in a lottery. Participants in Gainesville were recruited exclusively by one person (primary investigator), whereas the Tampa sample involved recruitment mainly by either the primary investigator or a research assistant, but other staff at that facility were involved in recruitment on occasion (intake staff, family therapists). Although it is unlikely that these differences made a significant difference in results, greater uniformity in data collection procedures would have been preferable.

Finally, although this study examined variables associated with suicidal behavior, only suicidal participants who did not succeed participated in this study. There might be significant differences on variables in this study between those who attempted suicide and those who succeeded in killing themselves. Obviously obtaining such information is problematic, but our understanding about suicide attempters is limited without obtaining information about successful suicide attempters. One of the best ways to obtain this information would be to conduct a long-term, prospective study of variables associated with suicidality. Clearly this would be a time, money, and energy-consuming effort, and it is understandable why few researchers have made an effort to conduct such a study. There have been some studies in which a “psychological autopsy” has been performed after successful suicide attempts (e.g., Agerbo, et al., 2002; Houston, et al., 2001; Suominen, et al., 2002; Zhang, et al., 2002), however, reliance on retrospective data also is problematic (Hawton, et al., 1998; Isometsae, 2001; Pearson, et al., 1999).

Future Directions

Due to the difficulties associated with obtaining data of this type (from children in locked psychiatric facilities), it would be advisable for future endeavors to include grant-funded, multi-agency involvement in which procedures are uniform at all facilities and all facilities are agreeable to including study materials in the intake procedure. These procedures would allow for larger, more diverse samples and would enhance consistency.

The impact of age/development on the patterns of suicidality remains unclear. It might be beneficial for future research to focus on changes across a broader age range, looking at variables year by year in a cross-sectional design, (e.g., 10 year-olds, 11 year-olds, 12 year-olds). This type of research would allow for a closer examination of changes that occur over the developmental period.

The ultimate goal of this study was to identify which children are most at risk for suicidal behavior in order to effectively target students who would benefit from intervention. There are other variables that may be associated with or enhance risk for suicidality which were not examined in this study, such as social isolation, school history, exposure to violence, and history of violent behavior. It will be necessary to examine many variables in order to determine which ones are most relevant in identifying children at risk for suicidal behavior, as well as the mediators and moderators of these variables. A large scale, longitudinal study of a community sample with repeated measures of multiple variables over time would provide an opportunity to examine precursors to suicide attempt, and help determine solid models of adolescent suicide attempt. It would also allow for comparisons to be made between successful and unsuccessful suicide attempters.

This study provided an examination of the variables of depression, hopelessness, impulsivity, and anger expression in relation to suicidal behavior in adolescents. Differences in the demographic variables of income, ethnicity, age, gender, and family constellation for suicide gesturers and non-gesturers also

were examined. Results did not support the notion that adolescents are similar to adults in their pattern suicidal behavior (i.e., high levels of depression and hopelessness associated with suicidal behavior). Prediction of suicidal behavior is complex, and multiple factors must be accounted for in order to predict this behavior with any accuracy. However, it is notable that many suicide prevention programs focus on depression alone as a predictor of suicidal behavior (Shaffer & Craft, 1999). Although treatment of depressive symptoms is advisable, it is not necessarily the sole or even most important predictor of suicidal behavior in adolescence. Those who work with adolescents should be educated about the many factors and variables that contribute to adolescent suicidal behavior, and prevention efforts should not focus simply on depression. Ultimately, the purpose of this and any investigation of factors associated with adolescent suicidal behavior is to further our understanding of this behavior in order to find ways to effectively prevent adolescent suicide.

References

- Adams, C.D., Kelley, M.L., & McCarthy, M. (1997). The Adolescent Behavior Checklist: Development and initial psychometric properties of a self-report measure for adolescents with ADHD. *Journal of Clinical Child Psychology, 26*, 77-86.
- Agerbo, E., Nordentoft, M., & Mortensen, P.B. (2002). Familial, psychiatric, and socioeconomic risk factors for suicide in young people: Nested case-control study. *British Medical Journal, 325*, 74-77.
- American Foundation for Suicide Prevention (2002). *Youth suicide*. Retrieved September 10, 2002 from <http://www.afsp.org/about/newyouth.htm>
- Annie E. Casey Foundation (2002). *Kids Count Rate of Teen Deaths by Accident, Homicide, and Suicide*. Retrieved August 21, 2002 from <http://www.aecf.org/kidscount/kc2002>
- Beck, R.W., Morris, J.B., & Beck, A.T. (1974). Cross-validation of the Suicidal Intent Scale. *Psychological Reports, 34*, 445-446.
- Borst, S.R. & Noam, G.G. (1993). Developmental psychopathology in suicidal and nonsuicidal adolescent girls. *Journal of the American Academy of Child and Adolescent Psychiatry, 32*, 501-508.
- Brent, D.A. (1987). Correlates of the medical lethality of suicide attempts in children and adolescents. *Journal of the American Academy of Child and Adolescent Psychiatry, 26*, 87-89.
- Brown, L.K., Overholser, J., Spirito, A., & Fritz, G.K. (1991). The correlates of planning in adolescent suicide attempts. *Journal of the American Academy of Child and Adolescent Psychiatry, 30*, 95-99.
- Butler, J.W., Novy, D., Kagan, N., & Gates, G. (1994). An investigation of differences in attitudes between suicidal and nonsuicidal student ideators. *Adolescence, 29*, 623-638.
- Centers for Disease Control (1991). Attempted suicide among high school students: United States, 1990. *Morbidity and Mortality Weekly Report, 40*, 633-635.

