THE UNIVERSITY OF CALGARY

Quality of Attachment and History of Suicidal Behavior in Clinical Adolescents

by

Sheila McDonald

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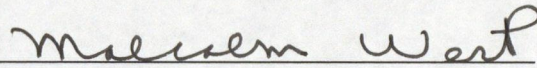DEPARTMENT OF MEDICAL SCIENCE

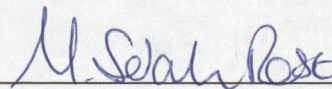CALGARY, ALBERTA

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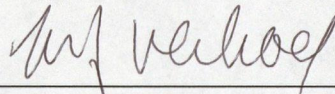
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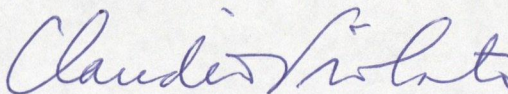
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ABSTRACT

One hundred eighty seven clinical adolescents participated in a case/comparison study investigating the association of attachment characteristics and other consequences with a history of suicidal behaviors. Attachment characteristics were assessed using the Adolescent Attachment Questionnaire (AAQ).

Adolescents who reported high perceived unavailability of their attachment figure and depression were significantly more likely to be in the suicidal group. Among adolescents aged 14 or younger, low perceived support from family predicted membership in the suicidal group. High angry distress was predictive of suicidality, particularly for older adolescents. Females with low scores on the Lack of a Secure Base attachment scale and males with high scores were more likely to be in the suicidal group.

These findings suggest that dysfunctional parent-adolescent relationships are the core dynamic underlying adolescent suicidal behavior. The results support an association between insecure attachment and adolescent suicidal behavior which is consistent with attachment theory's view of suicidal behavior.

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CHAPTER I

INTRODUCTION

In Canada, suicide among adolescents is a common, and increasing, cause of death. Currently, suicide is second only to accidents among 15-19 year olds (1). Although the suicide rate for adolescents aged 15-19 years is lower than many other age groups, the dramatic upsurge in their rate over the past forty years is cause for concern. From 1950 to 1991, the number of suicides per 100,000 population increased approximately four fold for adolescents aged 15-19 (1). Within that time period, the annual suicide rate for males was appreciably greater than for females. Furthermore, for every completed suicide by an adolescent, there are many more attempts (the actual rate, however, is unknown) - some estimate that for every successful suicide, there are 100 to 250 attempts (2). In the Ontario Child Survey, investigators found that 5-10% of boys and 10-20% of girls aged 12-16 years reported suicidal ideation or had made suicide attempts within the previous 6 months (1).

In the search for risk factors for adolescent suicidal behavior, many investigators have proposed that familial contributions to suicidal risk are among the most potent. In this study, attachment theory was used to conceptualize the influence of the family upon adolescent suicidal behavior. Based upon and guided by a theoretical model, specific research questions linking attachment and attachment consequences with adolescent suicidal behavior were tested.

REVIEW OF THE LITERATURE:

Adolescent Suicidal Behavior:

Various risk factors for adolescent suicidal behavior have been identified in the literature. These include psychiatric diagnosis, personality variables, biological factors, psychosocial factors and environmental factors. Among environmental factors, the role of the family has been explored by many investigators. Descriptive and clinical accounts support the more recent empirical research indicating that the families of suicidal adolescents are characterized by substantial levels of dysfunction. This dysfunction includes parental loss, family instability, and absence of supportive family relationships.

Of the various familial risk factors discussed in the literature, early parental loss resulting from death, divorce/separation and deprivation has been the most extensively studied. A number of controlled investigations have found a strong association between early parental loss and suicidal behavior later in life (3, 4, 5). In contrast, reports such as those by Crook and Raskin (6) and Goldney (7), found that incidence figures of parental death in childhood did not differentiate suicidal subjects from controls. These two studies, however, found a higher incidence of parental divorce/separation. Methodological inconsistencies, such as the period of early life under consideration for the loss, make it difficult to interpret the negative findings. For example, Crook and Raskin (6) examined loss before the age of 12 in their subjects and neglected to look for loss in a later age period; Adam(5) suggested that limiting the age period under consideration to the earlier years may under-report the incidence of parental death, and

that this may explain why significant differences for parental death in previous studies were not found.

When psychiatric comparison groups were used (8, 9), researchers found that parental loss had occurred significantly more often among suicide attempters. However, in a recent study by De Jong (10), incidence figures of parental divorce did not differentiate suicidal individuals in an undergraduate university population from both depressed and normal controls.

When parental loss among suicidal children and individuals under 18 years of age is examined, again, there are misleading and discrepant findings. Garfinkel, Froese and Hood (11) found a higher incidence of parental loss in suicide attempters than non-suicidal patients admitted to a pediatric hospital; however, when psychiatric comparison groups are used, no significant differences between suicidal adolescents and controls have been found (12, 13).

Parental loss, however, may be a crude indicator of a more general deprivation of adequate parental care in the early home environment of suicidal individuals. An early study by Bruhn (14) noted that the circumstances surrounding early loss for suicidal individuals were as important as the loss itself. This supports the results of two studies which suggest that long term family disorganization or instability is strongly associated with the development of suicidal propensities, and that it may well be the most important variable mediating the association between loss and suicidal behavior (4, 5). Furthermore, many investigators have suggested that a disturbed family life in childhood is prevalent for suicidal individuals, whether or not a major loss has occurred. Indeed,

there is remarkable evidence in the literature for the view that there exists a relationship between a family background of instability and disorganization, and suicidal behavior.

Suicidal adolescents are more likely to come from unstable homes than non-suicidal psychiatrically-ill adolescents (13, 15, 16, 17, 18). Family instability encompasses such risk factors as: residential instability; physical and/or sexual abuse; and chronic problems (depression/alcoholism) and physical or psychiatric illness in the parent(s). In their review of the literature, Spirito, Brown, Overholser and Fritz (19) suggested that overt conflict in the family appears to be a major factor differentiating suicide attempters and psychiatric comparison groups. Furthermore, studies have found that the families of suicidal adolescents are more often characterized by poor communication patterns than non-suicidal psychiatric controls and normal adolescents.(20).

Inconsistent findings have been reported regarding suicidal adolescents' perceptions of parental rearing practices. A parental rearing pattern of "affectionless control" (low care and high overprotection) was found to differentiate female suicidal patients from non-suicidal controls (7) and suicide attempting individuals from non-suicidal psychiatric adolescents (21). In the latter study, the authors suggested that this pattern may be stronger in females than males, and that maternal influences may be stronger that paternal influences. In contrast, two studies found that memories of parents' rearing behavior (9) and current perceptions of parental caring and overprotectiveness (22) were not specific to suicide attempters, but rather were associated with psychiatric disturbance in general.

There exists a paucity of research exploring the relationship between social support and perceived parental support in particular, and adolescent suicidal behavior. Of the few studies that do exist, the majority of them have failed to use comparison groups. Additionally, the different aspects of social support (namely social support from friends vs. social support from family) have been largely ignored. In general, the uncontrolled investigations have found that the quality of perceived social support, (23, 24) and low perceived parental support in particular (25, 26), is associated with adolescent suicidal behavior. Of interest, two uncontrolled studies noted that perceived family support was a more protective factor against adolescent suicidality than perceived friend support (25, 27).

Controlled studies within this area are conspicuously absent. A study by Taylor and Stansfeld (28) found a lack of supportive relationships and family warmth among adolescent self-poisoners compared to matched psychiatric controls. Two studies found that low perceived family support was more prevalent in suicidal adolescents than non-suicidal psychiatric adolescents matched on depression scores (29) and in adolescents at "high risk" for suicidal behavior compared to normal adolescents (30). De Jong (10) found that students with a history of suicidal behavior rated their parents, and especially their mother, as emotionally unavailable in childhood compared to both non-suicidal depressed and normal controls. This finding was more significant for males than for females. A clinical suggestion by Hendin (31) supports the empirical findings regarding perceived family support and love. He notes that the quality of feeling between a person

attempting suicide and the parents is a critical factor, and he even goes so far as to describe it as "emotional death".

Security of attachment has also been assessed in suicidal adolescents, using the Inventory of Parent and Peer Attachment. De Jong (10) found that students with a history of suicidality exhibited the lowest security of attachment to their parents compared to both non-suicidal depressed and normal controls. An uncontrolled study by Strang and Orlofsky (32) found that insecure attachment to parents was associated with suicidal ideation in college students, and the investigators suggested that it may be a more important factor in the etiology of suicidal ideation in college females than in males. Both studies found that insecure attachment to peers was less strongly associated with suicidal behavior. This is consistent with the findings of the uncontrolled studies noted above that perceived social support from friends was less strongly associated with suicidal behavior than support from family.

Comments:

A few comments with respect to the literature must be made. Firstly, investigation of gender effects were often precluded in the above studies due to the small sample sizes used. Use of a relatively large sample size, which allows for the exploration of the effect of gender, is an important consideration. This is mainly because of the well-known gender difference for suicidal behavior in adolescence (33).

Secondly, the individuals studied included children, individuals under 18 years and young adults. All were included in the literature review in order to discuss the delineated risk factors, yet an effort was undertaken to restrict the discussion to those

studies of individuals classified as "adolescents", that is individuals between the ages of 12 and 19, to accord with the sample of the present investigation.

The final consideration concerns the controlled nature of the investigations. The studies reviewed, for the most part, were empirically sound and included the use of control groups. Those studies which use psychiatric or depressed control groups are the most useful, as they allow for the risk factor under study to be related specifically to the suicidal behavior; further studies using this "stringent" type of design are necessary. In particular, there exists a need for controlled investigations within the area of perceived social support (and distinguishing family support from friend support) and interpersonal relationships of suicidal adolescents, as these issues have been inadequately addressed in the literature to date.

Summary:

In summary, it can be seen from the above literature review that there exists a constellation of family factors associated with adolescent suicidal behavior, ranging from a chaotic family life to low perceived social support from parents. Negative and contradictory findings are also evident; much of the inconsistencies reported among studies can be attributed to differences in study design, instrumentation and other methodological considerations. The general consensus which emerges from the literature suggests that adverse family functioning plays an important role in the development of suicidal behavior in adolescence. However, the following question remains yet to be answered: *How can we best conceptualize the role of the family in the genesis of adolescent suicidal behavior?* Adam (34, 35) has suggested that attachment theory may

be a useful model for conceptualizing both the earlier and later interactional factors of suicidal behavior. The primary goal of this study was to show that the construct of parent-adolescent attachment is useful for understanding family risk factors associated with suicidal behavior in adolescence.

Attachment:

The developmental theory of attachment is a way of conceptualizing the propensity of human beings to make strong affectional bonds to particular others and of explaining the course of individual differences in adaptation, both normal and pathological. Attachment refers to an affective tie between an individual and a preferred other (the attachment figure) and to a biologically based behavioral system cast in terms of set goals, goal correction and function (36). The behavioral system operates in interaction with other behavioral systems, such as the exploratory behavioral system and the maternal care-giving system. The goal of attachment behavior is to obtain and/or maintain a desired proximity to someone who is usually deemed stronger and/or wiser. Attachment behavior occurs in the young of almost all non-human species (37, 38) and has been shown to persist throughout adult life in a number of species. In the wild, the set goal of such behavior, namely proximity, is the rule, which suggests that it has survival value. Bowlby (36) argues that the most likely biological function of attachment behavior is protection from predators.

In humans, attachment behavior is regarded as an inherent component of human nature which is especially evident during early childhood and includes such forms as crying, calling, following, clinging and strong protest should a child be left with strangers

or alone. Specific patterning of behavior is used to identify the quality of an attachment relationship in infancy and early childhood by means of the Strange Situation procedure devised by Ainsworth, Blehar, Waters and Wall (39). As a result of this procedure, infants can be classified as presenting either a pattern of secure attachment or one of three forms of insecure attachment to mother. These patterns have been shown not only to have considerable stability, but also to predict a child's future socio-emotional development (40, 41, 42, 43) These forms of behavior persist into adult life as part of man's behavioral repertoire, yet the frequency and intensity with which they are activated decrease steadily with age. In adults, attachment behavior becomes especially evident during times of stress, illness, and fear. Broadening Bowlby's original view of attachment, Sroufe and Waters (44) suggested that the set goal and function of the attachment system is felt security and promotion of instrumental competence, respectively.

With development, an individual's attachment strategies change from being purely behavioral to more representational in nature. First characterized by Bowlby (36), representational, or internal working models are dynamic mental processes that are built by a child during the first few years of life which incorporate models both of the self and the attachment figure. The forms they take are based on the child's real life experiences of interaction with his/her attachment figure. Based upon experience, the young child forms a generalized expectation of the attachment figure as available and responsive (or unresponsive) and, in turn, a complementary model of self as worthy (or unworthy) of care. These models soon become established as influential cognitive structures and

persist relatively unchanged into adulthood. Perceptions and expectations of future attachment relationships, as well as one's sense of self worth are derived from these representational models of attachment.

An attachment relationship in adults is best distinguished from other social relationships by the following criteria put forth by Weiss (45): 1)in the face of stress, individuals will attempt to seek contact with their attachment figure; 2)increased comfort and diminished anxiety occur in the presence of the attachment figure; and 3)separation or threat of separation from the attachment figure causes "discomfort and anxiety on discovering the attachment to be inexplicably inaccessible". In the absence of an attachment bond, Weiss observed that individuals experienced persistent loneliness, which was not ameliorated by participation in a friendship network. In contrast, distress and isolation were experienced by individuals "without access to a community of others". What these individuals in the latter situation lacked was "affiliation", defined by Weiss as associations in which shared interests and similarity of circumstances provide a basis for mutual loyalty and a sense of community. The exploratory behavioral system, also characterized by Bowlby (36) is congruent with the "affiliation" need noted above. Attachment and affiliation are separate concepts, with each serving its own function of security and exploration, respectively.

Exploratory behavior, including play and varied activities with peers is antithetical to attachment behavior (46). In healthy individuals, the two kinds of behavior normally alternate. When an individual feels secure in his/her attachment relationship, he/she is likely to explore away from the attachment figure. An urge towards proximity is felt by

the individual when alarmed, anxious, tired, or unwell. Exploration from a secure base, first described by Ainsworth (47) is a typical pattern of interaction seen between a secure child and his/her attachment figure. A key point in Bowlby's thesis is his suggestion that the provision of a secure personal base, from which an individual goes out to explore and to which he/she returns from time to time, is an important parental role.

Exploratory behavior is best conceived as mediated by a set of behavioral systems evolved for the special function of extracting information from the environment (36). At first, explorations of a healthy child are limited both in time and space. As the child grows older, he/she becomes confident enough to increase time and distance away; as he/she grows into adolescence, excursions are extended, but a secure home base remains indispensable nonetheless for optimal functioning and mental health (48). Security of attachment in adolescence is related to perceptions of parents providing a secure base and support when needed, such as during times of crisis and stress.

There are two central hypotheses in Bowlby's work. The first proposition is that the quality of any attachment relationship is largely determined by the quality of care experienced within that relationship. Or, alternatively, the extent to which the attachment figure is available and responsive when needed by the child influences the quality of the attachment between the child and his/her attachment figure. Secondly, common variations in the way a mother (or primary attachment figure) responds to and attends to her child have lasting significance on the psychological development and later social functioning of the child. Bowlby states, "...there is a strong causal relationship between an individual's experiences with his parents and his later capacity to make affectional

bonds, and that certain common variations in that capacity, manifesting themselves in marital problems and personality disorders, can be attributed to certain common variations in the ways that parents perform their roles" (46, p. 135).

Bowlby has described a number of pathological patterns of attachment in later life which he believes are the result of disturbed attachment formed early on (46). Inherent in the patterns described is the lack of trust and insecurity that attachments hold for such individuals; among these are chronic yearnings for love and support, anxious attachment, compulsive self-reliance, and emotional detachment. Consequently, these disturbed modes of relating to others which become internally organized as internal working models make it difficult to maintain self-esteem and a sense of continuity in life, both of which are contingent upon the formation of stable relationships.

Attachment in Adolescence and Adulthood:

For most individuals, attachment to parents continues in adolescence. Later on, affectional ties to peers eventually replace parent-child attachment as the individual's primary relationship. The relinquishing of attachment to parents appears to be of central importance among the individuation-achieving processes of late adolescence and early adulthood (49). The timing of the relinquishing of parents appears to be influenced by situational factors. Some individuals, by the mid teens no longer treat their parents as attachment figures, while others appear to continue into their twenties to relate to their parents as attachment figures. Furthermore, the relinquishing of attachment does not steadily decrease in intensity, nor does it move only in a single direction. Instead, there may be abrupt changes and subsequent halts and regressions. For many adolescents,

parents remain as "attachment figures in reserve", to use Weiss' term, and continue to be

relied on for support and security during times of distress. Additionally, the extent to

which peer relationships are successfully formed and the self is seen as competent, is

largely determined by the adolescent's attachment history with his/her parents.

The primary focus of the majority of attachment research to date has been

attachment in infancy and early childhood. The development of the Adult Attachment

Interview (AAI) allowed for the extension of attachment research beyond early childhood,

particularly the assessment of attachment organization in later life. The AAI, developed

by George, Kaplan and Main (50), was constructed to investigate adults' past and present

relationships with their parents and uses a semi-structured format of inquiry. The scoring

of the AAI relies on the qualitative aspects of elicited information and patterns of the

narrative response. This information does not purport to provide an accurate picture of

childhood; rather it represents an adult's representational model of attachment, or current

state of mind with respect to attachment. The AAI yields four classifications of adult

attachment patterns which correspond to the patterns in infants as determined by

Ainsworth's Strange Situation procedure.

The AAI has also been used for assessing attachment in adolescence. Kobak and

Sceery (51), using the AAI and measures of attachment correlates, namely affective and

representational correlates, is one of the few research teams to have used a measure of

attachment for adolescents which closely conforms to Bowlby's theoretical postulates.

Other studies measuring attachment in adolescence have used the Parent and Peer

Attachment Questionnaire (10, 32); this instrument, however, does not demonstrate

convergent validity with the most commonly used classifications of attachment as derived from the Strange Situation protocol and the AAI.

The study by Kobak and Sceery (51) found that the secure group of adolescents were rated as more ego-resilient, less anxious and less hostile by peers, and reported little distress and high levels of social support. That is, across both peer and self-report ratings, the secure group appeared to be the most well adjusted. Insecure adolescents, in contrast, were rated as less ego-resilient, more anxious and more hostile than the secure adolescents.

Following a different research orientation, the Adolescent Attachment Questionnaire (AAQ) was designed specifically to assess the attachment characteristics of adolescents (52). The AAQ consists of three scales which assess adolescents' current perceptions of attachment. It has demonstrated high convergent validity with the "gold standard" for assessment of attachment in adolescence and adulthood, namely the AAI, and conforms closely to attachment theory outlined by Bowlby. An obvious advantage afforded by the AAQ is its ease of administration. A more complete description of the AAQ is given below (see METHODS).

THE MODEL:

The common theme underlying the adverse family experiences outlined in the literature review, such as early loss and family instability, is the threat they pose to the availability of adequate parental care and a secure environment in the ensuing years of the child's development. From an attachment perspective, this is viewed as the threat to the consistent availability and responsiveness of the individual's primary attachment figure

and therefore to the security of his/her attachment; this involves both the external security of the attachment relationship as well as the individual's internal security and thus continuity of self. This individual is predisposed to develop an insecure pattern of attachment early on which becomes the template upon which a working model of self in relation to others is constructed. A representational world of self as unlovable and others as unavailable develops, becomes internalized, and is confirmed if recurrent failure in achieving felt security within attachment relationships is experienced.

Continued lack of success in having his/her attachment needs met reinforces the individual's current style of insecure attachment *operationalized as perceived unavailability of the primary attachment figure, lack of a secure base and high angry distress on the Adolescent Attachment Questionnaire; AAQ.* In turn, an insecure style of attachment may lead to the following maladaptive social, cognitive and affective consequences for the individual: low perceived support from family and friends, low self-esteem, hopelessness and depression. This type of adolescent feels unable to turn to others for comfort and support during times of distress, which in turn produces feelings of anger and loneliness. Unable to adapt and cope constructively in the face of perceived threats (especially when these threats involve the continuity of important, interpersonal relationships), the insecurely attached adolescent is at increased risk for developing suicidal propensities. Alternatively, the securely attached individual, due to his/her upbringing within a secure environment, responds to felt distress in constructive and adaptive ways; that is, he/she feels that others can be counted on for support, is well-

adjusted psychologically, and has the ability to cope constructively. Figure 1 outlines the model described above.

In summary, when viewed from a developmental perspective as afforded by attachment theory, it can be seen that adolescent suicidal behavior is the outcome of a dysfunctional attachment history and can best be understood as desperate attempts targeted at attachment figures to signal that attachment needs are not being met. In attachment terms, suicidal behavior is conceptualized as an extreme form of attachment behavior occurring in response to current attachment threat. Adam (34) suggests that whatever other meanings suicidal behavior may have, it serves effectively in signaling distress to others in the social environment, admonishing them for neglect, punishing them for rejection, and coercing them to reestablish a needed bond. The needed bond is that which is afforded in a secure attachment relationship.

Figure 1. Model relating disturbed attachment with suicidal behavior

1. Attachment Pattern Within Family Working Models:	Insecure	Secure
2. Self	Unlovable	Lovable
3. Others	Unavailable	Available
4. Current Attachment Style	Perceived Unavailability Lack of a Secure Base High Angry Distress	Perceived Availability Secure Base Low Angry Distress
5. Social Consequences	Unsupportive Relationships	Supportive Relationships
6. Cognitive & Affective Consequences	Low Self-Esteem Depression Hopelessness	High Self-Esteem Low Depression Low Hopelessness
7. Outcome	Suicidal Behaviors	Successful Coping and Adaptation

STUDY DESIGN AND RESEARCH QUESTIONS:

This study was a retrospective case/comparison design of the association between attachment characteristics and other risk factors and a history of suicidal behavior in clinical adolescents. Previous investigators have proposed that suicidal behavior represents a continuum of ideation to attempt to completion (53); to accord with the literature therefore, the case group was comprised of adolescents with severe suicidal ideation and/or attempt(s). The comparison group included adolescents without any history of suicidal behaviors.

In order to test the different levels of the model, the following research questions were constructed. These research questions aim to investigate the association between suicidal behaviors in adolescence and attachment, as well as other consequences (social, cognitive and affective) of dysfunctional attachment.

Research Question 1: Adolescents in the suicidal group will be significantly more likely than adolescents in the non-suicidal group to have insecure attachment (operationalized as perceived unavailability of the attachment figure, high angry distress and lack of a secure base on the AAQ).

Research Question 2: Adolescents in the suicidal group will be significantly more likely than non-suicidal adolescents to perceive low family support.

Corollary 1: There will be a significant correlation between insecure attachment as measured by the AAQ and perceived family support.

Research Question 3: Adolescents in the suicidal group compared to adolescents in the non-suicidal group will be significantly more likely to experience adverse peer relationships.

Research Question 4: Adolescents in the suicidal group will be significantly more likely than those in the non-suicidal group to exhibit maladaptive cognitive and affective consequences.

Research Question 5: Adolescents in the two groups will be differentiated from each other by some specific combination of attachment pathology and other consequences.

Research Question 6: Low perceived family support will have more significance than low perceived peer support in predicting adolescent suicidal behaviors.

It is important to note that for all of the hypotheses listed above, the effect of gender was also investigated.

CHAPTER II

METHODS

This study was part of a larger study investigating the association between attachment organization as assessed by the AAI and a history of suicidal behaviors in clinical psychiatric adolescents (54). This study, in contrast to the larger study, used a self-report questionnaire, the Adolescent Attachment Questionnaire (described below), to assess adolescent attachment characteristics.

PARTICIPANTS:

The total sample was comprised of 187 adolescents between the ages of 12 and 19 years consecutively recruited to the study from participating treatment centers in three Canadian cities: Toronto, Ontario; Hamilton, Ontario; and Calgary, Alberta. The treatment sites included inpatient, outpatient and day programs, as well as longer term residential settings. The following exclusion criteria were used during recruitment: active psychosis, organic brain disorder, mental sub-normality, or significant physical illness. Otherwise, a full range of emotionally and/or behaviorally disturbed adolescents were represented in the total sample. Based on the suicide assessment protocol devised by Adam (described below), 101 adolescents (54%) had a history of severe suicidal ideation and/or behavior; there were 86 adolescents (46%) with no history of suicidal ideation or behavior.