- Centers for Disease Control (1999). *Deaths: Leading causes for 1999*. Retrieved August 21, 2002 from <http://www.cdc.gov/nchs>.
- Cole, D.A. (1989). Psychopathology of adolescent suicide: Hopelessness, coping beliefs, and depression. *Journal of Abnormal Psychology, 98*, 248-255.
- Demb, H.B., Brier, N., Huron, R., & Tomor, E. (1994). The Adolescent Behavior Checklist. *Research in Developmental Disabilities, 15*, 151-165.
- Dyer, J.A.T., & Kreitman, N. (1984). Hopelessness, depression, and suicidal intent in parasuicide. *British Journal of Psychiatry, 144*, 127-133.
- Elliot, R., Rubinsztein, J.S., Sahakian, B.J., & Dolan, R.J. (2002). The neural bias of mood-congruent processing bias in depression. *Archives of General Psychiatry, 59*, 597-604.
- Fisher, P., & Shaffer, D. (1984). Methods for investigating suicide in children and adolescents: An overview. In H. S. Sudak, A. B. Ford, and N. B. Rushforth (Eds.), *Suicide in the Young* (pp. 139-157). Boston, MA: John Wright.
- Fremouw, W.J., de Perczel, M., & Ellis, T.E. (1990). *Suicide risk*. New York: Pergamon Press.
- Glanz, L.M., Haas, G.L., & Sweeney, J.A. (1995). Assessment of hopelessness in suicidal patients. *Clinical Psychology Review, 15*, 49-64.
- Harris, T.E. & Lennings, C.J. (1993). Suicide and adolescence. *International Journal of Offender Therapy and Comparative Criminology, 37*, 263-270.
- Hawton, K. (1986). *Attempted suicide among children and adolescents*. Beverly Hills, CA: Sage Publications.
- Hawton, K., Appleby, L., Platt, S., Foster, T., Cooper, J., Malmberg, A., & Simpkin, S. (1998). The psychological autopsy approach to studying suicide: A review of methodological issues. *Journal of Affective Disorders, 50*, 269-276.
- Houston, K., Hawton, K., & Sheppard, R. (2001). Suicide in your people ages 15-24: A psychological autopsy study. *Journal of Affective Disorders, 63*, 159-170.
- Husain, S.A., & Vandiver, T. (1984). *Suicide in children and adolescents*. New York: Pergamon Press.

- Isometsae, E.T. (2001). Psychological autopsy studies – a review. *European Psychiatry, 16*, 379-385.
- Jacobs, G.A., & Mehlhaff, C.K. (1992, July). *Children's stress and the expression and experience of anger*. Paper presented at the International Congress on Stress as a Risk Factor, University of Santiago De Compostela, Spain.
- Jacobs, G.A., Phelps, M., & Rohrs, B. (1989). Assessment of anger expression in children: The Pediatric Anger Expression Scale. *Personality and Individual Difference, 10*, 59-65.
- Kalafat, J. (1990). Adolescent suicide and the implications for school response programs. *The School Counselor, 37*, 359-342.
- Kashden, J., Fremouw, W.J., Callahan, T.S., & Franzen, M.D. (1993). Impulsivity in suicidal and nonsuicidal adolescents. *Journal of Abnormal Child Psychology, 21*, 339-353.
- Kashden, J., Fremouw, W.J., Callahan, T.S., Garcia, M., & Velez, C.N. (1988). Attempted suicide in youth: Its relationship to school achievement, educational goals, and socioeconomic status. *Journal of Abnormal Child Psychology, 16*, 459-471.
- Kazdin, A.E., Rogers, A., & Colbus, D. (1986). The Hopelessness Scale for Children: Psychometric characteristics and concurrent validity. *Journal of Consulting and Clinical Psychology, 54*, 241-245.
- Kempton, T. & Forehand, R. (1992). Suicide attempts among juvenile delinquents; the contribution of mental health factors. *Behavioral Research and Therapy, 30*, 537-541.
- Kovacs, M. (1992). *Children's Depression Inventory Manual*. North Tonawanda, New York: Multi-Health Systems, Inc.
- Lewis, S.A., Johnson, J., Cohen, P., Garcia, M., & Velez, C.N. (1988). Attempted suicide in youth: Its relationship to school achievement, educational goals, and socioeconomic status. *Journal of Abnormal Child Psychology, 16*, 459-471.
- Marciano, P.L. & Kazdin, A.E. (1994). Self-esteem, depression, hopelessness, and suicidal intent among psychiatrically disturbed inpatient children. *Journal of Clinical Child Psychology, 23*, 151-160.
- Mitchell, M.G. & Rosenthal, D.M. (1992). Suicidal adolescents: Family dynamics and the effects of lethality and hopelessness. *Journal of Youth and Adolescence, 21*, 23-33.

- Morano, C.D., Cisler, R. A., & Lemerond, J. (1993). Risk factors for adolescent suicidal behavior: Loss, insufficient familial support, and hopelessness. *Adolescence*, 28, 851-865.
- Neinstein, L.S., Juliani, M.A., & Shapiro, J. (1996). Psychosocial development in normal adolescents. In L.S. Neinstein (Ed.) *Adolescent Healthcare: A Practical Guide* (pp. 40-45). Baltimore: Williams & Williams.
- Overholser, J.C., Adams, D.M., Lehnert, K.L., & Brinkman, D.C. (1995). Self-esteem deficits and suicidal tendencies among adolescents. *Journal of the American Academy of Child and Adolescent Psychiatry*, 34, 919-928.
- Pearson, J.L., Caine, E.D., Lindsay, J., Conwell, Y., & Clark, D.C. (1999). Studies of suicide in later life: Methodologic considerations and research directions. *American Journal of Geriatric Psychiatry*, 7, 203-210.
- Pillay, A.L. & Wassenaar, D.R. (1991). Rescue expectations and hopelessness in adolescent parasuicides. *Perceptual and Motor Skills*, 72, 363-366.
- Pinto, A. & Whisman, M.A. (1996). Negative affect and cognitive biases in suicidal and nonsuicidal hospitalized adolescents. *Journal of the American Academy of Child and Adolescent Psychiatry*, 35, 158-165.
- Reifman, A. & Windle, M. (1995). Adolescent suicidal behaviors as a function of depression, hopelessness, alcohol use, and social support: A longitudinal investigation. *American Journal of Community Psychology*, 23, 329-354.
- Rich, A.R., Kirkpatrick-Smith, J., Bonner, R.L., & Jans, F. (1992). Gender differences in the psychosocial correlates of suicidal ideation among adolescents. *Suicide and Life Threatening Behavior*, 22, 364-373.
- Rickelman, B.L. & Houfek, J.F. (1995). Toward an interactional model of suicidal behaviors: Cognitive rigidity, attributional style, stress, hopelessness, and depression. *Archives of Psychiatric Nursing*, 9, 158-168.
- Roberts, R.E. & Sobhan, M. (1992). Symptoms of depression in adolescence: A comparison of Anglo, African, and Hispanic Americans. *Journal of Youth and Adolescence*, 21, 639-651.
- Roberts, R.E. & Chen, Y.W. (1995). Depressive symptoms and suicidal ideation among Mexican-origin and Anglo adolescents. *Journal of the American Academy of Child and Adolescent Psychiatry*, 34, 81-90.
- Rosenthal, M. (1981). Sexual differences in the suicidal behavior of young people. *Adolescent Psychiatry*, 9, 422-442.

- Rotheram-Borus, M.J. & Trautman, P.D. (1988). Hopelessness, depression, and suicidal intent among adolescent suicide attempters. *Journal of the American Academy of Child and Adolescent Psychiatry*, 27, 700-704.
- Shaffer, D. & Craft, L. (1999). Methods of adolescent suicide prevention. *Journal of Clinical Psychiatry*, 60 S2, 70-74.
- Shaffer, D., Garland, A., Gould, M., Fisher, P., & Trautman, P. (1988). Preventing Teenage Suicide: A critical review. *Journal of the American Academy of Child and Adolescent Psychiatry*, 27, 675-687.
- Sheras, P.L. (1992). Depression and suicide in adolescence. In C.E. Walker & M.C. Roberts (Eds.), *Handbook of Clinical Child Psychology*, second edition (pp. 587-606).
- Spear, L.P. (2000). The adolescent brain and age-related behavioral manifestations. *Neuroscience and Biobehavioral Reviews*, 24, 417-463.
- Spirito, A., Francis, G., Overholser, J., & Frank, N. (1996). Coping, depression, and adolescent suicide attempts. *Journal of Clinical Child Psychology*, 25, 147-155.
- Spirito, A., Overholser, J., & Hart, K. (1991). Cognitive characteristics of adolescent suicide attempters. *Journal of the American Academy of Child and Adolescent Psychiatry*, 30, 604-608.
- Steer, R.A., Kumar, G., & Beck, A.T. (1993). Self-reported suicidal ideation in adolescent psychiatric inpatients. *Journal of Consulting and Clinical Psychology*, 61, 1096-1099.
- Suominen, K., Isometsae, E., Heilae, H., Loennqvist, J., & Henriksson, M. (2002). General hospital suicides: A psychological autopsy study in Finland. *General Hospital Psychiatry*, 24, 412-416.
- van Heeringen, C. (2001). Suicide in adolescents. *International Clinical Psychopharmacology*, 16S, S1-S6.
- Wagner, B.M. (1997). Family risk factors for child and adolescent suicidal behavior. *Psychological Bulletin*, 121, 246-298.
- Watkins, P.C. (2002). Implicit memory bias in depression. *Cognition & Emotion*, 16, 381-402.