PROTOCOL:

On admission to one of the above participating treatment centers, each adolescent was given a brief written statement of the research study by a member of the clinical staff. This statement asked only for permission for the trained research assistant to contact the adolescent to further explain the study and ascertain willingness to participate. This was the only involvement the treatment staff had with the recruitment process; no member of the clinical staff was aware of the adolescent's consent or refusal to participate in the study. For those adolescents who consented to participate, the research assistant explained to them the purpose of the study, the voluntary nature of participation, and the limits of confidentiality throughout the course of the study. The adolescents were also informed of their right to withdraw from the study at any time and of the independence of the study from the treatment process. Adolescents 18 years of age and older were asked to sign a written consent form. Adolescents not old enough to give informed consent were allowed to participate only if both he/she and his/her parent or guardian consented for their inclusion in the study. In these cases, the parent or guardian received a brief description of the study and a statement of informed consent.

Prior to data collection, all members of the treatment staff were advised of the nature and purpose of the study. Throughout the study, clinical responsibility for each adolescent participating remained with the treatment team of the respective treatment center.

The research assistant collected demographic information and a history of suicidal behaviors from each participant in a standardized interview and administered self-report questionnaires. These measures are described below.

MEASURES:

The Adolescent Attachment Questionnaire (AAQ) measures the component features of parent-adolescent attachment. In the AAQ, subjects are instructed to answer the questions about their relationship with their attachment figure, defined as the "person in your life who raised you - that is, the person who mostly took care of you from the time you were born to age 5". It is a self-report questionnaire comprised of 3 scales of 5 statements each. These three scales (**Perceived Unavailability, Angry Distress and Lack of a Secure Base**) define the behaviors and affects of parent-adolescent attachment. The Perceived Unavailability scale assesses the extent to which the attachment figure is viewed as reliably accessible. The Angry distress scale measures the individual's negative affective responses to the perceived unavailability of the attachment figure. And finally, the Lack of a Secure Base scale measures the extent to which the individual feels secure in the absence of the parent. Each scale item is rated with a Likert-type response from strongly disagree (1) to strongly agree (5). Summation scores for each scale are produced. Higher scores for each scale reflect greater insecurity with respect to the attachment characteristic being measured (52).

Internal consistency across the scales of the AAQ was demonstrated by Cronbach's alpha coefficient ranging from .71 to .90 over two sets of adolescent subjects: a sample of normal adolescents (n= 777) and a sub-sample of clinical adolescents (n =

133). Test-retest reliability of the AAQ for the sample of normal adolescents ranged from

.72 to .82 over a four week period (52).

The AAQ scales have demonstrated strong convergent validity with the "gold

standard" for classifying attachment styles in older age groups, the AAI. In the clinical

sample, participants classified as secure on the AAI tended to have lower mean scores on

Perceived Unavailability and higher mean scores on Lack of a Secure Base. Participants

classified as dismissing of attachment according to the AAI had significantly lower mean

scores on Lack of a Secure Base, and participants classified as preoccupied with

attachment issues had significantly higher mean scores on Angry Distress. The AAQ

scales have also demonstrated construct validity and offer high discriminant power, both

in differentiating the normal sample from the clinical sample and in differentiating,

within the clinical sample, adolescents with a history of suicidal behavior from

adolescents without a history of suicidal behavior (52).

The Perceived Social Support from Family and Friends Scale (PSS-Fa and

PSS-Fr) measures the extent to which an individual believes that his/her needs for

support, information and feedback are being fulfilled by family and friends. The PSS

measures have been used extensively to assess subjective appraisal of support in studies

with clinical and non-clinical populations as well as with medical patients. Each measure

consists of 20 declarative true-false statements to which the participant answers yes, no,

or don't know. For each item, the response indicative of perceived social support is

scored as 1 so that upon item summation, the possible range of scores is from 0 (low

perceived social support) to 20 (high perceived social support) (55).

Internal consistency coefficients of .90 for PSS-Fa and .88 for PSS-Fr were reported for a sample of college students (n = 222). Test-retest reliability coefficients ranged from .80 to .86 for PSS-Fa and from .75 to .81 for PSS-Fr over a one month period. (55).

Results from three validation studies indicated that higher levels of perceived support as measured by these instruments were significantly related to lower psychopathology and greater social competence levels in the college sample, lending evidence for the construct validity of the scale (55). Across three disparate populations - psychiatric (n = 74), diabetic (n = 53) and college (n = 92) samples - evidence was provided for the criterion validity of the scales: lower social support levels from both family and friends for the psychiatric patients compared to the other samples, and a correlation coefficient of .49 between the PSS-Fa and depression level for the psychiatric patients. Additionally, the PSS measures were found to measure separate, but related constructs (56).

The Rosenberg Self-Esteem Scale measures an individual's attitudes toward him/herself along a favorable to unfavorable continuum. High self-esteem, as reflected in the scale items, means that the individual respects him/herself, considers him/herself worthy, but does not necessarily consider him/herself better than others. Low self esteem, on the other hand, is defined as self-rejection, self-dissatisfaction, and self-contempt (57).

The scale consists of 10 positive and negative items which are alternately presented. Each item is rated on a 4-point scale from strongly agree to strongly disagree. In this study, the items were scored in the direction of increasing self-esteem; a

summation score based on the 10 items was produced for each individual, with higher scores reflective of higher self esteem.

The Rosenberg produced a test-retest reliability coefficient over a 2 week period of .85 for a sample of college students (n = 28) (58). When scored as a Guttman scale, its reproducibility coefficient was .92 for a sample of 5,024 high-school students (57). A Guttman scale, with its use of "contrived" items, has a reduced number of scale items compared to the "original" scale; for the Rosenberg, Guttman scoring yields a six item scale (scores ranging from 0 to 6) as opposed to a 10 item scale (scores ranging from 0 to 10). The Guttman format for scales has been strongly criticized (59). In this study, the 10 item (uncontrived) method of scoring was used.

Scale correlations with several similar measures and clinical assessment for a sample of college students, including those who were engaged in psychiatric treatment (n = 44), ranged from .56 to .83 (58). Other investigators have reported similar interscale correlations: .59 when scored as a Guttman scale, and .60 when scored as 10 items with another self-esteem inventory (59). The above results provide evidence for the convergent validity of the scale. Rosenberg (57), using the sample of high-school students (n = 5,024), demonstrated construct validity for the scale: he related positive self-esteem to many social and interpersonal consequences, such as less shyness and depression, more assertiveness, and more extra-curricular activities. The measure has also demonstrated adequate discriminative validity (58).

The Beck Hopelessness Scale measures an individual's negative expectancies concerning him/herself and future life. The scale is comprised of 20 true-false self-report

statements of which 9 are keyed false and 11 are keyed true. For each statement a response of either 0 (false) or 1 (true) is given and the total "hopelessness score" is the sum of the scores on the individual items. Thus, the possible range of scores is from 0 to 20, with higher scores reflective of greater hopelessness (60).

A sample of hospitalized patients who had made recent suicide attempts (n = 294) produced an internal consistency coefficient of .93. Highly significant correlations between each item and the total hopelessness score were also reported (60).

Concurrent validity of the scale was demonstrated by correlations of hopelessness scores with clinical ratings and other self administered measures of hopelessness. The correlations of hopelessness total scores with the clinical ratings were .74 for a general practice sample (n = 23) and .62 for an attempted suicide sample (n = 62). Its correlation with the pessimism item of the Depression Inventory was .63 for a sample of depressed patients (n = 59). The instrument has also demonstrated construct validity as evidenced by its use as a measure in testing and confirming various hypotheses relevant to the construct under investigation (60).

The Youth Self Report Scale (YSR) is designed to obtain 11-18 year olds' reports of their own competencies and problems in a standardized way. It is a symptom checklist yielding scores for three competence domains (Social, Activity and Total), three major behavioral domains (Internalizing, Externalizing and Total), and a number of behavioral syndromes which provide a profile of a youth's behavior problems. The instrument consists of 17 competence items, 103 items describing behavioral problems of clinical relevance and 16 socially desirable items. The range of scores for each item is

from 0 to 2. The subject gives a response of 0 if the item is not true, 1 if the item is somewhat or sometimes true, and 2 if the item is very true or often true. A total problem score is computed by summing the scores from each of the 103 problem items. The YSR is factor analyzed to describe both narrow-band syndromes and broad band syndromes. Broad band syndromes are divided into an Internalizing factor and an Externalizing factor. Narrow band syndromes are divided into seven factors for boys and six for girls. These include factors such as: Depressed; Unpopular; Somatic Complaints; Thought Disorder; Delinquent; and Aggressive. The factor unique to boys is: Self-Destructive/Identity Problems (61). For the present study, only scores derived from the **Depression Syndrome** scale were used.

The YSR has demonstrated both high internal consistency and test-retest reliability in large samples of both community youth and youth referred for psychological/psychiatric treatment. Only the activities scale and the total competence scale produced internal consistency coefficients less than .55 (.38 an .46, respectively); and test-retest reliability coefficients ranged from .47 (thought problems) to .81 (anxious/depressed and externalizing) over a one-week period (62).

Both content and criterion validity have been assessed. Validity assessment results showed that: competence scores, while useful in determining strengths and weaknesses should not be used in determining clinical status; and problem scores (both the total problem scores and scores on the six factors) are useful indicators of psychological distress (63). Discriminant validity of the YSR has also been demonstrated.

The Suicidal Ideation and Attempt Interview encompasses detailed inquiries into lifetime thoughts of suicide and any history of suicide attempts. The participant is asked to give as many details as possible about the onset, frequency, intensity, duration and content where suicidal ideas are reported. Parameters of frequency, intensity, and duration are given a rating of low, moderate or high order resulting in the scoring of suicidal ideation as significant or not significant. At least two of the parameters are required to be of moderate order or one parameter of high order for the subject to be rated as having significant suicidal ideation. Where participants report suicidal behavior in the form of one or more actual suicide attempts, a detailed inquiry is made of the circumstances surrounding it (them), and an estimate of the severity of the attempt according to its motivation, chosen method and provisions made for rescue is made (64). Based on this interview, each participant was assigned to one of three groups: suicidal ideation (suicidal ideation but no attempt); suicide attempt (single attempt or multiple attempts); and control (no history of suicidal ideation or attempt). Each participant's classification was confirmed by a second independent rater. The suicidal ideation and suicide attempt groups were combined in this study to form the suicidal group (the case group).

Note: Scale items corresponding to the appropriate measure described above are seen in Appendix B.

STATISTICAL ANALYSIS:

Descriptive statistics using means (with 95% confidence intervals), standard deviations and frequencies, where appropriate, were produced for the demographic variables and the model variables. Demographic statistics were produced for the total sample and for sub-groups derived from stratification of the total sample by group classification and gender. Descriptive statistics for the model variables were produced for the sub-groups only.

Testing for potential differences between the suicidal and the non-suicidal group on the demographic variables was performed by the Chi2 test for contingency tables for categorical variables and one-way analysis of variance for continuous variables.

Multiple linear regression was used to test for significant differences between the groups in the three attachment variables, the two social support variables and the three cognitive/affective variables. Using separate multiple regression models with each model variable as the dependent variable, the possibility of a confounding effect of gender on the relationship between group classification and the model variable was examined. In addition, the possibility of an interaction between group classification and gender in predicting scores on each model variable was investigated. Two tailed tests of hypotheses were conducted throughout, and to account for multiple tests, as eight test variables were tested, the conventional, but arbitrary p-value of .05 was adjusted and a new p-value of .01 was taken as the cut-off level for determining whether or not there exists enough evidence to reject the respective null hypothesis under investigation.

Prior to each multiple regression analysis, boxplots illustrating the distribution of scores of the respective model variable for the two groups (stratified by gender if necessary) were constructed and examined. The outer box extends from the 25th to the 75th percentile, or alternatively from the lower to the upper quartiles of the data distribution. The line running between the quartiles marks the 50th percentile of the data, or the median. For each model variable, the medians of the groups were compared.

Correlation analysis was performed between the three attachment scales from the AAQ (Perceived Unavailability, Angry Distress and Lack of a Secure Base) and the Perceived Support from Family scale. A separate correlation analysis was performed for each attachment scale. Person product-moment correlation coefficients were calculated for each analysis and p-values were reported. Scatterplot displays of the relationship between each attachment scale and the PSS-Fa scale were also produced.