- Whisman, M.A., Miller, I.W., Norman, W.H., & Keitner, G.I. (1995). Hopelessness depression in depressed inpatients: Symptomatology, patient characteristics, and outcome. *Cognitive Therapy and Research*, *19*, 377-398.
- Woods, P.J., Silverman, E.S., Gentilini, J.M., Cunningham, D.K., & Grieger, R.M. (1991). Cognitive variables related to suicidal contemplation in adolescents with implications for long-range prevention. *Journal of Rational-Emotive & Cognitive-Behavior Therapy*, *9*, 215-245.
- Zhang, J., Wieczorek, W.F., Jiang, C., Zhou, L., Jia, S, Sun, Y., Jin, S, & Conwell, Y. (2002). Studying suicide with psychological autopsy: Social and cultural feasibilities of the methodology in China. *Suicide & Life-Threatening Behavior*, *32*, 370-379.

APPENDIX A
Demographic Information Sheet

DEMOGRAPHIC INFORMATION SHEET

Participant Number: _____

Child's Name: _____

Name of legal guardian: _____

Child's age: _____

Child's gender: M / F

Child's ethnicity:

- Asian African-American Caucasian
 Hispanic Native American/Alaskan Other: _____
 More than one of the above (please mark each one)

Where does the child live?

- Both biological parents, who are married to each other
 At least one biological parent, but biological parents aren't married to each other (or living together).
 Adoptive parent(s)
 Another family member (aunt,/uncle, grandparent, older sibling, etc.)
 A friend of the family
 Foster care, or another program sponsored by the Department of Children and Families
 An alternative placement outside of the home (e.g., residential treatment, jail)

Approximate household income per year:

- Receive public assistance (like AFDC)
 Less than \$15,000 \$15,000-\$20,000 \$20,000-\$25,000
 \$25,000-\$30,000 \$30,000-\$35,000 \$35,000-\$40,000
 \$40,000-\$45,000 \$45,000-\$50,000 More than \$50,000

please check if child was residing in foster care before coming to the CCSU

please check if child was residing in an alternative placement outside of the home before coming to the CCSU

APPENDIX B
Adolescent Behavior Checklist

ADOLESCENT BEHAVIOR CHECKLIST
(Impulsivity Subscale)

The statements below describe different behavior problems. Read each item carefully and decide how much you think you have this behavior problem during the past 6 months: NOT AT ALL, JUST A LITTLE, PRETTY MUCH, OR VERY MUCH. For each item, circle the number in the column that goes with your answer. PLEASE ANSWER ALL ITEMS.

	<u>Not at all</u>	<u>Just a little</u>	<u>Pretty much</u>	<u>Very much</u>
1. I have difficulty sitting still.	0	1	2	3
2. I get excited easily.	0	1	2	3
3. I say or do things without thinking.	0	1	2	3
4. I have trouble staying seated.	0	1	2	3
5. I have problems waiting my turn in games or group situations.	0	1	2	3
6. I often blurt out answers to questions before they are completed.	0	1	2	3
7. I talk too much.	0	1	2	3
8. I feel restless and nervous.	0	1	2	3
9. I interrupt others when they are speaking.	0	1	2	3
10. I disturb or annoy people.	0	1	2	3

APPENDIX C
Children's Depression Inventory

CHILDREN'S DEPRESSION INVENTORY

From each group of three sentences, pick one sentence that describes you best for the past two weeks:

1. I am sad once in a while.
I am sad many times.
I am sad all the time.
2. Nothing will ever work out for me.
I am not sure if things will work out for me.
Things will work out for me O.K.
3. I do most things O.K.
I do many things wrong.
I do everything wrong.
4. I have fun in many things.
I have fun in some things.
Nothing is fun at all.
5. I am bad all the time.
I am bad many times.
I am bad once in a while.
6. I think about bad things happening to me once in a while.
I worry that bad things will happen to me.
I am sure that terrible things will happen to me.
7. I hate myself.
I do not like myself.
I like myself.
8. All bad things are my fault.
Many bad things are my fault.
Bad things are not usually my fault.
9. I do not think about killing myself.
I think about killing myself but I would not do it.
I want to kill myself
10. I feel like crying every day.
I feel like crying many days.
I feel like crying once in a while.
11. Things bother me all the time.
Things bother me many times.
Things bother me once in a while.
12. I like being with people.
I do not like being with people many times.
I do not want to be with people at all.

13. I cannot make up my mind about things.
It is hard to make up my mind about things.
I make up my mind about things easily.
14. I look O.K.
There are some bad things about my looks.
I look ugly.
15. I have to push myself all the time to do my schoolwork.
I have to push myself many times to do my schoolwork.
Doing schoolwork is not a big problem.
16. I have trouble sleeping every night.
I have trouble sleeping many nights.
I sleep pretty well.
17. I am tired once in a while.
I am tired many days.
I am tired all the time.
18. Most days I do not feel like eating.
Many days I do not feel like eating.
I eat pretty well.
19. I do not worry about aches and pains.
I worry about aches and pains many times.
I worry about aches and pains all the time.
20. I do not feel alone.
I feel alone many times.
I feel alone all the time.
21. I never have fun at school.
I have fun at school only once in a while.
I have fun at school many times.
22. I have plenty of friends.
I have some friends but I wish I had more.
I do not have any friends.
23. My schoolwork is alright.
My schoolwork is not as good as before.
I do very badly in subjects I used to be good in.
24. I can never be as good as other kids.
I can be as good as other kids if I want to.
I am just as good as other kids.
25. Nobody really loves me.
I am not sure if anybody loves me.
I am sure that somebody loves me.
26. I usually do what I am told.
I do not do what I am told most times.
I never do what I am told.

27. I get along with people.
I get into fights many times.
I get into fights all the time.

Note: Items 2, 5, 7, 8, 10, 11, 13, 15, 16, 18, 21, 24, and 25 are reverse scored, so that higher numbers reflect greater levels of depression.

APPENDIX D
Hopelessness Scale for Children

Please circle T if the statement is true for you, or F if it is false for you:

- T / F I want to grow up because I think things will be better.
- T / F I might as well give up because I can't make things better for myself.
- T / F When things are going badly, I know they won't be bad all the time.
- T / F I can imagine what my life will be when I grow up.
- T / F I have enough time to finish the things I really want to do.
- T / F Someday, I will be good at doing the things I really care about.
- T / F I will get more of the good things in life than other kids.
- T / F I don't have good luck, and there's no reason to think that I will when I grow up.
- T / F All I can see ahead of me are bad things, not good things.
- T / F I don't think I will get what I really want.
- T / F When I grow up, I think I will be happier than I am now.
- T / F Things just don't work out the way I want them to.
- T / F I never get what I want so it's dumb to want anything.
- T / F I don't think I will have any real fun when I grow up.
- T / F Tomorrow seems unclear and confusing to me.
- T / F I will have more good times than bad times.
- T / F There's no use in really trying to get something I want because I probably won't get it.

APPENDIX E
Pediatric Anger Expression Scale

For each statement, please circle how often it occurs for you: often, sometimes, or hardly ever:

- | | | | |
|---|-------------|-----------|-------|
| 1. I control my temper | hardly-ever | sometimes | often |
| 2. I show my anger | hardly-ever | sometimes | often |
| 3. I hold my anger in | hardly-ever | sometimes | often |
| 4. I talk to someone until I feel better | hardly-ever | sometimes | often |
| 5. I do thing like slam doors | hardly-ever | sometimes | often |
| 6. I hide my anger | hardly-ever | sometimes | often |
| 7. I keep my cool | hardly-ever | sometimes | often |
| 8. I attack whatever it is that makes me very angry | hardly-ever | sometimes | often |
| 9. I get mad inside but I don't show it | hardly-ever | sometimes | often |
| 10. I do something totally different until
I calm down | hardly-ever | sometimes | often |
| 11. I say mean things | hardly-ever | sometimes | often |
| 12. I can stop myself from losing my temper | hardly-ever | sometimes | often |
| 13. I try to calmly settle the problem | hardly-ever | sometimes | often |
| 14. I lose my temper | hardly-ever | sometimes | often |
| 15. I'm afraid to show my anger | hardly-ever | sometimes | often |

APPENDIX F
Suicide Intent Scale

To be completed by the crisis counselor if there was a suicidal gesture:

Name of patient:

Name of crisis counselor:

Active preparation for attempt

0. None
1. Minimal to moderate
2. Extensive

Degree of premeditation

0. None, impulsive
1. Suicide contemplated for three hours or less prior to attempt
2. Suicide contemplated for more than 3 hours prior to attempt

APPENDIX G
Consent Forms

Child's Informed Consent Form
USF Institutional Review Board-Behavioral/Social
Consent to Participate in A Research Study

Title of Study How Adolescents Feel
Principal Investigator Name Vicky Phares, Ph.D.
Department Arts and Sciences Mail-point BEH 339 Tel # (813)974-0493

Purpose of Study

The purpose of this research study is to help us understand how adolescents feel, and which feelings make them want to hurt themselves.

Duration and Location of the Study

Your child's participation in this study will last for approximately 15-20 minutes and will take place at Children's Crisis Stabilization Unit. The total number of other children who might take part in this study is 200.

Procedures

You understand that during this study, the following procedures will occur:

If your child has been admitted to the Children's Crisis Stabilization Unit, then he/she will be eligible to participate in this study. If your child would like to participate, and the child's legal guardian gives permission to participate, then he/she will be asked to fill out some forms. These forms will ask him/her about his/her thoughts and feelings. It should take about 15-20 minutes to fill these forms out. The legal guardian will fill out a sheet that asks for information about the child (age, gender, and ethnic background) and the type of family that the child lives with. If the child attempted suicide before coming to the Children's Crisis Stabilization Unit, then he/she will be asked some questions about that.

People who participate in this study will be entered in a drawing for prizes, like gift certificates and movie tickets. If a child gets upset while are participating in the study, or wants to stop for any reason, that is okay. A child can stop participating in the study at any time, and will still be entered in the drawing. If a child gets upset while filling out the forms, he/she should tell the counselor who gave him/her the forms. The counselor can talk to him/her about these feelings.

Whether or not your child decides to participate in this study, the people at the Children's Crisis Stabilization Unit will give him/her the best and most appropriate treatment that they can. It does not matter to the people at the Children's Crisis Stabilization Unit whether or not your child participates in this study.