The statistical method for combining the individual variables into a model predicting group membership is multiple logistic regression. Initially, the significance of the relationship between each independent variable and the outcome variable was assessed via univariate analysis, and then those independent variables whose relationships were deemed both statistically and practically important were entered into the multiple logistic model collectively, controlling for demographic variability between the two groups if necessary. The independent variables initially selected to be entered into the model were: the three attachment variables (perceived unavailability, lack of a secure base and angry distress), perceived support from family, perceived support from friends, self-esteem, hopelessness, and depression. The outcome variable in the model was group

classification. Interactions among the independent variables were examined. Thorough assessment of the model fit was made, and the most parsimonious model describing the relationship between the above set of independent variables and suicidal status was produced.

ETHICAL CONSIDERATIONS:

Participation in this study was entirely voluntary and based upon informed consent. Informed consent consisted of the adolescent (and the parent/guardian if the adolescent was younger than 18 years of age) signing a written consent form which outlined the objectives and nature of the study, the limits of confidentiality and the voluntary nature of participation. Each adolescent was assigned a number code, thus guaranteeing his/her anonymity. This study did not involve physically invasive procedures nor purposes hidden from the participants. Prior to data collection confirmation of ethical approval was sought and attained. Results produced from data analyses in this study were reported in aggregate form only.

CHAPTER III

RESULTS

DEMOGRAPHIC VARIABLES:

The demographic variables include age, gender, race, residential status and reported attachment figure. Upon data collection, there were 8 categories constructed for race and 9 for reported attachment figure. However, for each of these 2 variables, the original categories were collapsed to meet the requirements for a valid Chi2 analysis - that is, no cell should have an expected frequency of less than 1 and at least 80% of the cell frequencies should be greater than 5 for each analysis.

For the race variable, the condensed categories were: (1) white; and (2) race other than white (i.e. American-Indian, Black, other, don't know). For the reported attachment figure variable, 3 categories were constructed: (1) mother as attachment figure; (2) father as attachment figure; and (3) someone else other than biological mother or father (i.e. grandmother, foster mother, stepmother, stepfather, adoptive mother, adoptive father, other).

Demography of the total sample:

The mean age of the total sample was 14.9 years (standard deviation = 1.6 years). There were 85 (45.5%) female adolescents and 102 (54.5%) males. Eighty four percent (84.4%) (n = 157) of the sample was white. In terms of residential status, 61.3% (n = 114) were in residential treatment at the time of the study, while 38.7% (n = 72) were

either day-patients or outpatients (5.9% and 32.8%, respectively). Eighty percent (80.6%)

(n = 150) reported that their attachment figure was their mother, while only 7% (n = 13)

listed their father as their attachment figure.

Demographic comparison of the suicidal and non-suicidal group:

The gender and age distribution of the adolescents by group classification are

given in Table 1.. There was a significant gender difference between the two groups as

determined by a Chi2 analysis (Chi2(1) = 7.1763, p = .0074). ANOVA (one-way)

detected a significant difference in age between the two groups (F(1,185) = 9.937, p =

.0019). As can be seen, the suicidal group had more females and was significantly older

than the non-suicidal group.

Table 1. Distribution of gender and age by group

	SUICIDAL		NON-SUICIDAL	
Gender	MALE	FEMALE	MALE	FEMALE
n	46	55	56	30
(%)	(45.5%)	(54.5%)	(65.1%)	(34.9%)
Age				
Mean		15.2		14.5
SD		1.6		1.6

The race, residential status and reported attachment figure distribution of the

participants are seen in Table 2. There was no significant difference in race between the

groups (Chi2(1) = 1.2503, p = .2635). There was a significant difference between

adolescents in the two groups in terms of whether they were inpatients, outpatients or

day-patients (Chi2(2) = 8.6408, p = .0133). At the 5% level of significance, there was no

significant difference in reported attachment figure between the two groups (Chi2(2) =

5.2604, p = .0721). As can be seen in Table 2, the majority of adolescents in both groups

were white and listed their mother as their attachment figure. The suicidal group had

more adolescents in residential treatment than the non-suicidal group.

Table 2. Distribution of race, residential status and attachment figure by group

	SUICIDAL			NON-SUICIDAL		
Race	WHITE	OTHER		WHITE	OTHER	
n	82	19		75	11	
(%)	(81.2%)	(18.8%)		(87.2%)	(12.8%)	
Residential Status	INPT.	DAYPT.	OUTPT.	INPT.	DAYPT.	OUTPT.
n	71	3	27	43	8	34
(%)	(70.3%)	(3%)	(26.7%)	(50.6%)	(9.4%)	(40%)
Attachment Figure	MOTHER	FATHER	OTHER	MOTHER	FATHER	OTHER
n	87	4	10	63	9	14
(%)	(86.1%)	(4%)	(9.9%)	(73.2%)	(10.5%)	(16.3%)

VARIABLES DIFFERENTIATING THE GROUPS:

(1) Attachment variables:

Boxplots illustrating the distribution for the attachment variables for the two

groups stratified by gender are presented in Figure 2. The suicidal group had higher

median scores on Angry Distress for both genders than non-suicidal adolescents; female

suicidal adolescents compared to the other adolescents had the highest median scores.

For the Perceived Unavailability scale, suicidal adolescents of both genders had higher

median scores than non-suicidal adolescents; as for the Angry Distress scale, female

suicidal adolescents had the highest median scores. For the Lack of a Secure Base scale,

adolescents of both genders in the non-suicidal group had higher median scores than

adolescents in the suicidal group; female non-suicidal adolescents had the highest median

scores on this scale.

Figure 2. Distribution of scores on the three attachment variables stratified by group classification and gender

ANGRY DISTRESS

PERCEIVED UNAVAILABILITY

LACK OF A SECURE BASE
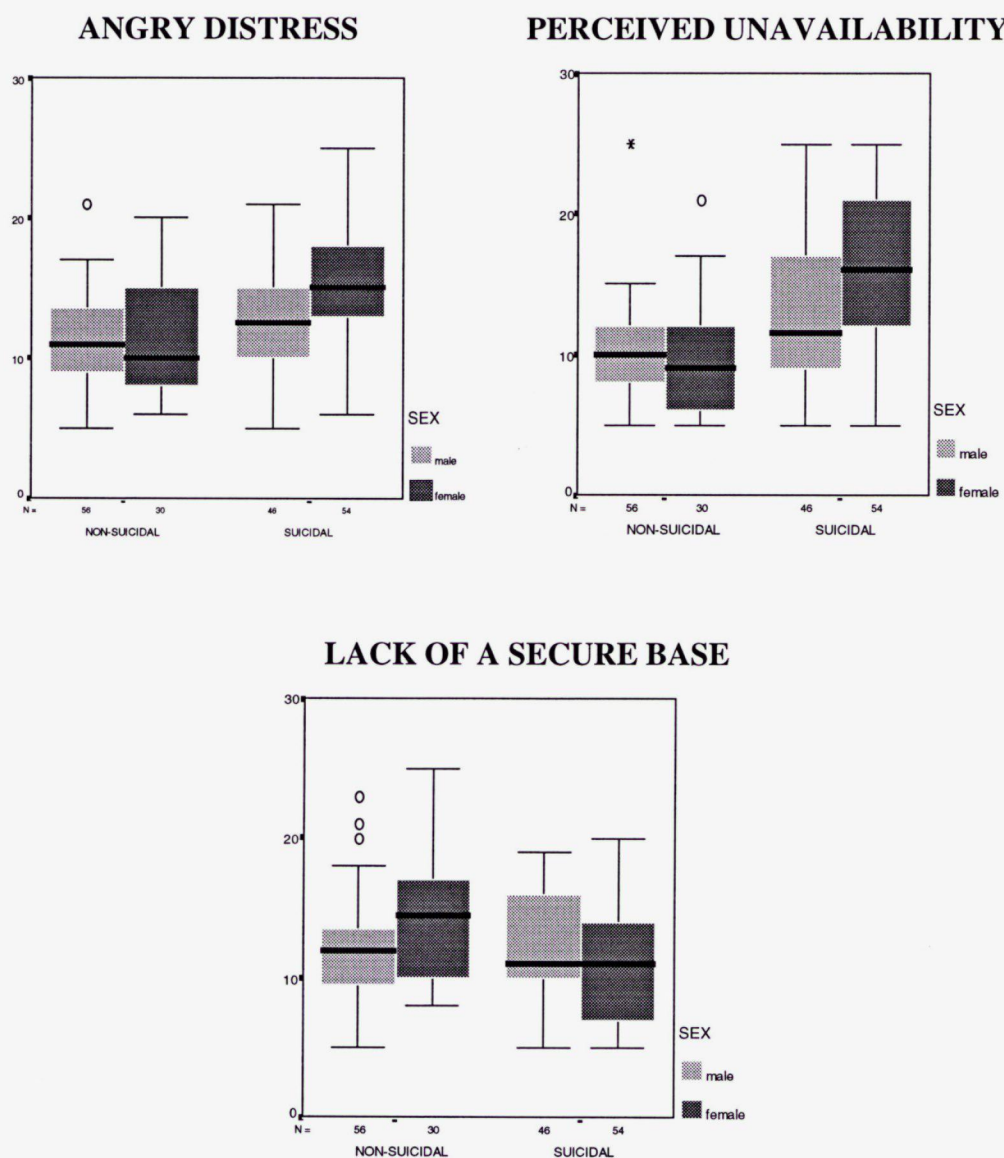
There was no evidence of gender acting as a confounder on the relationship between group classification and each of the three attachment variables. However, there was evidence of an interaction between group classification and gender in predicting scores on the Angry Distress ($t = 2.386$, $p = .0181$), Perceived Unavailability ($t = 2.517$, $p = .0127$) and Lack of a Secure Base ($t = -2.635$, $p = .0092$) scales. For the Angry Distress scale, female suicidal adolescents had significantly higher mean scores than female non-suicidal, male suicidal and male non-suicidal adolescents. In the Perceived Unavailability scale, female suicidal adolescents had significantly higher mean scores than female non-suicidal, male suicidal and male non-suicidal adolescents. In addition, male suicidal adolescents had significantly higher mean scores than non-suicidal adolescents of both genders for this scale. In the Lack of a Secure Base scale, female non-suicidal adolescents had significantly higher mean scores than female suicidal, male suicidal and male non-suicidal adolescents. The main effects of group classification and gender were not tested for these three scales. The means and 95 % confidence intervals for the two groups, stratified by gender are presented in Table 3.

Table 3. Means and 95% confidence intervals for suicidal and non-suicidal groups by gender for the attachment variables

	SUICIDAL		NON-SUICIDAL	
	MALE	FEMALE	MALE	FEMALE
n	46	54	56	30
Angry distress				
Mean	12.41	15.33	11.44	11.43
95% CI lower bound	11.19	14.15	10.52	9.77
95% CI upper bound	13.64	16.52	12.38	13.1
Unavailability				
Mean	13	16.46	9.96	9.67
95% CI lower bound	11.28	14.85	9.06	8.17
95% CI upper bound	14.72	18.17	10.87	11.16
Lack of a secure base				
Mean	12.02	11.09	12.18	14.7
95% CI lower bound	10.87	9.89	10.99	12.96
95% CI upper bound	13.17	12.29	13.37	16.44

(2) Social support variables

Boxplots describing the distribution for the perceived social support variables are seen in Figure 3. The suicidal group had lower median scores than the non-suicidal group on the PSS-Fa scale. For the PSS-Fr scale, in both study groups, female adolescents had higher median scores than males.

Figure 3. Distribution of scores for the perceived social support variables

PERCEIVED SUPPORT FROM FAMILY   **PERCEIVED SUPPORT FROM FRIENDS**
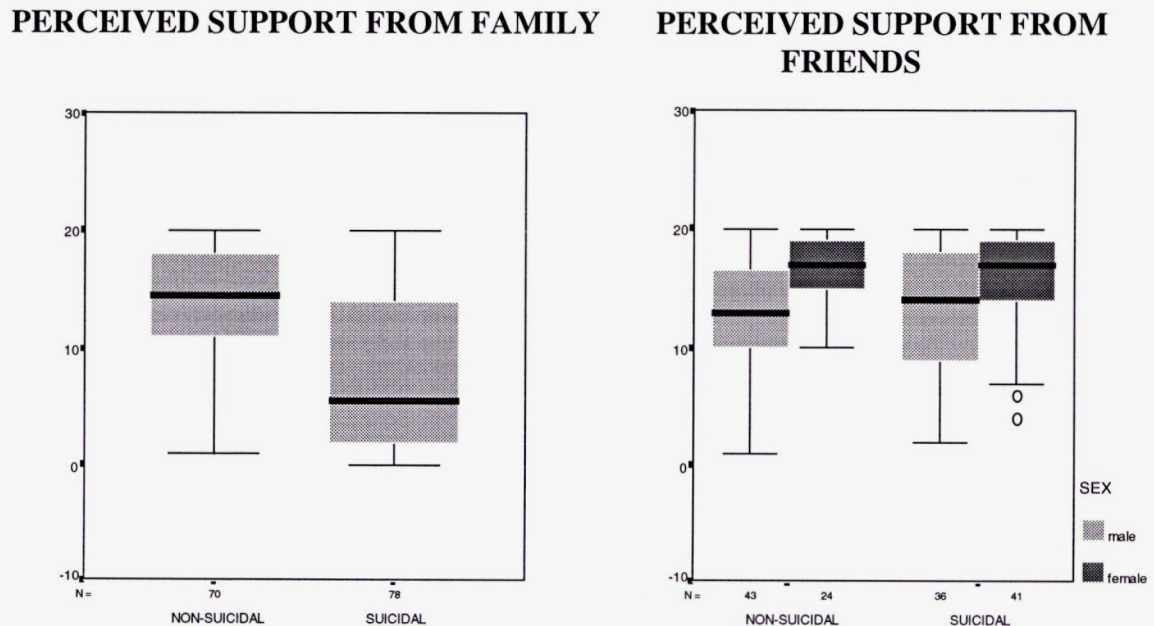
There was no evidence of a confounding effect of gender on the relationship between group classification and perceived social support from family and between group classification and perceived social support from friends. Nor was there evidence of an interactive effect between group classification and gender in predicting scores on these two scales. The main effect of group classification was significant ($t = -6.411$, $p < .0001$) for the PSS-Fa scale, but not for the PSS-Fr scale. Gender, however, was a significant predictor of perceived social support from friends ($t = 4.263$, $p < .0001$). Table 4 illustrates these findings. (Note: multiple linear regression was done after applying a squared transformation to the data for perceived support from friends, which rectified a mild violation of the assumption of normality of the residuals).

Table 4. Means and 95% confidence intervals for suicidal and non-suicidal groups by gender for the social support variables

	SUICIDAL		NON-SUICIDAL	
	MALE	FEMALE	MALE	FEMALE
Perceived support from family				
n	38	40	45	25
Mean	9.24	6.15	13.13	14.4
95% CI lower bound	7.14	4.34	11.85	11.95
95% CI upper bound	11.34	7.96	14.41	16.85
Perceived support from friends				
n	36	41	43	24
Mean	12.69	15.51	12.7	16.54
95% CI lower bound	10.83	14.21	11.28	15.38
95% CI upper bound	14.56	16.81	14.12	17.7

(3) Cognitive/affective variables:

The distribution for the cognitive/affective variables (self-esteem, hopelessness and depression) are presented in Figure 4. As can be seen, the suicidal group had lower median self-esteem scores, higher median hopelessness scores, and higher median depression scores than the non-suicidal group.

Figure 4. Distribution of scores for the three cognitive/affective variables

SELF-ESTEEM

HOPELESSNESS
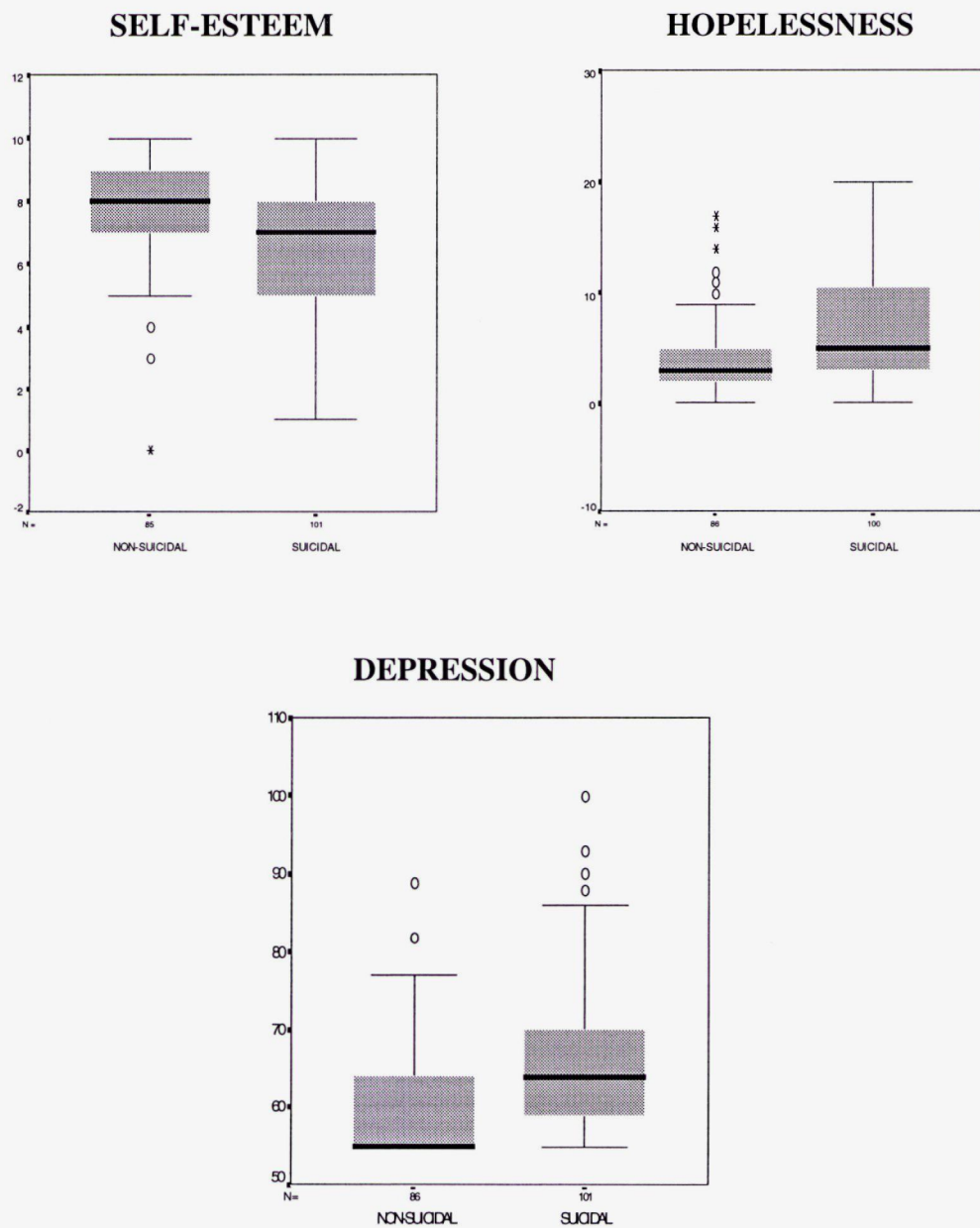
DEPRESSION

There was no evidence of gender confounding the relationship between group

classification and each of self-esteem, hopelessness and depression. Similarly, there was

no evidence of an interaction between group classification and gender in predicting scores

on each of these scales. The main effect of gender was non-significant for all three

variables. Group classification was a significant predictor of self-esteem (t = -3.933; p =

.0001), hopelessness (t = 4.401, p < .0001) and depression (t = 5.086, p < .0001). These

results are illustrated in Table 5. (Note: multiple linear regressions for the three variables

were done after applying a squared transformation to self-esteem, a square root

transformation to hopelessness and a log transformation to depression, which rectified a

mild violation of the assumption of normality of the residuals for each regression).

Table 5. Means and 95% confidence intervals for suicidal and non-suicidal groups for the cognitive/affective variables

	SUICIDAL	NON-SUICIDAL
Self-esteem		
n	101	85
Mean	6.38	7.71
95% CI lower bound	5.87	7.32
95% CI upper bound	6.88	8.09
Hopelessness		
n	100	86
Mean	7.12	4.00
95% CI lower bound	6.01	3.19
95% CI upper bound	8.23	4.81
Depression		
n	101	86
Mean	65.94	59.76
95% CI lower bound	64.02	58.25
95% CI upper bound	67.87	61.26

ASSOCIATION BETWEEN THE ATTACHMENT VARIABLES AND PERCEIVED SUPPORT FROM FAMILY:

The scatterplots in Figures 5 and 6 illustrate the relationship between each of the

three attachment variables and perceived support from family for the two study groups.

As anticipated, all three attachment scales were associated with the PSS-Fa scale. The

correlations between each of the three attachment scales and the PSS-Fa scale for the two

study groups were as follows: between angry distress and perceived support from family,

the correlation was -.4728 (p < .0001) for the non-suicidal group and -.3795 (p = .001) for

the suicidal group; the correlation between perceived unavailability and perceived support

from family was -.4437 (p = .001) for the non-suicidal group and -.7305 (p < .0001) for

the suicidal group; and the correlation between lack of a secure base and perceived

support from family was .2780(p = .028) for the non-suicidal group and .4157 (p <

.0001) for the suicidal group. The negative correlations for Angry Distress and Perceived

Unavailability mean that high scores on these two scales were associated with low scores

on the PSS-Fa scale. For the Lack of a Secure Base scale, the positive correlation

suggests that low scores on this scale were associated with low scores on the PSS-Fa

scale. (Note: correlational analysis was done after applying a square root transformation

to Perceived Unavailability for non-suicidal adolescents which rectified a mild violation

of the assumption of normality of the distribution of the data).