Potential Risks

You understand that there are no anticipated risks associated with participation in this study. In other words, participating in this study should not cause any risks. If your child finds that filling out the questions makes him/her upset, and would like to stop participating in the study, then he/she can stop participating at any time. The counselor who gave your child the forms can talk to your child about those feelings if your child thinks that would make him/her feel better.

Benefits

There are no direct benefits from participation in this study. However, by participating in this study, you will help us to understand how adolescents feel, and what feelings make adolescents want to hurt themselves. This could help us to help other adolescents in the future.

Alternatives

Whether or not you participate in this study, your child will still receive the same level of services at the Children's Crisis Stabilization Unit.

Confidentiality

The confidentiality of the records shall be maintained unless otherwise required by law. Confidentiality of records will be maintained by assigning a number to each person who participates. The information that you give will be identified by number only. The counselors will give the completed sheets to the person in charge of the study, and this person will keep the sheets in a locked place. When the study is done, the sheets will be shredded. Confidentiality will be broken only if your child reports that he/she is currently thinking about hurting him/herself, that someone is hurting your child, or that your child intends to hurt someone else. In that case, the child's crisis counselor or therapist will be notified, so that appropriate actions may be taken. Authorized research investigators, agents of the Department of Health and Human Services, and the USF Institutional Review Board may inspect your records from this research project. The results of the study may be published, but they will not include your name, or any other information that will identify you.

University of South Florida Injury Statement

In the event that you sustain an injury or illness as a result of participating in this research, please be aware that medical treatment for the injuries or illness may not be available from the University of South Florida (USF). USF does not maintain an emergency medical department nor does it provide medical treatment in all disciplines of medicine. If you become ill or sustain an injury which you believe is related to participation in this research, immediately contact one of the persons listed on page 1 of this form, and if emergency care is needed seek emergency attention from your nearest local hospital.

If injury results from your participation in research, money damages are not automatically available. Money damages are only available to the extent specified in Florida statute, 768.28. A copy of this statute is available upon request to the Division of Research Compliance, USF at (813) 974-5638. This statute provides that damages are available only to the extent that negligent conduct of a University employee caused your injuries, and are limited by law. If you believe you are injured as a result of participation in this research and the negligent conduct of a University faculty member, you may notify the USF Self Insurance Programs at (813) 974-8008, who will investigate the matter.

Compensation for Participation

- You will not be paid for participation in this study. However, everyone who participates will be entered in a drawing for prizes. If you decide to withdraw from the study before finishing, then you will still be entered in the drawing.

Volunteering to Be Part of this Research Study

You understand that participation in this study is voluntary. You understand that you may withdraw from the study at any time without penalty or loss of services, to which you are otherwise entitled. You also understand that the investigator has the right to remove you from the study at any time.

Questions and Contacts

If you have any questions about this research study, you may contact Vicky Phares at 974-0493. If you have any questions about your rights as a person taking part in a research study, you may contact a member of the Division of Research Compliance at the University of South Florida at (813) 974-5638.

Parental Consent—By signing this form I agree that:

- I have fully read or have had read and explained to me in my native language this informed consent form describing a research project.
- I have had the opportunity to question one of the persons in charge of this research and have received satisfactory answers.

- I understand that I, and my child, are being asked to participate in research. I understand the risks and benefits, and I freely give my consent to participate in the research project outlined in this form, under the conditions indicated in it. I also freely give my consent for my child to participate in the research project outline in this form, under the conditions indicated in it.
- I have been given a signed copy of this informed consent form, which is mine to keep.

Signature of Parent/Legal Guardian	Printed Name	Date
------------------------------------	--------------	------

Signature of Witness	Printed Name	Date
----------------------	--------------	------

Investigator Statement

I, or an appropriate third party, have carefully explained to the subject the nature of the above protocol. I hereby certify that to the best of my knowledge the participant signing this consent form understands the nature, demands, risks and benefits involved in participating in this study.

Signature of Investigator	Printed Name of Investigator	Date
---------------------------	------------------------------	------

Child's Assent Statement

I have read and understand the consent form, or _____ has read and explained the consent form to me. I agree to participate in the study called How Adolescents Feel.

Signature of Child	Printed Name of Child	Date
--------------------	-----------------------	------

Signature of Parent	Printed Name of Parent	Date
---------------------	------------------------	------

Signature of Investigator	Printed Name of Investigator	Date
---------------------------	------------------------------	------

Signature of Witness	Printed Name of Witness	Date
----------------------	-------------------------	------

OR

_____ is unable to give assent for the following reason(s): _____

Signature of Parent

Printed Name of Parent

Date

Signature of Investigator

Printed Name of Investigator

Date

Signature of Witness

Printed Name of Witness

Date

Institutional Approval of Study and Informed Consent

This research project/study and informed consent form were reviewed and approved by the University of South Florida Institutional Review Board for the protection of human subjects. This approval is valid until the date provided below. The board may be contacted at (813) 974-5638.