Figure 5. Scatterplot displays of the relationship between the three attachment variables and perceived support from family for non-suicidal adolescents
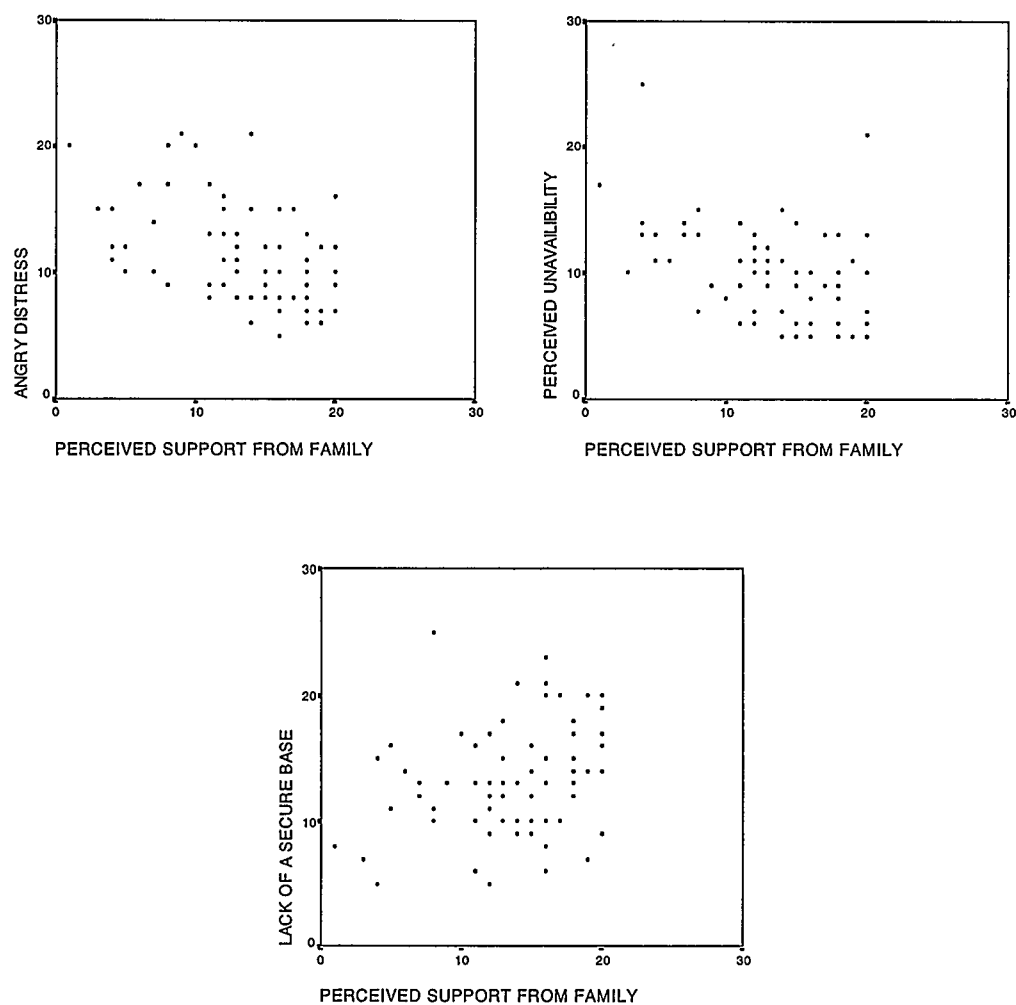
Figure 6. Scatterplot displays of the relationship between the three attachment variables and perceived support from family for suicidal adolescents
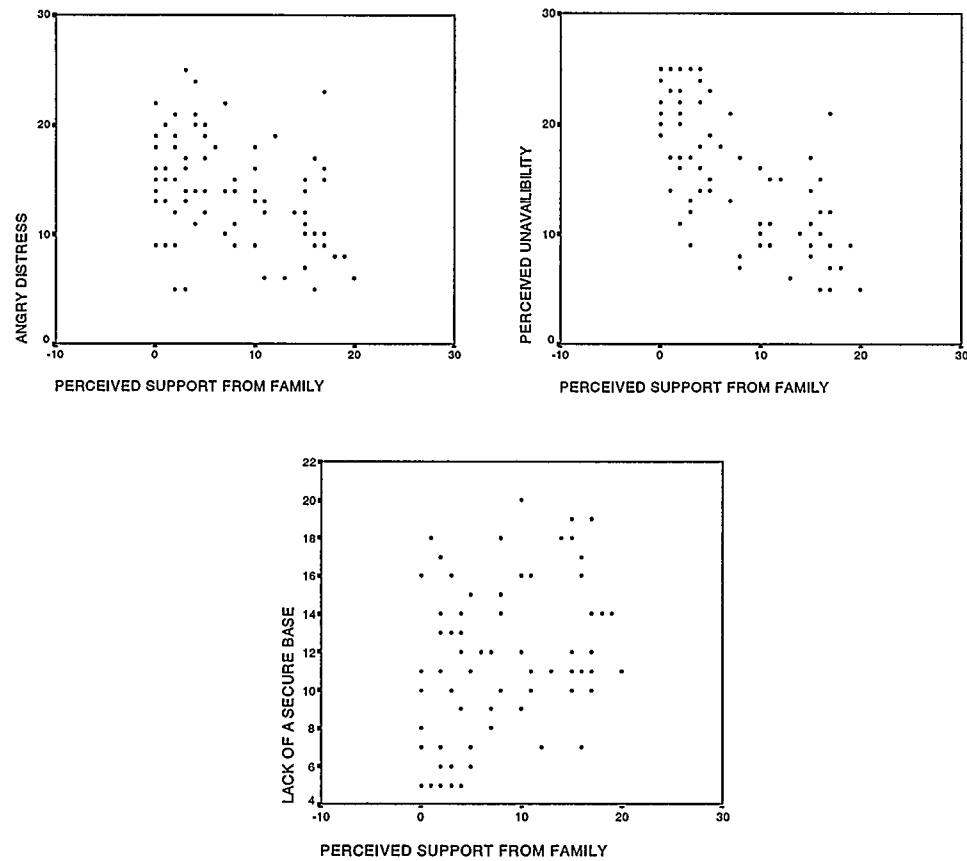
As can be inferred from the correlation coefficient and seen from the scatterplot display, the association between perceived unavailability and family support for non-suicidal adolescents is a.weak one. In contrast, the association between these two variables is much stronger for the suicidal adolescents. Similarly, the association between the Lack of a Secure Base scale and the PSS-Fa scale is stronger for the suicidal group than for the non-suicidal group.

VARIABLES PREDICTING GROUP MEMBERSHIP:

The following independent variables were considered to be significant predictors of membership in the suicidal group when considered individually in a simple logistic regression model: the three attachment variables, perceived support from family, self-esteem, hopelessness and depression. Perceived support from friends was not found to be a significant predictor of membership in the suicidal group. Due to the statistically significant age and gender differences between the groups, these two demographic variables were entered into the model in order to assess the effect of the test variables while adjusting for age and gender differences. Additionally, the significant differences between the sexes in the three attachment scales suggested the need for three interaction terms between each of the three attachment variables and gender in the multiple logistic regression model.

There was evidence that age should not be treated as a continuous variable in the logistic regression model (see Appendix). Therefore, two categories for age were constructed: (1) age equal to or less than 14 years of age; and (2) age equal to or greater than 15 years of age. As anticipated, there was a significant interaction between gender and lack of a secure base; however, interactions between gender and each of angry distress and perceived unavailability were non-significant. All other interactions between the test variables and each of age and gender were considered, and at the 5% level, interactions between age and angry distress and between age and perceived family support were found to be significant. The variables perceived unavailability and depression also reached significance. Therefore, as inferred from the final logistic

regression model, high perceived unavailability of the attachment figure and depression significantly increase the probability of membership in the suicidal group. When predicting group membership from scores on the Lack of a Secure Base attachment scale, the gender of the adolescent must be taken into account. Similarly, when predicting adolescent suidiality from scores on the Angry Distress attachment scale and the Perceived Support from Family scale, the age of the adolescent (young vs. old) must be specified. The Goodness of fit X2 of the best fit model is 133.27(df = 136; p = .5502). Estimated regression coefficients for the final model are provided in Table 6. These coefficients describe the usefulness of each variable in the model in estimating the log odds of membership in the suicidal group.

Table 6. Multiple logistic regression model for differentiating between suicidal and non-suicidal adolescents

	Estimated coefficient	SE	z	p
Intercept	1.49	2.18	0.68	0.494
Depression	0.09	0.03	2.95	0.003
Perceived support from family	-0.28	0.10	-2.83	0.005
Angry distress	-0.33	0.12	-2.84	0.004
Perceived unavailability	0.20	0.07	2.69	0.007
Lack of a secure base	0.13	0.07	1.83	0.067
Age	-7.24	2.84	-2.55	0.011
Gender (female)	2.16	1.74	1.24	0.215
Angry distress * age (older)	0.39	0.14	2.76	0.006
Perceived support from family * age (older)	0.30	0.12	2.48	0.013
Lack of a secure base * gender (female)	-0.24	0.12	-1.96	0.050

For practical purposes, the probability of membership in the suicidal group was calculated for: (1) several values of Perceived Unavailability; (2) values of Angry

Distress (by age); (3) values of Perceived Support from Family (by age) ; and (4) values of Lack of a Secure Base (by gender) keeping the other variables in the model at their median values for each scale assessed (Figures 7, 8, 9 and 10). Figure 7 indicates that increasing scores on Perceived Unavailability are associated with increased probability of being in the suicidal group for both females and males. Figure 8 illustrates that for high scores on the Angry Distress scale, older adolescents (15 years or older) are more likely to be in the suicidal group than younger adolescents. Figure 9 shows that low perceived support from family is predictive of adolescent suicidality for younger adolescents (14 years or younger) more so than for older adolescents. Figure 10 illustrates the interaction between lack of a secure base and gender. That is, for low scores on the Lack of a Secure Base scale, females have a higher probability of being in the suicidal group than males, but for high scores on this scale, males have a higher probability of being in the suicidal group than females.

Figure 7. Probability of being in the suicidal group for scores on the Perceived Unavailability scale

Figure 8. Probability of being in the suicidal group for scores on the Angry Distress scale
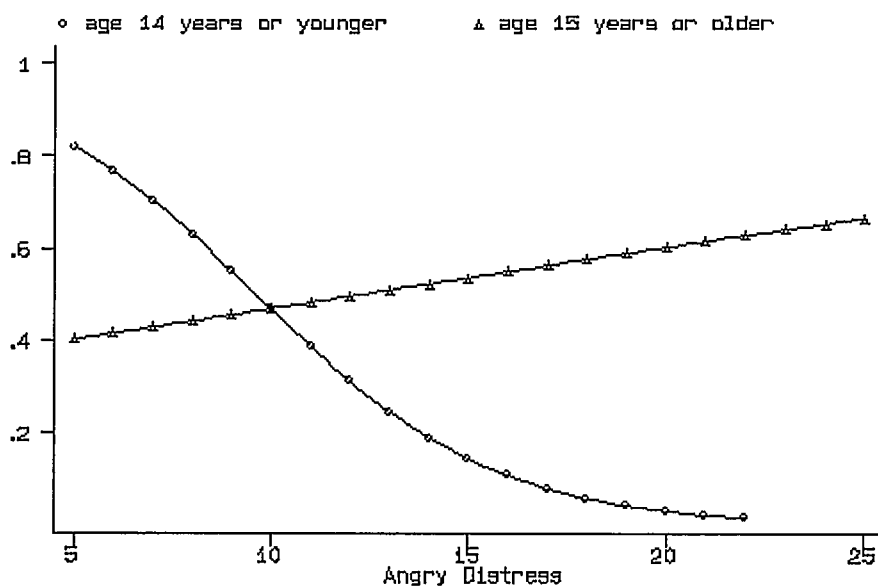
Figure 9. Probability of being in the suicidal group for scores on the Perceived Support from Family scale

Figure 10. Probability of being in the suicidal group for scores on the Lack of a Secure Base scale
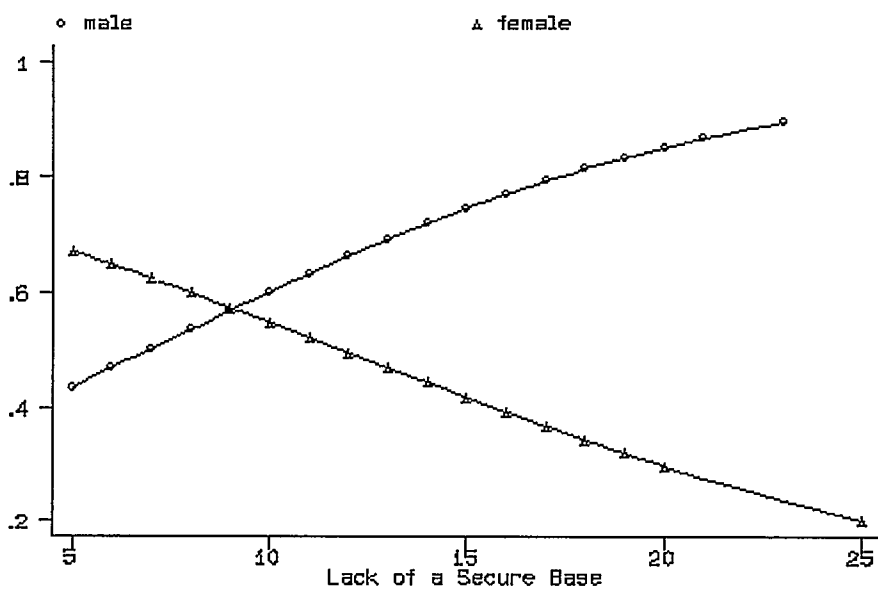
Multiple logistic regression was also used to assess whether perceived support from family was a more significant predictor of membership in the suicidal group than perceived support from friends. As mentioned above, when these two variables were considered individually in a simple logistic regression model, only perceived support from family was found to be a significant predictor of membership in the suicidal group. Similarly, when both of these variables were entered simultaneously into a multiple logistic regression model containing these two variables and controlling for age and gender differences, perceived support from family reached significance ($p < .0001$) while perceived support from friends did not ($p = .637$)

CHAPTER IV

DISCUSSION

This study examined the association between attachment, as assessed by the AAQ, and a history of suicidal behavior in adolescents. The results demonstrate that attachment status differentiates adolescents with a history of suicidal behavior within a clinical sample. Indeed, the findings of this study suggest that family factors, namely parent-adolescent attachment characteristics and perceived support from family, comprise the core dynamic differentiating adolescents with suicidal behavior from those without in a clinical population.

In general, the results showed that dysfunctional family relationships and depression were significant, independent predictors of adolescent suicidal behavior in this study. Included within the domain of "dysfunctional family relationships" are the three attachment variables and perceived support from family. For the Angry Distress and the Lack of a Secure Base attachment scales, and the Perceived Support from Family scale, important age and gender effects were found.

DEMOGRAPHIC VARIABLES:

In the multiple logistic regression model, the variables of gender and age were not independent, significant predictors of membership within the suicidal group. That is, after taking into account other risk factors, the adolescent's sex and age did not offer any additional information. Three terms that were significant in the model, however, were

interaction terms which involved these two demographic variables. For example, being female did not increase the probability of being in the suicidal group by itself, yet being female and having low scores on the Lack of a Secure Base scale significantly increased the risk for suicidal behavior. A similar kind of interpretation can be made for age. That is, being in either the "older" age group or the "younger" age group was by itself not significantly associated with being in the suicidal group. However, being in the "young" age group and having low perceived support from family, or being in the "older" age group and experiencing high angry distress with respect to attachment, was predictive of adolescent suicidal behavior in this study. As there were clear differences between younger adolescents and older adolescents in this study, future studies investigating different age groups would be of interest.

In sum, the extent to which particular risk factors (perceived family support, angry distress and lack of a secure base) were important in predicting suicidal behavior depended on the adolescent's age and gender. Demographic differences between suicidal and non-suicidal adolescents have been previously reported in the literature. In particular, previous studies have shown that suicidal adolescents tend to be female and older. The ratio of female to male suicide attempters has been documented to range from 3:1 to 9:1. Additionally, it has been reported that within the adolescent age group, suicidal behavior becomes more frequent with increasing age (65).

FAMILY VARIABLES (ATTACHMENT VARIABLES AND PERCEIVED SUPPORT FROM FAMILY):

For both genders and age groups, high scores on the Perceived Unavailability scale were associated with being in the suicidal group. The Perceived Unavailability attachment scale assesses the extent to which the attachment figure is viewed as reliably accessible. Individuals who score high on this scale perceive their attachment figure as unavailable and unresponsive. The results suggest that clinical adolescents who perceive their attachment figure to be unavailable and unresponsive are at increased risk of developing suicidal behaviors.

High scores on the Angry Distress attachment scale were predictive of adolescent suicidal behavior among adolescents aged 15 years or older in this study. The Angry Distress scale taps into the adolescent's negative affective responses to the perceived unavailability of his/her attachment figure. Bowlby (66) identified that a common source of anger is the frustration of unmet attachment needs; he also noted that this anger is specifically directed toward the attachment figure. As Bowlby states, "...being anxious especially that an attachment figure may be inaccessible or unresponsive when wanted, increases hostility" (p. 255). The results with respect to this scale suggest that clinical adolescents aged 15 years or older who experience anger in reaction to unmet attachment needs are at risk of becoming suicidal.

In the study by Sheldon-Keller, West, Larose and Adam (52), preoccupied subjects, as classified by the AAI, had significantly higher mean scores on Angry Distress than subjects with other attachment classifications. Two types of a preoccupied state of

mind classification are the E1 and the E2 subcategories. As assessed by the AAI, the E1 and the E2 subcategories are characterized by a focus on relationships with parents in either a passive or angry manner, respectively. The E2 classification is consistent with high scores on the Angry Distress attachment scale of the AAQ. Adam, Sheldon-Keller and West (54) reported an association between preoccupied attachment, in interaction with unresolved/disorganized attachment, and adolescent suicidal behavior. This is consistent with the present study's findings that high angry distress was associated with adolescent suicidal behavior. Furthermore, both sets of findings are in accord with previous reports that describe suicidal adolescents as angry and having a propensity for enmeshed relationships (19, 67).

For the Lack of a Secure Base attachment scale, low scores were associated with being in the suicidal group for females, while high scores were associated with being in the suicidal group for males. Bowlby (46) identified that the provision of a secure base from which the child is encouraged to explore and return to when needed as an important parental role. The extent to which parents recognize and respect the child's attachment desires, needs and behaviors, determines the adequacy of the secure base. Those individuals who are unable to maintain feelings of security in the absence of the parent are said to have a lack of secure base. In the description of their scale, Sheldon-Keller et al. (52) report that high scores on this scale reflect a lack of a secure base for the individual; additionally, one component of the operational definition of insecure attachment used in this study was "high" lack of a secure base (high scores on the Lack of a Secure Base scale). Yet, if high scores on this scale are hypothesized to reflect one

component of attachment insecurity (i.e. high need for the attachment figure) and suicidal

adolescents are hypothesized to be insecure, how can one interpret the finding that low

scores on this scale were associated with being in the suicidal group for females?

Inspection of the scale's items suggest that this scale is tapping into not one, but

two dysfunctional styles of relating to attachment figures. That is, not only are high

scores reflective of greater insecurity with respect to attachment, but low scores are

equally pathological. High scores appear to tap into an enmeshed style of relating to

attachment figures, while low scores seem to be associated with a style of high self-

reliance, that is, not turning to others during times of distress. A person exhibiting a style

of high self-reliance insists on doing everything for him/herself whatever the conditions.

Thus, sense can be made of the findings when this redefinition of the Lack of a

Secure Base scale is adopted. That is, both high and low scores tap into attachment

insecurity; at one end is an enmeshed style of relating to others and at the other end, a

pattern of high self-reliance. In response to the perceived unavailability of the attachment

figure and feelings of high angry distress, these two ways of coping may result. Based on

the findings of this study, both of the dysfunctional coping methods are associated with

being suicidal. Furthermore, it appears that males and females adopt different methods of

coping. Males who respond with the enmeshed style, and thus exhibit a high need for

their attachment figure, and females who adopt a pattern of self-reliance, thus investing

security primarily in themselves, are likely to be suicidal.

As previously mentioned, one of the components of the operational definition of

insecure attachment used in this study was "high" lack of a secure base. The other two

components were high perceived unavailability of the attachment figure and high angry

distress. High scores on all three scales of the AAQ were hypothesized to reflect insecure

attachment for the adolescent; furthermore, it was hypothesized that suicidal adolescents

would be more insecure than non-suicidal adolescents in this study. If both high and low

scores on the Lack of a Secure Base scale reflect pathology, a new operational definition

of insecure attachment becomes: high scores on Perceived Unavailability, high scores on

Angry Distress and either high or low scores on Lack of a Secure Base. When specific

comparisons were made between the two groups on these three scales, the findings

showed that suicidal adolescents scored higher than non-suicidal adolescents on

Perceived Unavailability and Angry Distress, and lower on Lack of a Secure Base. Using

the "original" operational definition of insecure attachment, only two of the criteria for

insecure attachment appeared to be true for these adolescents. Yet, using the new

definition, all three criteria were met. This suggests that suicidal adolescents, as assessed

by the AAQ, were more insecurely attached than non-suicidal adolescents in this study.

In this study, suicidal adolescents reported significantly lower family support than

non-suicidal adolescents. This is consistent with the study by Morano et al. (29) who

found that the ratio of family supports to overall supports was significantly lower for

suicide attempters than non-attempters in their psychiatric sample. The univariate

findings are also consistent with deJong (10) who reported that adolescents with a history

of suicidal behavior rated their parents as emotionally absent in childhood to a

significantly higher degree than depressed and normal controls. DeJong (10) additionally

found that in particular, male suicidal subjects rated their parents as emotionally

unavailable significantly more than the depressed and normal adolescents. In the present study, a gender-group interaction was not found in predicting perceived family support.

In the multiple logistic regression model, perceived support from family was a significant predictor of adolescent suicidal behavior. That is, even when taking other risk factors into account, perceived support from family was strongly associated with being suicidal for clinical adolescents in this study. This is consistent with the multiple regression analysis performed by Morano et al. (29) which found that low family support was a significant predictor of adolescent suicidal behavior. Yet, the findings of the present study suggest that perceived family support is important in predicting suicidal behavior depending on the age of the adolescent. That is, low perceived family support was associated with membership in the suicidal group for younger adolescents (14 years or younger) more so than for older adolescents. The findings of the present investigation suggest that low family support heightens younger adolescents' vulnerability to suicidal behavior. Perhaps, it is more critical for younger adolescents to perceive support from their families than older adolescents for whom perceived support from family is less critical, and therefore other factors (such as those relating to parent-adolescent attachment) put them at risk for suicidal behavior.

The core dynamic predicting adolescent suicidal behavior for clinical adolescents appears to be dysfunctional family relationships. Perceived unavailability of the attachment figure, angry distress (for older adolescents), the method of coping adopted in the face of the perceived unavailability of the attachment figure (which is different for males and females), and low family support (for younger adolescents) were significant

predictors of suicidal behavior for adolescents in this study. Additionally, the correlations between the attachment scales of Perceived Unavailability and Angry Distress, and perceived support from family for the suicidal adolescents were mid to high range, negative, and significant. The correlation between the Lack of a Secure Base attachment scale and perceived support from family was positive. Again, when low scores on this scale are viewed as pathological as high scores, the direction of the correlation makes sense. That is, low family support is associated with a pattern of high self-reliance, or low need for the attachment figure. The highest correlation for the suicidal adolescents was between perceived unavailability and perceived support from family. This makes conceptual sense, as high perceived unavailability of the attachment figure and low perceived support from family are compatible concepts.

PERCEIVED SUPPORT FROM FRIENDS:

When suicidal adolescents and non-suicidal adolescents were compared on their perceived support from friends, no significant differences were found in the present study. It was originally hypothesized that adolescents in the suicidal group would be more likely than adolescents in the non-suicidal group to experience adverse relationships with peers. The findings reject this hypothesis, yet make conceptual sense when viewed from an attachment perspective. That is, the domain of interpersonal relationships can be divided into an affiliative component and an attachment component. Attachment relationships provide a sense of security for the individual and affiliative relationships meet the individual's needs for companionship. In adolescence, attachment to parents continues. Eventually, attachment is transferred from parental figures to other individuals, yet even

for older individuals, parents remain as "attachment figures in reserve" who are turned to during times of severe distress. If dysfunctional attachment is hypothesized to be a risk factor for adolescent suicidal behavior, then those relationships with a dysfunctional attachment component should be associated with suicidal behavior and adverse relationships between peers (which are not attachment relationships) should have no association. Indeed, the findings support this conclusion; relationships involving the parents and not peers were found to predict adolescent suicidal behavior. Specifically, when both perceived support from friends and family were entered into a multiple logistic regression model with group classification as the dependent variable, perceived support from family was significant and perceived support from friends was not. This suggests that when solely looking at perceived support from family versus that from friends, it is the former which is strongly associated with suicidal behavior in clinical adolescents.

These results are consistent with those of deJong (10), who found that among suicidal subjects, non-suicidal depressed subjects and normal controls, there were no differences in attachment to peers. The study did, however, report a main effect for sex; that is, females scored significantly higher across the groups than males on attachment to peers. The present study also found a sex difference in perceived support from friends; females perceived higher support from friends than males irrespective of whether they were suicidal or non-suicidal. There is a lack of controlled studies investigating perceived support from both family and friends, thus comparison of the present findings to previous studies is difficult.

COGNITIVE/AFFECTIVE VARIABLES:

The suicidal group had significantly lower self-esteem, significantly greater hopelessness, and significantly more depression than the non-suicidal group. In addition, females had significantly higher depression scores than males, regardless of their group classification. After entering each of self-esteem, hopelessness and depression into a simple logistic regression model, with group classification as the dependent variable, the results showed that all three variables were significant predictors of suicidal behavior for these adolescents. Thus, at the univariate level, each of depression, hopelessness and self-esteem, discriminated suicidal adolescents and non-suicidal adolescents within a clinical sample.

The association between depression and suicidal behavior in adolescence has previously been investigated. Two studies reported higher rates of depression among psychiatric suicidal adolescents than a non-suicidal psychiatric control group (68, 69). The univariate results of this study with respect to depression are consistent with these two studies. That is, adolescents who have a history of suicidal behavior are more likely to be depressed than non-suicidal adolescents within a clinical sample. In a medically hospitalized sample, Taylor and Stansfeld (28) found that depression was significantly more prevalent among suicide attempters than a matched comparison group of adolescents seen in an outpatient child psychiatry clinic. The depression rate reported by Taylor and Stansfeld (28), however, is less prevalent than that seen in psychiatric samples. The prevalence of depression in samples of suicide attempting adolescents

appears to vary depending upon the population studied, with the highest rates reported in psychiatric samples.