Approval Consent Form Expiration Date:

Informed Consent to Participate in Research

**The University of Florida
Health Science Center
Gainesville, Florida 32610**

You and your child are being asked to participate in a research study. This form provides you with information about the study. The Principal Investigator (the person in charge of this research) or his/her representative will also describe this study to you and answer all of your questions. Read the information below and ask questions about anything you don't understand before deciding whether or not to take part. Your participation is entirely voluntary and you can refuse to participate without penalty or loss of benefits to which you are otherwise entitled.

Name of the Parent

Title of Research Study

How Adolescents Feel

Principal Investigator(s) and Telephone Number(s)

Heidi Liss (352) 376-1611 X5221

Sponsor of the Study

None

What is the purpose of this study?

The purpose of this research study is to help us understand how adolescents feel, and which feelings make them want to hurt themselves.

What will be done if you take part in this research study?

If your child has been admitted to Shands Vista for an inpatient stay, then you and your child may be eligible to participate in this study. If you would like to participate, and your child assents to participate, then your child will be asked to fill out some forms. These forms will ask your child about his/her thoughts and feelings. It should take about 15-20 minutes to fill out these forms. You will be asked to fill out a sheet that asks for information about your child, and the type of family that your child lives with. If your child attempted suicide before coming to Shands Vista, then his/her therapist, psychiatrist, or counselor will be asked to briefly rate the suicide attempt.

If you or your child get upset while participating in the study, or want to stop for any reason that is okay. You can stop participating at any time. If your child gets upset while filling out the forms, he or she will be directed to tell his or her counselor or physician, or the person who provided the forms. The counselor or physician can talk to your child about his or her feelings.

Whether or not you decide to participate in this study, the people at Shands Vista will give your child the best and most appropriate treatment that they can. It does not matter to the people at Shands Vista whether or not you participate in this study.

What are the possible discomforts and risks?

There are no anticipated risks associated with participation in this study. In other words, participating in this study should not cause any problems. If you or your child find that filling out the questions makes you upset, and you would like to stop participating in the study, then you can stop participating at any time. The counselor or physician who gave you the forms can talk to you about those feelings if you think that would make you feel better.

If you wish to discuss the information above or any other discomforts you may experience, you may ask questions now, or call the Principal Investigator listed on the front page of this form.

What are the possible benefits to you or to others?

There are no direct benefits from participation in this study. However, by participating in this study, you will help us to understand how adolescents feel, and what feelings make adolescents want to hurt themselves. This could help us to help other adolescents in the future.

If you choose to take part in this study, will it cost you anything?

No

Will you receive compensation for your participation in this study?

You will not be paid for participation in this study.

What if you are injured because of the study?

If you experience an injury that is directly caused by this study, only

professional medical professional dental professional consultative care

that you receive at the University of Florida Health Science Center will be provided without charge. However, hospital expenses will have to be paid by you or your insurance provider. No other compensation is offered.

If you do not want to take part in this study, what other options or treatments are available to you?

Participation in this study is entirely voluntary. You are free to refuse to be in the study, and your refusal will not influence current or future care you receive at Shands Vista.

How can you withdraw from this research study?

If you wish to stop your participation in this research study for any reason, you should contact:

Heidi Liss at (352) 376-1611 X5221, or notify the counselor or physician that has presented the materials to you. You are free to withdraw your consent and stop participation in this research study at any time without penalty or loss of benefits to which you are otherwise entitled. Throughout the study, the researchers will notify you of new information that may become available and that might affect your decision to remain in the study.

In addition, if you have any questions regarding your rights as a research subject, you may phone the Institutional Review Board (IRB) office at (352) 846-1494.

How will your privacy and the confidentiality of your research records be protected?

The responses that your child gives in this study related to his or her feelings might be shared with his or her counselor or physician if we believe that it would be helpful to your child for us to share this information. This information would remain confidential within Shands Vista. Otherwise, only authorized persons from the University of Florida, the hospital or clinic involved in this research, and the Institutional Review Board have the legal right to review the research records and will protect the confidentiality of those

records to the extent permitted by law. The research records will not be released without your consent unless required by law or a court order.

If the results of this research are published or presented at scientific meetings, your identity and your child's identity will not be disclosed.

Will the researchers benefit from your participation in this study (beyond publishing or presenting the results)?

Other than publication or presentation of research results, no benefits are expected.

Signatures

As a representative of this study, I have explained the purpose, the procedures, the benefits, and the risks that are involved in this research study:

Signature of person obtaining consent

Date

You have been informed about this study's purpose, procedures, possible benefits and risks, and you have received a copy of this Form. You have been given the opportunity to ask questions before you sign, and you have been told that you can ask other questions at any time. You voluntarily agree to participate in this study, and to allow your child to participate. By signing this form, you are not waiving any of your legal rights.

Signature of Legal Guardian

Date

Signature of Witness (if available)

Date

Informed Consent to Participate in Research

**The University of Florida
Health Science Center
Gainesville, Florida 32610**

You are being asked to participate in a research study. This form provides you with information about the study. The Principal Investigator (the person in charge of this research) or his/her representative will also describe this study to you and answer all of your questions. Read the information below and ask questions about anything you don't understand before deciding whether or not to take part. Your participation is entirely voluntary and you can refuse to participate without penalty or loss of benefits to which you are otherwise entitled.