The univariate findings with respect to hopelessness in this study are consistent with studies that have found a greater degree of hopelessness in suicide attempting psychiatric adolescents than non-suicidal psychiatric controls (70), non-suicidal psychiatric controls matched on depression scores (29) and both non-suicidal psychiatric and normal controls (71, 72). The study by Morano et al. (29) found that the variables loss and low family support, but not hopelessness, were significant predictors of suicide attempts by adolescents in their psychiatric sample. This is consistent with the present study in that hopelessness was not a significant predictor of being in the suicidal group when taking other risk factors into account in the multiple regression model.

In this study, suicidal adolescents reported significantly lower self-esteem than non-suicidal adolescents. Comparison with previous studies that have also used psychiatric control groups is difficult, as there is a paucity of studies with this type of research design in the literature. A few studies which compared suicidal and non-suicidal adolescents in the general population found that self esteem was lower among suicidal adolescents (73, 74). A study by Overholser, Adams, Lehnert and Brinkman (75) examined the relationship between self-esteem deficits and suicidal behavior in adolescent psychiatric inpatients and high school-students. The high-school students reported higher self esteem than the psychiatric inpatients, yet the relationship between self-esteem and suicidal behavior remained similar across hospitalization status; that is,

low self-esteem was related to suicidal behavior in both groups. The study, however, lacked non-suicidal comparison groups.

When the three cognitive/affective variables were entered into the multiple logistic regression model along with the three attachment variables, perceived support from family, and controlling for gender and age differences, only one of the three, namely depression, was a significant predictor of membership in the suicidal group. That is, after taking the family variables and depression into account, hopelessness and self-esteem do not offer any additional information.

Self-esteem has been found to be related to depression in child (76), and adolescent psychiatric inpatients (77, 75). As mentioned above, depression has been found to be associated with adolescent suicidal behavior. Overholser et al. (75) suggests that low self-esteem may indirectly heighten the risk of suicidal behavior by increasing an adolescent's vulnerability to depression. This suggestion may explain why, in the present study, depression, and not self-esteem, was a significant predictor of adolescent suicidal behavior in the multiple regression model. Perhaps, depression mediated the relationship between self-esteem and suicidal behavior in this study.

STUDY LIMITATIONS:

Limitations of this study include study design and generalizability to other suicidal populations. Firstly, this study was cross-sectional and therefore the findings cannot be interpreted in terms of cause and effect. The findings support an associative relationship only; no argument of causality can be made. Only longitudinal, prospective studies of risk factors for suicidal behavior can support this type of argument. The results

of this study are generalizable to suicidal adolescents in clinical populations, and therefore must be interpreted carefully when applying them to the general population. The suicidal adolescents in this study may also not be representative of clinical adolescents in other treatment centers. The adolescents in this study were selected from inpatient, outpatient and day treatment centers, and the majority of them were inpatients. However, the adolescents were selected from a variety of treatment settings in three different Canadian cities, which lends support for them being representative of clinical adolescents.

STRENGTHS AND FUTURE DIRECTIONS:

The results can be confidently related to suicidal status and not just generalized psychopathology, as suicidal and non-suicidal subjects within a clinical sample were compared in this study. Additionally, the large sample size (n = 187) allowed for the detailed examination of gender and age differences between the two groups on the variables tested. The results of this study point to the use of the attachment construct in future research of suicidal behavior. In particular, the findings support the use of parent-adolescent attachment as a clinically relevant way to describe the disturbed family environment common for many suicidal adolescents. These data also have potential usefulness for clinical practice. It is reasonable to suggest that the identification of dysfunctional parent-adolescent attachment characteristics, amongst other variables, may be important for assessing adolescent suicidal risk. And finally, with respect to the AAQ, this instrument can be used in future studies to assist in further characterizing phenomena

associated with various attachment styles in adolescence. The AAQ could also be used in clinical setting for evaluating therapeutic outcome.

CONCLUSION:

The results suggest that disturbed family relationships are the core dynamic underlying adolescent suicidal behavior, and depression is a result or consequent manifestation of a disturbed family environment. The results of this study support an association between insecure attachment and adolescent suicidal behavior. The findings are consistent with attachment theory's view of suicidal behavior. Attachment theory conceptualizes suicidal behavior as a manifestation of attachment behavior emerging in response to current attachment threat. Such behavior involves the expression of anger and distress directed at attachment figures who are perceived to be unavailable, and serves the function of striving to recover and maintain close proximity to them (34).

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APPENDIX A

The appropriateness of treating age as a continuous variable in the multiple

regression model was examined. To ascertain the scale of age, a categorical variable was

constructed. According to the 25th, 50th and 75th percentiles, 4 categories for the age

variable were created: (1) age equal to or less than 14 years; (2) age equal to 15 years; (3)

age equal to 16 years; and (4) age equal to or greater than 17 years. This categorical age

variable was then entered into a simple logistic regression model with group classification

as the dependent variable. If the logit was linear in age then it was expected that a linear

increasing or decreasing trend would be seen in the estimated coefficients. It can be seen

from the simple logistic regression output below (Table 7) that there is no evidence of

linearity; coefficients for the second, third and fourth categories are similar in value, and

all three categories appear to be different from the first category. This suggested that

perhaps there were two distinct age groups in the sample, an older group and a younger

group. When this four category age variable was entered into a multiple logistic

regression model, again, the observations suggested that there existed an older age group

made up of adolescents in the second, third and fourth age categories and a younger group

comprised of adolescents in the first age category (Table 8). Further supporting evidence

was seen when interaction terms involving the four category age variable were entered

into the model. Looking at the coefficients for each interaction, again, the coefficients of

those terms involving the second, third and fourth age categories are similar in value, and

all three differ from an interaction with the first category (Table 9).

As a result of this supporting evidence, a dichotomous variable taking on the value 0 if age is in the first quartile and one if otherwise, was created. That is, the first category included adolescents aged 14 years or younger and the second category was comprised of adolescents aged 15 years or older. The results of treating age as a dichotomous variable in the logistic multiple regression model are presented in the RESULTS section.

Table 7. Simple Logistic Regression Output

Variable	Coefficient	SE
Intercept	-0.449	0.2337
age2	**1.0169**	**0.3831**
age3	**0.8843**	**0.4520**
age4	**1.2291**	**0.4326**

Table 8. Multiple Logistic Regression Output with Main Effects

Variable	Coefficient	SE
Intercept	-2.8728	1.5327
Depression	0.0618	0.0263
Perceived support from family	-0.0952	0.0483
Angry Distress	-0.0602	0.0659
Perceived unavailability	0.1323	0.0654
Lack of a secure base	0.1144	0.0699
age2	**0.8758**	**0.5760**
age3	**0.9853**	**0.6504**
age4	**1.4301**	**0.6114**
gender	2.7857	1.5449
Lack of a secure base*gender (female)	-0.2399	0.1104

Table 9. Multiple Logistic Regression Output including Interaction Terms

Variable	Coefficient	SE
Intercept	1.5577	2.1940
Depression	0.0943	0.0311
Perceived support from family	-0.2798	0.0990
Angry distress	-0.3453	0.1195
Perceived unavailability	0.2070	0.0754
Lack of a secure base	0.1313	0.0741
age2	-8.9882	3.3511
age3	-6.9553	3.3707
age4	-6.8495	3.9087
gender	2.1040	1.7598
Lack of a secure base*gender (female)	-0.2359	0.1248
Angry distress*age2	**0.5301**	**0.1848**
Angry distress*age3	**0.3142**	**0.1737**
Angry distress*age4	**0.3749**	**0.2142**
Family support*age2	**0.2475**	**0.1403**
Family support*age3	**0.3206**	**0.1433**
Family support*age4	**0.3024**	**0.1507**

APPENDIX B

ADOLESCENT ATTACHMENT QUESTIONNAIRE

Angry Distress

1. I find it difficult to imagine turning to my parent for help.

2. My parent only seems to notice me when I am angry.

3. I often feel angry with my parent without knowing why.

4. I feel that there is something wrong with me because I'm remote from my

    parent

5. I get annoyed at my parent because it seems I have to demand his/her caring

    and support.

Unavailability

1. I'm confident that my parent with listen to me

2. I'm confident that my parent will try to understand my feelings.

3. When I'm upset, I am confident my parent will be there to listen to me.

4. I can count on my parent to be available if I need him/her.

5. I'm confident that my parent will always love me.

Lack of Secure Base

1. If I make a decision, I always check it out with my parent.

2. The further I am from my parent, the more insecure I feel.

3. I feel lost if I'm upset and my parent is not around.

4. Being with my parent is my only security.

5. I protest strongly when my parent leaves on a trip.

PERCEIVED SOCIAL SUPPORT FROM FAMILY SCALE

1. My family gives me the moral support I need.

2. I get good ideas about how to do things or make things from my family.

3. Most other people are closer to their family than I am.

4. When I confide in the members of my family who are closest to me, I get the idea that it makes them uncomfortable.

5. My family enjoys hearing about what I think.

6. Members of my family share many of my interests.

7. Certain members of my family come to me when they have problems or need advice.

8. I rely on my family for emotional support.

9. There is a member of my family I could go to if I were just feeling down, without feeling funny about it later.

10. My family an I are very open about what we think about things.

11. My family is sensitive to my personal needs.

12. Members of my family come to me for emotional support.

13. Members of my family are good at helping me solve problems.

14. I have a deep sharing relationship with a number of members of my family.

15. Members of my family get good ideas about how to do things or make things from me.

16. When I confide in members of my family, it makes me uncomfortable.

17. Members of my family seek me out for companionship.

18. I think that my family feels that I'm good at helping them solve problems.

19. I don't have a relationship with a member of my family that is as close as other

people's relationships with family members.

20. I wish my family were much different.

PERCEIVED SOCIAL SUPPORT FROM FRIENDS SCALE

1. My friends give me the moral support I need.

2. Most other people are closer to their friends than I am.

3. My friends enjoy hearing about what I think.

4. Certain friends come to me when they have problems or need advice.

5. I rely on my friends for emotional support.

6. If I felt that one or more of my friends were upset with me, I'd just keep it to myself.

7. I feel that I'm on the fringe in my circle of friends.

8. There is a friend I could go to if I were just feeling down, without feeling funny about it later.

9. My friends and I are very open about what we think about things.

10. My friends are sensitive to my personal needs.

11. My friends come to me for emotional support.

12. My friends are good at helping me solve problems.

13. I have a deep sharing relationship with a number of friends.

14. My friends get good ideas about how to do things or make things from me.

15. When I confide in friends, it makes me feel uncomfortable.

16. My friends seek me out for companionship.

17. I think that my friends feel that I'm good at helping them solve problems.

18. I don't have a relationship with a friend that is as intimate as other people's relationships with friends.

19. I've recently gotten a good idea about how to do something from a friend.

20. I wish my friends were much different.

ROSENBERG SELF ESTEEM SCALE

1. I feel that I'm a person of worth at least on an equal basis with others.

2. I feel that I have a number of good qualities.

3. All in all, I am inclined to feel that I am a failure.

4. I am able to do things as well as most other people.

5. I feel I do not have much to be proud of.

6. I take a positive attitude toward myself.

7. On the whole, I am satisfied with myself.

8. I wish I could have more respect for myself.

9. I certainly feel useless at times.

10. At times I think I am no good at all.

BECK HOPELESSNESS SCALE

1. I look forward to the future with hope and enthusiasm.

2. I might as well give up because there is nothing I can do about making things better

for   myself.

3. When things are going badly, I am helped by knowing that they cannot stay that way

forever.

4. I can't imagine what my life would be like in ten years.

5. I have enough time to accomplish the things I want to do.

6. In the future, I expect to succeed in what concerns me most.

7. My future seems dark to me.

8. I happen to be particularly lucky, and I expect to get more of the good things in life

than the average person.

9. I just can't get the breaks, and there's no reason I will in the future.

10. My past experiences have prepared me well for the future.

11. All I can see ahead of me is unpleasantness rather than pleasantness.

12. I don't expect to get what I really want.

13. When I look ahead to the future, I expect that I will be happier than I am now.

14. Things just don't work out the way I want them to.

15. I have great faith in the future.

16. I never get what I want, so it's foolish to want anything.

17. It's very unlikely that I will get any real satisfaction in the future.

18. The future seems vague and uncertain to me.

19. I can look forward to more good times than bad times.

20. There's no use in really trying to get anything I want because I probably won't get it.