Name of the Subject

Title of Research Study

How Adolescents Feel

Principal Investigator(s) and Telephone Number(s)

Heidi Liss (352) 376-1611 X5221

Sponsor of the Study

None

What is the purpose of this study?

The purpose of this research study is to help us understand how adolescents feel, and which feelings make them want to hurt themselves.

What will be done if you take part in this research study?

If you have been admitted to Shands Vista for an inpatient stay, then you may be eligible to participate in this study. If you would like to participate, and your legal guardian gives permission to participate, then you will be asked to fill out some forms. These forms will ask you about your thoughts and feelings. It should take about 15-20 minutes to fill out these forms. Your legal guardian will fill out a sheet that asks for information about you, and the type of family that you live with. If you attempted suicide before coming to Shands Vista, then your therapist, psychiatrist, or counselor will be asked to rate your suicide attempt.

If you get upset while participating in the study, or want to stop for any reason that is okay. You can stop participating at any time. If you get upset while filling out the forms, you should tell your counselor or physician, or the person who gave you those forms. The counselor or physician can talk to you about your feelings.

Whether or not you decide to participate in this study, the people at Shands Vista will give you the best and most appropriate treatment that they can. It does not matter to the people at Shands Vista whether or not you participate in this study.

What are the possible discomforts and risks?

There are no anticipated risks associated with participation in this study. In other words, participating in this study should not cause any problems. If you find that filling out the questions makes you upset, and you would like to stop participating in the study, then you can stop participating at any time. The counselor or physician who gave you the forms can talk to you about those feelings if you think that would make you feel better.

If you wish to discuss the information above or any other discomforts you may experience, you may ask questions now, or call the Principal Investigator listed on the front page of this form.

What are the possible benefits to you or to others?

There are no direct benefits from participation in this study. However, by participating in this study, you will help us to understand how adolescents feel, and what feelings make adolescents want to hurt themselves. This could help us to help other adolescents in the future.

If you choose to take part in this study, will it cost you anything?

No

Will you receive compensation for your participation in this study?

You will not be paid for participation in this study.

What if you are injured because of the study?

If you experience an injury that is directly caused by this study, only

professional medical professional dental professional consultative care

that you receive at the University of Florida Health Science Center will be provided without charge. However, hospital expenses will have to be paid by you or your insurance provider. No other compensation is offered.

If you do not want to take part in this study, what other options or treatments are available to you?

Participation in this study is entirely voluntary. You are free to refuse to be in the study, and your refusal will not influence current or future care you receive at Shands Vista.

How can you withdraw from this research study?

If you wish to stop your participation in this research study for any reason, you should contact:

Heidi Liss at (352) 376-1611 X5221, or notify the counselor or physician that has presented the materials to you. You are free to withdraw your consent and stop participation in this research study at any time without penalty or loss of benefits to which you are otherwise entitled. Throughout the study, the researchers will notify you of new information that may become available and that might affect your decision to remain in the study.

In addition, if you have any questions regarding your rights as a research subject, you may phone the Institutional Review Board (IRB) office at (352) 846-1494.

How will your privacy and the confidentiality of your research records be protected?

The responses that you give in this study related to your feelings might be shared with your counselor or physician if we believe that it would be helpful to you to share this information. This information would remain confidential within Shands Vista. Otherwise, only authorized persons from the University of Florida, the hospital or clinic involved in this research, and the Institutional Review Board have the legal right to review your research records and will protect the confidentiality of those records to the extent permitted by law. Your research records will not be released without your consent unless required by law or a court order.

If the results of this research are published or presented at scientific meetings, your identity will not be disclosed.

Will the researchers benefit from your participation in this study (beyond publishing or presenting the results)?

Other than publication or presentation of research results, no benefits are expected.

Signatures

As a representative of this study, I have explained the purpose, the procedures, the benefits, and the risks that are involved in this research study:

Signature of person obtaining consent

Date

What if you are under 18 years old or if you cannot give legal consent for another reason?

If you cannot give legal consent to take part in this study because of your age or because you may have trouble reading or understanding this consent form, then the researcher will ask for your assent. Assent is your agreement to be in the study. The researcher will explain the study to you in words that you can understand. You should ask questions about anything you don't understand. Then you should decide if you want to be in the research study. If you want to participate, your parent or someone who can sign a legal document for you must also give their permission and sign this form before you take part.

You agree to participate:

Subject's signature

Date

Signature of Principal Investigator or Representative

Date

Witness (if available)

Date

About the Author

Heidi Liss received a Bachelor's degree with a double major in Psychology and Spanish from Washington University in 1991. She received her Master's degree in Psychology from the University of South Florida in 1997, with a minor in Child and Family Public Health. She completed her clinical internship in child/pediatric psychology at the University of Florida Department of Clinical and Health Psychology in 2000.

Since completing her internship Ms. Liss has been involved in clinical work and clinical research at the University of Florida. Her work has focused on rural populations, telehealth, and family intervention research. She has several publications and presentations in the area of telehealth, and is currently completing a book chapter on this topic for the Handbook of Mental Health Services for Children, Adolescents, and Families. She is currently employed as an Assistant Scientist at the National Rural Behavioral Health Center at the University of Florida.